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CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
2017 LOGAN AIRPORT ENVIRONMENTAL STATUS AND PLANNING REPORT

PROJECT NAME	: 2017 Environmental Status and Planning Report (ESPR)
PROJECT MUNICIPALITY	: Boston/Winthrop
PROJECT WATERSHED	: Boston Harbor
EOEA NUMBER	: 3247
PROJECT PROPONENT	: Massachusetts Port Authority
DATE NOTICED IN MONITOR	: August 7, 2019

As Secretary of the Executive Office of Energy and Environmental Affairs (EEA), I hereby determine that the Status and Planning Report 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 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 2011 was filed in April of 2013. Environmental Data Reports (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. The 2017 ESPR is the subject of this review. This 2017 ESPR follows the 2016 EDR and reports on 2017 and future conditions. In addition, Massport has requested to combine both the 2018 EDR and the 2019 EDR into one document referred to as the 2018/2019 EDR. I have considered and granted this request. This Certificate also contains a Scope for the 2018/2019 EDR.

I have received comments from elected officials and municipalities including State Representative Adrian Madaro, State Senator Walter Timilty, State Representative RoseLee Vincent, Boston City Councilor Lydia Edwards, the Town of Winthrop's Board of Health, and the Selectboard of the Town of Milton. Comments were also submitted by municipalities, environmental advocacy groups, community organizations, and residents. The 2017 ESPR acknowledges that passenger activity has continued to grow faster than forecasts provided in the 2016 EDR and the previous 2011 ESPR. The majority of comment letters note that actual passenger growth has outpaced previous projections and identify concerns that measures to mitigate resulting noise, air quality, and transportation impacts have not been provided commensurate with the increased growth. Comments also identify concerns that the projected passenger growth rate underrepresents future conditions and associated impacts. Comments from State Representative Adrian Madaro, State Representative RoseLee Vincent, the Conservation Law Foundation (CLF), Airport Impact Relief Incorporated (AIR Inc.), the Town of Milton, and others request that Massport develop and analyze a higher passenger and aircraft growth scenario based upon actual growth rates. 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 commitments from Massport for the reduction of and mitigation of these impacts.

In addition to responding to these comments, the 2018/2019 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. The 2018/2019 EDR will document potential impacts and trends and propose measures to avoid, minimize and mitigate environmental impacts. Should actual growth in passenger and/or aircraft operations outpace the forecasts, I expect that additional information will be provided in future EDRs. 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. Furthermore, I 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 ESPR 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 2017 ESPR include reporting on, and analysis of, key indicators of airport activity levels, the regional transportation system, ground access, noise, air quality, environmental management,

and project mitigation tracking. This 2017 ESPR focuses on: (1) rapidly growing domestic and international passenger demand; (2) the formal introduction 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.

In 2017, passenger activity at Logan Airport continued to grow faster than previous forecasts. Air passenger activity levels at Logan Airport reached an all-time high of 38.4 million in 2017, an increase of 5.9 percent over what was projected in the 2016 EDR. Aircraft operations increased to a total of 401,371 in 2017, an increase of 2.6 percent over 2016. This trend continued in 2018 with air passenger activity levels of 40.9 million and aircraft operations totaling 424,024. The growth is directly correlated to the strong national and regional economies and an increase in demand for international air service. Massport has responded to this demand for international air by providing new service to international destinations and expanding service to existing destinations. As passenger levels have increased, aircraft operations remain significantly below the peak of 507,449 operations experienced in 1998 when Logan Airport served 26.5 million passengers. The reduction of over 100,000 annual flight operations, combined with the transition towards newer and larger aircraft with improved environmental performance and operational efficiencies, have supported passenger growth while limiting environmental impacts.

Although environmental impacts are significantly lower compared to 1998 when operations were highest, comparison of activity level and environmental impact data to the 2016 EDR identifies incremental increases in noise exposure, air emissions and traffic. These increases were not forecast in the previous 2011 ESPR. The current passenger forecast is higher by approximately 10 million passengers, or 26 percent higher, than the previous 2011 ESPR planning forecast of 39.8 million passengers. The 2017 ESPR forecast for aircraft operations (486,364) is approximately 2.5 percent higher than the 2011 ESPR operations forecast (474,734). These increases are associated with passenger growth, changes in flight patterns, and changes in modeling of noise and air quality. The 2017 ESPR indicates that terminals, roadways, and parking facilities are strained by these increases and identifies on-Airport improvements to relieve on-Airport roadway congestion and accessibility.

Logan Airport passenger ground access is changing rapidly with the use of TNCs for departures and arrivals at the Airport. Massport began collecting TNC data in 2017 when TNCs were authorized to pick up customers from the airport. The 2017 ESPR provides data and identifies effects of TNCs and provides an assessment of ground access trends.

The most significant change since the previous 2011 ESPR is the introduction by the FAA of changes to area navigation (RNAV) procedures. The RNAV program has been implemented throughout the country and its primary purpose is to increase safety and operational efficiency. 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 2017 ESPR and during review of specific projects, including the Terminal E Modernization Project (EEA# 15434).

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 2017 ESPR provided an update on this process and described Massport's efforts to mitigate noise exposure and impacts.

