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# 2020-2021 Logan EDR Consultation Session

Hybrid Meeting

Cathy Leonard-McLean Community Room  
Rental Car Center, Logan Airport  
& via Zoom

December 15, 2022



Environmental Planning and Permitting  
Strategic & Business Planning

# Presentation Agenda/Panelists

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## Agenda

- Introductions/Welcome
- MEPA Overview
- EDR Presentation
- Q&A

## Presenters

### Massport

- Anthony Guerriero
- Brad Washburn
- Stewart Dalzell
- Flavio Leo

### MEPA/EEA

- Jennifer Hughes/MEPA Analyst

### Consultant Team

- Carol Lurie/VHB
- Julie Goldberg/VHB
- Olympia Fisher/VHB
- Kate Larson/HMMH
- Paola Pringle/CMT (Virtual)

# MEPA Overview

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- 2020/2021 EDR published in November 23, 2022 edition of the *Environmental Monitor*
- **Comment period extended to January 23, 2023**
- Comments can be submitted to:
  - The Honorable Bethany A. Card, Secretary
  - Executive Office of Energy and Environmental Affairs (EEA)
  - Attn: MEPA Office
  - Jennifer Hughes, EEA: #3247
  - 100 Cambridge Street, Suite 900
  - Boston, MA 02114
- MEPA Comment Portal:  
<https://eeaonline.eea.state.ma.us/EEA/PublicComment/Landing/>

# Massport has been preparing comprehensive annual environmental filings for Logan Airport since the early 1980s

- Represents the longest detailed tracking of environmental impacts of any US airport
- The reports analyze the *cumulative effects* of Logan Airport operations and activities
- Massport's **Environmental Status & Planning Reports (ESPR)** and **Environmental Data Reports (EDR)** are the only detailed facility annual environmental reports required by the Secretary of Energy & Environmental Affairs (EEA)
- ESPRs are required every 5 years with interim annual EDRs – next one will cover 2022
- Circulation includes over 300 agencies, elected officials, community groups and individuals
- Since 2010, the full documents are posted on the Massport website
- Since 2015, Spanish versions of the Executive Summary have been published



# EDRs are prepared for years between ESPRs – at the Secretary’s direction, the current EDR covers 2020 and 2021

*ESPRs/EDRs are designed to facilitate long-range tracking and comparison of operations and environmental impacts and address cumulative impacts*

1. Introduction/Executive Summary
2. Activity Levels/Forecasts
3. Airport Planning
4. Regional Transportation
5. Ground Access
6. Noise Abatement
7. Air Quality/Emissions Reduction
8. Environmental Compliance and Management/ Water Quality
9. Environmentally Beneficial Measures and Project Mitigation Tracking



- Topics such as Greenhouse Gas (GHG) reporting have been added over time
- Includes responses to public comments
- Since 2015, EDRs (and other MEPA filings) have included Executive Summaries in Spanish
- Starting with this EDR, reporting on Massport Roadmap to Net Zero Programs

# In 2020 and 2021, the COVID-19 epidemic has significantly disrupted the Aviation industry and Logan Airport

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Starting in March 2020, Logan Airport experienced dramatic reductions in passenger levels and flights, associated with the COVID-19 pandemic.

- **2020**
  - Passenger activity levels totaled 12.6 million (30% of 2019 levels)
  - Aircraft operations declined to 206,700 (~49% of 2019 levels)
- **2021**
  - Recovery began
  - Passenger activity levels totaled 22.7 million (53% of 2019 levels)
  - Aircraft operations declined to 266,000 (~62% of 2019 levels)

Overall fewer passengers and employees used public transportation

- Logan Express and other HOV services were reduced to align capacity with demand
- Massport has restored much of that service and remains committed to project-related mitigation strategies

# HOV services were temporarily adjusted for reduced passenger levels; many have since been restored

- Logan Express services continue to be restored to match passenger and employees
  - The Peabody Logan Express service was restarted at a new/improved location in March 2022
  - The Back Bay Logan Express services resumed in October 2022
- Continued commitment to Silver Line and public transit
- Relocated RideApp (Uber & Lyft) operations to reduce empty vehicle trips (deadheads) and lessen curb congestion
- Continue to evaluate/implement on-airport infrastructure improvements to reduce congestion



# In March 2022, Massport released its *Roadmap to Net Zero by 2031*

- Roadmap for Massport to meet net zero emissions by Massport's 75<sup>th</sup> Anniversary in 2031
  - Focused on emissions Massport directly controls
  - Massport will strive to influence tenant emission reductions
- Roadmap based on five main pathways:
  - Energy conservation and efficiency
  - Clean and renewable energy sources
  - Sustainable ground transportation
  - Partnerships
  - Culture of sustainability and innovation
- Many ongoing projects and programs target these pathways
- 2022 ESPR and subsequent EDRs/ESPRS will provide Net Zero Updates

