



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Kathleen A. Theoharides
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
<http://www.mass.gov/eea>

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CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
2018/2019 LOGAN AIRPORT ENVIRONMENTAL DATA REPORT

PROJECT NAME : 2018/2019 Environmental Data Report (EDR)
PROJECT MUNICIPALITY : Boston/Winthrop
PROJECT WATERSHED : Boston Harbor
EOEA NUMBER : 3247
PROJECT PROPONENT : Massachusetts Port Authority
DATE NOTICED IN MONITOR : January 6, 2021

As Secretary of the Executive Office of Energy and Environmental Affairs (EEA), I hereby determine that the Environmental Data Report (EDR) submitted on this project **adequately and properly complies** with the Massachusetts Environmental Policy Act (MEPA) (M.G.L. c. 30, ss. 61-62I) and with its implementing regulations (301 CMR 11.00).

The environmental review process for Logan Airport has been structured to occur on two levels: airport-wide and project-specific. The Environmental Status and Planning Report (ESPR) has evolved from a largely retrospective status report on airport operations to a broader analysis that also provides a prospective assessment of long-range plans. It has thus become, consistent with the objectives of the MEPA regulations, part of the Massachusetts Port Authority's (Massport) long-range planning process. The ESPR provides a "big picture" analysis of the environmental impacts associated with current and projected activity levels, and presents a comprehensive strategy to avoid and minimize impacts. The ESPR analysis is supplemented by (and ultimately incorporates) the detailed analyses and mitigation commitments of project-specific Environmental Impact Reports (EIRs). The ESPR is generally updated on a five-year basis. The previous ESPR for the year 2017 (2017 ESPR) was filed in August of 2019. The Certificate on the 2017 ESPR was issued on November 25, 2019 and included a Scope for this 2018/2019 Environmental Data Report (EDR).

EDRs are filed in the years between ESPRs. The EDR is a retrospective document that is filed annually and identifies environmental impacts based on actual passenger activity and operations. This 2018/2019 EDR follows the 2017 ESPR. In the 2017 ESPR, Massport requested to combine both the 2018 EDR and the 2019 EDR into one document referred to as the 2018/2019 EDR. The 2018/2019 EDR is the subject of this review. This Certificate also contains a Scope for the next EDR.

The 2018/2019 EDR indicates that the strong economy resulted in a rapid increase in passenger activity levels and aircraft operations during 2018-2019. In 2019, air passenger activity levels at Logan Airport reached an all-time high of 42.5 million, an increase of 3.9 percent over 2018 (40.9 million). If this trend continues, the Airport will likely exceed the 50 million annual passengers much sooner than the 10 to 15 year timeframe projected in the 2017 ESPR. To provide additional context, the 2018/2019 EDR also includes an update through fall 2020 to acknowledge the decrease in passenger activity and passenger operations that occurred in 2020 as a result of the COVID-19 pandemic. Specifically, the 2018/2019 EDR details how beginning in March 2020, flights in and out of Logan Airport were dramatically reduced and passenger levels dropped by over 90 percent at the peak of the COVID-19 pandemic in the spring and summer of 2020. While activity levels began a slow recovery in mid-summer 2020, the ongoing wave of COVID-19 cases has resulted in a decrease in total flight operations by approximately 50 percent and passenger levels by approximately 70 percent compared to January through October 2019. The 2018/2019 EDR predicts that it will be years before operations at the Airport return to pre-COVID-19 levels. While I understand that future growth at Logan Airport will be impacted by public health guidance and post-pandemic economic recovery, comments from the Conservation Law Foundation (CLF), Airport Impact Relief Incorporated (AIR Inc.), the Town of Milton, and others request that Massport refine its process for forecasting growth rates and provide additional data to support the estimates. While activities and operations have decreased due to the COVID-19 pandemic, the next EDR should describe the methodology for the forthcoming future forecast which should be provided in the 2022 ESPR. Additionally, I am requiring that Massport file a combined 2020/2021 EDR given that 2020 activity levels, if considered in isolation, would not provide a clear and complete indication of post-pandemic growth trends. I expect that Massport will continue their ongoing consultation and share data regarding observed trends with the Massport Community Advisory Committee (CAC) and other stakeholder groups as these documents are being developed.

Although not required as part of the Scope, the 2018/2019 EDR also provides updates through fall 2020 where the current conditions have resulted in changes to planned capital projects or programs that were in place in 2018 and 2019 or were planned to occur in the near future. As described in the 2018/2019 EDR, these changes are a result of changes to capital and operations plans that have occurred in recognition of the dramatic reduction in flights, passenger levels, and revenue caused by the ongoing COVID-19 pandemic. The changes primarily include the deferral of several planned capital projects that would provide environmental benefits and reduce impacts associated with airport operations as activity levels recover, including but not limited to: the Logan Airport Parking Project (EEA# 15665) (5,000 new parking spaces, solar photovoltaic system, and electric vehicle charging stations), Phase 2 of Terminal E Modernization (EEA# 15434) (3 new terminal gates), several high-occupancy-vehicle investments (addition of 1,000 new spaces to Framingham Logan Express Garage (EEA# 16168), opening a new Logan Express suburban location, and implementing a 2nd urban Logan Express Service at North Station. I note comments from CLF, AIR Inc., the Massachusetts Chapter of the Sierra Club, and Mr. Frederick Salvucci identify concerns that the 2018/2019 EDR does not present a decision making process or timeline regarding future implementation of the deferred capital projects. As noted

below, I expect that the 2020/2021 EDR will include a description of the decision making process and factors that will be used to inform the timing of implementation of the deferred capital projects to ensure that mitigation is being provided commensurate with activity levels and associated impacts as the economy recovers and demand for air travel increases. The EDR should also include a description of the economic, financial, or other factors that will inform this decision. As noted above, I encourage Massport to continue their ongoing consultation with the Massport CAC and other stakeholder groups as this process is developed.

Comments also request that Massport present more direct information about the major research findings around health and airport impacts, including likely pollution and noise health impacts, and identify mitigation commitments to reduce these impacts. In addition to responding to these comments, the 2020/2021 EDR should report on the progress and other refinements for tracking noise, traffic, and air emissions and abatement efforts, as further described in the Scope below. While Massport has followed through on several important commitments despite these uncertain conditions, providing environmental mitigation commensurate with impacts remains critical as the economy recovers and demand for air travel increases. The 2020/2021 EDR should document potential impacts and trends and propose measures to avoid, minimize and mitigate environmental impacts. While I acknowledge that the next EDR will depict a decrease in passenger growth and aircraft operations due to the COVID-19 pandemic; I expect that future EDRs will include additional information if actual growth in passenger and/or aircraft operations outpace the forecasts, including a discussion of passenger and activity levels and planning/mitigation to address impacts of the growth. Furthermore, I continue to reserve the right to require that future ESPRs evaluate the impacts of a range of activity forecasts, based on the results of the interim reporting provided in the EDRs.

Logan Airport Environmental Review and Planning

The 2018/2019 EDR is generally responsive to the Scope. It contains useful data on activity levels and impacts, and lays out a forecast for trends in the future years. The technical studies in the 2018/2019 EDR include reporting and analysis of key indicators of airport activity levels, the regional transportation system, ground access, noise, air quality, environmental management, and project mitigation tracking.

As noted above, the 2017 ESPR presented an updated forecast for Logan Airport aircraft operations and passenger activity. That forecast focused on a Future Planning Horizon including projections of 50 million annual air passengers and 486,000 annual aircraft operations. As presented in the 2018/2019 EDR, the strong economy caused a rapid increase in passenger activity levels and aircraft operations during 2018-2019. Through 2019, Logan Airport was one of the fastest growing large airports in the United States in terms of passenger volume. From 2017 to 2019, U.S. air passenger traffic grew by 9.1 percent, whereas Logan Airport experienced a passenger growth of 10.7 percent over the same time period.

In 2019, air passenger activity levels at Logan Airport reached an all-time high of 42.5 million, an increase of 3.9 percent over 2018 (40.9 million). As has been the recent trend prior to March 2020, aircraft operations increased at a slower rate than passengers. In 2019, aircraft operations totaled 427,176 and in 2018, aircraft operations totaled 424,024. These levels both represent increases compared to the 2017 passenger levels of 38.4 million and 401,371 operations. The 2018/2019 EDR

asserts that the growth observed during 2018 and 2019 was directly correlated to the strong national and regional economies. However, even with this strong growth, aircraft operations remained well below the 487,996 operations in 2000 and the historic peak of 507,449 operations reached in 1998. The 2018/2019 EDR concludes that the slower growth in aircraft operations compared to passenger levels remains due to the steady increase in aircraft size and improving aircraft load factors (passengers/available seats). As noted above, the 2018/2019 EDR also describes how the COVID-19 pandemic has significantly reduced airport operations and passenger growth in 2020 and predicts that it will be years before operations at the Airport return to pre-COVID-19 levels.

This 2018/2019 EDR focuses on: (1) rapidly growing domestic and international passenger demand; (2) the increase in use of transportation network companies (TNC), such as Uber and Lyft, to Logan Airport and subsequent effects; (3) airport-wide emissions including those associated with vehicle trips; (4) use of the Federal Aviation Administration's (FAA) Aviation Environmental Design Tool (AEDT) for noise and air quality modeling; and, (5) noise abatement strategies.

Massport began collecting TNC data in 2017 when TNCs were authorized to pick up customers from the airport. The 2018/2019 EDR provides data and identifies effects of TNCs on traffic flow and congestion, and provides an assessment of ground access trends. Massport committed to a goal of 35.5 percent high occupancy vehicle (HOV) mode share goal by 2022 and 40 percent by 2027. Based on the results of the 2019 Air Passenger Ground-Access Survey, HOV mode share has reached 40.4 percent, exceeding both near-term and longer-term goals. The 2018/2019 EDR provides updates on the FAA requirements for changes to area navigation (RNAV) procedures introduced in the 2017 ESPR. The RNAV program has been implemented throughout the country and its primary purpose is to increase safety and operational efficiency. As noted in prior MEPA review documents, the implementation of several of these procedures has resulted in concentrations of flight patterns over certain communities and significant increases in noise exposure. The impact of the RNAV program is emphasized in comment letters received on the 2018/2019 EDR and the 2017 ESPR. Massport and the FAA signed a Memorandum of Understanding (MOU) in 2017 to frame a new process for analyzing opportunities to incrementally reduce noise through changes or amendments to Performance Based Navigation (PBN), including RNAV procedures. The 2018/2019 EDR provides an update on this process and describes Massport's efforts to mitigate noise exposure and impacts. Massport continues to seek funding for noise mitigation for properties that are eligible for participation in its Residential Sound Insulation Program (RSIP). In 2019, Massport updated its RSIP Noise Exposure Map contours and submitted an AEDT-derived noise exposure map to the FAA in 2020 for review and discussion.

The 2018/2019 EDR provides information on noise conditions modeled using the latest FAA noise modeling software, the AEDT. Massport transitioned to AEDT from the Integrated Noise Model (INM) in its 2016 EDR. The 2018/2019 EDR also uses FAA's AEDT model for emission factors compared to the legacy Emissions and Dispersion Modeling System (EDMS) model. Massport attributes some of the changes in air emissions to the use of the AEDT model, which assumes higher nitrogen oxides emission factors compared to the legacy EDMS model.

Review of the 2018/2019 EDR and Scope for the 2020/2021 EDR

The 2018/2019 EDR identifies the cumulative impacts of passenger growth and associated ground and aircraft operations based on revised forecasts; analyzes trends and environmental impacts of

operations in calendar year 2018 and 2019; and provides updates on projects, environmental management plans, and the status of project mitigation. As noted above, Massport has also included updates through fall 2020 in the 2018/2019 EDR where the current conditions have resulted in changes in projects or programs that were in place in 2018 and 2019. As noted above, I am requiring that Massport file a combined 2020/2021 EDR to provide a clear and complete indication of post-pandemic growth trends.

The 2020/2021 EDR must include information on the environmental policies and planning that form the context of environmental reporting, technical studies, and environmental mitigation initiatives against which projects at Logan Airport can be evaluated. This should include identification of the cumulative effects of Logan Airport operations and activities. The results of the Logan Airport Air Passenger Ground Access Survey and the Long-term Parking Management Plan should inform transportation planning and strategies to achieve the HOV mode share goal.

The 2020/2021 EDR must include copies of all ESPR and EDR Certificates and a distribution list (indicating those receiving documents, CDs, or Notices of Availability). Supporting technical appendices should be provided as necessary.

Response to Comments

The Response to Comments section should address all of the substantive comments on the 2018/2019 EDR, and other Certificates for Logan Airport that reference EDR/ESPR documentation (e.g. Logan Airport Parking Project (EEA# 15665), Terminal E Modernization (EEA# 15434)). To ensure that the issues raised by commenters are addressed, the 2020/2021 EDR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended to, and shall not be construed to, enlarge the scope of the EDR beyond what has been expressly identified in this Certificate. The Response to Comments should not reference a section of the EDR unless they are directly responsive to the comment. Common themes that should be addressed throughout the EDR and in the Responses to Comments include noise (modeling of noise contours and noise abatement) and emissions reduction issues. The EDR should also include sufficient information to address comments on air quality and public health which are common concerns of commenters.

Activity Levels

Air traffic activity levels at Logan Airport are the basis for the evaluation of noise, air quality, and ground access conditions associated with the Airport. In this section, current activity levels at the Airport are compared to prior-year levels, and historical passenger and operations trends at Logan Airport dating back to 2000, which is the year Massport approved an Environmental Management Policy.

In 2017, air passenger activity levels at Logan Airport reached 38.4 million, an increase of 5.9 percent from 2016. At the time of the 2017 ESPR filing, it was projected that Logan Airport would reach 50 million annual passengers in the next 10 to 15 years (the Future Planning Horizon). Air passenger activity levels at Logan Airport in 2018 and 2019 increased to 40.9 million in 2018 and 42.5 million in 2019. The 2019 passenger activity level represented a high for Logan Airport, which had been averaging an annual passenger growth of 5.9 percent since 2013 and continued to outpace the overall U.S.

passenger growth of 4.1 percent per year for the same time period. The 2018/2019 EDR indicates that the analysis provided for Massport's forecast is consistent with the FAA's Terminal Area Forecast (TAF).

As indicated in the 2017 ESPR, Massport needs to ensure mitigation is being provided commensurate with increased growth and associated impacts. The projection of 50 million annual air passengers in the next 10 to 15 years represents an average annual growth rate of 1.5 percent. As noted above, the 2018 and 2019 growth rates exceed the 1.5 annual growth rate and data for 2020 would likely have exceeded the projections, absent the decrease associated with COVID-19 pandemic. As previously stated in the 2017 ESPR, I expect that future EDRs will include additional information if actual growth in passenger and/or aircraft operations outpace the forecasts. Specifically, the EDR(s) should explain the circumstances that caused the growth, describe how this may affect the impact forecasts, and identify mitigation and policy strategies that will be implemented to address the proportional growth in impacts. In addition, as noted above, the future EDRs should include a description of the decision making process and factors that will be used to inform the timing of implementation of the deferred capital projects to ensure that mitigation is being provided commensurate with activity levels and associated impacts as the economy recovers and demand for air travel increases. The EDR should also include a description of the economic, financial, or other factors that will inform this decision. I continue to reserve the right to require that future ESPRs evaluate a range of activity forecasts based on the results of this interim reporting. I also expect that air and noise emissions related to passenger and activity levels and planning/mitigation will be a significant emphasis of the 2020/2021 EDR.

Domestic air passengers represent Logan Airport's largest market segment, accounting for approximately 81.2 and 80.2 percent of total air passengers in 2018 and 2019, respectively. The domestic passenger market increased by 6.9 percent in 2018 compared to 2017, and by 2.6 percent from 2018 to 2019. According to the 2018/2019 EDR, the continued economic and personal income growth of the New England region and the increased need for business travel contributed to the increase in domestic passenger demand over 2018 and 2019.

International passenger traffic at Logan Airport increased by 5.3 percent in 2018 over 2017 and 9.7 percent over 2018 levels. In 2018 and 2019, international passengers comprised approximately 18.5 and 19.6 percent of total Airport passengers, respectively. Since 2013, the international air passenger segment has averaged a 10.6-percent annual growth. According to the 2018/2019 EDR, this increase was driven by strong market demand as well as a rapid increase in foreign carrier services in recent years. As a large hub airport along the U.S. eastern seaboard, Logan Airport also ranked sixth in terms of transatlantic international passengers with nearly 5.0 million passengers flying to Europe, the Middle East, and Africa in 2019, increasing by 10.3 percent compared to 2018.

Aircraft operations continued the long-term trend of increasing at a slower rate than passenger growth. In 2018, operations totaled 424,024 and 2019 operations totaled 427,176. That growth was directly correlated to the strong national and regional economy. Even with the strong growth, aircraft operations remained well below the 487,996 operations in 2000 and the historic peak of 507,449 that aircraft operations reached in 1998. The combination of fewer operations in cleaner and quieter aircraft has resulted in dramatically reduced environmental impacts when compared with those historical peaks.

The increasing number of passengers per flight reflects a shift away from smaller aircraft and

rising load factors as airlines continue to focus on capacity control and improvements in efficiency. This trend is indicative of the industry-wide shift toward higher aircraft load factors and an increase in the number of domestic and international destinations. In 2019, Logan Airport operations accommodated an average of 99.5 passengers per flight compared to 96.6 in 2018 and 95.7 in 2017, which is the highest average in the last decade. The 2018/2019 EDR attributes this increase in 2018 and 2019 to the introduction of newer and larger aircraft like the Airbus 350 and Boeing 787 at Logan Airport, especially for international long-haul flights to both existing and new destinations. The average number of passengers per flight has risen by 27.9 percent since 2010 when the average number of passengers per flight was 77.8. In 2019, Logan Airport's average domestic load factor was 85.1 percent, an increase from 2018 levels of 84.2 percent and 2017 levels of 82.6 percent. The national average domestic load factor also increased during the same period, from 81.8 percent in 2017 to 84.4 percent in 2018 and 85.1 percent in 2019.

The 2018/2019 EDR provides an update on measures that have been implemented to improve accessibility to the Airport and a relieve on-Airport roadway congestion. In 2018 and 2019, Massport's strategies to improve and expand HOV service to and from Logan Airport included continued investment in Logan Express facilities and service. These improvements were in support of Massport's goal to double Logan Express shuttle bus ridership from 2 million to 4 million passengers (by the time Logan Airport reaches 50 million passengers), to reduce passenger and employee VMT, congestion, and associated air quality emissions. Those initiatives included both the urban and suburban Logan Express sites, and focused on increasing frequencies, adding parking, improving customer amenities, and reducing fares. Massport also continued to evaluate opportunities to add an additional urban and suburban location. As a complement to the existing Logan/Back Bay service, in 2019 Massport purchased new buses in anticipation of opening a new urban location proximate to Boston's North Station in 2020. The 2018/2019 EDR indicates this effort has been deferred due to decreased demand caused by the pandemic.

The 2018/2019 EDR also describes the parking management strategy that addresses parking supply, pricing, and operations to promote the use of HOV, transit, and shared-ride options, and to reduce the environmental impacts associated with drop-off/pick-up modes. As described in prior MEPA filings, the Logan Airport Parking Project (EEA #15665) is one element of Massport's ground access strategy to reduce drop-off/pick-up modes. The parking project will provide an additional 5,000 commercial parking spaces at Logan Airport. Massport has been advancing plans for constructing 2,000 of the spaces in a new garage in front of Terminal E. The 2018/2019 EDR describes that the construction of these additional parking spaces is now deferred due to the reduction in passenger activity associated with the ongoing COVID-19 pandemic. Massport has also deferred the remaining 3,000 spaces, which are being planned as a future expansion of the Economy Garage.

The 2020/2021 EDR should report on the effectiveness of the TNC management plan and provide an update on planned and executed measures to relieve on-Airport roadway congestion including updates on the Logan Airport Parking Project. As noted above, several measures to improve the use of HOV and reduce VMT have been deferred, including the expansion of the Framingham Logan Express Garage (EEA# 16168), opening a new Logan Express suburban location, and implementing a second urban Logan Express Service at North Station. The 2020/2021 EDR should include a description of the decision making process and factors that will be used to inform the timing of implementation of the deferred capital projects to ensure that mitigation is being provided

commensurate with activity levels and associated impacts as the economy recovers and demand for air travel increases. To the extent feasible, the EDR should identify the metrics, monitoring data, or other criteria that will be used to inform when these measures will be implemented based on future increases in demand for air travel as the economy recovers.

The 2020/2021 EDR should also report on:

- Aircraft operations, including fleet mix and scheduled airline services at Logan Airport;
- Domestic and international passenger activity levels;
- Cargo and mail volumes;
- Comparison of 2020 operations and passenger activity levels to 2018/2019 activity levels; and
- National aviation trends compared to Logan Airport trends.

Sustainability at Logan Airport

The 2018/2019 EDR describes Massport's airport wide sustainability goals as identified in its International Organization for Standardization (ISO) 14001 Environmental Management System (EMS) and Sustainability Management Plan (SMP). The Logan Airport SMP (2015) is integrated with the existing EMS framework to promote environmental, social, and economic improvement. The SMP identifies efforts to promote, coordinate, and integrate sustainability initiatives Airport-wide. Progress towards achieving these goals is addressed in the 2018/2019 EDR. Some highlights of initiatives that were completed in 2018 and 2019 include: conducting a comprehensive waste assessment of Logan Airport which categorized more than 5.5 tons of material; development of Massport's Resiliency Web Tool; completion of the Logan Airport Stormwater and Flood Risk Modeling Study; updating the Logan Flood Operations Plan and Heavy Weather and Flood Operations Plan; and, relocation of Ride App pick up and drop off locations to central garage to help reduce traffic congestion. The Logan Airport Annual Sustainability Report, first published in April 2016, provides a progress summary of sustainability efforts at Logan Airport based on Massport's sustainability goals and targets established in the Logan Airport SMP. It highlights Massport's progress towards improving sustainability and enhancing resiliency at its facilities.

Massport is currently working on a vision for Massport's "Sustainability 2.0" as a next-level planning effort to implement principles and approaches from the SMP at other Massport facilities and to update Massport's sustainability goals and targets. Massport is currently advancing a series of short-term initiatives to help reach its goals in the areas of (1) energy and GHG emissions; (2) water conservation; (3) community, employee, and passenger well-being; (4) materials, waste management, and recycling; (5) resiliency; (6) noise abatement; (7) air quality improvement; (8) ground access and connectivity; (9) water quality/stormwater; and (10) natural resources. In early 2019, Massport conducted a series of charrettes with Massport staff, tenants, and business partners to help define this vision. Massport is currently working on a detailed set of recommendations for Sustainability 2.0. Updates will be reported in future Massport Annual Sustainability and Resiliency Reports and included in future EDRs.

The 2018/2019 EDR describes how a number of sustainability and resiliency projects at the airport have been deferred due to the COVID-19 pandemic such as installing a solar PV system at the

new garage in front of Terminal E in 2020. In addition, Massport has installed electric vehicle (EV) charging facilities in all its garages and plans to install them in the proposed new garage in front of Terminal E and the expanded Economy Garage when these projects are constructed. However, both projects are currently deferred. The 2020/2021 EDR should provide updates to airport wide sustainability goals. As noted above, the 2020/2021 EDR should include a description of the decision making process and factors that will be used to inform the timing of implementation of the deferred capital projects to ensure that mitigation is being provided commensurate with activity levels and associated impacts as the economy recovers and demand for air travel increases. To the extent feasible, the EDR should identify the metrics, monitoring data, or other criteria that will be used to inform when these measures will be implemented based on future increases in demand for air travel as the economy recovers.

Climate Change

Massport assets and Logan Airport, in particular, are critical infrastructure and play an important role in the economy. As recognized in Executive Order (EO) 569 “Establishing an Integrated Climate Change Strategy for the Commonwealth” and a suite of other state and municipal initiatives, the impacts of climate change must be an important consideration for development across the state. Climate change presents a serious threat to the environment and the Commonwealth’s residents, communities, and economy. The EO indicates that extreme weather events associated with climate change present a serious threat to public safety and the lives and property of our residences.