The 2017 ESPR provides information on noise conditions modeled using the latest FAA noise modeling software, the Aviation Environmental Design Tool (AEDT). Massport transitioned to AEDT from the Integrated Noise Model (INM) in its 2016 EDR. The 2017 ESPR 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 2017 ESPR and Scope for the 2018/2019 EDR

The 2017 ESPR 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 2017 and provides projections for the next 10 to 15 years; and provides updates on projects, environmental management plans, and the status of project mitigation.

The 2018/2019 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 high occupancy vehicle (HOV) mode share goal.

The 2018/2019 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 2017 ESPR, and other Certificates for Logan Airport that reference EDR/ESPR documentation (e.g. Logan Airport Parking Project, Terminal E). To ensure that the issues raised by commenters are addressed, the 2018/2019 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 Responses 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 include sufficient information to address comments on traffic, 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. The total number of aircraft operations at Logan Airport increased for a total of 401,371 in 2017, an increase of 2.6 percent over 2016. Aircraft operations remain well below the 487,996 operations in 2000 and the historic peak of 507,449 operations reached in 1998. The slower growth in aircraft operations compared to passenger levels is due to the steady increase in aircraft size and improving aircraft load factors (passengers/available seats). Air carrier efficiency continued to improve in 2017 as the average number of passengers per aircraft operation at Logan Airport grew from 92.8 in 2016 to 95.7 in 2017. 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.

Logan Airport is considered an origin and destination airport both nationally and internationally, meaning that approximately 90 percent of Logan Airport passengers either start or end their trip in the New England area. According to the 2017 ESPR, international passenger levels increased at a faster rate than domestic passenger levels in 2017. Domestic air passenger activity levels increased by 5.1 percent while international air passenger activity levels increased by 9.3 percent over 2016 levels. The 2017 ESPR indicates that strong international passenger growth was driven by the economic attractiveness of the metropolitan Boston region and the strength of Boston as an origin and destination market. In response to regional demand for international service, new non-stop services were introduced by a number of airlines including Air Berlin, Norwegian Air Shuttle, Qatar Airways, Scandinavian Airlines, and TAP Air Portugal. New international destinations from Logan Airport in 2016 included Dusseldorf, London Gatwick, Doha, Copenhagen, and Lisbon.

The 2017 ESPR also updates the Logan Airport long-term passenger forecast to reflect growth trends at Logan Airport and revised expectations for the local/national/international economy. It addresses methodologies and assumptions used in the analysis, including anticipated changes to fleet mix and other trends in the aviation industry.

Passenger activity has continued to grow faster than forecasts provided in the 2016 EDR and the previous 2011 ESPR. In 2017, air passenger activity levels at Logan Airport reached 38.4 million, an increase of 5.9 percent over 2016. The 2017 passenger level represents a record high for Logan Airport. The ESPR projects that Logan Airport will reach 50 million annual passengers in the next 10 to 15 years (the Future Planning Horizon). This 2017 ESPR evaluates

future operational and environmental conditions associated with this increase in passenger activity. This level of air passengers is forecast to be accommodated in approximately 486,000 annual aircraft operations. The 2017 ESPR indicates that the analysis provided for Massport's forecast is consistent with the FAA's Terminal Area Forecast (TAF) that states within the 10- to 15-year planning horizon, the FAA forecasts 50 million annual air passengers at Logan Airport.

The 2017 ESPR provides a description on how Massport will achieve long-standing goals to reduce overall operating and environmental impacts at the airport as passengers and, in particular, international passengers increase. With this growth comes challenges, and Massport has to develop strategies to address these challenges in a manner that will allow Logan Airport to evolve in a sustainable and environmentally-responsible way. If this passenger level is reached sooner, Massport needs to ensure mitigation is being provided commensurate with increased growth and associated impacts. Passenger activity reached an all-time high in 2017 and the ESPR indicated this growth continued into 2018, with 40.9 million air passengers. According to the ESPR, this peak follows unprecedented, consistent growth since 2013 at a 6.2 percent annual average growth, making Logan Airport one of the fastest growing airports in the US in terms of passenger activity levels. 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. While I understand that growth at Logan Airport can be attributed to the strong local, regional, and national economies, many comments identify concerns that Massport may reach 50 million annual passengers much sooner than the projected 10 to 15 year timeframe. I expect that additional information will be provided in future EDRs 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. I 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 2018/2019 EDR.

To improve accessibility to the Airport as well as to relieve on-Airport roadway congestion, Massport proposes to enhance HOV and Logan Express facilities, implement on-Airport roadway and Massachusetts Bay Transportation Authority (MBTA) Blue Line/intra-terminal connectivity projects, construct a consolidated transportation network company (TNC, such as Uber and Lyft) drop-off and pick-up area, and construct new parking facilities, which will help reduce the number of drop-off/pick-up trips. The 2018/2019 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.

The 2018/2019 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 2018/2019 operations and passenger activity levels to 2017 activity levels; and
- National aviation trends compared to Logan Airport trends.

Sustainability at Logan Airport

The 2017 ESPR 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). In 2015, Massport completed the Logan Airport SMP through a grant awarded by the FAA. The SMP 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 2017 ESPR. The 2017 ESPR also describes the Annual Sustainability and Resiliency Report, released in April 2018. The report highlights achievements and progress toward Massport's sustainability goals and targets since the release of the SMP in 2015 and the publication of the Annual Sustainability Report in 2016. Massport has achieved three sustainability targets for energy use per square foot, energy use per passenger, and greenhouse gas (GHG) emissions per passenger. The 2018/2019 EDR should provide updates to airport wide sustainability goals.