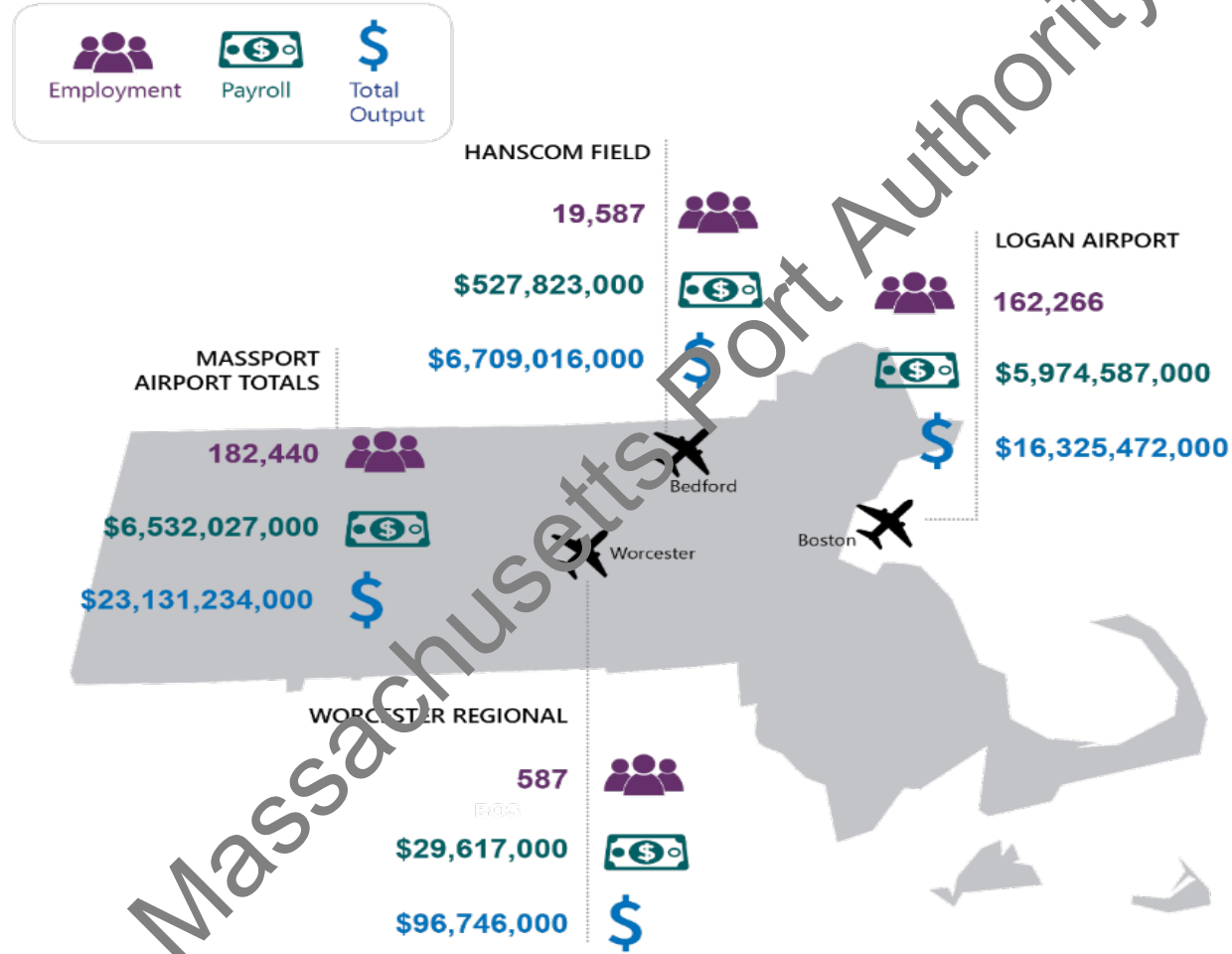




# Logan Environmental Context

Massachusetts Port Authority

# Logan Airport is a key transportation and economic resource contributing over \$16 billion annually to the Commonwealth



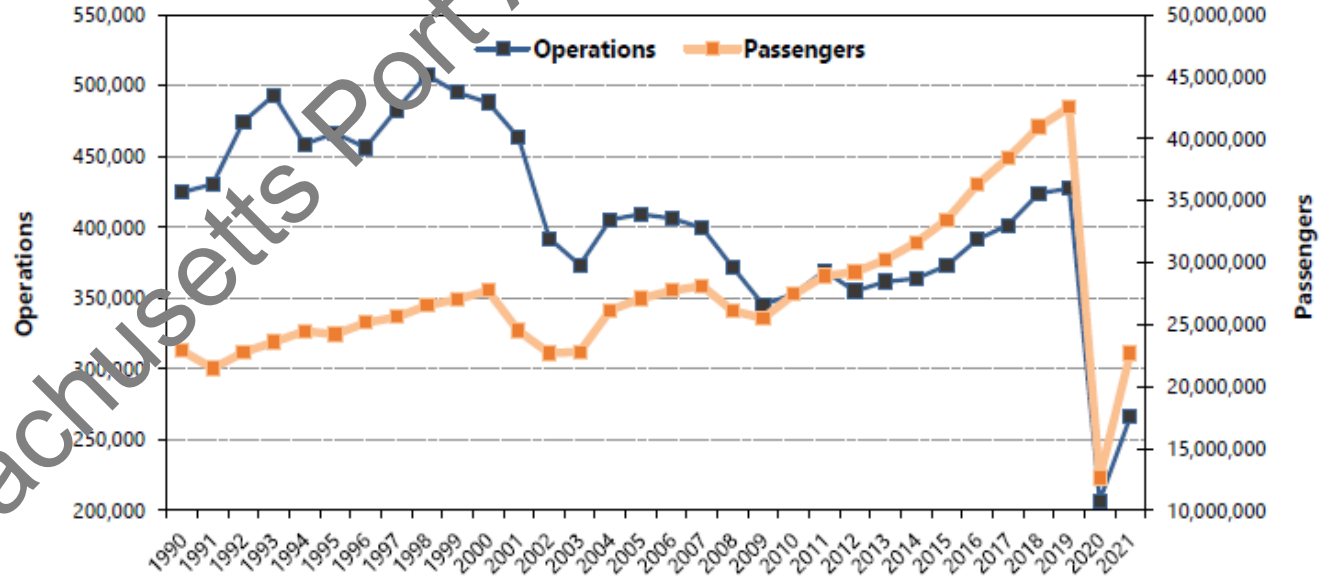
Source: MassDOT, Massachusetts Statewide Airport Economic Impact Study Update, 2019.