The EO also identifies the transportation sector as a significant contributor to GHG emissions in the Commonwealth and the only sector in which GHG emissions are increasing. In 2017, EEA and the Massachusetts Department of Transportation (MassDOT) conducted a number of transportation listening sessions throughout the Commonwealth to inform development of strategies and programs to reverse the growth in this sector. The 2018/2019 EDR addresses Massport’s consistency with EO 569, the Massachusetts State Hazard Mitigation and Climate Adaptation Plan, and the Massachusetts Energy Plan.

GHG emissions

The 2018/2019 EDR incorporates GHG emissions reporting consistent with that provided in the 2017 ESPR which was normalized to support effective review and analysis. The 2018/2019 EDR includes only conditioned (heated and cooled, enclosed buildings) building areas in energy use and emission intensity calculations, reports input energy components (oil, gas, electricity) and central plant data, and clarifies how renewable energy technologies are accounted for in the analysis. The 2018/2019 EDR contains a GHG emissions inventory for Logan Airport which presented emissions and energy data normalized by passenger use and building area. The GHG emissions associated with buildings and vehicles were presented as pounds of carbon dioxide (CO₂) per passenger.

The GHG emissions for aircraft, ground support equipment (GSE), motor vehicles, and stationary sources were quantified using emission factors and methodologies outlined in the *Greenhouse Gas Emissions Policy and Protocol* issued by EEA and the Transportation Research Board’s *Guidebook on Preparing Airport Greenhouse Gas Emissions Inventories* (Airport Cooperative Research Program

(ACRP) Report 11, Project 02-06). The 2018/2019 EDR compares the results of the 2018 and 2019 GHG emissions inventory to the 2017 ESPR results. The analysis showed total Logan Airport GHG emissions increased from 2017 to 2018 by approximately 10 percent and from 2018 to 2019 by approximately 4 percent. These increases are primarily due to the increase in aircraft operations (i.e., 5.6 percent in 2018 and 0.7 percent in 2019). According to the 2018/2019 EDR, the GHG emissions associated with Logan Airport in 2018 and 2019 are approximately 1 percent of the most recent statewide emissions estimates.

The 2020/2021 EDR should incorporate GHG emissions reporting consistent with that provided in the 2018/2019 EDR which was normalized to support effective review and analysis. In addition, Massport should ensure that only conditioned (heated and cooled, enclosed buildings) building areas are included in energy use and emission intensity calculations, report input energy components (oil, gas, electricity) and central plant data, and clarify how renewable energy is accounted for in the analysis. I encourage Massport to consider the recommendations identified in comments from the Department of Energy Resources (DOER) which recommend electrification of space and water heating as well as evaluation of opportunities for distributed renewable energy generation. Massport should consult with the MEPA Office and the DOER regarding presentation of GHG data in the 2020/2021 EDR.

In the 2020/2021 EDR, GHG emissions should continue to be quantified for aircraft, GSE, motor vehicles, and stationary sources using emission factors and methodologies outlined in the *Greenhouse Gas Emissions Policy and Protocol* issued by EEA and the Transportation Research Board's *Guidebook on Preparing Airport Greenhouse Gas Emissions Inventories* as developed for the 2018/2019 EDR. The results of the 2020 GHG emissions inventory should be compared to the 2018 and 2019 results.

Adaptation and Resiliency

The 2018/2019 EDR describes the resiliency program developed by Massport to identify critical infrastructure and to enhance its resiliency. As reported in the Logan Airport 2018 Annual Sustainability and Resiliency Report approximately 60 percent of critical assets (electrical power, diesel fuel pumping stations, telecommunications systems, and public safety) have been protected from storm surge flooding via relocation, and/or raising in elevation. This exceeds the 2020 resiliency target of elevating at least 25 percent of critical assets. A particular concern for Massport is the effect of sea level rise and projected increases in the severity and frequency of storms. To address this concern, Massport has initiated a Disaster and Infrastructure Resiliency Planning (DIRP) Study for Logan Airport which includes a hazard analysis, modeling of sea-level rise and storm surge, and projections of temperature, precipitation, and anticipated increases in extreme weather events. The DIRP Study provides recommendations regarding short-term strategies to make Massport's facilities more resilient to the effects of climate change. The 2018/2019 EDR provides a summary of the DIRP Study and identifies projects that were completed in 2018 and 2019 (specifically, the flood resiliency projects described below), and identifies which recommendations Massport will implement in the short term and long term. The 2020/2021 EDR should continue to identify which recommendations will be implemented by Massport to improve resiliency.

As part of the DIRP Study Massport created a Floodproofing Design Guide was published in November 2014 and updated in November 2018. Operational aspects of resiliency strategy include the development of Flood Operations Plans for Logan Airport. This plan were introduced in 2014 and

included the planned deployment of temporary flood barriers to protect up to 12 locations of critical infrastructure in the event of severe weather. Additional locations have been permanently enhanced to prevent flooding. The flood operations plans were re-evaluated in 2018 to enhance their effectiveness and to adapt to evolving requirements and past experiences. The 2020/2021 EDR should identify which recommendations will be implemented by Massport to improve resiliency.

The effects of climate change, such as extreme heat, may exacerbate the negative health effects of air pollution. As the effects of climate change progress, I encourage Massport to consider its ability to reduce negative air quality effects as a matter of public health, and to work with community-based organizations to collaboratively determine how to further mitigate air quality impacts. As discussed below, the 2020/2021 EDR should report on findings regarding health and airport impacts in relation to emissions, as well as measures to reduce these impacts.

Mitigation

The 2018/2019 EDR provides an update on Massport's mitigation commitments under the MEPA for projects at Logan Airport for which an EIR was filed to document that all feasible measures have been taken to avoid or minimize impacts. The 2018/2019 EDR addresses cumulative, Airport-wide impacts. It also updates the status of mitigation commitments for recent projects such as the Terminal E Modernization Project and the Logan Airport Parking Project as well as projects previously included in the EDRs.

The 2020/2021 EDR should continue to report on the status of mitigation commitments for specific Massport and tenant projects at Logan Airport that have undergone MEPA review. It should update the status of Massport's mitigation commitments and also identify projects for which mitigation is complete.

Planning

The Airport Planning section describes the status of projects underway or completed at Logan Airport since the filing of the 2017 ESPR which provided updates of work through 2019. Specific topics include terminal area projects, service area projects, buffer/open space projects, Airport parking projects, airside area projects, HOV improvements, and Airport-wide projects.

During 2018 and 2019 there was a strong focus on ground access and trip reduction measures, and terminal improvements. Recent and ongoing terminal area projects are providing seamless post-security connectivity and flexibility among the terminals along with enhancements to passenger processing through consolidated security checking areas. To enhance the on-Airport roadway network, Massport is improving several of the terminal area roadway segments and intersections. In October 2019, Massport opened its new TNC consolidated drop-off and pick-up areas in the Central Garage. In 2018 and 2019, Massport also advanced several HOV services and Logan Express facilities improvements as part of its trip-reduction goals. The 2018/2019 EDR outlines several planning projects that were deferred due to the COVID-19 pandemic.

Project updates include:

- The Logan Airport Parking Project, which will add 5,000 commercial parking spaces at Logan Airport in locations already in use for parking. The additional parking spaces respond to the MassDOT and U.S. Environmental Protection Agency (EPA)'s approval of a modification to the regulatory Logan Airport Parking Freeze. The additional spaces are intended to reduce dropoff/pick-up modes. The joint MEPA and federal review process was completed in January 2020. As noted earlier, this project is currently deferred due to the reduction in passenger activity associated with the COVID-19 pandemic.
- Terminal C Canopy, Connector and Roadway Project received federal environmental approval under NEPA in November 2018. As described in the 2017 ESPR, construction of this project will replace and reconfigure sections of the elevated roadways connecting Terminals B and C. At this time, construction of the replacement canopy is anticipated to begin and be completed in 2021, with a slightly reduced program than originally planned. The Terminal B to C Connector is anticipated to be complete in spring 2022 and roadways are anticipated to be complete in 2023.

The 2020/2021 EDR should continue to assess planning strategies for improving Logan Airport's operations and services in a safe, secure, more efficient, and environmentally sensitive manner. As owner and operator of Logan Airport, Massport must accommodate and guide tenant development. The EDR should describe the status of planning initiatives for the following areas:

- Roadways and Airport Parking;
- Terminal Area;
- Airside Area;
- Service and Cargo Areas;
- Airport Buffers and Landscaping; and,
- Energy, Sustainability, and Resiliency.

The 2020/2021 EDR should also indicate the status of long-range planning activities, including the status of public works projects implemented by other agencies within the boundaries of Logan Airport. The 2020/2021 EDR should provide an update on Logan Airport Parking project, including a description of the decision making process and factors that will be used to inform the timing of its implementation. To the extent feasible, the EDR should identify the metrics, monitoring data, or other criteria that will be used to inform when it will be implemented based on future increases in demand for air travel as the economy recovers. The 2020/2021 EDR should identify the status and assess the effectiveness of ground access changes, including roadway and parking projects, that consolidate and direct airport-related traffic to centralized locations and minimize airport-related traffic on streets in adjacent neighborhoods.

Regional Transportation

The 2018/2019 EDR describes activity levels at New England's regional airports and provides an update on regional planning activities, including long-range transportation efforts. The New England region is anchored by Logan Airport and a system of 10 other commercial service, reliever, and general aviation (GA) airports (regional airports). In 2018 and 2019, the New England region saw an increase in air passenger activity. Regional air passengers increased by 6.5 percent to 58.3 million air passengers in 2018 and by 2.5 percent in 2019 (59.7 million). The 10 regional airports in New England

accommodated 17.3 and 17.2 million air passengers in 2018 and 2019, respectively, compared to 16.3 million passengers in 2017.

The 2020/2021 EDR should report on:

Regional Airports

- 2020 regional airport operations, passenger activity levels, and schedule data within an historical context;
- Status of plans and new improvements as provided by the regional airport authorities;
- Regional economic factors;
- Role of the Worcester Regional Airport and Hanscom Field in the regional aviation system and Massport's efforts to promote these airports; and
- Ground access improvements.

Regional Transportation System

- Massport's role in managing the regional aviation facilities;
- Massport's cooperation with other transportation agencies to promote efficient regional highway and transit operations; and
- Report on metropolitan and regional rail initiatives and ridership.

Ground Access to and from Logan Airport

The 2018/2019 EDR reports that average daily traffic and VMT on Airport roadways has increased in 2018 and 2019 compared to 2017. It provides data on transit ridership, roadways, traffic volumes, and parking. Specifically, the 2017 ESPR states that Massport has continued to invest in and operate Logan Airport with a goal of increasing the number of passengers arriving by transit or other HOV modes. The 2018/2019 EDR provides a discussion of ground access modes and trip generation associated with each mode including: (1) transit and shared-ride HOV services; (2) drive to Logan Airport and park; or (3) drop-off/pick-up mode, which can involve a private vehicle, taxi, limousine, or TNCs.

Average weekday on-Airport VMT increased by about 4.5 percent from 2017 to 2018. Between 2018 and 2019, average weekday on-Airport VMT increased by 2.2 percent. The change in average daily traffic can be attributed primarily to the increases in air passenger activity, passenger drop-off/pick-up, cargo, and non-aviation related Airport uses. Additionally, the use of mobile application ride-booking (RideApp) services, such as Uber and Lyft, are increasingly becoming a mode of choice for ground access at Logan Airport. RideApp transactions totaled more than 7 million in 2018 and increased to over 8 million in 2019, a growth of over 16 percent. RideApps are impacting other access modes to the Airport and contributing to on-Airport congestion. Partially due to the continued rise of RideApps, black car limousines and scheduled van ridership dropped by nearly 23 percent from 2017 to 2019. Taxi dispatches declined 14 percent in 2018 compared to 2017 and 7 percent between 2018 and 2019. The Massachusetts Bay Transportation Authority (MBTA) Blue Line ridership increased by 4 percent between 2017 and 2018 and declined by 29 percent the following year.

Based on changes in passenger mode choice for accessing Logan Airport observed between 2017 and 2019, Massport updated its goals and definition of HOV. The updated definition considers vehicle

occupancies of taxis, black car limousines, and RideApps that carry two or more air passengers per vehicle to be HOV, while the same modes with one air passenger will count as non-HOV. With this updated definition, the 2018/2019 EDR describes that Massport established a goal of 35.5 percent HOV by 2022 and 40 percent by 2027. Based on the results of the 2019 Air Passenger Ground-Access Survey, HOV mode share has reached 40.4 percent, exceeding both near-term and longer-term goals. While it is anticipated that the HOV mode share will drop as a result of COVID-19 over the short term, Massport expects HOV ridership to recover over time and remains committed to the HOV mode share goals moving forward.

The 2020/2021 EDR should report on 2020 ground access conditions at the airport and provide a comparison to 2018 and 2019 for the following:

- Description of compliance with Logan Airport Parking Freeze;
- HOV ridership (including Blue Line, Silver Line, Water Transportation, and Logan Express);
- Logan Airport Employee Transportation Management Association (Logan TMA) services;
- Logan Airport gateway volumes;
- On-airport traffic volumes;
- On-airport VMT;
- Parking demand and management (including rates and duration statistics);
- Status of long-range ground access management strategy planning and the connection to the MBTA Airport Station associated with the planned Terminal E Modernization;
- Project, anticipated MBTA ridership, and possible changes in HOV mode share; and
- Trends of TNCs and their operations at Logan Airport.

The 2020/2021 EDR should address the following topics:

- Target HOV mode share and incentives;
- Impact of TNCs on Logan Airport landside operations and effectiveness of the TNC management plan;
- Update on parking conditions;
- Non-Airport through-traffic;
- Cooperation with other transportation agencies to increase transit ridership to and from Logan Airport via the Blue Line, Silver Line, Water Transportation, and Logan Express;
- Report on efforts to increase capacity and use of Logan Express;
- Progress on enhancing water transportation to and from Logan Airport;
- Results and recommendations of the ground access study Long-term Parking Management Plan required by the Parking Freeze amendments; and
- Strategies for enhancing services and increasing employee membership in the Logan Airport TMA.

Noise

The 2018/2019 EDR provides an update on the status of the noise environment at Logan Airport in 2018 and 2019 and describes Massport's efforts to mitigate noise exposure and impacts. As described below in greater detail, the implementation of the RNAV Pilot study being jointly undertaken by FAA

and Massport has resulted in concentration of flight patterns over certain communities and significant increases in noise exposure. The effects of this program are identified as significant concerns in the majority of comment letters. The 2018/2019 EDR provides updates of how Massport and FAA are continuing to work with the Massachusetts Institute of Technology (MIT) to investigate opportunities to reduce noise through changes to PBN, including RNAV. This cooperation is a first-in-the-nation project between FAA and an airport operator to better understand the implications of PBN and evaluate strategies to address community concerns.

The 2018/2019 EDR provides noise modeling results from the AEDT. The model requires detailed operational data as inputs for noise calculations, including numbers of operations per day by aircraft type and by time of day, which runway is used for each arrival and for each departure, and flight track geometry for each track. The 2018/2019 EDR also presents summaries of the 2018 and 2019 operational data used in the noise modeling, as well as the resultant annual Day-Night Average Sound Level (DNL) noise contours, a comparison of the modeled results with measured levels from the noise monitoring system, and estimates of the population residing within various increments of noise exposure in 2018 and 2019.

Both FAA and the U.S. Department of Housing and Urban Development consider DNL exposure levels above 65 decibels (dB) to be incompatible with residential land use. The 2018/2019 EDR describes how there was an overall decrease in the total number of people residing within the DNL 65 dB contour from 2017 to 2018. However, the number within the DNL 65 dB contour increased in Winthrop and Revere while decreasing in East Boston. From 2017 to 2018, there was an increase in total operations and in nighttime operations, but the primary factor in the DNL contour changes was a shift in 2018 back to typical runway use following the extended Runway 4L-22R closure in 2017.

Massport monitors flights that operate during the DNL nighttime period of 10:00 PM to 7:00 AM, when each modeled flight is increased by 10 dB in calculations of noise exposure. Nighttime operations during this period represented 16.1 percent and 16.6 percent of total operations in 2018 and 2019, respectively. Nighttime operations increased, from an average of 168 per night in 2017 to 187 per night in 2018 and 195 per night in 2019. This represents a total nighttime operations increase of 11.3 percent from 2017 to 2018, and another 4.4 percent from 2018 to 2019. The main increases to nighttime commercial activity were in passenger aircraft operations, primarily resulting from the overall growth in domestic air carrier flights and increased flights to international destinations. The majority (about 81 percent) of nighttime operations occurred either before midnight or after 5:00 AM.

The 2019 DNL contours are similar in shape and size to those for 2018, with small changes due to runway use shifts, increases in nighttime operations, and overall operations growth in 2019. The total number of people residing within the DNL 65 dB contour increased from 7,034 in 2018 to 8,768 in 2019. The additional population within the DNL 65 dB contour is mainly located in East Boston, primarily due to an increase in Runway 33L departures due to an increase in northwest winds in 2019. The estimated population (based on 2010 U.S. Census data) within the DNL 65 dB contour decreased by about 11 percent from 2017 to 2018 (going from 7,933 to 7,034) and increased again about 25 percent from 2018 to 2019 (to 8,768). The populated area included in the 2018 DNL 65 dB contour decreased in East Boston but increased in Winthrop and Revere, as compared to 2017. The populated area within the 2019 DNL 65 dB contour increased in East Boston and Winthrop and decreased in Revere, as compared to 2018.

Due to the effects of the COVID-19 pandemic and resulting decreased aircraft operations, the EDR also included assumptions about noise in 2020 through fall 2020. Massport predicts that the reduction in operations and changes in the fleet mix will likely result in a 40 percent or larger reduction in the DNL noise contour for 2020. Due to the pandemic, several airlines have retired larger and older aircraft models. When air traffic does return, it is anticipated that the mix of aircraft types will be different than the aircraft mix documented in the 2018/2019 EDR which will be updated in the 2020/2021 EDR.

In 2018, Massport received 71,381 noise complaints from 82 communities, an increase from 59,343 noise complaints from 95 communities in 2017. In 2019, the number of complaint calls rose to 268,929 from 86 communities. The number of individual complainants decreased from 4,269 callers in 2017 to 2,178 callers in 2018, and then increased again to 2,671 callers in 2019. The increase in complaints continues to be primarily related to the FAA's RNAV departure procedures, which concentrate flight tracks along narrower corridors. Complaints rose significantly in the communities overflown by Runway 33L departures (East Boston, Medford, Arlington, Somerville, Watertown, and Winchester). The 2018/2019 EDR attributes this due to a combination of several factors: an increase in departures from Runway 33L in 2019, increased ability to submit a complaint, and increased public awareness through various community groups. Complaints from communities under the Runway 27 flight path also increased due to similar reasons, including higher use of Runway 27 for departures and increased community awareness. All complaints have been forwarded to FAA. The 2018/2019 EDR also provides an update on the Memorandum of Understanding (MOU) between Massport and FAA to frame the process for analyzing opportunities to reduce noise through changes or amendments to PBN including RNAV. The 2018/2019 EDR also states that FAA and Massport are committing to: measure and model the benefits and impacts of changing some RNAV approaches; and, test and develop an implementation plan, which will include environmental analysis and community/public outreach.

The 2018/2019 EDR identifies which noise abatement measures are being employed and reports on the status of the sound insulation program since 1990. The 2018/2019 EDR describes that Massport continues to seek funding for noise mitigation for properties that are eligible for participation in its Residential Sound Insulation Program (RSIP). In 2019, Massport updated its RSIP Noise Exposure Map contours and submitted an AEDT-derived noise exposure map to the FAA in 2020 for review and discussion. To date, Massport has provided sound insulation for a total of 36 schools and 11,515 residential units. Eligibility for sound insulation must follow FAA guidelines which requires that the residence is located within the latest DNL 65 dB contour and interior noise levels within habitable rooms of noncompatible structures must be 45 dB or greater with the windows closed.. in the 2018/2019 EDR indicated that in March 2020, the FAA issued revised guidance which, for the first time, allows residences before 1993 to be eligible for consideration for improved sound insulation. Eligibility of this category of residences is still contingent on a current, FAA approved 65DNL contour and pre-testing requirements. In March 2021, the FAA issued additional clarifications regarding this change emphasizing that current policy regarding qualification for sound insulation also applies to the categories of residences treated before 1993. As suggested in several comments, Massport updated its Noise Exposure Map contours and submitted an AEDT-derived noise exposure map to FAA in 2020 for review and discussion. The FAA requires that a submitted sound insulation program contour should represent current operational conditions; generally, the contour year should match the date of the document submittal. However, due to the significant decrease in 2020 operations caused by the COVID-

19 pandemic, Massport developed a 2019 forecast contour, including block rounding representing pre-COVID conditions, and submitted it to FAA in the summer of 2020. Once accepted by the FAA, Massport will reach out to eligible homeowners to discuss potential mitigation options for their homes, subject to federal and Massport funding availability.

The 2020/2021 EDR must provide strategies to address noise impacts which are expressed in numerous comments received on the 2018/2019 EDR. Massport should continue to implement and develop additional noise abatement measures, such as runway use restrictions and reduced-engine taxiing. Massport should also coordinate with stakeholders through the Massport Community Advisory Committee to identify opportunities to reduce noise.

The 2020/2021 EDR should also provide an overview of the environmental regulatory framework affecting aircraft noise, the changes in aircraft noise, and the updates in noise modeling. The chapter should report on 2020 conditions and provide a comparison to 2018 and 2019 for the following:

- Fleet Mix, including Stage II, Recertified Stage III, newly manufactured Stage III, and qualifying Stage IV aircraft;
- Nighttime operations;
- Runway utilization (report on aircraft and airline adherence with runway utilization goals); and,
- Flight tracks.

The 2020/2021 EDR should report on the following:

- Changes in annual noise contours and noise-impacted population;
- Measured versus modeled noise values, including reasons for differences and any improvements attributable to the models deployed;
- Cumulative Noise Index (CNI);
- Times-Above for 65, 75, and 85 dBA threshold values/Dwell and Persistence of noise levels; and
- Flight track monitoring noise reports.

The 2020/2021 EDR should also report on noise abatement efforts, results from Boston Logan Airport Noise Study (BLANS) study, and provide an update on the noise and operations monitoring system. It should also report on the status of Block 1 and 2 of the RNAV Pilot Project, which will analyze the feasibility of changes to some of RNAV approaches and departures from Logan Airport.

Air Quality/Emissions Reduction

The 2018/2019 EDR provides an overview of airport-related air quality issues in 2018 and 2019 and the efforts to reduce emissions. The air quality modeling is based on aircraft operations, fleet mix characteristics, and airfield taxiing times combined with GSE usage, motor vehicle traffic volumes, and stationary source utilization rates. The 2018/2019 EDR uses FAA's approved computer model for calculating emissions from aircraft-related sources AEDT model (v. AEDT 2d). Total air quality emissions from all sources associated with Logan Airport are significantly lower than a decade ago. The 2018/2019 EDR identifies Massport's initiatives to improve air quality and reduce emissions, including: replacement of gas- and diesel-powered GSE with all-electric GSE (eGSE) by the end of 2027 (as commercially available); implementation of additional initiatives to increase HOV use, continue to

reduce emissions from Massport fleet vehicles, and encourage use of alternative fuel vehicles; and implementation of energy efficiency projects, including upgrades to the Central Heating and Cooling Plant, and increasing the use of renewable energy, such as solar and wind installations.

Massport prepared emissions inventories for 2018 and 2019 for the criteria pollutants carbon monoxide (CO), particulate matter (PM10/PM2.5), volatile organic compounds (VOCs), and oxides of nitrogen (NOx). Key findings of those emissions inventories include: total modeled emissions of CO, PM10/PM2.5 and NOx, increased from 2017 to 2018 by approximately 14 percent, 17 percent, and 4 percent, respectively. VOCs remained consistent. These increases were mainly attributable to the 5.6-percent increase in aircraft operations in 2018 compared to 2017. Variations in emissions were also due to airframe/engine combination parameters included in the two model versions used and the associated differences in applied emission factors assumed in the models. In 2019, total modeled emissions of CO, PM10/PM2.5, and VOCs each increased by about 2 percent from 2018. NOx emissions instead increased by about 5 percent. The 2018/2019 concludes these changes are also due to an increase in aircraft operations of 0.7 percent as well as slight variations in the aircraft fleet mix from 2018 to 2019. Additionally, increases in NOx emissions in 2019 are associated with higher stationary source fuel usages in that year. Modeled emissions of CO, VOC, and NOx associated with GSE and motor vehicles, many of which Massport has influence over, have declined from 2018 to 2019. Emissions of PM10/PM2.5 remain steady. While there are model version differences between 2017 and 2018, causing variances in emissions between those years, overall GSE and motor vehicles show a decreasing trend from 2017 to 2019 for all pollutants. As previously mentioned, GHG emissions also increased from 2017 to 2018 by approximately 10 percent and from 2018 to 2019 by approximately 4 percent, primarily due to the increase in aircraft operations (i.e., 5.6 percent in 2018 and 0.7 percent in 2019). Aircraft emissions continue to represent the largest source (95 percent) of NOx at Logan Airport, followed by other sources (2 percent), ground service equipment (GSE) (2 percent), and motor vehicles (1 percent).