Climate Change

Massport assets and Logan Airport, in particular, are critical infrastructure and play an important role in the economy. As recognized in Governor Baker's recent 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 2017 ESPR addresses Massport's consistency with EO 569, the Massachusetts State Hazard Mitigation and Climate Adaptation Plan, and the Massachusetts Energy Plan.

GHG emissions

The 2017 ESPR incorporates GHG emissions reporting consistent with that provided in the 2016 EDR which was normalized to support effective review and analysis. The 2017 ESPR 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 renewables are accounted for in the analysis. The 2017 ESPR contains a GHG emissions inventory for the Logan Airport which presented emissions and energy data normalized by passenger use and building area. The GHG emissions associated with buildings and transportation were presented as pounds of carbon dioxide (CO₂) per passenger.

Energy use for buildings were presented as Kilo British Thermal Units (kBtu) per square foot (sf) per year. The analysis showed that Massport has reduced emissions per passenger across its operations by 39 percent from 2007 to 2017. Building energy use has been reduced 23 percent while building emissions have been reduced 44 percent from 2007 to 2017.

The 2017 ESPR quantifies GHG emissions for aircraft, ground support equipment (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* (Airport Cooperative Research Program (ACRP) Report 11, Project 02-06). The 2017 ESPR compares the results of the 2017 GHG emissions inventory to the 2016 EDR results. Total GHG emissions increased from 2016 to 2017 by about 8 percent due primarily to the increase in aircraft operations. Total emissions of GHG in the Future Planning Horizon are predicted to be about 23 percent higher than 2017 levels predominantly due to the predicted increase in aircraft operations. Specifically, this is attributable to the forecasted approximate 21 percent increase in aircraft operations and 31 percent increase in passenger traffic, each resulting in an increase in fuel usage and vehicle miles traveled (VMT). The Future Planning Horizon Massport-related emissions are expected to represent about 10 percent of total GHG emissions at the Airport. Tenant-based emissions are anticipated to represent about 71 percent; electrical consumption from Massport, common areas, and tenants are anticipated to represent about 7 percent; and passenger vehicle emissions are anticipated to represent about 12 percent of total GHG emissions.

The 2018/2019 EDR should incorporate GHG emissions reporting consistent with that provided in the 2017 ESPR 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 renewables are accounted 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 2018/2019 EDR.

The 2018/2019 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 2017 ESPR. The results of the 2018/2019 GHG emissions inventory should be compared to the 2017 results.

Adaptation and Resiliency

The 2017 ESPR details 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 included in the 2017 ESPR, 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, exceeding the 2020 resiliency target of 25 percent. A particular concern for Massport is the effect of sea level rise and projected increases in the severity and frequency of storms. At the end of 2013, in recognition of the potential effects of climate change on Massport infrastructure and operations, Massport initiated a Disaster and Infrastructure Resiliency Planning (DIRP) Study for Logan Airport. The DIRP Study includes a hazard analysis, modeling 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. In addition to the DIRP Study and its related initiatives, Massport has completed an Authority-wide risk assessment; issued a Floodproofing Design Guide (which was updated in April 2016); and developed a resilience framework to provide consistent metrics for short- and long-term planning and protection of its critical facilities and infrastructure. The 2017 ESPR provides a summary of the DIRP Study and identifies which recommendations Massport will implement in the short term and long term. The 2018/2019 EDR should continue to 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 in greater detail, the 2018/2019 EDR should report on findings around health and airport impacts in relation to emissions, as well as measures to reduce these impacts.

Mitigation

The 2017 ESPR provides an update on Massport's mitigation commitments under the MEPA for projects at Logan Airport for which an Environmental Impact Report (EIR) was filed and state Section 61 Findings were committed in order to document that all feasible measures have been taken to avoid or minimize impacts. The 2017 ESPR addresses cumulative, Airport-wide impacts. The 2017 ESPR 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 2018/2019 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 by the end of 2017. 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. Project updates include:

