

Logan Airport
2022 Environmental Status and Planning Report
ESPR Post-Filing Meeting

June 26, 2024



Logan Airport 2022 ESPR Post-Filing Public Meeting Agenda

- Welcome and Introductions
- Purpose and Overview of the 2022 ESPR
- Report Format and Accessibility
- ESPR Findings by Chapter
 - Sustainability, Outreach, and Environmental Justice
 - Activity Levels and Forecasting
 - Airport Planning
 - Regional Transportation
 - Ground Access
 - Noise
 - Air Quality and GHG Emissions
 - Water Quality
 - Project Mitigation
- Next Steps

Presenters

Massport

- Anthony Guerriero
- Brad Washburn
- Flavio Leo

MEPA/EEA

- Jennifer Hughes

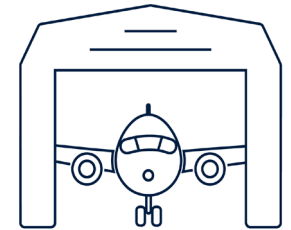
Consultant Team

- Carol Lurie

EDRs and ESPRs are an important planning and reporting process for Massport

- **EDRs** provide an **annual** update on activity and environmental conditions at the Airport compared to the prior reporting year
- **ESPRs** provide annual updates and **long-range analysis** of projected operations, passengers, and anticipated future conditions at Logan and within surrounding communities and the New England Region.
- Massport's EDRs and ESPRs describe and analyze airport operations and environmental conditions.
 - EDRs and ESPRs **do not propose projects** but provide a **planning context** for airport-wide activities that complement project-specific MEPA or NEPA filings.
 - The MEPA process **evaluates single and complete projects** for potential adverse environmental impacts.
 - MEPA Certificates issued for EDRs and ESPRs are not statutory EIRs, and do not replace or circumvent the MEPA process for projects subject to MEPA.

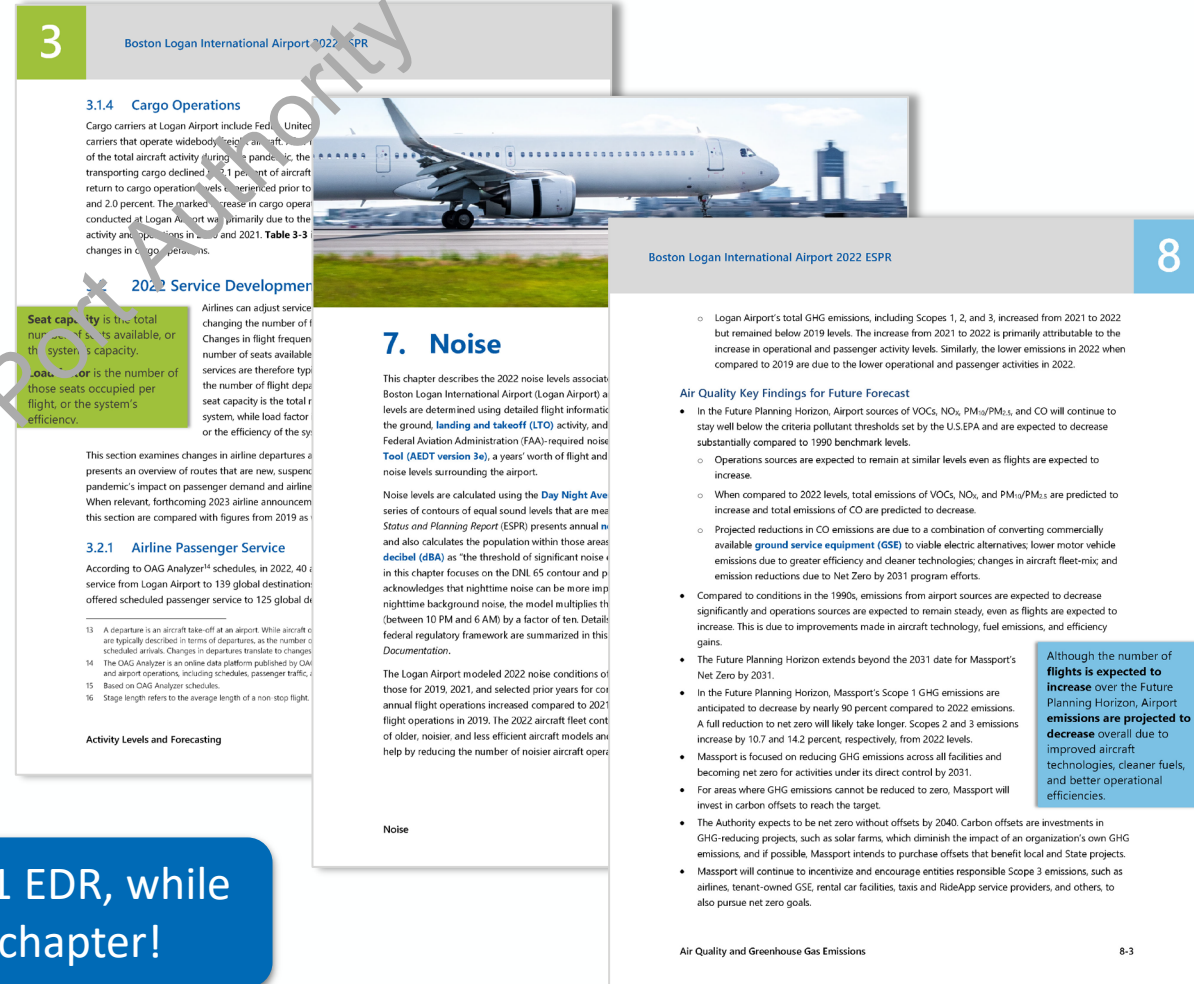
Massport is
unique as the
only state
agency that
prepares
ESPRs/EDRs