# Strong passenger growth at Logan Airport through early 2020 reflected the economic characteristics of the region

- Low unemployment
  - Boston Metro Area 4.1% (2021)
- High income levels
  - Boston Metro per capita income 45% higher than U.S. average (2021)
- A well-diversified, travel intensive economic base: technology, biotech, financial services, education and healthcare
- Rich historical and cultural resources and extensive tourism

Logan Airport Aircraft Operations and Air Passenger Trends

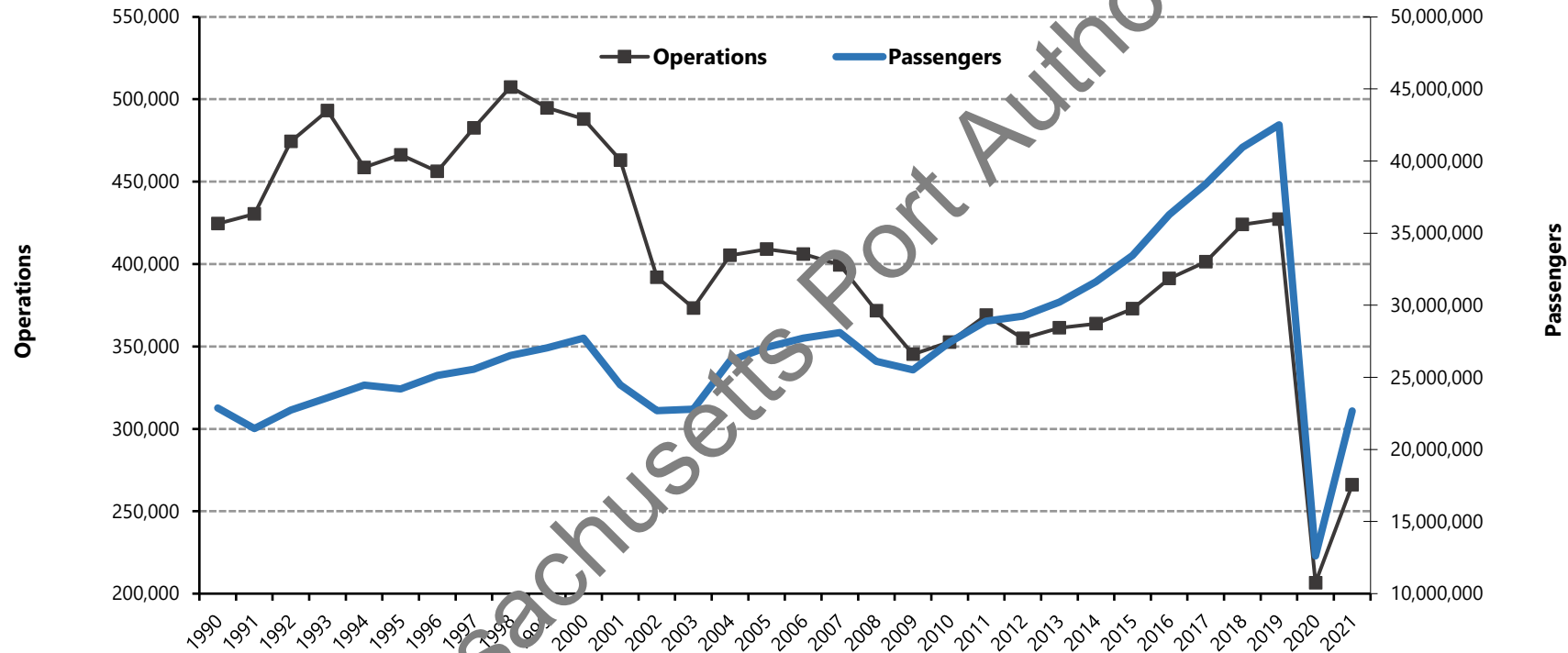


# Chapter 2 – Activity Levels

Massachusetts Port Authority

# Trends through 2021 showed gradual recovery from 2020

Logan Airport Aircraft Operations and Air Passenger Trends through 2019



## COVID-19 Impacts

- Aircraft operations fell 52% from 2019 to 2020
- Recovery of 63% of aircraft operations 2019 in 2021
- Passengers down 70% from 2019 to 2020
- Recovery to 53% of 2019 passengers in 2021



# Chapter 3 – Airport Planning

Massachusetts Port Authority

# The EDR updates the status of current and future Logan projects

Sample projects:

Phase	Project
Planning/ Permitting	Logan Parking Project (Deferred)
	Runway 9-27 Safety Area Improvement Project (in permitting)
	Runway 15-33 Rehabilitation Project (in design)
	North Service Area
Under Construction	Terminal E Modernization (Phase 1)
	Terminal C, Canopy, and Roadway Project
	Jet Fuel Storage Addition
	Piers Park Phase II
Completed	RideApp Infrastructure Improvement and Policy
	Convenience and Filing Station/Taxi Pool/RideApp Lot Relocations
	Terminal B Optimization
	Terminal C, Pier B Optimization

# Terminal E Modernization Phase 1 construction is underway

## Phased construction of 7 new gates

- 3 gates approved in 1996 as part of the International Gateway West Concourse Project, but never constructed
- **Phase I (4 gates)** underway
  - 2023 planned construction completion
- **Phase 2 (3 gates)** deferred