The 2020/2021 EDR should continue to provide an overview of the environmental regulatory framework affecting aircraft emissions, changes in aircraft emissions, and the changes in air quality modeling. The 2020/2021 EDR should also provide discussion of progress on national and international levels to decrease air emissions. Massport should continue to use the latest version of FAA's AEDT model for air emissions modeling as was presented in the 2018/2019 EDR. The EPA Motor Vehicle Emission Simulator (MOVES) tool should continue to be used to assess vehicular emissions on airport roadways. The 2020/2021 EDR should include a mobile sources emissions inventory for CO, NOx, VOCs, and PMs. It should also report on Massport and tenant alternative fuel vehicle programs and the status of Logan Airport air quality studies undertaken by Massport or others, as available. The 2020/2021 EDR should demonstrate that Massport's programs to maintain and increase HOV modes provide the capacity to meet demand associated with growth.

Commenters continue to express concern regarding ultrafine particulates (UFPs). The 2018/2019 EDR includes information on the status of UFP review by EPA and an update on associated and monitoring. For the first time, the 2018/2019 EDR includes information about research into the health impacts of aviation. I appreciate Massport including this information and expect that the 2020/2021 EDR will include an update on it. The 2020/2021 EDR should also provide an update on the status and the findings of UFP research being performed by Tufts University and Boston University regarding the identification of airport-specific related UFPs in an urban environment. The 2020/2021 EDR should present more direct information about the major research findings around health and airport impacts in

relation to emissions, including likely pollution and noise health impacts, and commitments from Massport for the reduction and mitigation of these impacts.

Since October 2014, as a result of the Department of Public Health's (DPH) Logan Airport Health Study, Massport has provided funding for the East Boston Neighborhood Health Center (EBNHC) to enhance services and educational resources for children and adults in East Boston and Winthrop who are managing asthma and/or Chronic Obstructive Pulmonary Disease (COPD). Massport should continue to fund this program and should consult with the EBNHC to evaluate opportunities to expand current services, outreach, and prevention materials. This expanded effort should include collaboration with East Boston and Winthrop public school nurse coordinators to identify additional high risk individuals in schools and ways to expand outreach efforts. The 2020/2021 EDR should include an update on the status of this collaboration effort. Massport indicates that they contacted the EBNHC in early January 2020 regarding supplementing the Massport-funded Asthma Home Visiting program with HEPA filters; however this was not identified as the best strategy for this program. The 2020/2021 EDR should describe how Massport will reengage with the Health Center and include a discussion of how the services provided directly to and through the Health Center (which are funded by Massport) can be expanded. I encourage Massport to work with community-based organizations to collaboratively determine how to further mitigate air quality impacts.

Water Quality/Environmental Compliance

The 2018/2019 EDR describes Massport's ongoing environmental management activities including National Pollutant Discharge Elimination System (NPDES) compliance, stormwater, fuel spills, activities under the Massachusetts Contingency Plan (MCP), and tank management. Massport's primary water quality goal is to prevent or minimize pollutant discharges, to limit adverse water quality impacts of airport activities. Massport employs several programs to promote awareness of activities that may impact surface and groundwater quality. Programs include implementing best management practices (BMPs) for pollution prevention by Massport, its tenants, and its construction contractors; training of staff and tenants; and a comprehensive stormwater pollution prevention plan.

The 2020/2021 EDR should identify any planned stormwater management improvements and report on the status of:

- NPDES Permit and monitoring results for Logan outfalls and the Fire Training Facility;
- Jet fuel usage and spills;
- MCP activities;
- Tank management;
- Update on the environmental management plan; and
- Fuel spill prevention.

Conclusion

Massport may prepare a 2020/2021 EDR for submission consistent with the Scope included in this Certificate. As noted above, although unlikely for the 2020/2021 EDR and 2021 EDR, should actual growth in passenger and/or aircraft operations outpace the forecasts, I expect that additional information will be provided in future EDRs to demonstrate that additional mitigation and policies and strategies will

be implemented to address the proportional growth in impacts.

March 19, 2021

Date

K. Theoharides

Kathleen A. Theoharides

Comments received:

01-25-21 Steve Kaiser
02-22-21 Emma Uppal
02-22-21 Sheila Mooney
03-01-21 Nancy S. Timmerman
03-02-21 Steve Kaiser 2nd comment
03-08-21 Eleanor Kebabian
03-10-21 Sonja Tengblad
03-10-21 Teresa Doyle
03-12-21 AIR Inc.
03-12-21 Alyssa Vangeli
03-12-21 Carla Ceruzzi
03-12-21 Carrie Van Horn
03-12-21 Conservation Law Foundation
03-12-21 Dave Matheu
03-12-21 DOER
03-12-21 Tania Castro-Daunais
03-12-21 Town of Milton
03-12-21 Massachusetts Chapter of the Sierra Club
03-15-21 Carol Walker
03-15-21 Frederick Salvucci

KAT/ACC/acc

Stephen H. Kaiser
191 Hamilton St.
Cambridge Mass. 02139

To : Kathleen A. Theoharides, Secretary, Office of Energy and Environmental Affairs
Attention : Anne Canaday MEPA Office : anne.canaday@mass.gov

From : Stephen H. Kaiser, Principal Civil Engineer, MEPA 1976-1988

Cc. Brad Washburn, Massport : Bwashburn@massport.com

Subject : Environmental Data Report, Massport EEA #3247 2018-2019

By accepted tradition, Massport's Environmental Data Report for the years 2018 and 2019 would be a continuation of its unique format and contribution. But it would also be expected to serve as a lead-in to next year's review of the revolutionary changes brought forth by COVID in 2020. The unspoken message would be : wait for another year to find out how COVID decimated transportation.

I was pleasantly surprised to find a welcome change in format. Where possible, the record of COVID-diminished performance from 2020 was included for comparison with the two previous years. The best examples of comparative data dynamics can be seen in Figures 1-2 and 1-3 in the Executive Summary.

Passenger count data was especially valuable to illustrate how Massport's customers were affected by the ongoing COVID experience. Fortunately, passenger counts can be assembled quickly and do not need further laborious processing – as required for estimates of noise exposure or air pollution emissions.

So valuable has been this inclusion of contemporary information that my conclusion is : Massport should adopt a new tradition to include recent passenger data for 2021 in next year's 2020 update. If the year 2020 has shown the extraordinary COVID impacts since last March, the current year may provide a window into the results of vaccinations and other controls to gain increased safety for airline travellers and personnel. This new format would be a lead-in to 2022, when we would anticipate that the COVID threat would have been substantially controlled.

How many of the lost passengers from 2020 can be recaptured in the data for 2021 and 2022?

Massport so far has suggested their preference for a “return to normal” scenario. However, other factors may interfere, such as

- * work-at-home and videoconferencing,
- * major office complexes that are downsized to reduce rental costs,
- * health restrictions on international and interstate flights, such as quarantines,
- * tourist declines ; residual “fear of flying,” and
- * residual cautions about virus threats, distaste for airport security, and paperwork

All of these factors produce fewer airline, vehicle and transit trips. In other words, some of the passenger reductions wrought by 2020 and COVID19 will become permanent. Stated very simply, the year 2020 brought about very unstable times, with dramatic and unplanned changes, especially in the transportation sector. Massport passenger counts dropped precipitously, initially by 90 to 95%, while many MBTA services suffered similar reductions. And so did Amtrak, cruise ships, taxis and Uber. The least impacted appear to be autos and highway travel, with 20% declines fairly common, but 50% reductions occur on sections of the Mass Turnpike Extension.

Some questions have not even been asked of the data, let alone answered. Why should the largest declines in both highway travel and commuter rail occur in the western corridor (Framingham and Worcester)?

These sudden and massive patronage losses are beyond identification as merely “large.” In years past a drop of the 20% in ridership would be considered very significant. Agencies might be able to develop plans to try to ameliorate such changes. However, passenger losses of 90 to 95% are beyond comprehension : a common agency response is “shell-shock”-- a dulling of the senses beyond rational grasp. What does a public agency do when faced last fall with 94% declines in ridership, as happened on MBTA’s Framingham-Worcester Commuter Rail line? What does Amtrak do when confronted by 95 percent declines in ridership?? Full contraction to almost nothing has occurred on Eurostar train service in Europe, where passenger counts are down 95% and 90 percent of the employees have been laid off.

Such massive changes cross over the line of what is “thinkable” in terms of rational response and planning. The data extends beyond the boundaries that public agencies could conceive of and deal with. Government agencies may feel obligated to change all prior plans, to re-evaluate where they expect their transportation plans will go in the future. But a common human tendency in difficult times is refusal to accept unpleasant evidence presented to them, and instead deny the reality. It is the natural inclination of Public Relations and marketing personnel. (In recent years we might call it “Trumpian”).

This natural dulling of the senses has an unfortunate side effect : to ignore the data and meaning of massive change. Similar dulling of the senses occurs with climate change and flooding, especially along coastal areas. Denial is common when reality conflicts with development goals.

A most evident exception to public denial is Massport's present EDR. It takes the initiative to report on the extent of transportation changes at Logan Airport, and also includes information on other modes beyond aviation. The benefits of collecting this “vital data” and reporting on its implications can be seen by the fact that no other institution in our society -- municipal, state, Federal, academic, business, non-profit, professional or volunteer/advocacy group -- has been able to assess the impacts of the COVIC crisis on transportation generally. Even the Central Transportation Planning Staff has been a failure. They simply cannot do it, for whatever reason. Other activities have been affected to a similar degree -- hotels and restaurants are prime examples, but the business media have provided some coverage of this distress. A critical need exists for an honest assessment of the staggering COVID impact on almost all forms of transportation. It is a critical deficiency in our society. Based on reporting to date, the only entity capable of such an information review is Massport.

There are several reasons why MassPort is ideally situated to perform such an assessment of future possibilities, especially in the field of transportation. The Authority is familiar with issues of all types of aviation at Logan, vehicular access, parking, transit access, mitigation of auto travel, and issues of competition, such as Amtrak, as well as freight transportation and general aviation. The current EDR can serve as an initial effort to offer a multi-modal perspective on the current state of transportation in the Boston area, as well as trends for the future. I submit that no one else can do it : not MassDOT, not CTPS, not the MBTA, not the MAPC. No Federal agency, not USDOT, nor the Volpe Transportation Center has done this and none can do it. No municipality has the resources, skills, interest or professional outlook to take it on. While the universities claim an interest in doing research, some public agencies see themselves as oriented towards operations -- with no interest in research. Massport has an interest in both operations and research.

The MBTA has been tracking some ridership trends, and indicates that its transit system has shown a 75 percent ridership drop. The Blue line and buses have survived best with only 60 percent drops, while the Orange and Red Lines are below average with 80 percent drops. There is no web-site to offer the equivalent of EDR Figures 1-2 and 1-3 to show the up-dated timelines for passenger reductions and recoveries.

Neither is there an accessible repository for timelines showing VMT, ADT and peak hour flows on sampled state highways. State highways have been the least affected transportation mode by COVID, with typical drops of 20 percent in ADT, but information on measured recovery towards “normal” remains skimpy.

Back in the late 1970s Massport did a traffic study of the Sumner Tunnel and reported lower traffic flows compared to earlier years. The report submitted to MEPA claimed as a result the tunnel would have sufficient residual capacity to handle future Logan growth. MEPA rejected the Massport report on the grounds that the reduced volumes were the result of congestion and stop-and-go traffic with less traffic flow, lowered traffic speeds and worsened efficiencies. Governor Ed King was elated because his Trumpish nature opposed new MassPort management. However, Massport officials realized their error, hired VHB to do a new tunnel study, and revised their report to indicate the nature of tunnel congestion. MEPA approved the new report. Ed King was not happy. Forty years ago MEPA would not tolerate a traffic misrepresentation for the Sumner Tunnel, and Massport responded heroically by reporting the truth.

Looking back forty years, I can now appreciate how rare this second report was coming from Massport, because it recognized the effects of Level-of-Service F effects on road congestion, speed and volume. To my knowledge, no such assessment of LOS F has ever been reported in any traffic study in Massachusetts, especially for Boston. Levels of service and congestion were not expressed in the landmark but suppressed Coverdale & Colpitts report of 1957 to Mass DPW. This state report indicated that 1975 traffic on the Central Artery would require twenty-two lanes, not the six lanes that had just been completed. It was a good report, but Mass DPW did not correct its errors and did not repair its damaged Inner Belt Master Plan.

Why should Massport be the only entity in the Commonwealth reporting on traffic truth? I believe the trigger was this same Coverdale and Colpitts report -- predicting the future overloading of the Central Artery. The growth in vehicles and traffic was so overwhelming after World War II that no highway system could have handled all those cars. The solution for state highway engineers was to make many of those embarrassing trips “disappear.”

In 1963 a manipulated “solution” appeared in the form of trip assignment formulas based on a new mathematical formula : the BPR equation. This formula allowed trips on any highway link to approach infinity as speeds approached zero. That condition we would recognize today as gridlock, when nothing moves. The BPR equation is a completely wrong engineering aberration, inconsistent with real-world traffic flow under Level-of-Service F conditions.

Today, the Federal Highway Administration mandates use of computer models based on the 1963-vintage BPR equation and so does MassDOT and CTPS. None of these agencies can find the necessary grit to oppose the BPR equation. By contrast, Massport is aviation-based and is not restricted by outdated highway stipulations. If there is anyone who could analyze traffic conditions for volume, speed and travel times, based on hard data, it would be Massport. They should add those skills to assess traffic flow conditions to and from Sumner and Callahan Tunnels. They did it forty years ago. Any consideration of ground access to Logan Airport would be incomplete without such an evaluation of these two tunnels.

One brief comment is on a non-traffic matter with environmental implications. Many EIRS reviewed by MEPA discuss water quality impacts, and at times the issue of road salt usage has been discussed. Massport has snow and ice issues, but road salt is strictly forbidden. Why? Because of corrosion effects on aircraft. The airlines would never allow it. Woe unto any Massport employee who allows salt near planes.

How does state and local highway road salting work? When I served on the Road Salt Task Force back in the 1970s, the highest costs associated with road salt usage was corrosion damage to vehicles and bridges. Yet the public clamor about road salt was almost entirely focused on sodium damage to water supplies and trees. There were no automobile and bridge advocates complaining about road-salt corrosion. No equivalent to the airlines existed to compel transportation agencies to restrict salt applications.

Today, all across the country, we are finding corroded and spalling Interstate highways from the 1950s and 1960s reaching an end-of-life situation of typically 50 years. Meanwhile the Brooklyn Bridge is about 140-years old and still going strong. Many structures half a century ago were not built with protective membranes --- to save money in the short-run but not in the long run. The result is structurally deficient bridges -- due primarily to salt corrosion -- which have lifetimes less than many aircraft flying in and out of Logan Airport today.

Is it possible that Massport's policies on snow and ice control could be useful for highway agencies across the nation to reduce corrosion in their own bridges and for the millions of privately-owned vehicles

that are slowly rusting out as they travel the nation's highways? It is possible that someone could make a calculation of climate change consequences for each car that needs to be scrapped and replaced by a new one, for each bridge that must be demolished and replaced, and for each passenger aircraft scrapped and replaced by a new plane. Based on the large numbers of older Boeing 737s still in the air, the airlines must have a great incentive to continue using them.

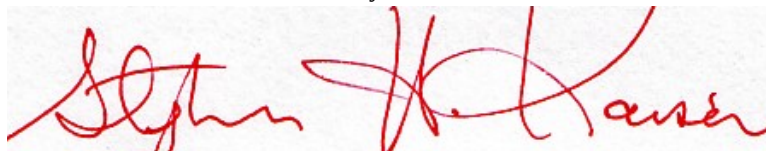
In preparation for a 2020 EDR with supplementary 2021 passenger data, I suggest the follows steps in planning that would make the EDR even better :

1. **Calculate Load Factors** : Most of the passenger data for 2020 has been included in the Executive Summary, and from this data trends in load factors can be easily calculated for national and Logan experience. The data suggests that Logan load factors overall are only 70 percent of their previous pre-COVID levels. The MBTA was showing a 75 percent drop in load factor when previous service levels were maintained. Ridership on various Logan Express buses could also be included, along with bus load-factors.
2. **Develop Future Passenger Scenarios at Logan based on various factors** :
 - a. Gradual recovery to previous activity levels
 - b. Slowed long-term growth due to work-at-home, virtual meetings and travel, and cutbacks on company travel expenses. Also a reduced economic expansion, including a recession -- either short-term or long term,
 - c. Slowed recovery due to regulatory effects, such as requirements for quarantines due to differences in state and international regulations. The experience of Britain's national isolation as a result of a new virus strain is pertinent.
 - d. Resistance by certain elements in society against masks and vaccination, resulting in an extension of the COVID spread and delays in terminating the emergency. Also delays or quality control problems in vaccine distribution.
 - e. Possible expansion of air-freight due to continued package delivery such as Amazon.
 - f. More rapid recovery in airline passengers due to conventional tourist travel, rather than use of the decimated cruise ship industry.

- g.** Summary of national and international experience with transit operations in 2020 -- both passengers served, recovery rates and recovery strategies attempted.
 - h.** Examples of airports that have recovered more rapidly than expected.
 - i.** Compilation of auto occupancy studies in 2020, to determine the impacts on shared rides and car-pooling vs. Single Occupant Vehicles.
 - j.** Compilation of airline industry data and experimental experiences dealing with change and recovery.
 - k.** Explanation of major changes in plans to account for COVID impacts, and illustrate initial experience in shifting over to the new plans. Many professionals recognize the importance of planning, but not the importance of changing the plans when conditions warrant.
 - l.** In an appendix, include all of the one-page Massport monthly aviation performance summaries to show passenger count changes for the years 2019 to 2021.
- 3. Recommendations** to EEA/MEPA and MassDOT on any of the above topics where assistance from other state agencies would be most useful. The EDR is a complex undertaking. Massport should not be expected to shoulder the entire burden.

I close by again congratulating Massport for including 2020 passenger data in the 2018-2019 report, and thereby allowing an early warning sensitivity to recent transportation changes caused by COVID19. In terms of demonstrated excellence in performance, I estimate that MPA's only competitor is the Mass Water Resources Authority, which has survived less disruption, but also must deal with an annual budget which is 2/3 debt service and close monitoring by justices of the Court. It might be worth a meeting bringing together officials and staff of the state's two best Authorities -- Massport and MWRA -- to discover how they both managed to talk about the problems they had to solve and how they got the job done.

Sincerely,



Stephen H. Kaiser

From: [Czepiga, Page \(EEA\)](#) on behalf of [MEPA \(EEA\)](#)
To: [Canaday, Anne \(EEA\)](#)
Subject: Fw: Public Comment; Logan Airport 2018/2019 Environmental Data Report
Date: Monday, March 1, 2021 9:47:19 AM

From: Emma Uppal <uppal.emma@gmail.com>
Sent: Sunday, February 28, 2021 2:08 PM
To: Canaday, Anne (EEA) <anne.canaday@mass.gov>; MEPA (EEA) <mepa@mass.gov>
Subject: Public Comment; Logan Airport 2018/2019 Environmental Data Report

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To the Massachusetts MEPA office,

I write to you as an East Boston resident, parent, and small business owner. I am asking for some mitigation for our community because of the incorrect growth projections from 2018-2019 that were released in the latest EDR.

We have all been hurt by COVID in many ways, including financial, as I know Massport must be. However, our community and other environmental justice communities have long-term health implications, regardless of how slow travel was temporarily for 2020. Our neighborhood has a 360% increase in Asthma and a 200% increase in COPD. And our rates of COVID were the highest in Boston. As a Harvard T.H. Chan School of Public Health study outlined, people exposed to higher levels of ultrafine particulate matter saw an 8% increase in COVID mortality.

“Many of the pre-existing conditions that increase the risk of death in those with COVID-19” [cardiovascular and respiratory diseases like asthma and COPD] “are the same diseases that are affected by long-term exposure to air pollution.” They found “statistically significant evidence that an increase of 1 g/m³ in long-term PM_{2.5} exposure is associated with an 8% increase in the COVID-19 mortality rate.”

Massport must consider all of the implications for East Boston residents of the increased travelers in and out of Logan; the increased air pollution, noise pollution, and traffic on our already-congested streets. We have to think, when discussing re-opening schools, if opening the windows to ventilate for COVID is worth exposing our kids to outdoor pollution.

East Boston residents would welcome collaboration on how Massport can co-exist with us without further poisoning our children's health. HEPA filters placed in all public schools within a 2 mile radius would cost just over \$1 million dollars, a drop in the bucket compared to the \$170 million Massport has spent on sound proofing.

Thank you for your time and for hopefully being a good neighbor.

Emily Uppal, East Boston resident, mother, and business owner

From: [Czepiga, Page \(EEA\)](#) on behalf of [MEPA \(EEA\)](#)
To: [Canaday, Anne \(EEA\)](#)
Subject: Fw: Environmental Data Report 2018/2019 open comments
Date: Monday, February 22, 2021 7:21:58 PM

From: Sheila Mooney <shebamoon@hotmail.com>
Sent: Monday, February 22, 2021 12:11 PM
To: MEPA (EEA) <mepa@mass.gov>
Subject: Environmental Data Report 2018/2019 open comments

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Thank you for opening and receiving additional comments regarding the 2018/2019 EDR.

I am not in favor of proving DNL metrics/data wrong. The measurements have been in place since the mid 20th century. As such, the metrics belong to the past. Any transportation model which is based on the burning of fossil fuels is contributing to the planet's existential crisis, climate change. With or without RNAV, fossil fuel burning remains a dirty problem. The future is clean energy.

Mid 21st century transportation technology promises the world a cleaner future. For example, the auto industry intends to produce vehicles with zero emissions and no offsets by 2040.

1/28/21 New York Post, online: "GM has announced that by 2035 all vehicles in its production line will be electric."

2/19/21 New York Times OP-ED "The One Big Problem with Electric Cars": The company (Tesla) has amassed oodles of zero-emission regulatory credits that it sells to other car makers: in 2020 Tesla brought in more than 1.6 billion through credits without which it would have posted a loss."

What COMPARABLE clean energy commitments has the airline industry put forth and what is the timeline?

The timeline matters. We, who live under RNAV, have the additional health assaults associated with noise pollution. Clearly, everyone who breathes is at risk from the air pollution generated by dirty jet fuel. Micro-particulates kill.

2/9/21 The Boston Globe "Fossil Fuels Tied to 9 Million Deaths":

"In the United States, ingesting the fine particulate matter produced by burning fossil fuels kills an estimated 350,000 people a year, including more than 7,600 people in Massachusetts, according to the study by researchers at Harvard and other universities."

Additionally, "The scientists estimated more than 16,500 people are dying in New England as a result of fossil fuel pollution, with Massachusetts suffering the highest death toll." Furthermore, the study finds that even exposure to low level emissions over time are deadly. Our health and our planet are at stake.

The very energy hominins once used for survival is now hastening us to our demise. From "Kindred, Neanderthal Life, Love, Death, and Art" by Rebecca Wragg Sykes (RWS) in "Chez Neanderthal Paleo Pyro-technics":

"A most unexpected fuel for Neanderthals is coal."

RWS asserts, "Neanderthals were intentionally experimenting with fossil fuels."

How have we homo sapiens developed and innovated energy options since paleo times? We mined.