- *Terminal E Renovation and Enhancements Project:* This project includes interior and exterior improvements at Terminal E to accommodate regular service by wider and longer Group VI aircraft. The project reconfigured three gates to accommodate Group VI aircraft (including the Airbus A380 and Boeing 747-8 primarily used by international air carriers) and passenger holdrooms to accommodate larger passenger loads associated with these aircraft. Construction was completed in early 2017.
- *Terminal E Modernization Project:* This project will accommodate existing and long range forecasted demand for international service. The expansion will add the three gates approved in 1996 (International Gateway West Concourse project, EEA #9791), which were never constructed, and four additional new gates in an extended concourse. A key feature of this project is the first direct pedestrian connection from the MBTA Blue Line Airport Station to the terminal complex at Logan Airport. It will also include roadway improvements to facilitate access to the terminal.
- *Terminal C to E Airside Connector:* This project provides a new post-security connection between Terminals C and E on the Departures Level and provides improved passenger circulation within the post-security concourses, additional holdroom space at Terminal E, reconfigured office space, concessions and concessions support, and a new consolidated location for escalators and stairs. The project was completed in May 2016.
- *Terminal B Airline Optimization Project:* Massport is upgrading its facilities on the Pier B side of Terminal B to meet airlines' needs (primarily reflecting the merger of American Airlines and US Airways) and to provide facilities that improve the passenger traveling experience. Similar improvements have been implemented with the recent renovations and improvements at Terminal B, Pier A. Planned improvements include an enlarged ticketing hall; improved outbound bag area; and expanded bag claim hall, concession areas, and holdroom capacity at the gate. Final design is complete and construction is underway. Construction was completed in 2019.
- Massport is also planning improvements to Terminal A, including interior upgrades in the main terminal and satellite terminal, enhanced passenger amenities, reconfiguration and improvements at the security checkpoint, and a feasibility study of post-security connection between Terminal A and Terminal B, and Terminal A and Terminal E.
- *Logan Airport Parking Project:* This project includes the construction of up to 5,000 new commercial parking spaces to reduce trip generation associated with increases in passenger drop-off and pick-up at the airport. The Certificate on the Draft Environmental Impact Report (DEIR) was issued on August 2, 2019 and included a Scope for the Final Environmental Impact Report (FEIR). The project required an amendment to the Logan Airport Parking Freeze Regulations (310 CMR 7.30). Amendments to the regulations were promulgated in 2017. During the review of the 2017 ESPR Massport released three studies to identify ways to further support alternative transit options to and from the Airport, which the amended Parking Freeze regulations required Massport to complete. The results of these studies will inform Massport's future long-range planning efforts to

reduce air passenger-related VMT and associated air emissions which will extend the associated air quality benefits of this project.

- In addition to the planned roadway improvements as part of the Terminal C Building, Roadway and Curb Enhancements, Terminal E Modernization, and Logan Airport Parking Projects, Massport is considering other possible infrastructure modifications. Several options are being considered to reduce on-Airport congestion and improve on-Airport ground access efficiency, including dedicated HOV bus lanes, the creation of an intermodal transportation center with bus service to terminals, and the construction of an Automated People Mover (APM).
- *Maintenance of Airport Edge Buffer Areas and Parks:* The 2017 ESPR provides updates on the planning, construction, and maintenance of four Airport edge buffer areas and two parks along Logan Airport's perimeter. As of 2017, the Bayswater Buffer, Navy Fuel Pier Buffer, SWSA Buffer Phase 1 and the SWSA Buffer Phase 2 have been completed. These buffers and parks include 3.3 miles and more than 33 acres of green space developed or managed by Massport.

The 2018/2019 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 2018/2019 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 2018/2019 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 2017 ESPR 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 2017, passenger traffic at the New England airports represented the highest passenger traffic level for the region since the economic downturn in 2008. In 2017, the total number of air passengers utilizing these 11 New

England commercial service airports increased by 5.5 percent, from 51.9 million air passengers in 2016 to 54.7 million passengers in 2017.

The 2018/2019 EDR should report on:

Regional Airports

- 2018 and 2019 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 at Massachusetts Regional Airports.

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 2017 ESPR reports that average daily traffic and VMT on Airport roadways has increased in 2017 compared to 2016. The 2017 ESPR provides data on transit ridership, roadways, traffic volumes, and parking. Specifically, the 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 2017 ESPR 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 11 percent from approximately 176,840 in 2016 to 196,500 in 2017. 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 services, such as Uber and Lyft, are increasingly becoming a mode of choice for ground access at Logan Airport. TNCs were estimated to contribute about 15,000 vehicle trips per day. TNCs are impacting other access modes to the Airport and contributing to on-Airport congestion. Partially due to the emergence of TNCs, black car limousines and scheduled van ridership dropped by 40 percent from 2016 to 2017. Taxi dispatches declined 18 percent and MBTA Blue Line ridership decreased by 2 percent in 2017 compared to 2016. The 2017 ESPR does not present a quantifiable comparison between VMT values prior to 2011 because the previous model was limited to terminal access roads while the current VMT model includes a larger on-Airport study area. Massport has proposed to construct a consolidated TNC drop-off and pick-up area and implement a TNC management plan to encourage shared rides and reduce gateway congestion.

Massport remains in compliance with the Parking Freeze regulations which regulates the number of commercial and employee parking spaces allowed at Logan Airport. As required, Massport submits semi-annual filings to the Massachusetts Department of Environmental Protection (MassDEP) to demonstrate compliance with the Logan Airport Parking Freeze. The full reports for 2017 are included in the 2017 ESPR. As permitted (and encouraged) by the regulations, Massport has converted employee spaces to commercial spaces, within the overall limits. In 2017, the Logan Airport Parking Freeze was amended to allow for an increase of up to 5,000 on-Airport commercial parking spaces, which allows for the construction of additional parking to reduce drop-off/pick up modes and alleviate constrained on-Airport parking conditions. MassDEP issued the amended regulation on June 30, 2017, approving the requested Parking Freeze increase. On December 5, 2017, the U.S. Environmental Protection Agency (EPA) proposed a rule approving the revision of the Massachusetts SIP incorporating the amended Logan Airport Parking Freeze. The final rule was issued on March 6, 2018 and became effective on April 5, 2018.