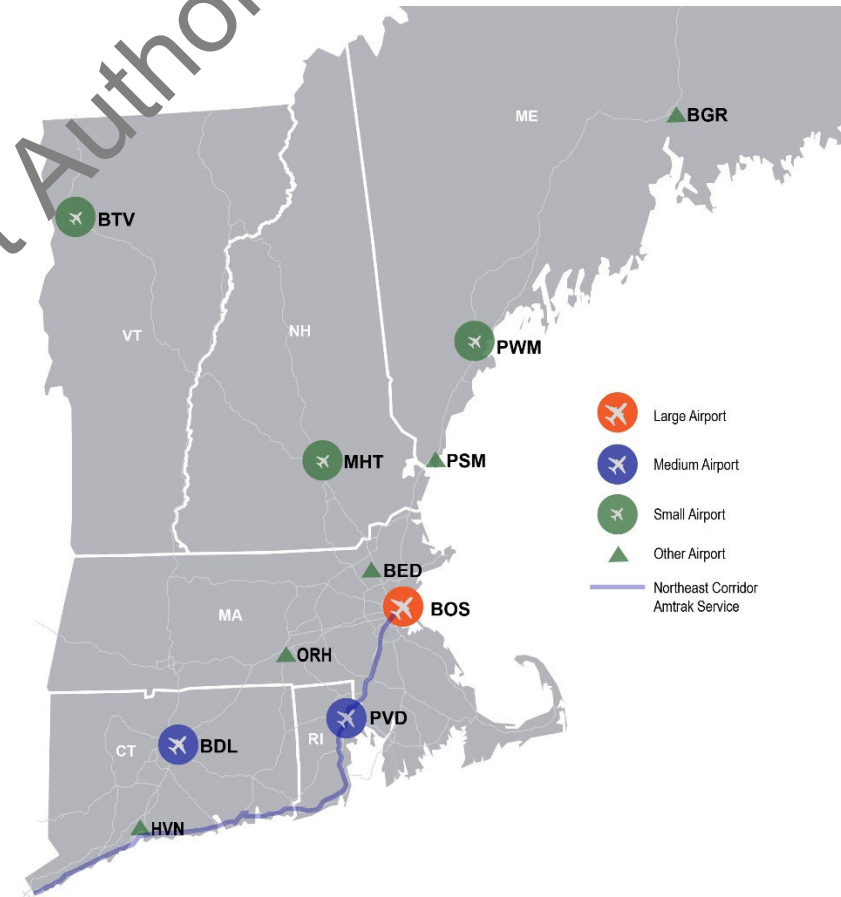


## Chapter 4 – Regional Transportation

Massachusetts Port Authority

# New England is served by a system of regional airports and Amtrak

- Regional airports are showing strong signs of recovery
- Recovered to 80%-100% of 2019 total aircraft operations in 2021:
  - Bradley International (BDL)
  - Rhode Island T.F. Green International (PVD)
  - Portland International Jetport (PWM)
  - Bangor International (BGR)
  - Manchester-Boston Regional (MHT)
  - Worcester Regional (ORH)
  - Hanscom Field (BED)
- Recovered to more than 2019 total aircraft operations in 2021:
  - Tweed-New Haven (TVN),
  - Burlington International (BTV)
  - Portsmouth International (PSM)
- Northeast Corridor (NEC) ridership decreased
  - 2020: 6.1 million passengers, down 51% from 2019
  - 2021: 4.4 million passengers, down 65% from 2019



# Hanscom Field is New England's premiere general/business aviation airport and is a key reliever to Logan

- Second busiest airport in New England based on aircraft operations
- Boston MedFlight Hangar recently relocated to a new LEED Certified facility
- New Jet Aviation FBO now in operation
- In support of ongoing Pine Hill Redevelopment, Massport is nearing completion of new Box Hangars
  - Construction began in 2021 lasting 18 months
- RFP issued in 2021 for third-party development of 28 acres of the North Airfield
  - Concept plans for new hangars currently in development



# Although service was suspended due to COVID, Massport welcomed back commercial service to Worcester Regional Airport and celebrated the 1 million passenger served in the fall of 2022

Worcester Regional Airport's role is growing

- Massport is investing \$100 million over 10 years
- New Category III Instrument Landing System improve ORH's all-weather reliability (*March 2018*)
- Cumulative over 1,000,000 passengers served (2022)
  - JetBlue service to FLL, JFK
  - American Airlines service to PHL
  - Delta to LGA



Chapter 5 – Ground Access

Massachusetts Port Authority

# Massport's ground access strategy focuses on trip reduction and continued leadership in HOV

- HOV ridership significantly dropped due to COVID-19
- Massport continues to invest in significant trip reduction strategies with the goal of reducing single occupancy trips
  - Logan Express facilities and service improvements
  - Ride App on-airport operations and facilities
  - Public transportation subsidies
  - Parking facilities to reduce drop-off/pick up activity
- Additional improvements and expanded services tied to passenger levels

Hierarchy of Ground-Access Mode Choices (Based on Vehicle Trips per Passenger)

Fewest Vehicle Trips



MBTA Blue Line and Silver Line

Logan Express, Scheduled & Courtesy Buses  
Shared-Ride Van  
Water-Taxi



Long-Term Parking



Taxi/TNC/Limousine



Drop-Off/Pick-Up

Up to Four Vehicle Trips  
Per Air Passenger

# Massport continues to rebuild key HOV services after reductions in 2020 and 2021

- Logan Express service was temporarily suspended in Peabody and Woburn and reduced in Braintree and Framingham due to COVID-19 related ridership reductions
  - Braintree, Framingham and Woburn resumed in 2021
  - Peabody (relocated) and Back Bay resumed 2022
- New rate schedule approved in 2021, reducing Logan Express Cost
  - Now \$9 to \$12 each way with online purchase
- Proposed future action plan includes:
  - Increased Braintree Logan Express Service
  - Add 1,000 additional spaces to Framingham Garage
  - Evaluate new Logan Express suburban locations
  - Continued monitoring of parking capacity at Logan Express sites



## Chapter 6 – Noise

Massachusetts Port Authority



# Massport partners with airlines and the FAA to identify and implement noise abatement measures

- Massport collaborating with FAA, MCAC and MIT on RNAV Study
  - The Study was completed in 2022 but post study coordination continues
- Continue to implement noise abatement measures, such as runway use restrictions and noise abatement turns
- FAA approved an initial grant to begin a Phase I Pilot of a Residential Sound Insulation Program to soundproof eligible residences
  - Massport will submit new noise exposure maps to the FAA to ensure the eligibility contours reflect Logan's most current noise environment
- Working with elected officials, Massport has received FAA approval to include in the eligibility process 1st Generation windows – this program is now underway
- Logan continues to accommodate an aircraft fleet with the latest, more efficient engines resulting in less noise and emissions