2/21/22 "Can Saudi Arabia Buy Time with Clean Oil?":

2019 greenhouse gas emissions reportedly weigh in at 15 million metric tons for #1 highest emitter, coal, and 13 billion metric tons attributable to #2 highest emitter, oil combustion. Modern man clings to primitive energy pursuits even as by-products from said energy sources threaten hominin existence itself.

To change course, away from fossil fuel, industry must innovate. If we can't innovate fast enough, then the airline industry needs to eliminate consumer incentives such as frequent flyer programs. Those who choose to fly should be subject to a sizeable environmental tax. Changing course will cost money and all must contribute.

Are we clever enough to change course? We know that Nature will correct the global warming. We know, also, that we might not like her terms.

From "Kindred," in "Ice and Fire-Climate Crisis" regarding paleo-climate MIS 5e, LEAP:

"The warmest temperatures (2-4 degrees C higher due to the position of Earth to Sun at that time) and highest sea levels existed for just 4 millennia between 126 and 122ka (thousand years ago) until gradual cooling began, but this was the calm before the storm." RWS notes that this time of climate crisis was marked by frightening and unpredictable weather.

Including "...at about 118.6ka....something odd appears: for precisely 468 years, dust rained down."

Dust, of biblical proportion. One might find that alarming. RWS doesn't mince words- from Kindred's epilogue:

..."we are heading into a world hotter and more dangerous than any previous hominin survived."

Lastly, she warns: "This future of blistering sun, suffocating cities, floods, tempest, and maybe more pandemics is like a bison thundering towards us. If we do not move fast, our children's children will be impaled."

Not only climatologists, but scientists of myriad disciplines are ringing the alarm. Aviation's alarm response was to engineer RNAV. RNAV is not an appropriate solution. RNAV simply "paved a new parking lot" for its dirty problem. Tens of thousands of Americans across the nation unwittingly shoulder the burden of offloading the aviation industry's fossil fuel emissions. We, the burdened, who dwell in the shadows under the narrow flight paths are made to absorb bulk, raw noise pollution, air pollution, and now (2/21/21 Boeing engine failures) the added stress of knowing about projectile debris events. (Heads up, debris events are common. Hard hats, everyone!)

This situation is unhealthy and unjust.

To my thinking, the affront of RNAV is, in and of itself, a form of impalement; NOT a form of environmental protection. It's time for the global airline industry to close the chapter on the burning of fossil fuels. This transportation model belongs to the past. Clean fuel must be our future.

Sheila Mooney

Nancy S. Timmerman, P.E.
Consultant in Acoustics and Noise Control
 25 Upton Street
 Boston, MA 02118-1609
 (617)-266-2595 (Phone) ; (617)-645-0703 (Cell)
 nancy.timmerman@alum.mit.edu
 nancy_timmerman@comcast.net

March 1, 2021

The Honorable Kathleen A. Theoharides, Secretary
 Executive Office of Energy and Environmental Affairs
 Attn: MEPA Office
 Anne Canaday, EOEA No. 3247
 100 Cambridge Street, Suite 900
 Boston, MA 02114

Subject: EOEA No. 3247 – Boston-Logan Airport 2018/19 Environmental Data Report (EDR)

Dear Secretary Theoharides:

These comments are being transmitted by email. I have reviewed the 2018/19 Environmental Data Report (EDR), EOEA #3247, for Logan Airport, and offer the following comments and questions.

First of all, in view of the tremendous reduction in air travel in 2020, it seems the reliance on high occupancy vehicles (HOVs) would be counter-productive (Page 2 of the document). Recovery of public transit will take a while. I have noted before that flights arriving just before midnight and departures between 5 and 7 am cannot be served by public transportation. The MBTA, during the best of times, only runs between 6 am and midnight. This forces people to drive, use a taxi, or, perhaps, Uber. This was true during the time period reviewed.

In Table 6-8, on Page 6-42, it seems that there have been a number of recent technical issues with a number of the sites. It is good that efforts are still being made to keep them operational. In Table 6-13 on Page 6-51, the values of time above are computed. It is disturbing that the average above 65 dBA, which would certainly cause speech to cease, is 38.3 minutes in a 24- hour day, and the highest such value, in Winthrop, is 111 minutes, neatly 2 hours in 24. It is no wonder that Winthrop has historically objected to noise from the airport.

I also want to comment on buffer spaces and the land and water adjacent to the communities. I am aware that there are bioremediation practices which can be employed which reduce the flooding in the area. Some projects have shown that pollutants can be remediated. I am not an expert in this area, but have read some promising studies. Since there has been such a concern in the recent past over the effects of climate change, it would seem that newer/older approaches might be helpful. Technology has improved over the recent past.

I also want to state, for the record, that the responses in this report to my comments from last year were completely ignored. The response was boiler-plate. It is no wonder the airport has such a large public relations problem. I have commented on this report for the last twenty (20) years, and the replies are always the same.

Thank you for the opportunity to comment on this report.

Sincerely,

A handwritten signature in blue ink, appearing to read "Nancy S. Timmerman, P.E.", with a stylized flourish at the end.

Nancy S. Timmerman, P.E.

Cc: S. Dalzell, MPA

Stephen H. Kaiser
191 Hamilton St.
Cambridge Mass. 02139

To : Kathleen A. Theoharides, Secretary, Office of Energy and Environmental Affairs
Attention : Anne Canaday MEPA Office : anne.canaday@mass.gov

From : Stephen H. Kaiser, Mechanical Engineer and Historian

Cc. Brad Washburn, Massport : Bwashburn@massport.com

Supplemental Comment : Environmental Data Report, Massport EEA #3247

Because of the extension of the deadline for public comment to March 12, I have had time to reflect further on issues raised in the EDR and my original comment of January 25.

Closer investigation of Figures 1-2 and 1-3 illustrates that both are based on TSA counts. However, seven-day data is plotted in Fig 1-2 and monthly data in Fig 1-3. The latter shows Logan passenger dropping to zero in early April 2020, while the seven-day change shows a 96 percent drop at the low point. I think the difference is how the curve for Logan is drawn through the monthly data points. The 96 percent figure appears to be more accurate.

Tracking daily occurrences of anything can result in a very peaky curve, and the seven-day average is best for airport traffic trends and for following COVID data. Admittedly, monthly data is already collected and available, so the ideal solution is to collect the monthly summaries in a separate appendix.

Figure 1-2 represents the drop in passengers shown by an initial plunge of 94 percent. However Massport is entering a time of recovery, and the best format for the recovery may be to represent the initial condition as 6 percent, with the recovery curve ascending into a range of possible stable states between 30 and 100 percent of 2019 levels. I also see the recovery period as an effort to “claw back” former passengers lost by last year's collapse. The term refers to very active efforts by the airline, Massport, and Federal officials to create conditions that safely allow reconnecting with former passengers. Air travel has the advantage of a band of supporters stronger and more active than the moribund transit industry. Airlines are less likely to remain in the ridership and economic doldrums for years into the future.

Examples of clawback activity include acquisition of smaller and more efficient aircraft, resolving issues of quarantines, and accurately estimating permanent passenger losses due to work-at-home or company decisions to cut back on business flights (which will be related to the quarantine situation). The quarantine situation will also be closely linked to the appearance of new COVID variants and the continued effectiveness of vaccines. One would hope greater stability in the state's computerized appointment system will work to improve progress toward a trustworthy Zero-COVID future – when the masks can come off.

It would appear that domestic flights with completed vaccinations would be allowed earlier than international flights that depend on the quarantine situation. It is possible that the primary vaccination facilities could be at airports, to handle passengers who tested positive or have no vaccination record. An option of immediate vaccination at the airport could result in reduced quarantine requirements. However, from public information available, it does not appear that top state and Federal officials have worked out these strategies yet.

Because quarantines appear to be a major factor in airport recovery, I would suggest that an international survey be collected (by someone) to investigate various experiences with quarantines to date. Singapore, for example, has very stiff penalties for violations ... with years in prison and thousands of dollars in fines. Britain and South Africa as the origin of new variants have also had quarantines imposed on them by other nations. If the U.S. becomes the source of a new variant, it should be prepared.

Reviving the tourist business has similar concerns about quarantines, but has the advantage of recovering business previously carried by Cruise lines, and now the most moribund form of transportation. Both airline travel and Cruise lines could benefit from European proposals for combining COVID vaccination status data with passports. Quarantines could be substantially reduced. The details are still being worked out.

Because of the unpredictable arrival of variants, COVID digital passports may need to be quickly updated to indicate that a new problem has arisen that clouds the validity of such passports. With the sudden emergence of a new variant, a rush to obtain updated vaccinations could risk overloading medical facilities, wherever they are located. Modern vaccine technology offers us the opportunity for hope and solutions that were not available a century ago to deal with the 1918 influenza crisis. But there will need to be special precautions taken at the health gateways to our society – namely our airports. Next year's EDR will allow an opportunity to work through various strategies so that the logic works to maximize effectiveness and allows Logan Airport to function close to pre-COVID levels.

I am also seeing reports suggesting that the last to be vaccinated will be the children, who may not be inoculated until early next year. It is unlikely that a Zero-COVID clearance can be declared unless children are fully vaccinated, because children use the airlines too.

Airport security is a factor, combining with COVID to present delays, paperwork and schedule uncertainties. The ability to keep TSA operations as tolerable as possible, combined with smooth processing of plane arrivals and departures, will be of vital importance. Any duplication of the recent overloaded state vaccine-appointment process must be avoided at all costs. The combination of delays, uncertainties and undermining of public trust is the perfect storm no one needs.

One trend already evident in airline plane orders is for smaller, single-aisle aircraft. The goal would be to retain service for lower total volumes of travelers. The new planes would be expected to be quieter and more fuel efficient, but this information may not be available for some time yet.

As I noted in my earlier comment, Massport is in a leadership position to illustrate how to set a transportation recovery target and meet it. Other MassDOT agencies in highways, transit, and planning have not demonstrated they can assess the data on the extraordinary transportation collapse we have recently experienced as a society. Massport representing government and the airlines representing private business will need to work together creatively as never before.

Sincerely,

A handwritten signature in red ink, reading "Stephen H. Kaiser". The signature is fluid and cursive, with the first name "Stephen" and last name "Kaiser" clearly legible, and "H." in the middle.

Stephen H. Kaiser

Principal Civil Engineer, MEPA 1976-1988

From: [Eleanor Kebabian](#)
To: [Canaday, Anne \(EEA\)](#)
Subject: Public Comment for Boston Logan International Airport 2018/2019 Environmental Data Report
Date: Monday, March 8, 2021 2:49:38 PM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To the Massachusetts MEPA office,

I am a mother and resident of East Boston, and calling for collaboration between Massport and East Boston residents for mitigation on account of the 2018-2019 miscalculated growth projections, as shown in the latest EDR.

The residents of East Boston continue to have long-term health implications: a 360% increase in childhood asthma, and 200% increase in adult COPD. These health implications have affected our community even more this year, as East Boston experienced the highest COVID rates in Boston. As a Harvard T.H. Chan School of Public Health study outlined, people exposed to higher levels of ultrafine particulate matter saw an 8% increase in COVID mortality.

“Many of the pre-existing conditions that increase the risk of death in those with COVID-19” [cardiovascular and respiratory diseases like asthma and COPD] “are the same diseases that are affected by long-term exposure to air pollution.” They found “statistically significant evidence that an increase of 1 g/m³ in long-term PM_{2.5} exposure is associated with an 8% increase in the **COVID-19 mortality** rate.”

When discussing reopening of schools, we have to choose whether or not to open the windows and expose our children to outdoor pollution, or ventilate for COVID. A working mom down my street gave up her job because she couldn't work at home, and was fearful of her asthmatic son retracting COVID at daycare.

At my own home, pre-covid when we are out on the roof deck there is a cloud in the air that hovers over our house, the effects of all the air traffic is clearly visible to us. Rather than having that inside our house we have to live like they do in China, where all windows and doors are constantly closed and we heavily filter the air in our house. It's a huge loss that we can never have fresh air because of the air pollution.

As a community, we welcome collaboration and conversation on how Massport and East Boston's families can co-exist in healthier ways. HEPA filters placed in all public schools within a 2 mile radius would cost just a mere \$1 million dollars, a drop in the bucket considering the affects had on the residents.

Thank you
Eleanor

From: [Sonja Tengblad](#)
To: [MEPA \(EEA\)](#); [Canaday, Anne \(EEA\)](#)
Subject: Public Comment for Boston Logan International Airport 2018/2019 Environmental Data Report
Date: Wednesday, March 10, 2021 8:43:10 AM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To the MEPA review board,

As the coordinator for Mothers Out Front East Boston, mother and resident of East Boston, I am calling for collaboration between Massport and East Boston residents for mitigation on account of the 2018-2019 miscalculated growth projections and subsequent rise in pollutants including Nitrous Oxides and Carbon Monoxide, as shown in the latest EDR.

We know that Massport has suffered major financial losses during COVID. However, the residents of East Boston continue to have long-term health implications: a 360% increase in childhood asthma, and 200% increase in adult COPD. These health implications have affected our community even more this year, as East Boston experienced the highest COVID rates in Boston. As a Harvard T.H. Chan School of Public Health study outlined, people exposed to higher levels of ultrafine particulate matter saw an 8% increase in COVID mortality.

“Many of the pre-existing conditions that increase the risk of death in those with COVID-19” [cardiovascular and respiratory diseases like asthma and COPD] “are the same diseases that are affected by long-term exposure to air pollution.” They found “statistically significant evidence that an increase of 1 g/m³ in long-term PM_{2.5} exposure is associated with an 8% increase in the COVID-19 mortality rate.”

When discussing reopening of schools, we have to choose whether or not to open the windows and expose our children to outdoor pollution, or ventilate for COVID. A working mom down my street gave up her job because she couldn't work at home, and was fearful of her asthmatic son contracting COVID at daycare. Another mom I know whose son has acute asthma and who contracted COVID didn't tell him for fear that he'd have high anxiety.

As a community, we welcome collaboration and conversation on how Massport and East Boston's families can co-exist in healthier ways. Air filters (of particular models) placed in all public schools within a 2 mile radius would cost just over \$1 million dollars, a drop in the bucket compared to the \$170 million Massport has spent on sound proofing. Let's be on the right side of history in caring for highly polluted neighborhoods, especially environmental justice communities who are predominantly families of color.

Thank you for your consideration,
Sonja Tengblad
63B Maverick Square Apt. 2
East Boston, MA 02128
763-210-8198

--

She / Her / Hers

Soprano | www.sonjatengblad.com

Wellesley College | Music Performance Faculty in Voice

[Beyond Artists](#) | Founder

[Mothers Out Front East Boston](#) | Coordinator

From: [Czepiga, Page \(EEA\)](#) on behalf of [MEPA \(EEA\)](#)
To: [Canaday, Anne \(EEA\)](#)
Subject: Fw: 2018/2019 EDR Input
Date: Thursday, March 11, 2021 10:37:11 AM

From: Teresa Doyle <teresamother@icloud.com>
Sent: Wednesday, March 10, 2021 4:51 PM
To: MEPA (EEA) <mepa@mass.gov>
Subject: 2018/2019 EDR Input

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To whom it may concern,

We moved to our JP neighborhood in 1996. Since 2016 we have been subjected to extreme amounts of airplane traffic flying in a very low, very tight route directly overhead. This flight pattern can start as early as 5 am and can continue for 8+ hours. Another common flight pattern starts around 2 pm and can go for 7+ hours. There can be less than a minute between flights leading to non stop airplane noise. We are living under a noise tunnel.

I have been contacting my elected officials for years. I am repeatedly told to log complaints with Massport. I have been logging weekly complaints with Massport since 2018 with no results. I have reported my experience to the FAA who also passed blame on to Massport.

This is a plea for help.

Thank you,
Teresa Doyle
11 Robeson St
Jamaica Plain, Ma 02130

Sent from my iPhone



March 12, 2021

The Honorable Kathleen A. Theoharides,
Secretary Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900,
Boston, Massachusetts 02114

Re: Logan Airport 2018 / 2019 Environmental Data Report (EDR) EEA# 3247

Dear Secretary Theoharides,
Airport Impact Relief, Incorporated (AIR, Inc.) thanks you for the opportunity to comment on the Massport 2018 / 2019 EDR. AIR, Inc. supports the MEPA process by organizing monthly meetings, analyzing Massport's updates in consultation with our members and experts in related fields, and conducting community engagement to assure public participation.

This year's review comes at a pivotal moment as we come to terms with a set of unravelling truths about the long term growth of air travel demand and the environmental and public health costs of operating a large airport in the center of a major metropolitan area. In this year's EDR AIR, Inc. was expecting a number of especially key updates to be carried forward from the ESPR 2017 iteration of Logan's unique MEPA review process:

- the relevant scientific research on health impacts of aviation noise and pollution
- additional strategies to keep mitigation on pace with growth
- strategies for the most effective distribution of air filtration units

At the outset of our comments, we would like to take a moment to note that we are very supportive of MEPA's recent requirement that all electronic submittals over 50 pages include bookmarks or an electronic table of contents that provides direct links to each of the sections and appendices. With the 891 page length of this EDR and the disjointed nature of the presentation of data, a searchability feature would be extremely welcome.

Relevant Health Research

Included in this EDR for the first time is information about research into the health impacts of aviation. AIR, Inc. was ultimately not consulted about the selection and discussion of research included, but even this first step provides MEPA with ample evidence of the need to continue its relative activism in envisioning further, more responsive policies and more collaboration. Later in our comments we will provide further discussion of Massport's health research reporting.

Additional Mitigation

Citing current reduced impact levels resulting from the temporary decline in passengers and flights due to the COVID-19 pandemic, Massport does not respond to MEPA's request to provide additional mitigation. Our comments below will provide further discussion of mitigation strategies.

Air Filtration Strategy

With the health center's continuing financial ties to Massport as the airport's medical first responder dating back to its inception, and Massport's funding of asthma identification and treatment, Massport has better access to East Boston Neighborhood Health Center (EBNHC) leadership and staff than we do. With early comments by Massport and EBNHC staff suggesting that key asthma staff at the health center questioned the effectiveness of plug-in air filtration systems, AIR, Inc. repeatedly asked to meet with both of them with the express purpose of assuring they had the latest information and policy guides about the effectiveness of this specific strategy. Citing the demands upon their staff due to pandemic response, Massport and the Health Center declined to meet with us. They did, however meet together, and we have subsequently learned that the health center has recommended against use of plug-in air filtration strategies citing questions about their efficacy in mitigation strategies.

We ask you to require that Massport make any recommendations on the topic of the efficacy of plug-in HEPA air filtration available to the public.

Adequacy of compliance to MEPA

In the certificate for Massport's 2017 ESPR, Secretary Theoharides included numerous directives most of which were conditional upon whether airport flight and passenger volumes continued to outpace Massport's 2017 ESPR growth projections, including that:

1. Mitigation should be commensurate with growth
2. Additional mitigation should be included in this EDR to address continued outsized growth
3. The EDR should list and provide discussion of relevant research on health impacts of aviation
4. Massport should collaborate with community stakeholders
5. Massport should consult with school nurses and the local health center on strategies to most effectively distribute air purifiers
6. Transportation mitigation planning must consider impacts in neighboring communities

With flight activity up 6.3% and passenger volumes rising 10.5% during this reporting period, each more than tripling the forecasted rates, the outpacing condition has been exceeded. The EDR reports these increases and across the board increases in impacts, but does not embrace or adequately address the additional mitigation required by the Secretary.

In an unanswered follow-up [letter](#) to Massport on 12/14/2020, after our first joint discussion on the EDR in November 2020, AIR, Inc. offered *the following initial suggestions which we now ask MEPA to consider*:

1. *Normalize collaboration* through regular meetings with community, perhaps on an every 3 months schedule as part of a MEPA Special Review Process (SRP)
2. *Growth-triggered mitigation strategies*. Mitigation developed through this SRP should be based on actual passenger, flight, and traffic volumes to address the risk of impact backlogs seen in the present retrospective reporting system. This approach would allow Massport to implement programs over time as travel volumes and airport revenues recover

The Global Pandemic

Massport reports that sharply reduced flight and passenger levels due to the pandemic have reduced environmental impacts. Considering that these drops have slashed Massport's revenues and staffing capacities, they have placed many projects and programs on hold.

ALL BOSTON TESTING DATA - CUMULATIVE COMMUNITY POSITIVITY

The "Cumulative Community Positivity" calculation counts each individual person one time (their first negative, their first positive), regardless of the number of times an individual is tested, to assess the level of COVID-19 infection in the City and neighborhoods since the start of the pandemic. College ordered testing included. (As of February 14, 2021. The next update will be 02-24-2021.

NEIGHBORHOOD	NUMBER TESTED	OF TESTED, CUMULATIVE % POSITIVE	TESTING RATE PER 100,000 RESIDENTS
East Boston - 02128	35,022	18.9%	74,630.8
Dorchester - 02122, 02124	46,716	17.3%	57,759.6
Hyde Park - 02136	22,218	16.9%	64,921.3
Dorchester - 02121, 02125	42,872	16.3%	66,698.8
Mattapan - 02126	15,119	15.2%	51,093.2
Roslindale - 02131	21,185	13.7%	62,731.3

Although passenger load factors have increased over the last 20 years, because of the effects of the pandemic, resulting in fewer passengers per flight and travelers' avoidance of HOV modes, per-passenger impacts are increasing and it is likely that peak impacts are on track to return ahead of peak flight and passenger volumes. MEPA should be concerned with the lack of policy and mitigation of the potential near term impacts of this decline in load factors, in the EDR.

Massport reports that pandemic-related losses in activity are likely to follow a recovery curve which resembles previous downturns' recoveries. But, a number of factors suggest a faster return. One year into the pandemic, in late December 2020, [Forbes magazine reported](#) that *'for the strong majority of the traveling public, Covid-19 will cease to be a factor in travel plans by the end of 2021'*. Forbes predicts that with the U.S. national savings rate at a 45-year high, and pent up demand for air travel, a full recovery of US air travel is possible by the end of 2022.

Writing about China's air travel markets, Apex Aero, self-described as one of the world's largest international airline associations in a [November 2020 article](#) listed factors which they say contributed to 'a remarkable recovery', in Chinese air travel including:

1. Success in suppressing the virus
2. Latent demand

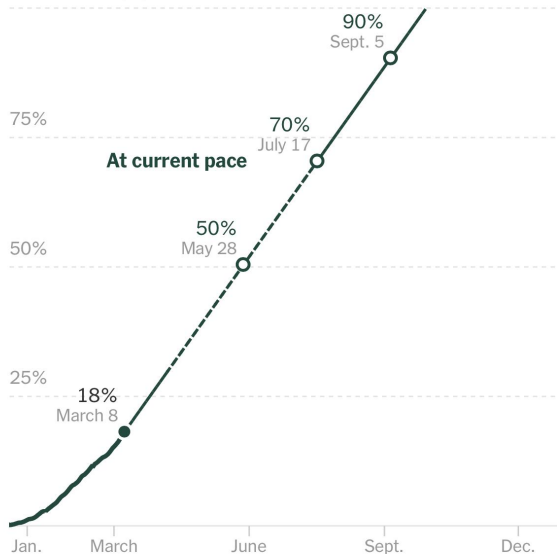
3. Mask-wearing culture, widespread temperature checking, and QR code tracking and tracing technology
4. Price discounting

When a given share of the U.S. population might be at least partially vaccinated

The current vaccination rate is based on average daily increase in first doses administered over the past week.

Average daily first doses in last 7 days: 1,324,605

100% of U.S. population



Source: Centers for Disease Control and Prevention | Note: Data from Dec. 20 to Jan. 12 are for all doses administered. Data for Jan. 13 is unavailable. Projections could change if additional vaccines are authorized.

The EDR suggests that several more years of downturn may lie ahead. But with evidence of faster than anticipated recoveries elsewhere and US vaccination rates already at 18% (21% in Massachusetts) and [reported by the New York Times](#) this week, to be on track for 60% of the US population, enough to develop a degree of herd immunity, to be vaccinated by May 2021, air travel could rebound *faster* than predicted. Tabling mitigation planning until peak volumes return again asks MEPA and impacted communities to rely on unfounded forecasts which have proved to be gross underestimates of actual demand in the past.

Growth-triggered mitigation planning would reduce this risk and satisfy MEPA's ESPR requirements.