The 2017 ESPR describes a multi-pronged trip reduction strategy to reduce the number of private vehicles that access Logan Airport and, in particular, the drop-off/pick-up modes. Measures implemented in 2017 by Massport to increase HOV use include a blend of initiatives related to pricing (incentives and disincentives), service availability, service quality, marketing, and traveler information. The 2017 ESPR introduced a new definition for HOV modes. In the 2016 EDR and previous documents, Massport identified all taxis and TNCs as non-HOV and all black car limousines as HOV. The 2017 ESPR will estimate HOV and non-HOV breakdowns for taxis, livery services, and TNCs based on whether there is more than one passenger. Consistent with the directive identified in the Certificate for the Logan Airport Parking Project, and through negotiations with the CLF, Massport has committed to a goal of 35.5 percent HOV by 2022 and 40 percent by 2027.

The Airport-wide Automated Traffic Monitoring System (ATMS) includes permanent traffic count stations at the Airport's gateway roadways. These stations provide data on annual average daily traffic (AADT), annual average weekday daily traffic (AWDT), and annual average weekend daily traffic (AWEDT). The AADT (entering and departing Logan Airport) increased by 4.1 percent between 2016 and 2017. The change in average daily traffic can be attributed to: an 5.9-percent increase in air passenger activity in 2017; the impact of TNCs, which generated approximately 15,000 vehicle trips per day; and an increase in drop-off/pick-up activity by private and commercial automobiles.

The 2017 ESPR describes improvements to support HOV access which include: Back Bay Logan Express service (since May 2014); free boarding of the MBTA Silver Line outbound (from Logan Airport); a 1,100-car parking garage at the Framingham Logan Express; reduced holiday travel parking rates at Logan Express facilities; increased parking rates on the Airport; and support for private coach bus and van operators. Logan Express passenger ridership from suburban park-and-ride locations increased by over 6 percent from 2016 to 2017 and overall service increased by about 1 percent. The 2017 identified a continued decrease in ridership to and from Back Bay Logan Express, which has been a noted trend since the MBTA's Government Center Station reopened.

In the next 10 to 15 years Logan Airport is anticipated to reach 50 million air passengers. While the 2017 ESPR above discusses strains placed on the Airport's roadway infrastructure at 2017 levels (38.4 million passengers) the 2018/2019 EDR is an opportunity to commit to further reducing congestion and associated emissions by increasing HOV ridership, reducing TNC deadheading activity (empty one-way trips), increasing on-Airport parking to reduce drop-off/pick-up, and expanding Logan Express service and facilities. The 2018/2019 EDR should provide an expanded mitigation package to address the transportation impacts associated with increased passenger activity should actual passenger growth outpace the forecasts.

The 2018/2019 EDR should report on 2018 and 2019 ground access conditions at the airport and provide a comparison to 2017 for the following:

- Description of compliance with Logan Airport Parking Freeze;
- High-occupancy vehicle (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 vehicle miles traveled (VMT);
- Parking demand and management (including rates and duration statistics);
- Status of long-range ground access management strategy planning and the connection to the Massachusetts Bay Transportation Authority (MBTA) Airport Station associated with the planned Terminal E Modernization;
- Project, anticipated MBTA ridership, and possible changes in HOV mode share; and
- Trends of transportation network companies (TNCs), such as Uber and Lyft, and their operations at Logan Airport.

The 2018/2019 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 2017 ESPR updated the status of the noise environment at Logan Airport in 2017, provided a projection of noise impacts for the Future Planning Horizon, and described 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 2017 ESPR 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 2017 ESPR also presents summaries of the 2017 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 2017.

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. Population exposed to DNL levels greater than or equal to DNL 65 dB noise levels increased by 483 people, from 7,450 in 2016 to 7,933 in 2017. Runway use changes from 2016 to 2017 were the largest factor influencing noise exposure in 2017. The one-month closure of Runway 4R-22L from May and June 2017 and its continued limited availability for arrivals into September 2017 are reflected in the noise contour changes presented in the 2017 ESPR. An additional factor influencing noise contour changes in 2017 was an increase in nighttime operations, from 55,499 in 2016 to 61,155 operations in 2017, an increase of 10.2 percent. The DNL 65 dB contour is projected to increase due to expected growth in operations in the next 10 to 15 year Future Planning Horizon projects. Therefore, the total number of people residing in the DNL 65 dB contour would also increase. The 2017 ESPR also provides the Future Planning Horizon DNL contours presented compared to 2017. The contours indicate that the total number of nighttime operations for the Future Horizon Planning forecast (an average nightly 167.75) will remain almost the same as in 2017, while the daytime operations are expected to grow from an average of 932 operations to 1,165 daily (25 percent increase). The 2017 ESPR states that the contours represent a conservative estimate of the future noise levels because Massport assumes the continued advancement in aircraft technology will result in quieter engines and actual lower noise levels in the future.

In 2017, noise complaints more than doubled. Massport received 59,343 noise complaints from 95 communities, a 56-percent increase from the 2016 total of 38,045 noise complaints from 83 communities. The increase in complaints continues to be primarily related to the FAA's RNAV departure procedures, which concentrate flight tracks along narrower corridors. All complaints have been forwarded to FAA. The 2017 ESPR 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 Performance

Based Navigation (PBN), including RNAV. The 2017 ESPR 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 2017 ESPR EDR identifies which noise abatement measures are being employed and reports on the status of the sound insulation program since 1990. To date, Massport has installed sound insulation in 5,467 residences, including 11,515 dwelling units, and 36 schools in East Boston, Roxbury, Dorchester, Winthrop, Revere, Chelsea, and South Boston. 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. The FAA will allow a residence to be treated under the sound insulation program one time; homes treated previously are not eligible for additional consideration.