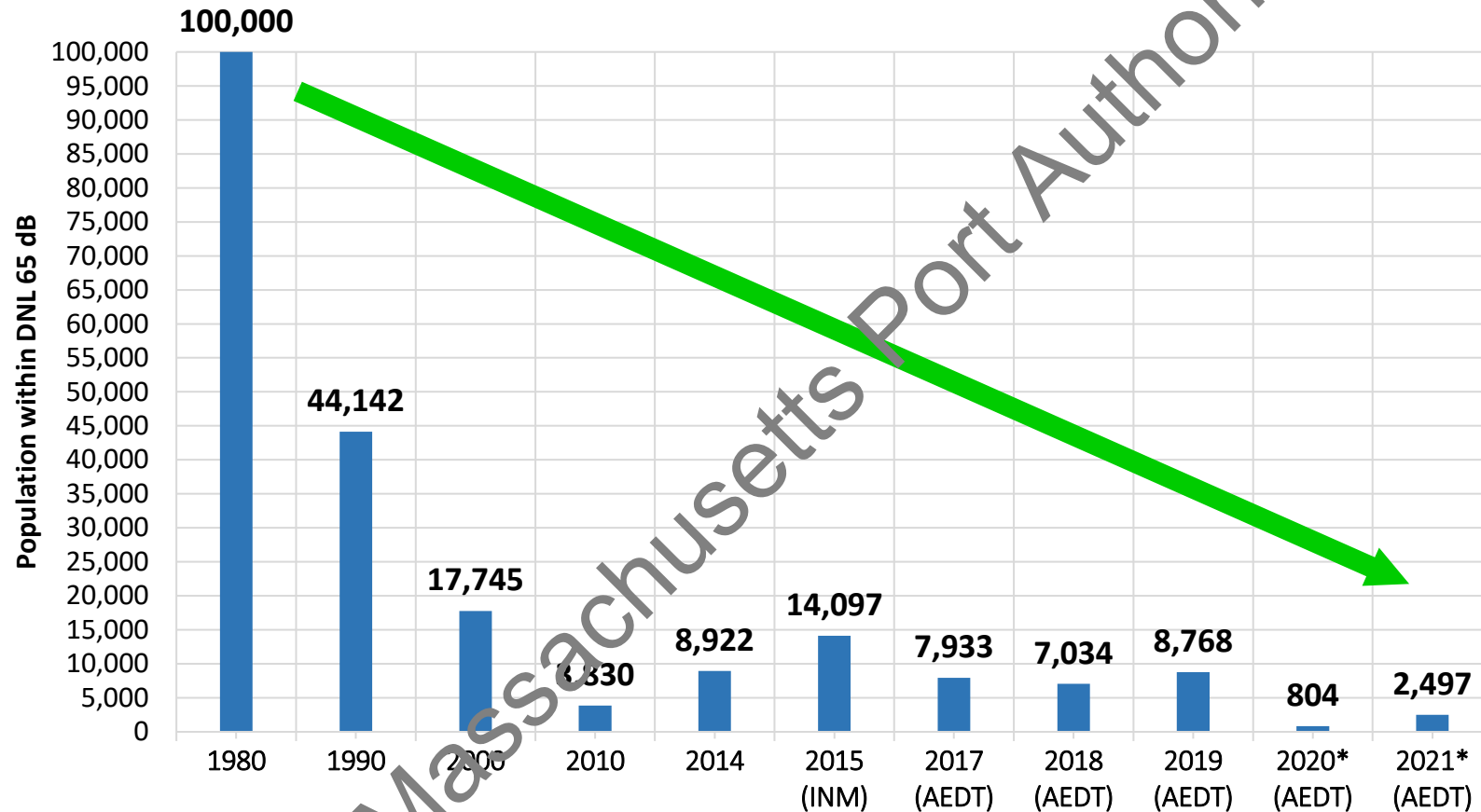
Image of Vortex Generator Device by Port on Wing.

# Almost 98% of Logan's commercial jet fleet meets at least Stage 4 noise classification requirements; over 29% meet Stage 5

Year <sup>1</sup>	Meeting Stage 5 Requirements <sup>5</sup>	Meeting Stage 4 Requirements <sup>2</sup>	Certificated Stage 3	Recertificated Stage 3 <sup>3</sup>	Stage 2 (Greater than 75,000 lbs.)	Total
1990	N/A	N/A	51.1%	0.0%	48.9%	100%
1998	N/A	N/A	65.9%	21.7%	12.4%	100%
2000	N/A	N/A	75.0%	24.0%	1.0%	100%
2010	N/A	93.2%	5.7%	1.1% <sup>4</sup>	0.0%	100%
2019	15.2%	82.9%	2.0%	0.0%	0.0%	100%
2020	28.5%	68.7%	2.8%	0.0%	0.0%	100%
2021	29.1%	69.2%	1.7%	0.0%	0.0%	100%

As with previous significant air travel disruptions, Massport has observed a reduction in older, noisier and higher emitting aircraft at Logan beginning in 2020 caused by earlier aircraft retirement by airlines and replacement with newer, quieter and more fuel-efficient fleets

# Population within DNL 65 dB contours remain well below historic peaks



Note: In 2016 FAA transitioned from the legacy Integrated Noise Model (INM) to the Aviation Environmental Design Tool (AEDT)

\*Impacts from COVID-19 substantially decreased aircraft operations leading to decreased aircraft noise for 2020 and 2021



# 2019-2021 DNL contours reductions due to fewer flights and newer aircraft fleet

- Decrease in population within the DNL 65dB contour compared to 2019
- Overall, DNL contours are similar in shape with small changes due to runway use shifts
- Contours are smaller due to COVID-19's impact on aircraft operations and fleet changes