Activity Levels

Actual flight operation and passenger levels at Logan averaged 3.15% over the 2018 and 2019 reporting period. This is nearly triple the ESPR forecast of 1.1% growth. Actual passenger volumes averaged 5.25% during the same period, 3.5 times the forecasted annual growth rate of 1.5%.

Even over this brief two year period, forecasting error has had a direct negative bearing on environmental outcomes in impacted communities. At the forecasted rate, Logan would have had 1.16 million more passengers in 2019 than in 2017. But 4.15 million additional passengers came, adding 3 million more passengers to the 9 million passenger backlog observed in Massport's previous MEPA filing.

To keep pace with the strength of demand for air travel seen in Boston, policy and mitigation efforts must be scaled accordingly. Continuing the example of this EDR's reported 3 million passenger overgrowth: with 40% of passengers choosing high occupancy vehicle (HOV) ground access modes, the mode choice breakdown of 3 million unplanned passengers would result in 1.8 million more single occupancy vehicle (SOV) trips to Logan. Aiming to boost Logan Express

HOV by 2 million riders per year over the long term, Massport's comprehensive ground access strategy is nowhere near the scale needed to keep pace with this level of growth. The increase in SOV during just the 2018 and 2019 period has preemptively almost entirely offset the hoped for long term HOV gains. The same can be said of growth in noise, and emissions.

We have chosen to include this example of ground access impacts within our Activity Levels comments as this proves the wisdom in MEPA's directive that mitigation be commensurate with growth. It also highlights the enormity of the challenge facing Massport and community mitigation planners and the need for farther reaching and more powerful policies to be put on the table if continued unchecked growth is being planned for at Logan.

Along with the supersized growth of flight and passenger levels recorded in this reporting period alone, came a series of equally unmitigated related increases, each of concern:

- Nighttime operations grew by 17%
- The population exposed to 65 DNL or greater grew by 10%
- Average weekday on-Airport vehicle miles traveled (VMT) increased by 6.7%
- Blue Line fare gate activity declined by 24%
- Logan Airport emissions of Carbon Monoxide (CO) pollution increased by 16%
- Logan Airport emissions of fine particulate pollution (PM 2.5 - 10) increased by 19%
- Logan Airport emissions of Nitrogen Oxides (NOX) pollution increased by 7%
- Logan Airport emissions of Volatile Organic Compounds (VOC) pollution increased by 2%

Mitigation

The 'commensurate' and 'outpacing' directives require that new mitigation be devised to keep pace with growth. However, while we see that the EDR provides lists of existing mitigation, the large majority of these are legacy programs (some over 40 years old), or fringe programs unable to mitigate the massive annual increases in impacts posted year after year. Throughout the EDR instead, Massport maintains that the pandemic related decline in activity levels seen after the reporting period abrogates the responsibilities they were required to adopt in the Secretary's certificate.

MEPA should not sanction this self-prescribed exemption. Instead, we hope that MEPA will stand by its correct 2017 ESPR certification and redouble its efforts to seek Massport's compliance. As we will explain in our comments on the example of Massport's request for FAA funding of additional soundproofing below, Massport's extremely low level of ambition to mitigate impacts, more than the cost or viability of these programs, is the key obstacle to progress. The EDR's lack of responsiveness to additional mitigation again puts MEPA into the role of arbiter, and challenges the Secretary to demand the mitigation planning required.

We hope that MEPA will enforce its certificate in a manner which will move Massport to mobilize its full capacities as a motivated and ambitious leader in environmental mitigation. This is the

Massport we are waiting for. This is the Massport that pushed for the country's first residential soundproofing program in the 1980's. Only a motivated and committed 'activist' Massport will be able to overcome the obstacles to advancing innovative mitigation once again in Boston.

Noise Mitigation

The EDR offers the welcome news that Massport has submitted updated noise maps to the FAA Regional Assistant Administrator to address issues with first-generation soundproofing installations which could lead to further FAA funding for retrofits in older soundproofed homes. It is important that Massport is acknowledging the need for further soundproofing. Now, 13 months after their initial communication, Massport should escalate their efforts by writing to the regional administrator with cc to our federal delegation. They should submit a grant application to the FAA for additional funding, and if rejected, they should use landing fee money to fund this necessary program. Massport's FAA fundraising entreaties should not be mistaken for new mitigation for impacts occurring because of their airfield user's activity.

We appreciate the Port Authority's efforts to encourage single engine taxiing and use of vortex generators on Airbus aircraft. As in the example of annual increases in SOV traffic provided above, and the CO emissions savings achieved through Massport's alternative GSE program below, the accumulated benefit of all of these efforts is small in comparison to any single year's increases in noise as a result of flight operations growth. It would be most helpful if Massport would model or otherwise provide comprehensive analysis and discussion of the relative noise abatement value in DNL or other terms of such programs in relation to increases in noise driven by operational growth, as it is otherwise difficult for MEPA and commenters to ascribe value to the accumulation of these efforts.

AIR, Inc.'s Noise Impact Team has offered to engage with Massport in discussing a variety of additional noise mitigation strategies. We are confident that if Massport mobilizes its full capacities within a collaborative planning framework, we can devise effective solutions which can reduce total noise impacts as air travel to the region grows. Massport, in our November meeting agreed to meet with our Impact Teams, but with their focus in submitting the EDR, and our focus subsequent to submission on responding, no date has been set.

The difficulty we have had in arranging topical meetings with Port Authority staff in this and the air filtration example above underscores the importance of our suggestion above that MEPA require changes to its unique iterative reporting structure. Specifically, MEPA should require that Massport conduct a regular schedule of meetings with legitimate community advocacy groups. The structure of these meetings should not be determined by Massport staff, but by MEPA, in consultation with community partners.

Health

In East Boston, 1,000 additional children likely live with Asthma, an equal number of seniors battle COPD, and countless community members suffer heart disease, stroke, obesity, sleep disturbance, cancer, and learning impairments *as a result of increased exposure to airport*

pollution. We can quarrel over the science, or applicability of health outcomes to aviation specific ultrafine and other pollutants if we choose. Or we could choose to accept the obvious implications and conclusions of modern research science and take action now, out of caution. The likelihood of increased morbidities and premature mortality are burdens which families in airport impacted communities will carry throughout this recovery period and for the rest of their lives. With this in mind, the urgency and scrutiny with which we examine these iterative ESPR and EDR documents must rise sharply and steadily, and not be delayed on account of the temporary reduction in impacts caused by the pandemic.

Noise and Health

Noise annoyance is an important health disability. World Health Europe's systematic literature review is widely accepted as providing the most definitive policy guidance available. WHO Europe strongly recommends that aviation noise be kept below the 45 dB Lden (the 24 hour equivalent of our DNL). This recommendation is problematic for airports and industry noise generators, as it is approximately 50 times lower than the present FAA 65 DNL threshold.

On this topic we must pause. While Massport reports in answering Representative Madaro's comments in the response to comments section of its responses to the MEPA certificate for the ESPR 2017 that they have had several calls with AIR, Inc. to discuss this EDR, there is, as is unfortunately often the case between Massport and community advocates, an important disparity in perspectives: of the three calls between us, the first was an early pandemic update in May, the second was focused on the Framingham Garage Expansion, in April, and the last call, which was the first EDR working session was a Zoom meeting held in November, two weeks before Massport told us they would be finished writing the EDR.

The fact here is that AIR, Inc. has repeatedly and consistently offered collaboration with Massport inside and outside of the MEPA process. We have requested to have detailed topical mitigation discussions with Massport, but the Port Authority staff has not made time to include our views. In this example, the EDR's review of research on the health impacts of noise presents evidence to MEPA which was considered in isolation and implies incorrect conclusions without having given AIR, Inc.'s Health Impact Team an opportunity to discuss and perhaps reconcile some possible points of contention. Specifically, while the EDR included WHO Europe's review in its listing of relevant studies on noise, it casts doubt upon it noting that its strength of evidence has been criticized. Massport also listed ICCAN's rapid evidence assessment (REA) and noted that it was also critical of WHO Europe's conclusions.

The effect of Massport's editorial commentary produces a misleading implication that the scientific evidence is inconclusive, or unreliable. We were surprised that Massport would attempt to devalue the WHO review in this manner. Misleading and incorrect information is an impediment to our shared goals. As part of our review of the EDR, we convened discussions about this within our Health Impact Team, as well as with our European noise advocacy counterparts. Had Massport collaborated with AIR, Inc. as instructed through the ESPR 2107 MEPA process, a more balanced report could have been reached.

MEPA should know that criticism of WHO's methodology was mainly led by Norwegian acoustician and aviation industry consultant Truls Gjestland who raised concerns about: 1) a degree of bias in sampling practices used in one of the studies cited by WHO; 2) that WHO included too much material from Schiphol Airport in Amsterdam which might be too specific to Amsterdam and not as widely applicable as WHO assumes, and; 3) that too many of the studies WHO used were from airports where outsized public reaction to 'new noise' may have distorted findings and recommendations.

We don't question Mr. Gjestland's credibility in his assessment of WHO, but ask that MEPA consider that all research is subject to academic sniping, but in its reporting on the health impacts of noise, Massport misses the most salient point: that European airports and governments have accepted the overall body of evidence on the health impacts of noise including the WHO Review, as well as the SoNA, Defra, and ICCAN research as legitimate drivers of policy. We believe it is important that MEPA understand that the debate has changed in Europe over the last decade or so, and we believe this carries important implications for how Massachusetts, as a leading center of science and progress should progress.

Our European counterparts explain: "In the UK the turning point came when Heathrow was refused permission for a third runway in 2010. A third runway was what Heathrow, the UK aviation industry and the civil servants in the Department for Transport wanted above all else. Yet the incoming coalition Government led by the Conservatives – the traditional party of business – had turned it down and in effect backed the eight year campaign by the local community and environmentalists against it.

The industry was in shock and retreated to assess things. Heathrow came to realise that, unless it improved its relationship with the community, it was going nowhere. The more progressive people within the organisation were given more senior positions. There was also a shake-up of staff in the Department for Transport, with a younger generation coming to the fore who were more community and environmentally-minded."

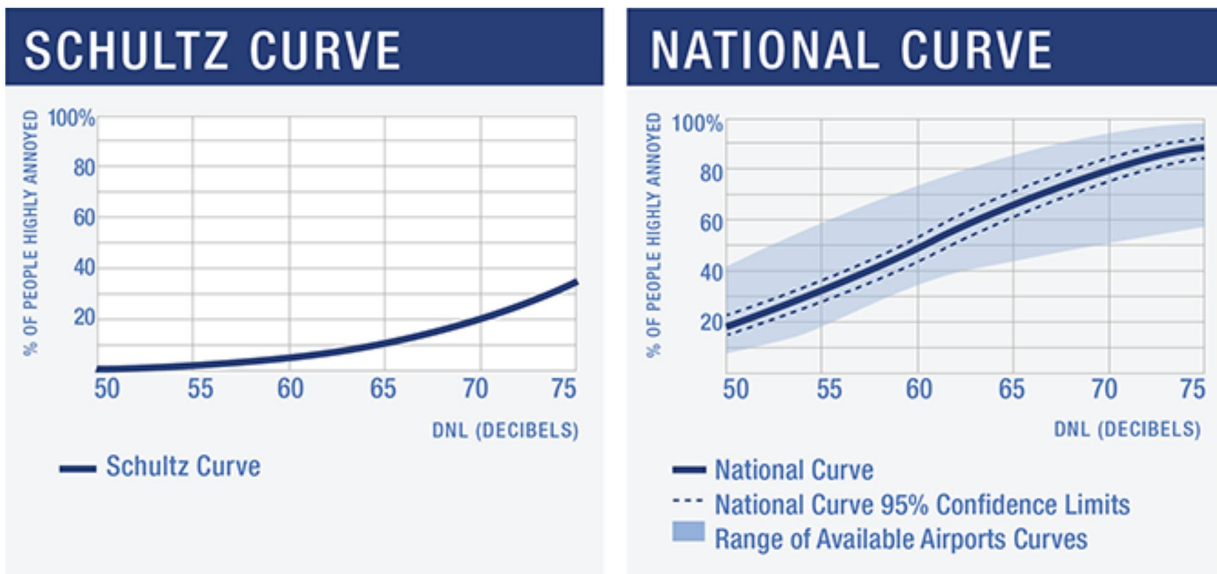
While airport activists in Europe concede that the aviation industry, is a powerful lobbying force within the European Union, they believe the changes at Heathrow and the Department for Transport have begun to influence change across Europe. They see signs of reasonably meaningful engagement with communities that was largely absent 20 years ago and guess that the independent advisory group ICCAN, which Massport paints as opposing WHO Europe's recommendations will be broadly supportive of them.

Had Massport met with us specifically about the available health research on noise, we could have bypassed this distraction and collaborated on a joint recommendation to MEPA as to what reasonable actions Massport could take to employ this knowledge in its mitigation planning.

Neighborhood Environmental Survey

The Neighborhood Environmental Survey (NES) commissioned by the FAA, was released earlier in 2021. This scientific survey found a jaw-dropping increase in jet noise annoyance in

the US. The findings of the NES show that twice as many people are highly annoyed by aviation noise at the 50 dB DNL level than were previously reported to be annoyed at the 65 dB DNL exposure level. This shakes the foundations of the entire basis of the FAA's noise program and validates 50 years of community advocacy on noise impacts. FAA will now need to re-examine their use of the 65 DNL as the threshold of significance for noise annoyance. This will necessitate changes in mitigation strategies.



The new Survey was designed to use a consistent approach across each airport community surveyed. This has allowed for an enhanced ability to provide additional statistical information about the new results, such as the 95% Confidence Limits and range of results from each of the 20 airports, as shown on the plot above. This was not possible with the older Schultz Curve.

It is important to not that the revelations provided by NES track precisely with the similar recent WHO Europe and Defra studies in Europe, and support the conclusions that:

- A. Noise is a public health issue
- B. Noise abatement in the US / FAA system is the responsibility of Airport operators
- C. And things need to change now

Emissions and Health

Massport's 2019/2019 EDR listed of a handful of reports, but did not provide a helpful discussion and analysis of how air pollution from aircraft at Logan could be reduced or mitigated. Through our 9 year long Health Initiative, AIR, Inc. has developed extensive contacts within the research community which we believe can be helpful. We hope that the Secretary will ask Massport to join with our Health Impact Team in reviewing the important health research and investigating possible responses. We believe a very prescriptive directive is needed as now 15 months have elapsed since the issuance of the 2017 ESPR certificate.

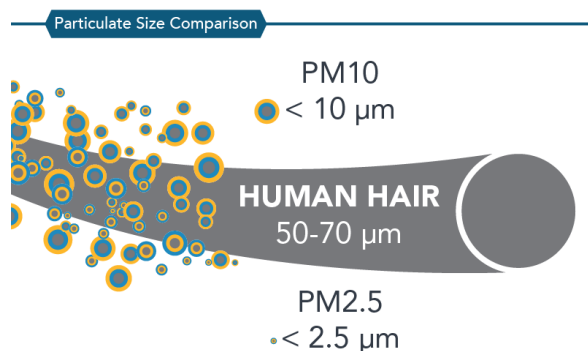
Below we have provided a basic listing and explanation of the criteria pollutants reported on in the EDR to illustrate the state of knowledge about the pollutants and their impacts on human health and to exemplify how the EDR might have handled this reporting requirement.

Carbon Monoxide (CO)

Logan Airport emissions of Carbon Monoxide pollution increased by 16% between 2018 and 2019.

The EPA website on CO pollution in outdoor environments states that elevated outdoor CO levels are of particular concern for people with heart disease who already have a reduced ability for getting oxygenated blood to their hearts in situations where the heart needs more oxygen

than usual such as when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina.



PM10/PM2.5

Logan Airport emissions of fine particulate matter pollution increased by 19% during the two year reporting period between 2017 and 2019.

The California Air Resources Board's website (CARB) describes airborne Particulate Matter pollution (PM) as: Particles of pollution which are 10 microns or less (PM10) in diameter are inhalable into the lungs and can induce adverse health effects. Combustion of gasoline, oil, diesel fuel or wood produce much of the PM2.5 pollution found in outdoor air, as well as a significant proportion of PM10.

- Older adults with chronic heart or lung disease, children and asthmatics as the groups most likely to experience adverse health effects
- Children and infants are susceptible to harm from inhaling pollutants such as PM because they inhale more air per pound of body weight than do adults
- Children's immature immune systems may cause them to be more susceptible to PM
- Children in communities with high PM2.5 have slower lung growth, and smaller lungs at age 18 compared to children in communities with low PM2.5 levels
- CARB reported that exposure to PM2.5 contributes to 5,400 premature deaths due to cardiopulmonary causes, 2,800 hospitalizations for cardiovascular and respiratory diseases and about 6,700 emergency room visits for asthma per year in California

Nitrogen Oxides (NOX, or NO₂)

Logan Airport emissions of Nitrogen Oxides pollution increased by 7% between 2017 and 2019. Logan emissions of NOX in this reporting period hit an all-time high.

The American Lung Association describes Nitrogen Oxides as a gaseous air pollutant composed of nitrogen and oxygen formed when fossil fuels are burned at high temperatures, which contribute to particle pollution and to the chemical reactions that make ozone. Nitrogen dioxide causes a range of harmful effects on the lungs, including:

- Increased inflammation of the airways
- Worsened cough and wheezing;
- Reduced lung function
- Increased asthma attacks
- Greater likelihood of emergency department and hospital admissions
- New research warns that NO₂ is likely to be a cause of asthma in children
- People with lung cancer face greater risk from exposure
- Linked to cardiovascular harm, lower birth weight in newborns and increased risk of premature death

The EDR reports that increased NOX is a trade-off for less noise and fuel efficiency, but offers no substantive suggestions on how to reduce the NOX burden on Logan's neighbors.

Volatile Organic Compounds (VOC)

Logan Airport emissions of Volatile Organic Compounds pollution increased by 2% during the two year reporting period between 2017 and 2019.

The World Health Organization (WHO) says VOC's enter the body through the lungs or through the skin, causing symptoms that may lead to pathologies, including asthma, dermatitis and neurological problems. Some VOCs are classified by the International Agency for Research on Cancer (IARC) as carcinogenic for humans.

Ultrafine Particulate Matter (UFP)

While not regulated by EPA, a University of Illinois study explains that UFP's are present in the air in large numbers and can enter the body through the lungs but translocate to essentially all organs. Compared to fine particles, they cause more pulmonary inflammation and are retained longer in the lung. Exposure to PM_{0.1} induces cough and worsens asthma. PM_{0.1} causes systemic inflammation, and predisposes individuals to ischemic cardiovascular disease and hypertension. PM_{0.1} are also linked to diabetes and cancer. PM_{0.1} can travel up the olfactory nerves to the brain and cause cerebral and autonomic dysfunction. Moreover, in utero exposure increases the risk of low birthweight.

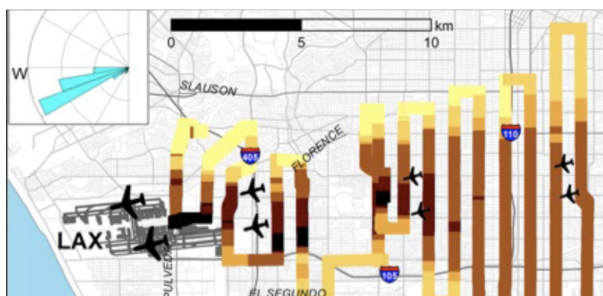


Image: Distribution of UFP's around LAX

UFP's have been measured in 6-8 times average urban levels extending 10 miles under flight paths at major airports. 70% of the measured outdoor levels of these unregulated pollutants have been measured indoors in a study of ultrafine pollution in Chelsea released in 2017. This has great relevance to discussions about strategies to mitigate Logan's pollution.

Pollution monitoring

Regarding the geo-spatial distribution of pollutants, the EDR disingenuously reports that Logan contributes only 1% of the state's total emissions (2% of the NOX). If it were spread across the 10,555 square mile landmass of Massachusetts, Logan's pollution would be of little concern. However, as seen above in the graphic illustration of UFP pollution measured under LAX flight paths, the distribution of pollutants from mobile sources including motor vehicles and aircraft is highly concentrated near the sources, and therefore pollution impacts from Logan are highly localized and create acute health impacts. This information is essential to the discussion of Airport pollution. Further discussion of the implications of Chelsea and other research would have been helpful.

While the EDR points out that UFP pollution is an area of ongoing research, there is enough evidence of extreme and growing UFP and EPA criteria pollutant exposure to exceed any standard of reasonable concern. Massport at their own discretion then, may take whatever action in researching, mapping, monitoring, or reducing exposure which they feel is needed. The FAA has no authority to impede Massport's efforts to mitigate airport impacts; will often not act unless forced to by Congress, and; when forced, routinely drags its deliberations out for years using endless studies and reports which more often than not lead to findings of no significant impact.

Airport Sources of Pollution

95% of Logan emissions come from aircraft. Since they do not control engine technology, Massport does not currently have any emissions reduction programs that deal with 95% of Airport pollution. *With Massport limiting their emissions reduction focus to only the smallest segmental sources of pollutants under their direct control, even large reductions amount to fractional overall reductions in pollution.* In the example of their commendable efforts to reduce pollution from ground service equipment (GSE), the 18.4% reduction in CO from GSE-related sources reported amounts to a 0.37% overall reduction in Logan airport CO. The 16% increase in CO from all airport sources during the same period is 43 times more than what will be saved 5 years from now.

While all of the data used for the AIR, Inc. analysis above is harvested from the EDR, without such a contextual discussion Massport leaves MEPA with the impression that its varied efforts are exhaustive. While Massport is correct in reporting that they do not control Airport noise and pollution, they have the power to activate considerable resources in pursuit of a wide variety of avenues that could help.

We hope that MEPA will recognize that the Port Authority is not powerless to make any change, but that where there is a will, there is a way. And while influencing things like airlines' choices of airports, or sizes and types of aircraft used may be rife with many challenges, it will not be done through inaction.

We ask that MEPA indulge us in one more thought: the Massachusetts Port Authority is in tremendous financial good health even despite the pandemic, and should therefore be able to afford the planning responses necessary to make the progress we seek. As evidence of this last point, we note that [Moody's has recently assigned an Aa2 rating to Massport revenue bonds](#), and reports that the outlook for Massport is stable. In fact Boston Logan International Airport was the only airport to achieve this rating. Moody's notes that Logan is "supported by Boston's strong and diversified economy anchored in high technology, biotechnology, healthcare and higher education. This combination of high origin and destination demand from a strong non-leisure based economy and diversity of carrier mix is one of the key credit strengths of the authority and we expect the demand for air service out of BOS to recover." They explain that Massport's FY 2019 debt service coverage was 3.57x on a Moody's net revenue basis. Importantly, Moody's adds, "Through the last quarter of FY 2020, the authority took several actions to bolster its finances, including a \$40 million reduction in operating expenses, suspension or deferral of \$850 million of capital projects and a taxable direct purchase transaction which provided additional financial flexibility. These actions resulted in debt service coverage decreased only slightly to a still robust 3.19x, or 3.67x with the benefit of \$57.1 million of CARES ACT funds and strong liquidity levels at approximately 700 days cash on hand."

So MEPA can rest assured that the Port Authority can well afford to plan and mitigate Logan impacts.

Noise Health Impacts

Nighttime Noise

Massport's most recent estimate for growth of nighttime flight operations was provided in ESPR 2017. This estimate forecasted an average of 168 operations per night as we reached Logan's long term planning horizon c. 2032. With the average number of operations per evening period already at 168, in 2019 when this forecast was made, the 2017 ESPR essentially predicted that nighttime operations would not increase over the coming decade. The EDR reports:

- Nighttime flights climbed to 16.6 percent of total operations in 2019, respectively, increasing 16% during this reporting period from an average of 168 per night in 2017 to 195 per night in 2019
- 81% of night flights occurred between 10:00 - 12:00 AM and 5:00 AM - 7:00 AM time slots

In ESPR 2017, Massport predicted that international flights would comprise the largest percentage of flight operations growth over the near future. In this EDR, Massport attributes the

increases in nighttime flights to increases in flights to international destinations. *The conclusion we reach is that without any nighttime flight restrictions, increases in international operations will correlate directly with increases in nighttime noise.*

The EDR's data on the growth of nighttime operations treats all nighttime operations the same. This hides the real story: because although the total number of night flights has only gone up 35% or so over the past 17 years, more louder Jets are more frequent at night now than in the past. Whereas carrier Jets comprised 69% of total nighttime operations in 2000, the increase in overall number of operations, and the shift in fleet composition wherein 90% of operations, especially international and cargo are comprised of a larger, louder category of aircraft, nighttime noise at Logan is up 75%.