The 2018/2019 EDR must provide strategies to address noise impacts which are expressed in numerous comments received on the 2017 ESPR. 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 2018/2019 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 2018 and 2019 conditions and provide a comparison to 2017 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);
- Preferential runway advisory system (PRAS) tracking; and
- Flight tracks.

The 2018/2019 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 2018/2019 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 2017 ESPR provided an overview of airport-related air quality issues in 2017, efforts to reduce emissions, and projections for Future Planning Horizon 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 2017 ESPR uses FAA's approved computer model for calculating emissions from aircraft-related sources AEDT model. The latest version of AEDT is 2d (AEDT 2d), which was released in February 2018. Total air quality emissions from all sources associated with Logan Airport are significantly lower than a decade ago. The 2017 ESPR 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.

Aircraft emissions continue to represent the largest source (94 percent) of nitrogen oxides (NOx) at Logan Airport. In 2017, total emissions of NOx increased by about 12 percent from 2016 to 2017. Modeled NOx emissions increased to 5,935 kg/day compared to 5,300 kg/day in 2016. The increase in NOx from 2016 to 2017 is almost entirely attributed to the forecasted increase in aircraft operations at the Airport coupled with the changing aircraft fleet (i.e., greater use of quieter, more fuel-efficient aircraft engines that overall result in fewer emissions with the exception of NOx). Emissions of NOx are predicted to increase by about 37 percent in the Future Planning Horizon compared to 2017. The changes are also attributable to the FAA's AEDT model, which assumes higher NOx emission factors compared to the legacy Emissions and Dispersion Modeling System (EDMS) model. NOx emissions associated with GSE, motor vehicles, and stationary sources, many of which Massport has control or influence, have declined from 2016 to 2017. As stated previously in this Certificate, GHG emissions also increased from 2016 to 2017 by about 8 percent due primarily to the increase in aircraft operations. Total emissions of GHG in the Future Planning Horizon are predicted to be about 23 percent higher than 2017 levels predominantly due to the predicted increase in aircraft operations.

Total modeled emissions of carbon monoxide (CO), particulate matter (PM10/PM2.5), and volatile organic compounds (VOCs) have decreased from 2016 to 2017 by about 4 percent, 20 percent, and less than 1 percent, respectively, even though aircraft operations have increased over the same time period. Specifically, total modeled emissions of VOCs decreased in 2017 to 1,273 kilograms (kg)/day, compared to 1,280 kg/day in 2016. Total modeled CO emissions decreased in 2017 to 7,092 compared to 7,350 kg/day in 2016. Total PM10/PM2.5 emissions have decreased to 77 kg/day in 2017 compared to 96 kg/day in 2016. The 2017 ESPR projects that total emissions of CO, PM10/PM2.5, and VOCs will decrease in the Future Planning Horizon by about 2 percent, 10 percent, and 8 percent, respectively, compared to 2017 levels.

The projected reduction in emissions is attributed to a combination of the conversion of GSE to viable electric alternatives, lower motor vehicle emissions due to greater efficiency, cleaner aircraft engine technologies, and changes in aircraft fleet mix.

The 2018/2019 EDR should contain an overview of the environmental regulatory framework affecting aircraft emissions, changes in aircraft emissions, and the changes in air quality modeling. The 2018/2019 EDR should also provide discussion of progress on national and international levels to decrease air emissions. Massport should continue to use the FAA's AEDT model for air emissions modeling as was presented in the 2017 ESPR. The 2018/2019 EDR should provide enhanced mitigation related to air emissions to address the potential of 50 million air passengers and increased activity levels if this level of growth is attained prior to the Future Planning Horizon timeframe.

The EPA Motor Vehicle Emission Simulator (MOVES) tool should continue to be used to assess vehicular emissions on airport roadways. The 2018/2019 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 2018/2019 EDR should demonstrate that Massport's programs to maintain and increase HOV modes provide the capacity to meet demand associated with growth. The 2018/2019 EDR should also provide an update on its efforts to encourage the use of single engine taxiing under safe conditions.

Commenters continue to express concern regarding ultrafine particulates (UFPs). The 2017 ESPR includes information on the status of UFP review by the Environmental Protection Agency (EPA) and an update on associated and monitoring. The 2018/2019 EDR should include an update on this information. It 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 2018/2019 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 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 Health Center to evaluate opportunities to expand current services, outreach, and prevention materials. The expanded program 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. I also recommend that Massport work with the Health Center to provide appropriate HEPA room air purifier filters to high risk individuals identified through this program. I encourage Massport to work with community-based organizations to collaboratively determine how to further mitigate air quality impacts. The 2018/2019 EDR should describe how Massport will reengage with the Health Center and include an evaluation of how the services

provided directly to and through Health Center (which are funded by Massport) can be expanded.

Water Quality/Environmental Compliance

The 2017 ESPR 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, thus limiting 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 2018/2019 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 2018/2019 EDR for submission consistent with the Scope included in this Certificate. I encourage Massport to target mid 2020 for filing of the 2018/2019 EDR. As noted above, 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.