Massachusetts Port Authority

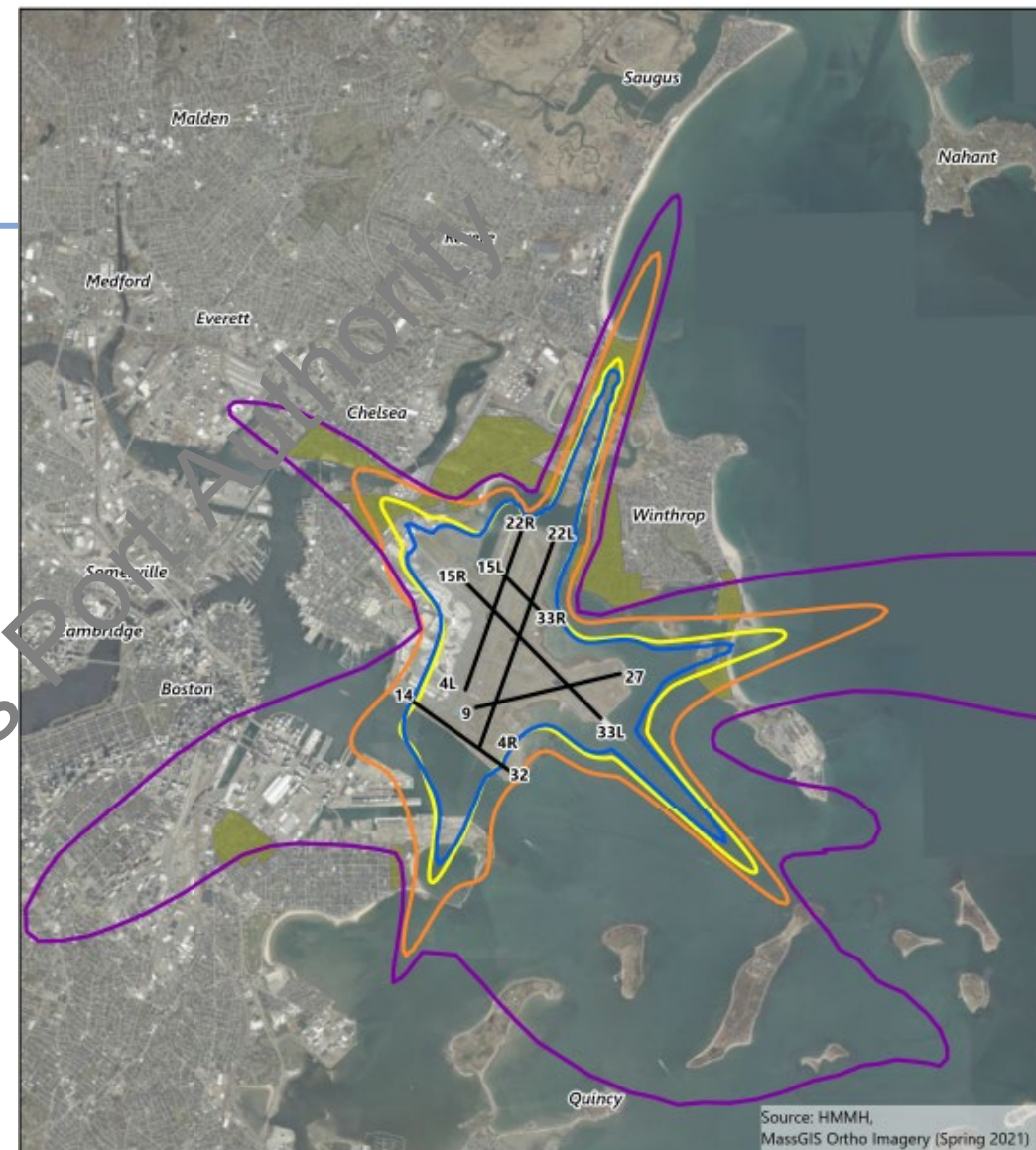


Figure 6-15 Comparison between 1990, 2019, 2020, and 2021 DNL 65 dB Contours

2020/2021 Environmental Data Report

- 2019 DNL Contour (AEDT 3c)
- 2020 DNL Contour (AEDT 3d)
- 2021 DNL Contour (AEDT 3d)
- 1990 DNL Contour (INM)
- Sound Insulation Areas



## Chapter 7 – Air Quality/Emission Reduction

Massachusetts Port Authority

# Massport continues to implement targeted environmental strategies to reduce air emissions

- Replace gas and diesel-powered equipment and vehicles through the Alternative Fuel Vehicles (AFV) Program
- Provide infrastructure to support alternative fuels including compressed natural gas and electricity
- Encourage practices that support reductions in aircraft emissions
- Maximize use of HOV and reduce single occupancy vehicle trips
- Reduce emissions associated with Massport buildings and fleet, including energy needs
- Incorporate Net Zero pathways into all airport projects and planning



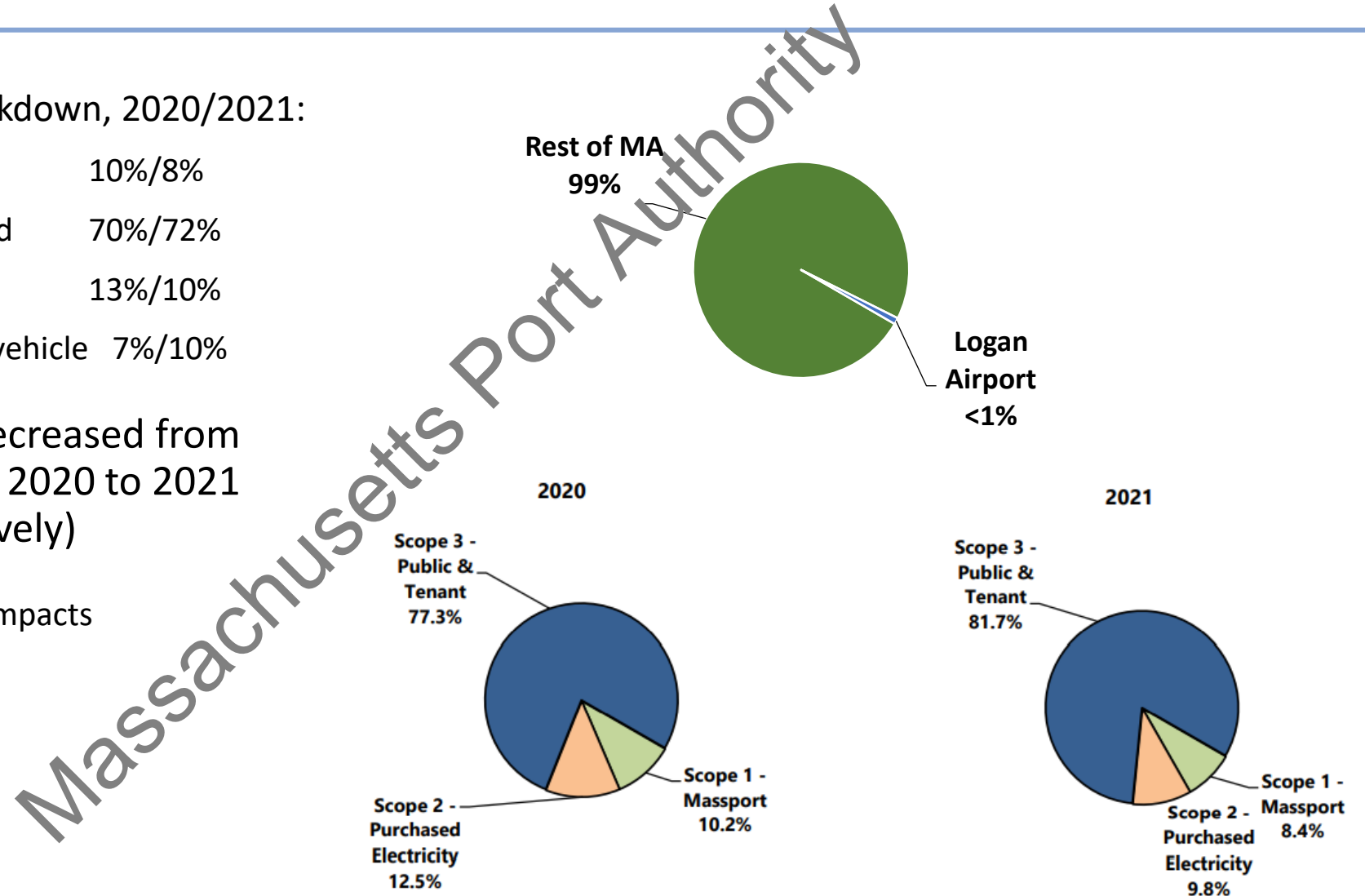
# Reductions in airport-wide emissions mirror overall reductions in activity