AIR, Inc. has considered Massport's additional report that 81% of night flights occur outside of a core (12:00 AM - 5:00 AM) overnight timeframe, versus within the peripheral periods (10:00 PM - 12:00 AM, and 5:00 AM - 7:00 AM). This information is totally misleading in that the FAA approved DNL metric for aircraft noise establishes a 10dB penalty for noise occurring between 10:00PM and 7:00AM precisely to account for the increased impact of airplane noise during those hours. Massport's attempt to redefine the authorized noise metric established by FAA is completely unjustified. What the copious scientific evidence makes perfectly clear is that loud aircraft noise events interrupt the restorative circadian rhythms and sleep / wake cycles of residents during the times when they are sleeping causing negative health effects.

Preferential Runway Advisory System (PRAS)

AIR, Inc. has requested that Massport update PRAS in multiple EDR / ESPR comments. Hopefully we can begin a dialogue about this in the coming year. From the perspective of in-close communities with far greater health and environmental impacts, an updated and more effective PRAS would be valuable. However, there is broad agreement among our diverse Noise Impact Team which includes in its leadership, leaders from impacted RNAV communities across the metropolitan area, that an updated PRAS would rationalize noise impact dialogues across the region. By providing target percentages for impacts and dwell and persistence goals, PRAS provides all impacted communities with benchmarks against which they may measure Massport's progress toward fair distribution of noise impacts, and it is responsive to community needs.

We reiterate that updating PRAS was a condition of the FAA Record of Decision of 2002. That Massport reports that the Logan CAC voted to abandon PRAS should not be taken by MEPA as an indication that PRAS is defunct. The FAA RoD is legal mitigation in Massport's Airport Improvement plan and does not offer either Massport, or the LCAC the authority to abandon PRAS. The RoD specifically states that PRAS shall remain in place until replaced or updated.

In our previous comments, we have suggested that in the event that Air Traffic Control (ATC) is unable to implement PRAS effectively while this runway use program (RUP) is classified as an Informal RUP, Massport could respond by submitting an application to FAA to upgrade PRAS to a Formal RUP. When queried about this and nighttime flight restriction proposals, Massport has

exhibited a defeatist attitude, suggesting that such applications would be a waste of time since they would be denied. Such assessments do not excuse Massport from its responsibility to act and to advocate with the FAA on behalf of its impacted citizens.

Emissions

One of the steps ESPR 2017 MEPA certificate required was that Massport increase collaboration with a variety of partners including non-profit community groups. AIR, Inc. stepped forward immediately to initiate discussions around collaboration, build a shared understanding of the research on airport impacts and discuss mitigation alternatives. Massport declined our initial invitation due to their need to respond to the developing implications on Logan Airport of the global pandemic at the time. A series of check-in and update emails and telephone calls took place over the spring and summer of 2020, but Massport staff were unable to meet with us regarding potential collaborations until November 11, 2020 a few weeks before their planned end of the drafting process for the present EDR.

The delays in coordinating our initial MEPA related discussion left us without time to make any substantial progress. During our first Zoom meeting, AIR, Inc. members expressed our belief that a) a series of separate topical meetings around traffic, noise, traffic and public health impacts would be needed in order for our expert impact teams to meet with Massport's area-specific staff to explore more detailed collaboration and assist them in developing their review of relevant research, that; b) reductions in load factors and reluctance to return to HOV modes resulting from COVID 19 may have additional impacts on the relationship between air travel volumes and pollution levels. Specifically we are concerned that as the recovery of air travel volumes return, per passenger environmental impacts will be accelerated. We have suggested to Massport that these factors increase the urgency with which we should develop our additional mitigation strategies going forward, and that; c) given the financial and staffing impacts the COVID -19 pandemic has had on Massport, and with the overarching goal of developing a system in which impact mitigation and reduction strategies remain commensurate with Airport growth, we have suggested that a mitigation scheduling approach be developed as part of our collaboration.

The intent of this proposal is twofold: first to allow for the recovery of air travel to commence, giving Massport time to staff up and rebuild its mitigation planning and funding capacity, and second to allow for a progressive approach to mitigating the impacts over time as they recover such that the needed programs and policies can be prepared in advance of any increase in the level of impact.

With the growing evidence of a multitude of increased morbidities related to exposure to air and noise pollution, Massport cannot possibly continue the practice of entering into agreements with individual healthcare providers to address specific concerns. The EDR reports that Massport continues to stay apprised on studies regarding impacts of aviation on air quality and public health, and points to Tufts research that shows increased gaseous and particulate pollutant concentrations in residential measurements when wind was blowing from the airport compared to when it was not.

The EDR also cites studies conducted by the University of Southern California and the University of Washington which demonstrated adverse health effects following exposure to airport and roadway traffic-related UFPs, distinguished roadway from airport sources and showed distinct health impacts associated with each source. However, in order to assess the impacts at Logan airport, site specific science is needed.

Regulation

Even while recognizing the recent research, the EDR reports that EPA has only just begun to reconsider a NAAQS for UFPs due to their unique physical attributes and potential human health hazards. Massport concludes that this reassessment would be the next opportunity to consider including UFPs among the criteria air pollutants, and warns that the link between UFP exposure and adverse health effects, although suggestive, may not rise to the level of promulgating a new NAAQS at this time. Massport adds (despite the research considered above) that while studies have begun to explain the dispersion characteristics of UFPs from airports, specific health studies are needed to assess impacts of UFPs from airport sources.

AIR, Inc. has done everything in our power to partner with Massport in evaluating how established and emerging science might be incorporated in Airport policy and mitigation strategies. Without such partnership, on its own Massport may end up adding UFP's to its current set of criteria pollutant reportbacks and mitigation strategies. But mere compliance with future EPA or subsequent FAA guidance which may be 5 - 10 years away will leave us essentially in the same position as we are today: with ineffective regulation allowing continued exposure of our children, elders, and families to extreme pollution.

AIR, Inc. shares the public's expectation and hope that honest conversation, innovation and leadership can lead to far more expeditious and effective solutions. We hope that MEPA will agree and use this review as a means of leveraging the collaboration needed.

United Airlines and biofuel

The EDR reports the interesting fact that United Airlines has agreed to purchase up to 10 million gallons of cost-competitive, commercial- scale, sustainable aviation biofuel over the next two years.

The EDR does not make certain whether 5 million gallons of commercial biofuel will be available in this timeframe, how many of those gallons will be used at Logan, or what beneficial impact such use may have. AIR, Inc. notes that in 2019 United Airlines alone burned 4.3 billion gallons of jet fuel in 2019, while Massport's tenant airlines burned 20 million gallons on Logan's tarmac, and another 20 million over metro Boston during landing and takeoff. United made a \$3 billion profit in 2019, off \$43 billion in revenue. The top 5 airlines at Logan earned \$11.5 billion in profits in 2018. So clearly, the burning of fossil fuels is a profitable practice which is likely to continue long into the future. We are happy to hear that alternatives are being investigated. But reports of change and innovations which are unlikely to amount to anything should not be used to defer mitigation that can be affected now.

Changing Models

The EDR reports that the FAA has again changed its emissions modeling methodology. This results in further confusion. By way of explanation, Massport adds, *“As an example of these differences, there was a 30.2 percent increase in PM10/PM2.5 aircraft emissions in 2018 between AEDT 3c and AEDT 2d that is attributable to a change in methodology used to estimate PM emissions in the AEDT model (i.e., FOA 4.0 versus FOA 3.0). Similarly, there is a 32.4 percent increase in PM10/PM2.5 aircraft emissions in 2018 when applying AEDT 3c compared to 2017 when applying AEDT 2d. This is also attributable to the aforementioned modeling methodology change in addition to differences in fleet mix and operations between the two years.”*

With constantly changing methodologies, how can MEPA or the public possibly participate in a constructive conversation about relative growth and improvement in pollution? AIR, Inc. suggests that with Massport and FAA's documented failure to develop a reasonable and stable baseline against which emissions policy and mitigation can be measured, future EDR documentation should be based upon actual emissions measurements.

Ground Access Mitigation

The EDR reports that much of Massport's ground access planning has been put on hold due to the drop in impacts caused by the pandemic. With HOV reported to be down 84%, Logan's SOV trip percentage is set to spike dramatically just as vaccinations rise and air travelers take back to the skies; a traffic congestion perfect storm is coming.

At 2019's 40% HOV level, with passenger volumes at around 42 million, average annual daily trips (AADT) to Logan reached about 140,000 trips per day resulting in roughly 84,000 SOV average daily trips to Logan, by far in excess of our regional and local roadway capacities. At this level, traffic congestion routinely backed up in multiple locations across the region and clogged local and citywide arterial streets and highways. Unless the current 16% HOV rate which has been reported in this EDR improves dramatically, the critical 84,000 AADT will be surpassed with a return of 60% of Logan's 2019 passenger volume, at around 25 million annual passengers. Considering all of the previously mentioned factors, the level of recovery is possible within the coming year.

While Massport makes promising general statements about encouraging HOV trips to the airport, they haven't taken substantive action or set ambitious goals to do so. They set a goal of 40% HOV trips, then changed the definition of an HOV trip so that it was met with little mode shift toward sustainable options. Other Massport initiatives such as free 30-minute parking for pickup/dropoff trips are actually counterproductive to the stated goal of reducing airport trips. Generally, as seen in the areas of noise and emissions mitigation, Massport demonstrates little appetite to promote an actual mode shift. A fundamental flaw in Massport's perspective in the report is that it frames demand (e.g. demand for parking, demand for Uber/Lyft trips) as fixed, and takes the approach that Massport must accommodate this demand rather than implementing strategies to adjust this.

There are a number of effective ways Massport could reduce single-occupant trips and generate revenue:

1. Transit investment in a variety of projects
2. Tolling RideApp trips, [similarly to what was done in Chicago](#), \$8 fee for Uber/Lyft trips to the airports
3. Decreasing the availability of short-term parking
4. Imposing a toll on all vehicles entering the airport

AIR, Inc.'s Ground Access Impact Team has suggested BRT strategies in past comments on the Framingham

Logan Express Garage Expansion. These, and other existing HOV programs must be taken back up by Massport if it is serious about increasing its ground access HOV mode share, especially in light of the pandemic's impact on Logan Express ridership. Curiously, the EDR reports a variety of incentives and price adjustments which prove over and over again that mode choice decisions are particularly dependent on price and other cost considerations.

Logan Express

With environmental justice communities once again in the crosshairs of the worst of Logan's soon to be growing ground access impacts, the Woburn, Back Bay, and Peabody Logan Express locations should be ramped up once again to work in conjunction with the above-mentioned congestion pricing programs. This two pronged approach is truly the only option left for Massport to incentivise suburban passengers into HOV modes.

As part of their multi-pronged approach to expanding HOV, Massport should not pause, but should now reinvigorate their plans to open the North Station urban location and accelerate their efforts to find at least one new suburban location.

Otherwise, there are no surprises in the EDR's Logan traffic disclosures:

- Average annual daily trips (AADT) to Logan increased by 10% attributed primarily to RideApp and general increase in drop-off/pick-up activity by private and commercial automobiles
- RideApp activity increased 16% 2018 - 2019
- Logan Express ridership from suburban locations increased 19% 2018 - 2019 in response to extreme roadway congestion driven by Logan-bound traffic
- Logan Express ridership is now down 84% October 2020 compared to 2019 due to traveler apprehension over social distancing guidance
- RideApp use increased over 16%
- MBTA Blue Line ridership declined 25%
- Back Bay Logan Express ridership declined in 2018 when Massport raised fares back to \$7.50 per passenger, then increased dramatically when the Port Authority incentivized this service with security line preference and discounted fares (free to Downtown

Boston/\$3 to the Airport) Riders with a current, valid MBTA pass received reduced \$3 fare

Massport's Logan Passenger Ground Access Survey shows that the largest segment of air travelers are not interested in Massport's HOV enticements. Urban travellers and those from further out beyond 495 each for various reasons are shown to adopt HOV modes much more readily, compared to suburban travellers between the urban core and 495. While stating its goal to increase use of HOV, Massport has seemingly bumped into a constraint beyond which they are unwilling to pass: use of financial disincentives for SOV modes.

It is crystal clear that the combinations of availability of options or lack thereof and the range of financial and convenience costs which would drive large-scale adoption of HOV mode choices among suburban travelers have not been found. Ample evidence presented in these disclosure documents points to a direct relationship between increases in financial and convenience costs and behavior change, yet Massport rather than pushing on the obvious levers available to them has refrained.

Massport, as the mitigator of other people's pollution, is placed in the position to need to make difficult decisions. How forcefully or whether they act to drive behavior change with implications on public health in the balance has been a topic of repeated emphasis in our comments. We believe this must be a matter of open public debate. If there is a reason not to wage more powerful disincentives upon the cost/benefit mix which creates the present suburban HOV impasse, Massport should be expected to present and be prepared to defend it. Importantly, in response to media reports and public calls for discussion of the application of congestion pricing strategies to influence the Logan SOV ground access decision making process, [Massport unilaterally announced](#) in 2018 that they would not consider an airport roadway fee.

With long term growth trends showing that demand outstrips capacity and backsliding of HOV ridership MEPA should require a full analysis of the potential effectiveness and cost of congestion pricing at Logan.

Conclusion

Briefly, we are sorry to have needed to provide such extensive comments. We were hoping for a far different sort of dialogue. We felt that now is not the time to pause, but instead that we should use the temporary reduction in impacts as an opportunity to accelerate our efforts to make Logan the healthiest possible air travel facility.

Sincerely,

AIR, Inc.
395 Maverick Street

East Boston, MA 02128

From: [Alyssa Vangeli](#)
To: [Canaday, Anne \(EEA\)](#); [MEPA \(EEA\)](#)
Subject: Public Comment for Boston Logan International Airport 2018/2019 Environmental Data Report
Date: Friday, March 12, 2021 11:23:23 AM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To the Massachusetts MEPA office,

I am a resident of East Boston and a mother with two young daughters ages 3 and 6. I'm writing to urge collaboration between Massport and East Boston residents for mitigation on account of the 2018-2019 miscalculated growth projections, as shown in the latest EDR.

On many occasions, I have had to opt to not take my kids outside to play because the smell from the airport is overwhelming and I'm deeply worried about their health. When discussing reopening of schools, we have had to choose whether or not to open the windows and expose our children to outdoor pollution, or ventilate for COVID.

The residents of East Boston continue to have long-term health problems: a 360% increase in childhood asthma, and 200% increase in adult COPD. These health implications have affected our community even more this year, as East Boston experienced the highest COVID rates in Boston. As a Harvard T.H. Chan School of Public Health study outlined, people exposed to higher levels of ultrafine particulate matter saw an 8% increase in COVID mortality.

We urge Massport to consider placing HEPA filters in all public schools within a 2 mile radius as one concrete and effective mitigation strategy. Please consider this request for the health and benefit of our children.

Thank you for your consideration,
Alyssa Vangeli
198 Everett Street
East Boston 02128
978-807-6089

From: [Carla Ceruzzi](#)
To: [Canaday, Anne \(EEA\)](#)
Cc: [MEPA \(EEA\)](#)
Subject: Public Comment for Boston Logan International Airport 2018/2019 Environmental Data Report
Date: Friday, March 12, 2021 9:55:43 PM

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To the Massachusetts MEPA office,

I am a parent of two and resident of East Boston since 2010, and am calling for collaboration between Massport and East Boston residents for mitigation on account of the 2018-2019 miscalculated growth projections, as shown in the latest EDR. In the decade I've lived here, the pollution, the noise, and the car traffic have all increased substantially. The presentation I attended presenting the draft EDR emphasized that there is less pollution and noise than in the 1970s (before I was born). I think it's time to stop trotting out that line of argument and make a good-faith effort to improve the situation as it is now. That would start with acknowledging the miscalculations and the heavy burden they have imposed on the families of East Boston.

We know that Massport has suffered major financial losses during COVID. However, the residents of East Boston continue to have long-term health implications: a 360% increase in childhood asthma, and 200% increase in adult COPD. These health implications have affected our community even more this year, as East Boston experienced the highest COVID rates in Boston. As a Harvard T.H. Chan School of Public Health study outlined, people exposed to higher levels of ultrafine particulate matter saw an 8% increase in COVID mortality.

“Many of the pre-existing conditions that increase the risk of death in those with COVID-19” [cardiovascular and respiratory diseases like asthma and COPD] “are the same diseases that are affected by long-term exposure to air pollution.” They found “statistically significant evidence that an increase of 1 g/m³ in long-term PM_{2.5} exposure is associated with an 8% increase in the COVID-19 mortality rate.”

As a community, we welcome collaboration and conversation on how Massport and East Boston's families can co-exist in healthier ways. HEPA filters placed in all public schools within a 2 mile radius would cost just over \$1 million dollars, a drop in the bucket compared to the \$170 million Massport has spent on sound proofing. Good-faith efforts to encourage public transit use over car traffic and hold airlines accountable for noise and pollution would also help! It's what anyone would want for their kids, their families.

Thank you for your consideration.

Carla Ceruzzi

From: [Carrie Van Horn](#)
To: [Canaday, Anne \(EEA\)](#); [MEPA \(EEA\)](#)
Subject: Public Comment for Boston Logan International Airport 2018/2019 Environmental Data Report
Date: Friday, March 12, 2021 11:07:15 AM

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To the Massachusetts MEPA office,

I am a mother and resident of East Boston, and am calling for collaboration between Massport and East Boston residents for mitigation on account of the 2018-2019 miscalculated growth projections, as shown in the latest EDR.

We know that Massport has suffered major financial losses during COVID. However, the residents of East Boston continue to have long-term health implications: a 360% increase in childhood asthma, and 200% increase in adult COPD. These health implications have affected our community even more this year, as East Boston experienced the highest COVID rates in Boston. As a Harvard T.H. Chan School of Public Health study outlined, people exposed to higher levels of ultrafine particulate matter saw an 8% increase in COVID mortality.

“Many of the pre-existing conditions that increase the risk of death in those with COVID-19” [cardiovascular and respiratory diseases like asthma and COPD] “are the same diseases that are affected by long-term exposure to air pollution.” They found “statistically significant evidence that an increase of 1 g/m³ in long-term PM_{2.5} exposure is associated with an 8% increase in the **COVID-19 mortality** rate.”

When discussing reopening of schools, we have to choose whether or not to open the windows and expose our children to outdoor pollution, or ventilate for COVID. A working mom down my street gave up her job because she couldn't work at home, and was fearful of her asthmatic son retracting COVID at daycare.

As a community, we welcome collaboration and conversation on how Massport and East Boston's families can co-exist in healthier ways. HEPA filters placed in all public schools within a 2 mile radius would cost just over \$1 million dollars, a drop in the bucket compared to the \$170 million Massport has spent on sound proofing.

Personally, though we hear planes taking off and landing continually, taxi-ing in overcast weather is SO LOUD sometimes that it shakes our house and wakes us up. AND YET, we have been told we are not eligible for MASSPORT soundproofing. I have a son who attends a local East Boston school. I am writing for him and his future.

Carrie Van Horn
617-388-5282
3 Hooten Court
East Boston

- Logan Airport is one of the busiest airports in the country, and one of a few housed in very close proximity to families.
- During the 2018-2019 year, Logan Airport's forecasts were off by 300%; they saw 9 million passengers they were not planning for, and car traffic increased exponentially as a result.
- We believe East Boston deserves mitigation for these miscalculated growth projections now, and going forward if these trends continue.
- In 2107, Logan Airport pumped out 58,000 lbs of pollution a day, 21 million lbs for the year.
- A 2014 Logan Airport study showed that East Boston children living in highly impacted areas see a 360% increase in asthmatic symptoms, and adults see a 200% increase in COPD symptoms.

March 12, 2021

Via Electronic Mail and Online Portal

The Honorable Kathleen Theoharides, Secretary
Executive Office of Energy and Environmental Affairs
Attention Anne Canaday
100 Cambridge Street, Suite 900
Boston, MA 02114

Subject: EEA #3247: Boston Logan International Airport
2018/2019 Environmental Data Report

Dear Secretary Theoharides:

On behalf of the Conservation Law Foundation (CLF) and its members,¹ I am providing our comments regarding Massachusetts Port Authority's (Massport) Boston Logan International Airport 2018/2019 Environmental Data Report (EDR).

Preliminary Statement

The 2018/2019 EDR provides a historical review of environmental conditions for the given reporting years and describes Massport's progress on its environmental mitigation commitments. Flight activity and passenger volumes rose during the reporting years, exceeding the modeled growth rates. Given that growth is a primary driver of public health and environmental impact, and consequently will determine the scale of Massport's obligations and opportunities to avoid, minimize, and mitigate environmental harm, CLF recommends that the Secretary's Certificate clarify reporting requirements, require additional air mitigation, specify transparent thresholds for deferred mitigation projects, and direct additional community engagement.

While overall airport operations have decreased as a result the pandemic, communities near Logan Airport have been disproportionately affected by COVID-19² and are uniquely vulnerable

¹ CLF is a nonprofit, member-supported, regional environmental organization working to conserve natural resources, protect public health, and promote thriving communities for all in the New England region. CLF protects New England's environment for the benefit of all people. We use the law, science and the market to create solutions that preserve our natural resources, build healthy communities, and sustain a vibrant economy. We are working to cut pollution from our cars and trucks, create alternatives to driving, and push for more affordable and equitable transportation options across New England.

² East Boston has some of the highest COVID-19 positivity rates relative to other Boston neighborhoods. Boston Public Health Commission (2021). Accessed 15 February 2021 at <https://www.bphc.org/onlinenewsroom/Blog/Lists/Posts/Post.aspx?ID=1282>.

to its health risks. Similarly, public health studies document strong links between air pollution and COVID-19 health risk.³ Given these risks, it is critical that Massport continue its mitigation projects and provide clear thresholds for any deferrals, engage with residents and organizations from affected communities, and provide transparent and clear reporting of environmental impacts.

Massport expects that it will be years before operations return to pre-COVID-19 levels. While we applaud Massport for following through on several important commitments despite these uncertain conditions, environmental mitigation is critical during this unprecedented public health crisis. CLF encourages Massport to be more exacting in its activities and transparent in its decision making. As such, CLF offers the following comments regarding the 2018/2019 EDR.

Detailed Comments

CLF and Massport share and have worked collaboratively to achieve the goal of reducing overall environmental, emissions, and traffic impacts resulting from Logan Airport operations. CLF offers these comments regarding Massport's ongoing and planned initiatives to minimize and mitigate public health and environmental impacts as presented in the 2018/2019 EDR. We also reference the Executive Office of Energy and Environmental Affairs (EEA) certificate of the 2017 Environmental Status and Planning Report (ESPR) and the requests EEA poses to Massport in this document (ESPR Certificate). We note the importance of mitigation and a rigorous MEPA review process to best adjust to the current reality of the COVID-19 pandemic.

A. We recommend that Massport clarify and refine its process for estimating growth rates and provide additional data.

The Secretary's Certificate on the ESPR indicates that the 2018/19 EDR "must include information on the environmental policies and planning that form the context of environmental reporting, technical studies, and environmental mitigation initiatives against which projects at Logan Airport can be evaluated" and include cumulative impacts of Logan Airport operations and activities.⁴ The Secretary recommended that Massport work with the East Boston Health center to provide HEPA room air purifier filters to high risk individuals and to work with community-based organizations to collaboratively determine how to further mitigate air quality impacts.⁵ It further required the 2018/19 EDR to include "commitments from Massport for the reduction and mitigation of these [ultrafine particulates] impacts."⁶

Chelsea, Revere, and Everett have some of the highest COVID-19 positivity rates in the state, relative to other municipalities. Commonwealth of Massachusetts (2021). COVID-19 Interactive Data Dashboard. Accessed 16 February 2021 at <https://www.mass.gov/info-details/covid-19-response-reporting>

³ Wu, X., Nethery, R.C., Sabath, M.B., Braun, D. and Dominici, F., 2020. Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis. *Science Advances*, 6(45), p.eabd4049.