November 25, 2019

Date

Kathleen A. Theoharides

Comments received:

9/9/2019	Maryann Aberg
9/30/2019	Noel Scott

10/04/2019	Michael Adamian	11/20/2019	Bill Trabilicy
10/09/2019	Vanessa Fazio	11/20/2019	Martha Karchere
10/09/2019	Danielle Emond	11/20/2019	Julia Burrell
10/09/2019	Karla Torres-Welch	11/20/2019	Peter Houk
10/09/2019	Lindsay Falewicz	11/20/2019	JP Petriello
10/10/2019	Kannan Thiruvengadam	11/20/2019	Andrea van Wien
10/10/2019	Fabricio Paes	11/20/2019	Andrea van Wien, 2nd Comment
10/10/2019	Phoebe Chadwick-Rivinus	11/20/2019	Ryan Miller
10/10/2019	Mary Palermo	11/20/2019	Representative Roselee Vincent
10/10/2019	Gaby Perry	11/21/2019	Representative Adrian Madara
10/10/2019	Nat Taylor	11/21/2019	Airport Impact Relief, Inc.
10/10/2019	Gillian Anderson	11/22/2019	City of Malden
11/08/2019	Aileen Healy	11/22/2019	Catherine McNeil
11/13/2019	Meredith Shannon	11/22/2019	Senator Walter Timilty
11/13/2019	Kathleen Rourke	11/22/2019	Maureen Wing
11/13/2019	Teresa Doyle	11/22/2019	Airlines for America
11/13/2019	Rosalind Mott		
11/13/2019	Wendy Corkhum		
11/18/2019	Town of Milton		
11/18/2019	Town of Winthrop		
11/20/2019	Anastacia Marx de Salcedo	10/ 12/2019	Audrina Warren
11/20/2019	Richard Madden	10/ 12/2019	Sara Goldsmith
11/20/2019	Carla Ceruzzi	10/ 17/2019	Jim Linthwaite
11/20/2019	Cindy Christiansen	10/17/2019	Susan M. Horn
11/20/2019	Mary Tittmann	10/ 17/2019	Jodi Remington
11/20/2019	Nancy Timmerman	10/ 17/2019	Monique Labbe
11/20/2019	Department of Energy Resources	10/17/2019	Paul K. Ciampa
11/20/2019	Dorothy Ahle	10/ 17/2019	Colleen Murphy
11/20/2019	Frank Ciano	10/ 17/2019	Nancy Hurley-Claffin
11/20/2019	Ursula Kullmann	10/ 17/2019	Tom Claffin
11/20/2019	Romero Kuhn	10/ 17/2019	fwb823@yahoo.com
11/20/2019	Matthew A Romero Massport CAC	10/ 17/2019	Robin Maguire
11/20/2019	Lydia Edwards, Boston City	10/ 17/2019	Steven Tamasy
	Councilor	10/ 17/2019	Rebecca Lynds
11/20/2019	Conservation Law Foundation	10/17/2019	John Casamassima
11/20/2019	Myron Kassaraba	10/17/2019	Kathryn Skogstrom
11/20/2019	Carol Goss	10/17/2019	Lisa DeAngelico
11/20/2019	Alan Wright	10/17/2019	Rebecca Gorlin
11/20/2019	Meredith Shannon	10/17/2019	Julie Rizzo
11/20/2019	Darcey Deveny	10/17 2019	Andrew Desantis
11/20/2019	Thomas Phipps	10/17/2019	Nikolas Navakos
11/20/2019	Edward Beuchert	10/17/2019	Ida Migliore
11/20/2019	Claire Silvers	10/17/2019	Christopher Tkach
11/20/2019	Sheila Mooney	10/17/2019	Lucas Rossier
11/20/2019	Lisa Avery	10/17/2019	Jane Paronich
11/20/2019	Danielle Simbajon	10/17/2019	Charles Cambria
11/20/2019	Kathleen Rourke	10/17/2019	Ali Reed
11/20/2019	David Matheu	10/17/2019	Nick Camacho
11/20/2019	Kathleen Higgins	10/17/2019	Jenn Cunio
11/20/2019	Gary Gryan	10/17/2019	Michelle Mccann
11/20/2019	Anita Gryan	10/17/2019	Angela Cilibrasi
11/20/2019	DeeNee Skipper	10/17/2019	Christy Tatarian
11/20/2019	Barbara Franklin	10/17/2019	Anthony Leonardi
		10/17/2019	Damien Margardo

Form Letters sent via email subject line: "Opposition to ESPR 2017"