- Total emissions of VOC, NO<sub>x</sub>, CO, and PM decreased from 2019 to 2020 (59%, 55%, 58% and 53% respectively)
- In 2021, total emissions of VOC, NO<sub>x</sub>, CO and PM decreased from 2019 (45%, 42%, 48%, and 23% respectively)

Total Emissions Inventory Comparison, 2019, 2020, and 2021				
Model	Pollutant (kg/day)			
	VOC	NO <sub>x</sub>	CO	PM <sub>10</sub> / PM <sub>2.5</sub>
2019 AEDT 3c	771	6,123	7,171	58
2020 AEDT 3c	315	2,777	2,985	27
2020 AEDT 3d	314	2,832	2,979	27
2021 AEDT 3d	399	3,576	3,678	32
% Difference 2020 AEDT 3c and 2019 AEDT 3c	-59.1%	-54.6%	-58.4%	-53.4%
% Difference 2020 AEDT 3d and 2019 AEDT 3c	-59.2%	-53.7%	-58.5%	-53.1%
% Difference 2020 AEDT 3d and 2020 AEDT 3c	-0.2%	2.0%	-0.2%	1.6%
% Difference 2021 AEDT 3d and 2020 AEDT 3d	27.1%	26.3%	23.5%	19.1%

# Total Logan GHG emissions remain less than 1% of statewide GHG emissions

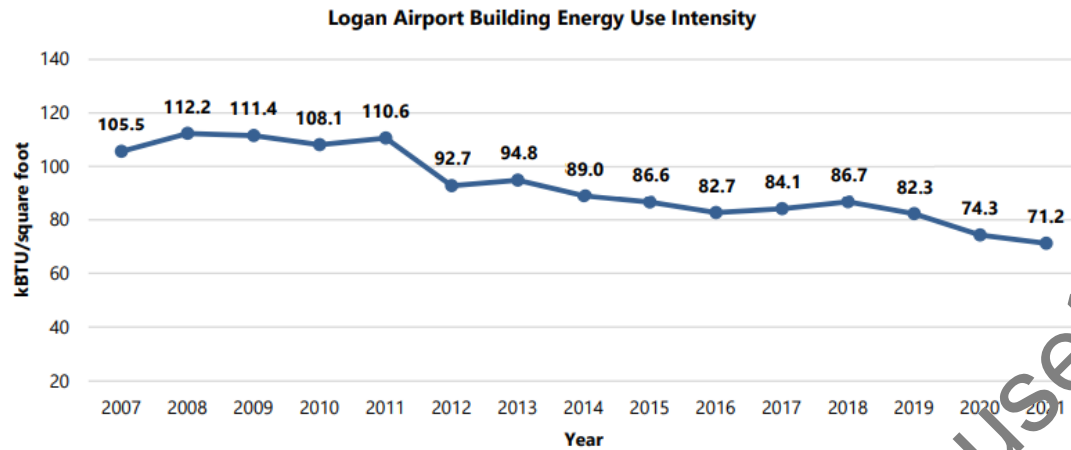
- Logan GHG emissions breakdown, 2020/2021:
  - Massport-controlled 10%/8%
  - Aircraft, GSE, tenant-based 70%/72%
  - Purchased Electricity 13%/10%
  - Passenger ground access vehicle 7%/10%
- Total GHG emissions decreased from 2019 to 2020 and from 2020 to 2021 (60% and 51% respectively)
  - Due mainly to COVID-19 Impacts