⁴ Certificate of the Secretary of Energy and Environmental Affairs on the 2017 Logan Airport Environmental Status and Planning Report, MEPA Certificate 3247, page 4 (Nov. 25, 2019).

⁵ *Id.* at 18.

⁶ *Id.*

Massport should clarify the discrepancies between the 2018/2019 EDR and forecasted growth rates included in the 2017 ESPR. While activities and operations have decreased after the reporting years, Massport should describe its planned methodology for future forecasting, especially as it has deferred mitigation projects because of reduced activity and operations. Massport must first avoid, minimize, and then mitigate damage to the environment that occur as a result of activities at Logan Airport.⁷ Massport's process for measuring impacts and devising appropriate mitigation activities must be robust to meet situational uncertainties. For Massport to adequately mitigate its impacts, it must have data collection and review processes that accurately measure and understand its impact.

Even prior to the COVID-19 crisis, Massport's characterizations of environmental impact were based on a flawed forecasting process for both operations and passenger activity. As CLF has previously noted, the forecasting process in the 2017 ESPR was inconsistently represented, historically inaccurate, and did not match the qualitative descriptions of key growth drivers within the ESPR. CLF also notes that the passenger compound average growth rate represented in the 2017 ESPR of 1.5 percent⁸ has largely been exceeded by the passenger count included in the 2018/2019 EDR. Specifically, the EDR estimates that in 2019, passenger activity levels reached 42.5 million,⁹ which represents a 5.2 percent annual growth rate from the 2017 estimate of 38.4 million.¹⁰

Given this discrepancy, Massport should describe its basis and methodology for future forecasting, which will be critical to deciding the scope of future mitigation. This prior forecasting resulted in flawed and inaccurate estimates. This is concerning because Massport will need to accurately measure how activities and associated environmental impacts change as the pandemic continues and through subsequent recovery. In the EDR, Massport notes that "...the 2017 ESPR projections will need to be adjusted as the longer-term impacts of the COVID-19 pandemic are better understood."¹¹ The EDR does not outline a process or timeline for when these projections will be adjusted, how the adjusted projections relate to mitigation efforts (see section below), and how the methodology will differ from what was presented in the 2017 ESPR. Massport has deferred several mitigation projects, and it is unclear under which activity, operations, or environmental impact scenario that these deferrals will be revisited.

CLF also recommends that Massport review assumptions that no longer hold true because of the pandemic, especially those that may increase environmental impacts on a unit basis. While the pandemic has reduced operations, impacts on a per-unit basis have potentially shifted. In its 2017 ESPR, Massport noted that airline operations have historically grown at a slower rate than passenger activities.¹² Notwithstanding, in the 2018/2019 EDR, Massport notes that cargo volumes in large airports around the country have "have seen more mild declines or, in a few

⁷ M.G.L. c. 30, § 61.

⁸ ESPR 2017, p. 2-36.

⁹ EDR 2018/2019, p. 1-10

¹⁰ Calculated.

¹¹ EDR 2018/2019, p. 1-12.

¹² ESPR 2017, p. 1-7.

cases, significant growth.”¹³ Similarly, airlines are operating planes with fewer passengers. Even as passenger counts decrease, they may not have the same relationship to operations. Regarding vehicle miles traveled (VMT) and ground transportation as Massport notes, “the public’s interest in using HOV transportation services like buses, rapid transit, and commuter rail has been significantly affected by public health concerns related to COVID-19.”¹⁴ The average impact on a per passenger basis then is higher, even as base passenger activities have decreased.

We also echo the concerns of other stakeholders that basing measures of impact (noise, air quality, VMT, etc.) on inaccurate activity forecasts is problematic. We recommend that Massport provide a list of all measured impacts, how said impacts are methodologically related to the activity levels presented in the ESPR forecast, and how current and forward-looking data can be used instead in both the MEPA reporting process, and in other public engagement forums. We encourage Massport to work with community stakeholders to create a mitigation planning system which is based on actual passenger, flight, and daily traffic volumes.

To that end, Massport should more thoroughly document public health impacts. Massport should provide a more detailed update on the Tufts and Boston University Ultrafine Particulate (UFP) study and associated findings. EEA notes that the EDR should “provide an update on the status and finding of UFP research being performed by Tufts University and Boston University regarding the identification of airport-specific related UFPs in an urban environment.”¹⁵ The 2018/2019 EDR notes Massport’s cooperation and data sharing with the study but does not provide additional detail on study findings or relevance to Massport activities.

Massport should provide additional detail on any activities or research regarding the connection between heat and air quality issues. The City of Boston estimates that Boston’s average summer temperatures and the number of days with extreme heat will increase.¹⁶ Boston and other urban areas are prone to urban heat island effect, which results from the retention of heat by building materials, versus vegetation. By 2030, Boston will see 20-40 days above 90 degrees with similar effects for communities around the greater urban area.¹⁷ Extreme heat increases the concentration of ozone and particulate matter in the air, which can have detrimental effects on those with respiratory conditions.¹⁸ The ESPR Certificate acknowledges the connection between extreme heat, respiratory illness and public health and encourages “Massport to consider its ability to reduce negative air quality effects as a matter of public health, and to work with community-based organizations to collaboratively determine how to further mitigate air

¹³ EDR 2018/2019, p. 2-23.

¹⁴ EDR 2018/2019, p. 1-17.

¹⁵ 2017 ESPR Certificate, p. 18.

¹⁶ City of Boston. 12/2016. Climate Projection Consensus. Accessed 18 November 2019 at https://www.boston.gov/sites/default/files/03_climate_ready_boston_digital_climateprojectionconsensus.pdf, p. 5

¹⁷ City of Boston. 12/2016. Climate Ready Boston. Accessed 2 October 2019 at <https://www.boston.gov/departments/environment/climate-ready-boston>

¹⁸ Massachusetts Department of Public Health - Bureau of Environmental Health. https://matracking.ehs.state.ma.us/Climate-Change/climate_and_health_profile.html

quality impacts.”¹⁹ CLF supports the Secretary’s directive in the ESPR Certificate to work with community stakeholders to determine appropriate and effective mitigation.

B. Additional mitigation is required commensurate with growth in the reporting years to minimize impacts to local communities.

C. There should be transparent thresholds for deferred mitigation projects.

There are several projects that initiatives that Massport has deferred due to reduced activities and operations. We list these in the table below. We recommend that Massport develop transparent thresholds of the appropriate metric (e.g., VMT, operations, passenger activity, etc.) for when Massport will return to the implementation of these projects, or at least clarify decision-making processes for returning to these mitigation measures. The 2018/2019 EDR notes that these projects will need to be re-evaluated but the decision-making processes that indicate when and under what conditions Massport will conduct this re-evaluation is unclear. In some cases, Massport notes that they will begin the project once passenger activities reach 2019 levels. CLF recommends that the Secretary’s 2018/19 Certificate establish thresholds for Massport to recommence deferred mitigation projects.

Table 1 – Key Deferred Mitigation Projects

Project Category	Mitigation Activity	Environmental Impact	Referenced Page Number - 2018/2019 EDR
Suburban Logan Express Enhancement	Add about 1,000 additional spaces to the Framingham garage (deferred due to COVID-19).	Added HOV share, reduced VMT.	p. 1-8
Suburban Logan Express Enhancement	Provide security line priority status to Logan Express Back Bay riders (implemented in 2019; however, service is suspended as a result of COVID-19)	Added HOV share, reduced VMT.	p. 1-8
Suburban Logan Express Enhancement	Evaluate new Logan Express suburban locations, with a plan to open at least one new site (deferred due to COVID-19).	Added HOV share, reduced VMT.	p. 1-8
Urban Logan Express Service	Implement a second urban Logan Express service at North Station (although Massport procured buses for this service in 2020, due to COVID-19, this new service has been deferred).	Added HOV share, reduced VMT.	p. 1-19
Airport Ground Transportation and Parking Projects/Planning Concepts	Logan Airport Parking Project (additional 5,000 spaces)	Reduced VMT.	p. 3-13
Airport Ground Transportation and Parking Projects/Planning Concepts	On-Airport Roadway Congestion Relief Infrastructure (studies currently deferred)	Reduced emissions from idling.	p. 3-14

¹⁹ 2017 ESPR Certificate, p. 9.

Airport Ground Transportation and Parking Projects/Planning Concepts	Terminal E Modernization (incorporates former West Concourse Project) - Blue Line Pedestrian Connection	Added HOV share through pedestrian connectivity.	p. 3-17
Other	Proceed with environmental review and seek funding for construction of People Mover system.	Added HOV share through intermodal transit, infrastructure improvements, reduced VMT.	p. 9-18

D. Massport should continue to engage with affected communities to discuss mitigation opportunities.

The 2018/2019 EDR reports on mitigation commitments and environmental impacts within the reporting period. In this EDR review process, Massport produces these documents internally, and then releases them to the public for comment and input after they are already complete. Given the rapid changes that have followed from the pandemic, an annual public review process where public input is only provided after Massport releases a document is insufficient for proper mitigation planning, especially as Massport is making decisions about mitigation projects and operations as the external pandemic situation shifts. Instead, Massport should work with organizations and members from most affected communities prior to the release of the next iteration of the report. This will allow Massport to conduct more thoughtful planning as operations and impacts shift.

State law and policies require enhanced engagement with residents of environmental justice communities.²⁰ To that end, CLF encourages Massport to hold community meetings, outside of MEPA processes and after MEPA deadlines expire, to discuss ways for Massport to be a great neighbor and best implement mitigation measures associated with its environmental impacts, which are especially important during this major public health crisis.

E. CLF seeks additional detail in the ESPR regarding ground transportation to conform with the Massport-CLF agreement.

Pursuant to the Massport-CLF agreement, Massport agreed to undertake a comprehensive program to reduce ground transportation impacts by encouraging HOV mode transportation to and from the airport. Regarding employee transit, Massport agreed to establish a program to offer its 18,000 Logan Airport based employees effectively free (net of employer subsidies) Massachusetts Bay Transportation Authority (MBTA) Blue Line service from Airport Station by January 2019 to assist lower-wage workers in environmental justice populations.²¹ This program would serve larger goals of transit and environmental justice. Language about this agreement was absent from the ESPR and the 2018/2019 EDR. Massport provides shuttle bus service for

²⁰ Executive Order 552 (2014); Massachusetts Environmental Justice Policy (2017).

²¹ Massport-CLF Agreement (May 18, 2017).

passengers and employees between the Blue Line Airport Station and all terminals,²² while also supporting the Sunrise Shuttle, which provides early morning bus service for employees in East Boston and parts of Winthrop and Revere.²³ However, these services are not equivalent to free MBTA Blue Line service for employees. As this was a component of the Massport-CLF agreement, Massport should explicitly include the free Blue Line service program for employees in the 2018/2019 EDR. Massport includes its response to CLF's previous comment on this issue and alludes to the changing circumstances regarding employee commuting and HOV use but does not specifically address the issue.²⁴ Regarding Logan Express service, Massport also agreed to increase its Logan Express service capacity by 10 percent by the end of 2019.²⁵ While some service is currently suspended Massport should transparently communicate its decision-making on restoring service within the 2019/2019 EDR.

In addition to its HOV commitments, Massport has committed to improvements that would improve air quality and reduce pollution including the replacement of gas- and diesel-powered ground service equipment (GSE) with electric equivalents by 2027.²⁶ CLF continues to encourage and support Massport's efforts in reducing emissions from its GSE, and in its GHG-reduction initiatives and investments in renewable energy and applauds Massport for moving forward with these improvements. CLF also supports Massport's completed additions of new electric vehicle charging stations and the progress made since the release of the 2017 ESPR.²⁷

CLF is happy to provide additional information and assistance as may be required. You may contact me with questions at SRubin@clf.org and 617-850-1781.

Sincerely,



Staci Rubin
Senior Attorney

Cc: Stuart Dalzell, sdalzell@massport.com
Brad Washburn, bwashburn@massport.com

²² *Id.*

²³ ESPR 2017, Table 5-6, p. 5-28.

²⁴ 2018/2019 EDR, B-232.

²⁵ Massport-CLF Agreement (May 18, 2017).

²⁶ ESPR 2017, p. 7-1.

²⁷ 2018/2019 EDR, p. 3-35.

From: [Czepiga, Page \(EEA\)](#) on behalf of [MEPA \(EEA\)](#)
To: [Canaday, Anne \(EEA\)](#)
Subject: Fwd: public comments on Boston Logan International Airport 2018/2019 Logan Airport Environmental Data Report
Date: Friday, March 12, 2021 4:56:51 PM

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From: David Matheu <dmmatheu@gmail.com>
Sent: Friday, March 12, 2021 4:49:40 PM
To: MEPA (EEA) <mepa@mass.gov>
Subject: public comments on Boston Logan International Airport 2018/2019 Logan Airport Environmental Data Report

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Dear MEPA,

My name is David Matheu and I live at
59 Everett St, Arlington, MA 02474

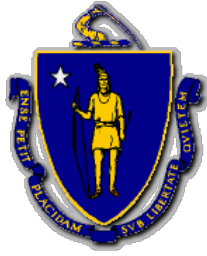
I am writing to file a public comments on the Logan Airport 2018/2019 Environmental Data Report:

1. While the report claims that Massport cares about aircraft noise pollution, it declines to address the 100X increase in noise complaints filed with the airport since 2013 -- the introduction of RNAV/NextGen. This is a gross omission that allows Massport to downplay the problem.
2. While the report claims Massport tries to minimize overland/maximize over-water departures, the reality is that use of overland runway 33L is significantly increasing as a percentage of overall departures over the years of the report. This behavior has a major impact on noise. Reasons for this behavior aren't given. MEPA should not allow Massport to make such a claim when their behavior is the opposite of what they say.
3. Massport claims they wish to minimize aircraft noise and be a good neighbor. But over the period of the report, they continue to pay landing fees -- bonuses, essentially -- for landing new flights at night or in the early morning (5 to 6 AM) hours. This contradicts their claim and MEPA should demand an explanation -- this is a choice Massport makes, not the FAA.
4. Massport claims they employ a nominally quieter aircraft fleet. While probably technically true, this benefit is erased by the FAA's hyper-concentration of flightpaths through the disastrous, air-pollution-increasing NextGen program, because that program went with increased flight capacity and increased total noise and particulate pollution.

Please don't allow Massport executives to be deceptive about the noise and particulate pollution their behavior and choices actually bring about. By wrongly accepting the 2017

report, the secretary let them say a lot of things that weren't true in the 2017 report. MEPA can make the world a better place by checking Massport's behavior now. Please do so. Please check Massport's behavior in the unbounded increase in aircraft noise pollution they've heaped on so many.

Thank you
Dave Matheu



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF
ENERGY AND ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENERGY RESOURCES
100 CAMBRIDGE ST., SUITE 1020
BOSTON, MA 02114
Telephone: 617-626-7300
Facsimile: 617-727-0030

Charles D. Baker
Governor

Karyn E. Polito
Lt. Governor

Kathleen A. Theoharides
Secretary

Patrick Woodcock
Commissioner

11 March 2021

Kathleen Theoharides, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02114
Attn: MEPA Unit

RE: Boston-Logan International Airport, Environmental Status and Planning Report (ESPR),
Boston, MA, EEA #3247

Cc: Maggie McCarey, Director of Energy Efficiency, Department of Energy Resource
Patrick Woodcock, Commissioner, Department of Energy Resources

Dear Secretary Theoharides:

We've reviewed the Environmental Data Report (EDR) for 2018/2019 (published December 2020) for Boston Logan International Airport. EDRs are produced annually to identify environmental impacts based on measured passenger activity and operations.

EDRs complement Environmental Status and Planning Reports (ESPRs), filed periodically, which provide both a data lookback, like an EDR, and a planning perspective looking forward. The DOER's most recent comments were concerning the ESPR published in 2019.

We are pleased to see that, in response to DOER's recommendation, these reports are continuing to track the following:

- GHG emissions in buildings, normalized by square foot (lbs CO₂/sf-yr), and
- Energy use in buildings, normalized by square foot (kBtu/sf-yr)

The addition of these metrics will help provide important insights into the performance of Logan's buildings and help plan for the future.

Estimating Building Emissions in Context of CHP

Estimating building emissions from buildings which use only utility provided electric and gas is relatively straightforward. However, we understand that, in addition to utility provided electric and gas, Logan also uses central plant combined heat and power (CHP) to heat, cool, and power buildings. When CHP is used, the building emissions picture is more complex.

To assess this, as we've previously recommended¹, EDRs and ESPRs should also report the following:

- Space and water heating end use consumption should be estimated and broken down by heating which is provided by central plant steam versus heating provided by fossil-fuel fired (or other) equipment;
- Similarly, space cooling end use consumption should be estimated and broken down by cooling from central plant produced chilled water versus cooling provided by other non-CHP means;
- CHP heating and cooling production efficiency and power production efficiency should be estimated.

Once the above is estimated, the emissions of building space heating, space cooling, and service water heating can then be estimated. This analysis should be done using electric grid emissions of 658 lbs/MWhr (for year 2021) and 200 lbs/MWhr (for year 2050) to provide a picture of current and future emissions footprints.

Recommendations for New Construction and Renovations

When planning new construction and renovations, we recommend the following:

1. Prioritize building design and construction practices that result in low heating and cooling thermal energy demand intensity (heating and cooling "TEDI") by:
 - Maintaining envelope integrity with framed, insulated walls with continuous insulation;
 - Thermally-broken windows and other components to eliminate thermal bridges;
 - Minimizing glass curtain wall assemblies and excessive windows;
 - Low air-infiltration, confirmed with in-building air-infiltration testing;

¹ See DOER comment letter on the 2017 Environmental Status and Planning Report, dated November 2019

- Energy recovery;
 - Management of solar heat gains;
2. If new or renovated residential or hotel space is planned, pursue Passivehouse (either PHIUS or PHI certifications.)
 3. Pursue efficient electrification of space heating, including air-to-air (or VRF) and air-to-water heat pumps. Avoid use of CHP and on-site gas combustion for space heating.
 - At current grid emission rates (658 lbs/MWhr), space heating provided by efficient electric heat pumps has about 17% less emissions than space heating provided by CHP. By 2050 when emission rates are at about 200 lbs/MWhr, space heating provided by efficient electric heat pumps will have about 60% less emissions than CHP. Accordingly, expansion of CHP use into new construction and renovations projects is not recommended.
 - At current grid emission rates, space heating provided with electric heat pumps has about 50% less emissions than on-site natural gas combustion. By 2050, electric heat pumps will have about 90% less emissions than gas.
 4. Use efficient electrification of water heating wherever possible, including heat pump water heaters.
 5. Set aside as much rooftop space for solar as possible, including for projects in which solar may not be built as part of initial project.
 6. Prepare for ubiquitous electric vehicles with as much EV and EV ready parking spaces.

Sincerely,



Paul F. Ormond, P.E.
Energy Efficiency Engineer
Massachusetts Department of Energy Resources



Brendan Place
Clean Energy Engineer

Village Meadows, EEA #16154
Groton, Massachusetts

Massachusetts Department of Energy Resources



March 12, 2021

Re: Logan Airport 2018 / 2019 Environmental Data Report (EDR) EEA# 3247

Dear Secretary Theoharides:

The Massachusetts Chapter of the Sierra Club has been actively supporting sustainable transportation throughout the Commonwealth. We would like to submit the following comments regarding the Logan Airport Report.

Logan is a high-volume urban airport in a constrained location. Continued growth can only negatively impact the neighboring communities. Therefore, we call on MassDOT, EEA and Massport to develop plans that explore directing flights to other Massport airports or even other modes (because other modes are less polluting). For example, could Massport consider strategies to reduce the number of flights to the New York City regional airports or other destinations that are well served by rail and bus (as higher-speed rail is developed)? Or redirecting freight or private jets to other airports? Or increasing landing fees to not only mitigate the airport's community impacts but also disincentive short-haul flights?

The remainder of our comments addresses the more specific areas of the report.

A. Ground Transportation:

These proposals will reduce pollution, congestion and noise:

- We strongly recommend that the Massport eliminate CNG buses and other equipment. This fuel harms the environment and offers no meaningful environmental benefits over gasoline and may be worse for accident risks particularly at refueling stations.
- The interim 2030 Clean Energy and Climate Plan (CECP) identifies electrification as a critical piece to reduce transportation emissions and meet our climate goals. Massport should commit to 100% and interim targets for electrification of all Logan ground equipment starting with on-airport shuttle buses, drayage trucks and forklifts. Electric GSE will also reduce ground workers exposure to combustion pollutants.
- Massport should expand routes served by the Logan Express to help reduce congestion and commit to electrification of all Logan Express buses by 2025. Massport should make use of the recently announced [MOR-EV Truck rebate](#) to procure electric medium-and heavy-duty vehicles and the [MassEVIP subsidies](#) for state agencies to install charging infrastructure.
- We urge Massport and the Department to strongly support the Blue-Red Line connector, which will increase the number of passenger and worker trips to Logan via transit. This topic should be included in the Report. Similarly the Sliver Line Underpass at D Street would improve that route.



50 Federal Street, 3rd floor
Boston MA 02110
(617) 423-5775
www.sierraclubmass.org

- It is disappointing that the 2020 procurement of 45 buses for the Silverline included polluting diesel-hybrid buses that will continue to contribute to air pollution levels in East Boston, an environmental justice community, for at least 12 years if not more. Massport should work with the MBTA to ensure that the next bus procurements for the Silverline are fully electric.
- Massport needs to make Logan Express and MBTA services more efficient and attractive in order to shift traffic from private vehicles.
 - Massport needs to support dedicated bus lanes on the roadways to Logan
 - Continue to incentivize passengers (e.g., security line prioritization) who use the Express bus service.
 - Logan Express fares should be lowered or free if it increases volumes away from private vehicles. Airport workers should have free MBTA bus/subway passes.
- Expand electric vehicle charging infrastructure at Logan airport, Massport office and all garages.
- We would like to see passengers and workers who use plug-in EVs be given incentives such as preferential parking locations and reduced ground access fees. This includes private vehicles, taxis and TNCs. With many people working at or using Logan Airport facilities, there exists an opportunity for Massport to engage employees, passengers and the surrounding community on EVs through fun educational events, vehicle test drives, and information booths.

B. Safety:

- Fire-fighting foams that use PFAS are not mentioned in the report but should be. These are used not just for equipment fires but also in suppression systems for the fuel storage tanks at the airport. These foams need to be eliminated now. We urge you to work with Federal agencies to research and allow non-PFAS options at airports.
- Past use of PFAS foams should be documented and mitigation plans developed as needed for sources such as runoff and groundwater.

C. Pollution:

- We commend the inclusion of ultrafine particles as a topic. However, the reduction or mitigation of this pollution is not discussed. While standards do not exist, Massport should be proactive about measuring and reducing this type of pollution.
- The Sierra Club supports nighttime flying restrictions. People and habitats need hours when there are *no* flights scheduled. We call on Massport to pilot and evaluate such a program.
- Light pollution is not mentioned at all but should be. The entire campus should be surveyed for dark skies compliance and a plan developed to reach conformity. This might create opportunities to reduce lighting and energy consumption but more importantly will help with habitat protection particularly for birds and insects.
- Work more closely with residents and governments of neighboring communities, especially East Boston, to aggressively mitigate air pollution (e.g., filtration) and noise. Massport should work with the surrounding cities to prioritize municipal buildings serving



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children such as schools, libraries, community health and recreation facilities, and public housing. We need to protect children from asthma and COPD.

- Develop a plan to measure and reduce acute noise events, which can be more disruptive especially during nighttime sleeping hours.

Please let us know if you have any comments or questions.

Respectfully,

Deb Pasternak
Mass. Sierra Club, Chapter Director
deb.pasternak@sierraclub.org

cc: Jamey L. Tesler, Acting Secretary of Transportation

From: [Tania Castro-Daunais](#)
To: [Canaday, Anne \(EEA\)](#); [MEPA \(EEA\)](#)
Subject: My Public Comment for Boston Logan International Airport 2018/2019 Environmental Data Report
Date: Friday, March 12, 2021 5:05:03 PM

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To the MEPA review board,

I am a resident of East Boston, and am calling for collaboration between Massport and East Boston residents for mitigation on account of the 2018-2019 miscalculated growth projections (off by 300%) and subsequent rise in pollutants including Nitrous Oxides and Carbon Monoxide, as shown in the latest EDR.