10/17/2019	Mary Ryan	10/20/2019	Nicole Bishop
10/17/2019	Gail Miller	10/21/2019	Mariellen Dalton
10/17/2019	Kristen D'Avolio	10/21/2019	Josephine Fatta
10/18/2019	Suzanne & Scott	10/21/2019	Josephine Matthews
10/18/2019	Bobbie Ross	10/21/2019	Julia Collins
10/18/2019	Mikki De Sisto Falcone	10/21/2019	Cheryl Granara
10/18/2019	Jim Linthwaite	10/21/2019	Ariana Lehrer
10/18/2019	Rick Sherva	10/21/2019	Josephine Fatta
10/18/2019	Michael Mullen	10/21/2019	Jake Bernier
10/18/2019	Kelly O'Keefe	10/21/2019	Carole Brown
10/18/2019	Mary Oconnor	10/22/2019	Aleksandra Kuzina
10/18/2019	Kevin Donahue	10/22/2019	Roberta W Benton
10/18/2019	Karen Gaeta	10/22/2019	Dominique Bonafoux
10/18/2019	Sheryl Fleitman	10/22/2019	Robert Fiore
10/18/2019	Kathleen Toland	10/22/2019	Marie Piacenza
10/18/2019	Lynn Donovan	10/22/2019	Dawn Sullivan
10/18/2019	Kathleen Toland	10/22/2019	Frederico Leal
10/18/2019	Cathy Huban	10/22/2019	Joan Dimarzo
10/18/2019	Leydon, Susan	10/22/2019	Vincent Crossman
10/18/2019	Chris Millerick	10/22/2019	Wendy Corkhum
10/18/2019	Brian Vogel	10/22/2019	Tracey Honan
10/18/2019	Angela Auda	10/22/2019	Lisa Foley
10/18/2019	Deanna Castano	10/22/2019	johnbegood73@outlook.com
10/18/2019	Rebecca Gorlin	10/22/2019	Teresa Carroll
10/18/2019	Angelique Pirozzi	10/22/2019	Cindy L. Christiansen
10/18/2019	Gezim Mucelli	10/22/2019	Elizabeth Tanefis
10/18/2019	Catherine Sullivan	10/22/2019	Danielle Meeker
10/18/2019	Colleen Murphy	10/22/2019	Carol Leary
10/18/2019	Gina Cassetta	10/22/2019	Nick Loconte
10/18/2019	Dominic Rizzott o	10/22/2019	Deborah Lalone
10/18/2019	Kim Brazier	10/22/2019	Elaine Sullivan
10/18/2019	Sara Swart	10/22/2019	James Roberts
10/18/2019	Anne Gripenburg	10/22/2019	Albee Schimanski
10/18/2019	Barbara Franklin	10/22/2019	Bill Curtis
10/19/2019	Jeanne Stewart	10/22/2019	Isabella Tocci
10/19/2019	Maura Garrity	10/22/2019	James Roberts
10/19/2019	Luz-Dary Barlow	10/22/2019	William Tanner
10/19/2019	Shannon Viera	10/22/2019	Lisa Jacobson
10/19/2019	Roberta W Benton	10/22/2019	Magdalena Ayed
10/19/2019	Mary Gail Murphy	10/22/2019	Jenn Goonan
10/19/2019	Kevin Slattery	10/22/2019	Patricia Dunn
10/19/2019	Brian Ferrari	10/23/2019	Judith Gundersen
10/19/2019	Ian Chiang	10/23/2019	Donna Swanson
10/19/2019	Heather McKinnon Glennon	10/23/2019	Trudy Marsoloni
10/19/2019	Mary Palermo	10/23/2019	Liz ORourke
10/19/2019	Tracey Honan	10/23/2019	Linda Nelson
10/19/2019	Rebecca Connell	10/23/2019	Stacie and Brian Marley
10/19/2019	Eivin Hila	10/23/2019	Carole Brown
10/20/2019	Theodore Resnikoff	10/23/2019	Scott Gagnon
10/20/2019	Jaclyn Loson	10/24/2019	Hagar Shirman
10/20/2019	Jennifer Harris	10/25/2019	Christopher Pearl
10/20/2019	Kathy Masterson	10/25/2019	Wendy Corkhum
10/20/2019	Nancy Morelli	10/26/2019	Jane Moncreiff
10/20/2019	Bill Masterson	10/26/2019	Roberta W Benton
10/20/2019	Zachary Heath	10/26/2019	Kim Brazier
10/20/2019	Liddy Cole	10/26/2019	David Brazier

10/27/2019	Martin Shannon
10/27/2019	Zachary Speert
10/28/2019	Layne Petrie
10/28/2019	Suzanne Knight
10/29/2019	Maria Drewnowski
10/29/2019	Scott Oakley Hersey
10/30/2019	Paul Skogstrom
10/30/2019	Jonathan Hess
10/31/2019	Christopher Marchi
10/31/2019	Amy Tai
11/03/2019	Baljinder Nijjar
11/03/2019	Jonvante Nijjar
11/03/2019	Jasmine Nijjar
11/03/2019	Sandra Nijjar
11/03/2019	Magdalena Ayed
11/04/2019	arytych@voyager.net
11/05/2019	Julia Wallerice
11/05/2019	Alyssa Vangeli
11/16/2019	Gail Miller
11/16/2019	Sonja Tengblad
11/17/2019	Anne Riesenfeld
11/17/2019	Sarah Paysnick
11/17/2019	Meredith Krebs-Smith
11/17/2019	Charles Blandy
11/18/2019	Jonathan Hess
11/18/2019	Catherine McNeil, 1 st Comment
11/18/2019	Catherine McNeil, 2 nd Comment
11/18/2019	Catherine McNeil, 3 rd Comment
11/18/2019	Beth Battson
11/18/2019	Charles Bartoloni
11/18/2019	Anita Albright
11/18/2019	Judith Gundersen
11/18/2019	Brian Crosse
11/18/2019	Amy King
11/18/2019	Suzanne Knight
11/18/2019	Peter Dunn
11/18/2019	Johanna Bronk
11/18/2019	Allison Donelan
11/18/2019	Andrea LeBlanc
11/19/2019	Daryl Warner
11/19/2019	Ellen Daly
11/25/2019	Kevin Donahue

KAT/ACC/acc