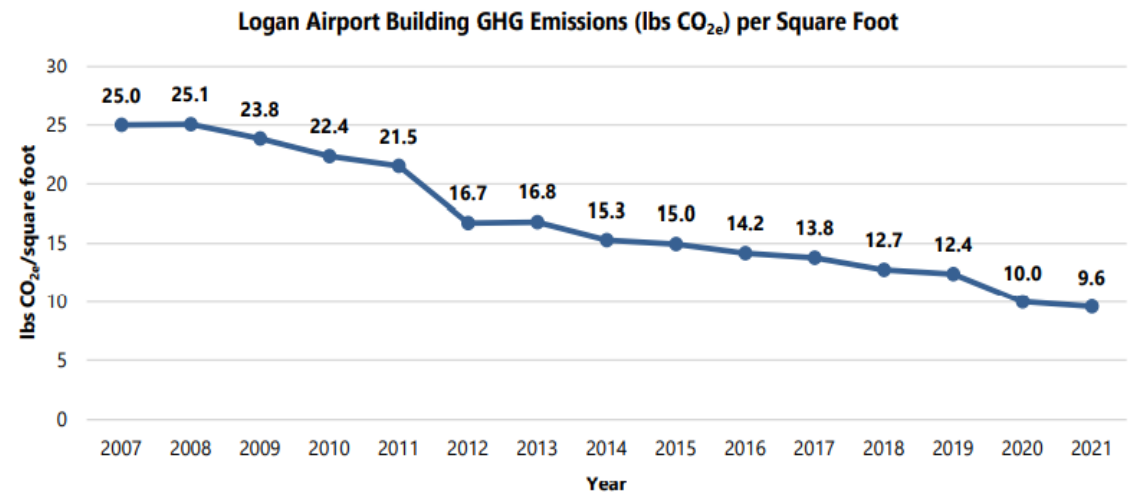


# Several Logan GHG metrics have declined since 2007

Building Energy Use Intensity (kBTU/sf), 2007-2019



Building GHG (lbs CO<sub>2</sub>e) per square foot, 2007-2021



## Chapter 8 – Environmental Compliance and Management/Water Quality

Massachusetts Port Authority

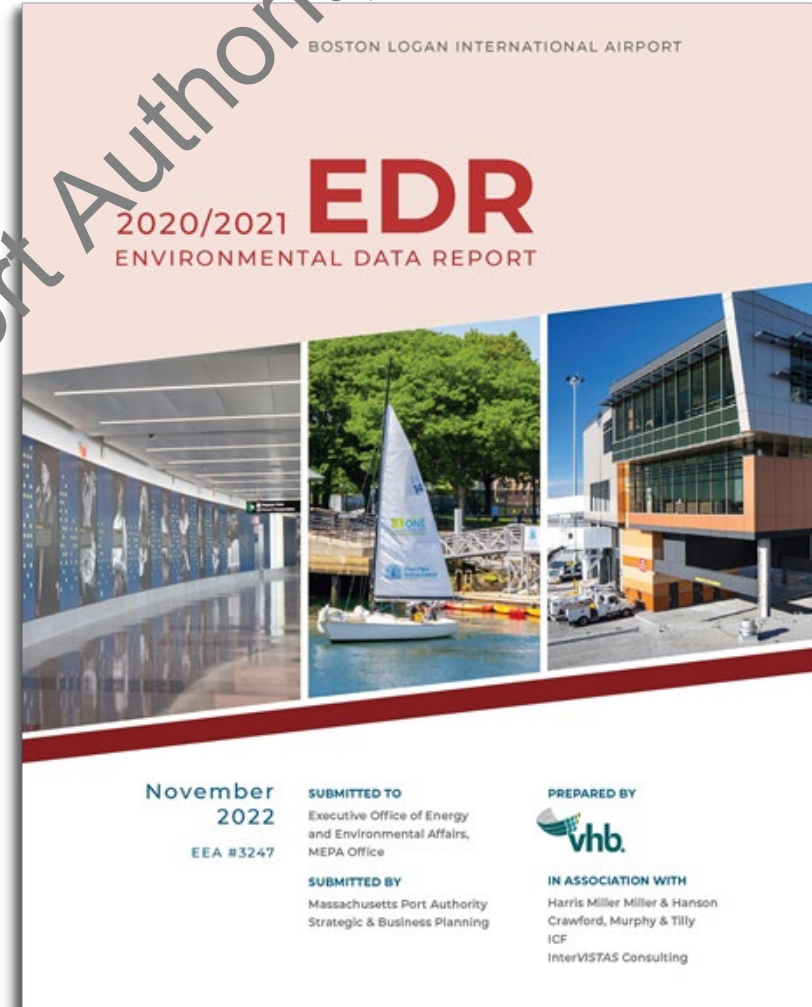
# Update on Water Quality and Environmental Management Plan

- Massport reports water quality compliance per state and federal regulations
- In **2020, 100%** of Massport's stormwater samples were in compliance with *National Pollutant Discharge Elimination System* (NPDES) permit requirements; in **2021, 99%** were in compliance
- 2020 had four reported spills with two storm drains impacted
- 2021 had four reported spills with no storm drains impacted



# This EDR includes a Proposed Scope for the 2022 Logan ESPR

- Appendix C of the *2020/2021 EDR* presents Massport's Proposed Scope for the *2022 ESPR*
- ESPRs include all information presented in the EDRs and also include forecasts of future activity levels (flights, fleet, passengers, ground traffic, parking, etc.)
- The Secretary's Certificate on the *2020/2021 EDR* will serve as the Scope for the *2022 ESPR*



# Public review schedule for the 2020/2021 EDR

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- ✓ • **November 15, 2022** 2020/2021 EDR filed with MEPA
- ✓ • **November 23, 2022** Extended Comment Period Opens
- ✓ • **December 15, 2022** 6:00 PM Hybrid Public Information Meeting
- **January 23, 2023** MEPA Extended Comment Period Closes
- **January 30, 2023** Secretary's Certificate/Scope for 2022 *ESPR* Issued

# Comments on the 2020/2021 EDR must be submitted in writing to EEA/MEPA by January 23rd to:

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- The Honorable Bethany A. Card, Secretary  
Executive Office of Energy and Environmental Affairs (EEA)  
Attn: MEPA Office  
Jennifer Hughes, EEA: #3247  
100 Cambridge Street, Suite 900  
Boston, MA 02114

## **MEPA Public Comments Portal:**

<https://eeaonline.eea.state.ma.us/EEA/PublicComment/Landing/>

*Please forward copies of your comments to:*

[jennifer.hughes@mass.gov](mailto:jennifer.hughes@mass.gov)

[bwashburn@massport.com](mailto:bwashburn@massport.com)

# THANK YOU!

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