We know that Massport has suffered major financial losses during COVID. However, the residents of East Boston continue to have long-term health implications: a 360% increase in childhood asthma, and 200% increase in adult COPD. These health implications have affected our community even more this year, as East Boston experienced the highest COVID rates in Boston. As a Harvard T.H. Chan School of Public Health study outlined, people exposed to higher levels of ultrafine particulate matter saw an 8% increase in COVID mortality.

“Many of the pre-existing conditions that increase the risk of death in those with COVID-19” [cardiovascular and respiratory diseases like asthma and COPD] “are the same diseases that are affected by long-term exposure to air pollution.” They found “statistically significant evidence that an increase of 1 g/m³ in long-term PM_{2.5} exposure is associated with an 8% increase in the COVID-19 mortality rate.”

As a community, we welcome collaboration and conversation on how Massport and East Boston’s families can co-exist in healthier ways. HEPA filters placed in all public schools within a 2 mile radius would cost just over \$1 million dollars, a drop in the bucket compared to the \$170 million Massport has spent on sound proofing.

Let's be on the right side of history in caring for highly polluted neighborhoods, especially environmental justice communities who are predominantly families of color and overwhelmingly bear the brunt of health effects caused by air pollution.

Thank you for your consideration,
Tania Castro-Daunais

tania.gomes.castro@gmail.com
508.287.1887



MICHAEL D. DENNEHY
TOWN ADMINISTRATOR

COMMONWEALTH OF MASSACHUSETTS
TOWN OF MILTON
OFFICE OF SELECT BOARD
525 CANTON AVENUE, MILTON, MA 02186
Telephone: 617-898-4843
Fax: 617-698-6741

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MEMBER

March 12, 2021

The Honorable Kathleen A. Theoharides, Secretary
Executive Office of Energy and Environmental Affairs
Attn: Massachusetts Environmental Policy Act ("MEPA") Office
Anne Canaday, EEA No. 3247
100 Cambridge Street, Suite 900
Boston, MA 02114

via EMAIL to env.internet@mass.gov and anne.canaday@mass.gov

Re: Comments of the Town of Milton on the Boston Logan International Airport 2018-2019 Environmental Data Report (2018-2019 EDR)

Dear Secretary Theoharides,

The Select Board of the Town of Milton ("Milton") is pleased to provide the following comments in response to the Boston Logan International Airport 2018-2019 Environmental Data Report (2018-2019 EDR).

We understand that this combined 2018-2019 EDR was prepared during the ongoing COVID-19 pandemic and includes updates through the fall of 2020. We note that the dramatic reduction in passengers and flight operations has provided some respite to the ongoing airplane noise and pollution issues experienced in Milton, but still no real solutions have been proposed to successfully insulate the on-the-ground impacts from increasing airplane overflights on the Logan Airport surrounding communities. We urge Massport and the FAA to use this period of respite to continue to consider the impacts noise and pollution has on your neighbors and customers.

1. Scope of the 2018-2019 EDR

Milton summarizes and repeats its comments on the 2017 ESPR concerning scope of Massport's review of environmental impacts, as we are specifically concerned about how the increased demand for airport services impacts the surrounding communities, including increasing the

volume and concentration of overflights, and increasing the amount of nighttime operations and nighttime overflights.

As is typical with these EDRs and the ESPR, the focus remains on environmental impact of operations at Logan, rather than around Logan. Failing to fully address off-airport impacts ignores the robust science that demonstrates that airport operations can impact communities as far as 10 miles beyond the airport location, particularly where those communities are overflowed by multiple RNAVs and the aircraft traffic is concentrated and persistent.

2. Cumulative Impacts Analysis and PRAS

We repeat the need for an analysis of the cumulative impacts from increasing numbers of RNAVs flown over surrounding communities. As discussed in numerous other comment letters, there are three RNAVs that overfly Milton, with two others proposed. Looking at these impacts in isolation does not provide an actual assessment of on-the-ground impacts – some of which are reflected in the increasing number of noise complaints filed in these communities. Neither the EDRs, the ESPRs, nor the proposed rulemaking for the 4L RNAV approach appropriately analyzes cumulative impacts – and such analysis is required by law.

As defined in the FAA’s own guidance (Order 1051.1F), cumulative impacts are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, whether Federal or non-Federal. The Massachusetts Environmental Protection Act (MEPA) also requires that projects be analyzed together, and segmentation to evade analysis of cumulative impacts is prohibited. While not directly applicable to the EDR analysis, the same theory applies -- when analyzing the environmental impacts of Massport operations, the off-premises operations must be analyzed in toto, and not evaluated in separate boxes.

When cumulative impacts are analyzed appropriately, then those impacts may be appropriately distributed among the impacted communities. This was the concept behind the Preferential Runway Advisory System (PRAS), which was unfortunately abandoned in 2012. PRAS was established “to provide an equitable distribution of Logan Airport’s noise impacts on surrounding communities.” The two primary objectives of the PRAS goals are: (1) to distribute noise on an annual basis; and (2) to provide short-term relief from continuous operations over the same neighborhoods at the ends of the runways. See EDR, page 6-19.

While no other guidelines are in place, Massport still reports runway usage with respect to the PRAS goals (Table 6-6). The PRAS goals offer at least some picture of what a fair distribution of aircraft traffic might look like using one particular tool, i.e. differential runways (being mindful that these PRAS goals were created well before RNAV concentrated flight routes were implemented). Thus, at this stage, only achieving balanced runway usage would not be sufficient to relieve those under the RNAVs, although it would be a step in the right direction.

Ultimately, a fair resolution of these ongoing noise issues in Milton will require further dispersion of the aircraft traffic from the concentrated RNAVs.

Milton continues to be ready to work on these equity issues, either via the MCAC, or directly with Massport and the EEA agencies. The 2018-2019 EDR's response to Milton's prior comments concerning equitable runway use, and a fair allocation of noise distribution, as set forth in section 7-2 to 7-4 of the Appendix is wholly insufficient. The response simply throws up its hands and shifts the burden of developing a procedure to the MCAC. As we all know, leaving it to the communities is unproductive, and pits neighbors against each other. We again request that the Secretary direct Massport and the EEA agencies, with the support of the MCAC, to promptly develop a system for the fair and equitable distribution of aircraft overflights that provides real relief to the highly impacted surrounding communities.

3. Evaluation and Updating of Noise Metric

We urged, and we repeat this request- Massport and the Secretary must move to a more updated method for noise assessment using currently available noise measurements (e.g., N70, which focuses on the number of noise events greater than 70 dB(A)¹ or Lmax²), and either discontinue using the DNL standard, or supplement its use with these additional metrics. The logarithmic nature of the DNL standard, which has been widely criticized, combined with the fact that this calculation is most often calculated on an annual basis "masks" the acute impacts a succession of aircraft flying over a home has on the sleeping residents within, and also masks the acute impacts felt in a community when it is overflowed for hours on end, with little break in the incoming aircraft. Massport has the ability to calculate DNL on a much more frequent basis, and is supposed to be calculating this figure monthly but chooses not to do so. Calculating DNL across shorter time periods (e.g., monthly, weekly) would provide a more accurate indication of the suffering that Milton residents are enduring as a result of concentrated flightpaths and long hours of overuse, and would compel Massport to act to reduce airplane noise in Milton and other communities.

Massport's responses to Milton's comments from the 2017 ESPR are not encouraging. It simply notes, vaguely, that Massport uses a variety of noise metrics and measurements. This is not enough. There is significant evidence that the DNL significantly under-measures noise and annoyance. FAA has recognized this in the 1050.1F guidelines, and suggests that DNL can be supplemented. The guidance states:

DNL analysis may optionally be supplemented on a case-by-case basis to characterize specific noise impacts. Because of the diversity of situations, the

¹https://www.infrastructure.gov.au/aviation/environmental/airport_safeguarding/nasf/files/1.3_Guideline_A_attachment1.pdf

² The Lmax measurement measures "maximum sound level" during a single event. This measurement is successfully used by the Federal Highway Administration (FHA), a DOT agency just like FAA.

variety of supplemental metrics available, and the limitations of individual supplemental metrics, the FICON report concluded that the use of supplemental metrics to analyze noise should remain at the discretion of individual agencies.

In comments we are also submitting this month on the Neighborhood Environmental Survey (NES), we make a similar point. DNL under-measures noise and annoyance, because it dilutes measurement of noise annoyance during in-use runway days by inclusion of days not in-use, and it fails to take into account the noise disturbance contribution of peak-time continual short-interval overflight aircraft separation. Supplemental metrics (which already exist) lower the measurement threshold for particular hours (like overnight), or take into account the short interval between noise events, are necessary to make the noise and sound measurement real and useful, in working with impacted overflight communities. We urge the Secretary to require Massport to update its measurements to use these supplemental metrics, when evaluating the impacts of airplane noise on the communities surrounding Logan.

4. Collaboration

We continue to urge real and substantive collaboration between Massport, the Secretary, and the communities impacted by Logan overflights. Multiple communities surrounding Logan (not just Milton) take the brunt of the impact of the operations of Logan, and the situation has worsened substantially since the FAA implemented NextGen. While, as noted above, the pandemic has lessened these impacts, the respite is temporary and now is the time to build better communications and collaboration for a region-wide approach to overflight noise, annoyance, and pollution. Direct and regular access to Massport and the Secretary/all EEA agencies may help develop real and meaningful solutions to address the problems from airport operations – especially noise and pollution -- occurring in those communities. While we understand some of that work must be done via the Massport Community Advisory Committee (“MCAC”), the large size and the organization of the MCAC has the unintentional effect of diluting the voices of the most affected communities. With respect to the MIT study, four years after it began, Milton’s requests for specific analysis and relief through that study remains incomplete.

3. Increased Noise Complaints Reported

Table 6-16 demonstrates that no single community made as many complaints on the Noise Complaint Line as Milton, although the numbers for other communities are catching up. Overall, and in Milton, both the number of complaints and the number of callers continues to increase. Table 6-16 reports a total increase in calls from Milton in 2018 - 10,962 and total a further increase in calls in 2019 - 6,673. Total calls in 2018 were 34,902, and in 2019 were 41,575. For reference, the 2014 EDR reported 2,669 complaints and 4,991 were reported in the 2015 EDR. That represents over a 1000% increase in the number of complaints filed. Overall, Massport reports more than a 400% increase in the number of individual complainants on the noise complaint line, from 2017 to 2019 in all 15 reported overflown communities. Complaints

on the Massport complaint line from Milton have continued to increase since 2012, coinciding with and increasing as the use of performance-based navigation at Logan has been implemented.

The 2018-2019 EDR continues to ignore the importance of noise annoyance as a factor of environmental impact and harm. Noise annoyance in the Logan overflight communities -- which includes lack of sleep, disrupted and interrupted sleep, interrupted conversation, and impacts on use of outside spaces such as decks and yards, playgrounds, and civic spaces -- is growing. This noise annoyance is not simple NIMBYism, it is a public health issue, as further discussed below. These are real impacts, suffered by real people, who live in nearby communities. It is outrageous that Massport virtually ignores these complaints in the 2018-2019 EDR, and still has no plan in place to address impacts on these citizens. The noise from Logan operations impacts citizens across boundaries, yet no one community is empowered to find a solution. Instead, we must turn to our leaders at the state level, including the EOEEA for oversight, empowerment, and solutions.

4. Increased Nighttime Operations

Nighttime operations at Logan -- defined as from 10:00 P.M. to 7:00 A.M. -- continue to increase steadily. Nighttime operations increased by 15% from 2016 to 2017 increased again, by another 5.1% from 2018-2019 (Table 6-4). Total nighttime operations have more than doubled since 1990.

Although the noise complaint data is not broken down by time of day (either that the complaint was filed, or that the complaint concerned), it follows that some portion of the increase in complaints in Milton and other communities is driven by increased nighttime operations. Data continues to be developed which indicates airplane noise in overflowed communities disrupts sleep patterns, which has been shown to result in adverse human health impacts.

Information from Milton residents indicate that the noise from airplanes in Milton is clearly heard above background noise in both commercial and residential areas. As elected officials, we hear frequently from Milton residents who suffer from interrupted sleep, anxiety and a reduced quality of life because of the noise pollution caused by very frequent -- and some days continuous -- flights over Milton at low altitudes. Indeed, this is one of the two most common requests for relief we receive from residents. We cannot overstate the seriousness of the health problems that these RNAVs cumulatively pose for Milton residents, and the adverse cumulative environmental impact that the RNAVs and the low flying planes have on our entire community. The noise from airplane overflights can also negatively impact property values. Fewer buyers are willing to purchase a home in an area with known noise impacts, and prices can be suppressed. Meanwhile, recent buyers have been vocal on social media that they would not have purchased a home in Milton had they been aware of the amount of airplane noise in the town.

We repeat the request we made in our comments to the 2017 ESPR, which were not sufficiently addressed in Appendix 7 to the 2018-2019 EDR, that the Secretary work with the FAA,

Massport, and Milton to implement late night aircraft restrictions, similar to those set forth in 740 CMR 24.04, which are protective of Milton and its residents. In particular, it is important to discuss restrictions on RNAV usage and routes that overfly residential neighborhoods, including spreading the routes further so that the nighttime noise is less concentrated in residential neighborhoods, or moving routes over the ocean during certain periods of time. Specifically, as there are already nighttime restrictions on arrivals to runway 4L, we request the same restrictions (no arrivals between 11:00 PM and 6:00 AM) for runway 4R. See Massachusetts Port Authority Noise Rules and Regulations I.1(b), Summary of Runway Use Restrictions, Boston Logan International Airport (May 2, 2016) (also referenced in FAA BOS ATCT Noise Abatement Order 7040.1H). In addition, early-morning departures from runway 27 also routinely overfly Milton and the other communities under the runway 27 RNAV.

5. Air Pollution and Public Health.

Once again the 2018-2019 EDR only discusses air pollution from airport operations in the context of the actual operations of Logan airport, on Logan property. We repeat our comments to the 2014 and 2015 EDRs, and the 2017 ESPR, that this perspective is overly and conveniently narrow. Recent studies at LAX (Hudda, et al., May 2014) found ultrafine particle (UFP) counts as far as ten miles from heavily used arrival runways. Although study of the negative effects of UFPs are ongoing, UFPs are believed to have negative effects on respiratory and cardiovascular health in humans, and Massport does not dispute that UFP pollution is an issue at Logan³. We are disappointed that the 2018-2019 EDR did not consider the developed science on this important environmental impact to the citizens living in the Logan overflight area. The health of our residents, employees, and visitors depends upon policy and operational procedures that takes this data into account.

We repeat the request we made in our comments to the 2017 ESPR, which were not sufficiently addressed in Appendix 7 to the 2018-2019 EDR, that the Secretary direct Massport, in conjunction with the Department of Public Health (“DPH”) and the Department of Environmental Protection (“DEP”), to conduct noise and air pollution studies in communities like Milton which receive a substantial number of low-flying arrival aircraft. This work would be consistent with the evolving science on this point, and protective of the residents in these communities. We further request that the scope of the future EDRs be expanded to consider the health impacts from increased and concentrated arrival and departure operations due to RNAVs, and that pollution data be measured for every community under any of the many Logan RNAVs, and that no new RNAV overflight paths be put into use until such study is complete and all parties agree that no additional detrimental effects will be experienced by residents in communities bearing the brunt of low-flying airplane overflight.

7. Conclusion and Request for Assistance.

³ <https://www.wgbh.org/news/local-news/2019/09/24/air-pollution-from-logan-airport-harms-surrounding-communities-research-shows>

Thank you for your attention to and consideration of our comments on the 2017 ESPR. We believe that there can be solutions available to remedy and mitigate the ongoing impact of Logan operations on the residents of Milton. We request that the Secretary work with Massport, Milton, the MCAC, and other affected communities to help remedy the multiple impacts discussed above. Specifically, the requests made are as follows:

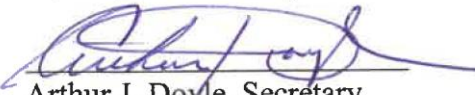
- a. Direct Massport to prepare a Supplemental EDR which fully and realistically addresses projected increases to Logan operations and airport throughput, and the resulting environmental impacts;
- b. Work with the FAA, Massport, and Milton to develop and implement late-night aircraft overflight restrictions which are protective of Milton and its residents, including consideration of an 11:00 PM to 6:00 AM landing prohibition on runway 4R;
- c. Direct Massport and the MCAC to promptly develop a system for the fair and equitable distribution of aircraft overflights that provides real relief to the highly impacted surrounding communities, especially those that are under multiple RNAVs;
- d. Direct Massport to collaborate with DPH and DEP to develop and conduct noise and air pollution studies in highly impacted surrounding communities, especially those that are under multiple RNAVs;
- e. Direct Massport to include all of the points made above in the scope of the 2018-2019 EDR and in all future EDRs. This includes impacts to health from noise and pollution from: off-airport impacts of growth, cumulative impacts of RNAV overflights, increased nighttime operations, moving to updated noise measurements which are more protective of human health and which account for acute impacts more realistically than the DNL standard; and working directly with impacted communities to more fully understand and evaluate the human health effects from Logan operations.
- f. Direct Massport to utilize supplement metrics when measuring sound and annoyance from airplane overflights in Milton and all other communities.

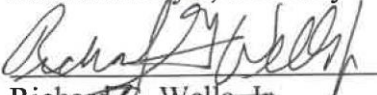
We would appreciate a time to meet with you and your staff to personally discuss the concerns we have outlined here, as well as our specific requests for assistance.

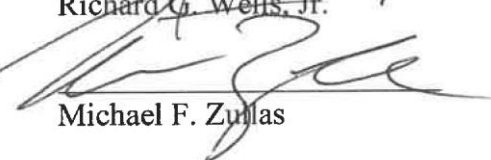
Sincerely,


Melinda A. Collins, Chair


Kathleen M. Conlon, Vice Chair


Arthur J. Doyle, Secretary


Richard G. Wells, Jr.


Michael F. Zullas

Milton Select Board

cc: Representative Stephen F. Lynch
Representative Ayanna Pressley
U.S. Senator Elizabeth A. Warren
U.S. Senator Edward J. Markey
State Senator Walter F. Timilty
State Representative William Driscoll
State Representative Brandy Fluker Oakley
Milton Board of Health
Milton Airplane Noise Advisory Committee Chair Andrew Schmidt
MCAC Representative Thomas Dougherty
Town Counsel Karis North

From: [Carol Walker](#)
To: [Canaday, Anne \(EEA\)](#)
Subject: Public Comment for Boston Logan International Airport 2018/2019 Environmental Data Report
Date: Monday, March 15, 2021 4:43:49 PM

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To the MEPA review board,

I am a mother and resident of Winthrop, and am calling for collaboration between Massport and Winthrop and East Boston residents for mitigation on account of the 2018-2019 miscalculated growth projections and subsequent rise in pollutants including Nitrous Oxides and Carbon Monoxide, as shown in the latest EDR.

We know that Massport has suffered major financial losses during COVID. However, the residents in our communities very close to the airport continue to have long-term health implications: a 360% increase in childhood asthma, and 200% increase in adult COPD. These health implications have affected our communities even more this year; East Boston has experienced the highest COVID rates in Boston. As a Harvard T.H. Chan School of Public Health study outlined, people exposed to higher levels of ultrafine particulate matter saw an 8% increase in COVID mortality.

“Many of the pre-existing conditions that increase the risk of death in those with COVID-19” [cardiovascular and respiratory diseases like asthma and COPD] “are the same diseases that are affected by long-term exposure to air pollution.” They found “statistically significant evidence that an increase of 1 g/m³ in long-term PM_{2.5} exposure is associated with an 8% increase in the **COVID-19 mortality** rate.”

When discussing reopening of schools, we have to choose whether or not to open the windows and expose our children to outdoor pollution, or ventilate for COVID. A working mom in the area told me she'd had to give up her job because she couldn't work at home, and was fearful of her asthmatic son retracting COVID at daycare.

As a community, we welcome collaboration and conversation on how Massport and our nearby communities' families can co-exist in healthier ways. HEPA filters placed in all public schools within a 2 mile radius would cost just over \$1 million dollars, a drop in the bucket compared to the \$170 million Massport has spent on sound proofing.

Let's be on the right side of history in caring for highly polluted neighborhoods, especially environmental justice communities who are predominantly families of color.

Thank you for your consideration,
Carol Walker
carwalker58@gmail.com
617-846-3608

From: [Czepiga, Page \(EEA\)](#) on behalf of [MEPA \(EEA\)](#)
To: [Canaday, Anne \(EEA\)](#)
Subject: Fw: EEA#3247 attention MEPA unit
Date: Monday, March 15, 2021 6:16:43 PM

From: Schwalbert, Nick (EEA) <nick.schwalbert@mass.gov> on behalf of internet, env (EEA) <env.internet@mass.gov>
Sent: Monday, March 15, 2021 5:18 PM
To: MEPA (EEA) <mepa@mass.gov>
Subject: Fwd: EEA#3247 attention MEPA unit

FYI

From: Frederick P Salvucci <salvucci@mit.edu>
Sent: Monday, March 15, 2021 5:00 PM
To: internet, env (EEA)
Subject: EEA#3247 attention MEPA unit

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Secretary Theocharides

I am hoping that you will accept this brief comment on the very inadequate environmental Report of Massport, and require that Massport prepare a much more thorough report for public review, and for your own review.

Decades ago, Massport became a champion of environmental mitigation of the adverse impact of its activities upon the largely low and moderate income neighbors, particularly in EastBoston, Revere, and Chelsea. Unfortunately more recently Massport has chosen to coast upon its earlier actions, and has adopted a reactive approach, implying that it is appropriate to act to mitigate adverse impact only after the impact has occurred, and been documented. This approach leads to a substantial lag in time during which adverse health impacts on the surrounding community residents, and upon Massport workers have already done significant damage. Even worse, this reactive approach is also based on lowball estimates of the growth that should be reasonably expected, so residents and workers are suffering from a double penalty.

The extensive comments filed with you by AIR Inc last week have provided detailed analysis of the deficiencies in the latest Massport Report.

I urge that you consider a simpler, and more effective standard for Massport to be held accountable for.

I suggest that there should be identified a maximum environmental footprint that humans should be exposed to at the airport and in surrounding neighborhoods, which have been exceeded for decades

in terms of noise and air pollution impacts as experienced by the worker and neighboring populations, and require mitigation not only reactively based upon how much worse conditions have become, which is certainly a sensible non degradation standard, but also in comparison to any excesses over reasonable standards that have already existed for some time. (essentially a belt and suspenders approach to achieve both reasonable standards where they do not exist, and non degradation standards, whichever standard is better for human health.

I further urge that there should be a « build it back better » approach, as called for by President Biden. The temporary downturn in aviation activity caused by Covid has created an opportunity to pre-empt the worsening of conditions by adopting strategies now to lower impact. This should certainly be feasible by increasing the capacity, and decreasing the price of Logan Express services to preempt the return of severe congestion at Logan. This should be complemented by the long delayed completion of the Blue to Red connector , a transit improvement that was to have been in place by 2010 under DEP regulations accepted by Massport and Massdot as part of the Big Dig, but is not yet even under construction. It should be further supplemented by an aggressive exit fee on all automobiles exiting the roadway system and entering the capacity constrained Logan circulation system, to guard against the return of gridlock both within the airport and. In the approach regional roads which were caused by the pernicious growth in UBER access, pre Covid. which caused a tragedy of the commons impact on all road users by undermining transit access and Logan Express access as preferred modes.

The substantial revenue potential of such an exit fee could fund both Logan .express, Transit improvement, and other public health mitigation efforts.

Massport, unique among Massachusetts public agencies is still enjoying very robust fiscal strength, which should be used to pay for the mitigation of the adverse environmental impact of its activities. Moreover, the recently signed Covid relief act included very substantial subsidies to shore up the finances of the aviation industry.

Massport is a public agency with obligations to the health of its workers and neighbors, and should be using its unusual strength to properly mitigate the impacts of aviation and ground access to support it from landing fees and roadway access fees, so that aviation can grow back in a much more sustainable manner.

I urge you to reject the .Massport report as inadequate, and order Massport to prepare a much more fundamental report based on the belt and suspenders approach outlined above.

Frederick Salvucci,
Former .secretary If Transportation of Massachusetts,
Currently at MIT in the Mobility project within DUSP

Sent from my iPad