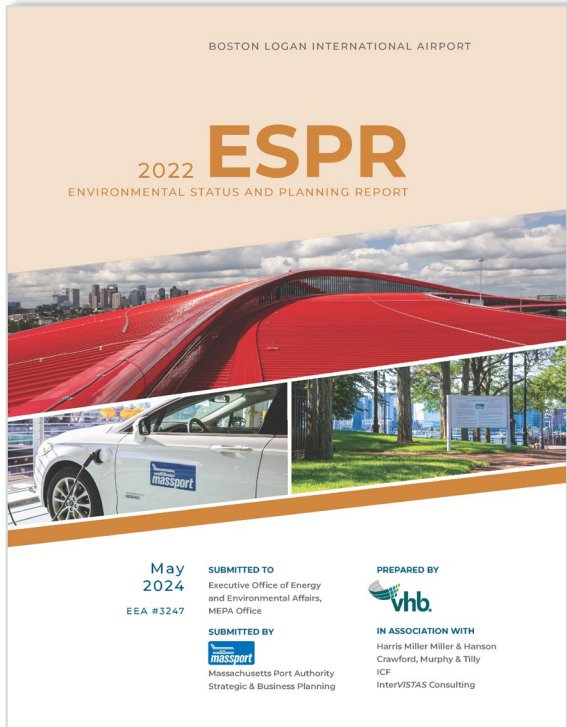
The 2022 ESPR focused on improving brevity, readability, navigability, and overall content accessibility

- **New features include:**
 - Navigation guides, numbered sections, and chapter color coding
 - Key Terminology defined at beginning of document and bolded within chapter text
 - Callout boxes and icons on key topics
 - Updated chapter structure and enhanced graphics
 - Prior ESPR/EDR information incorporated by reference with weblinks for access
 - Refreshed format and simplified writing style for enhanced readability
 - Historical data and dense data tables moved to appendices

The 2022 ESPR was over 100 pages shorter than the 2020/2021 EDR, while still including forecasting/future conditions analysis and a new chapter!



The 2022 ESPR's content includes additional sustainability, community outreach, and environmental justice information



1. Introduction and Executive Summary
2. **Sustainability, Outreach, and Environmental Justice**
3. Activity Levels and Forecasting
4. Airport Planning
5. Regional Transportation
6. Ground Access
7. Noise Air Quality and GHG Emissions
8. Water Quality
9. Project Mitigation
10. MEPA Appendices: A and B – Responses to Comments
11. Technical Appendices: C to K – Supporting Information

In response to comments received on the 2020/2021 EDR, the 2022 ESPR includes a **new chapter**, which discusses

- **Sustainability**
- **Community Outreach**
- **Environmental Justice (EJ)**



Sustainability, Outreach, and Environmental Justice

Massport is a national leader in sustainability and resiliency

- In 2022, published *Roadmap to Net Zero by 2031* which committed to Net Zero GHG Emissions by 2031 for **Massport-controlled** activities
 - Continued to support airlines and tenants in reducing their GHG emissions
- Entered into the Airports Council International Airport Carbon Accreditation (ACA) Program and achieved Level 1 – Mapping (2023)
- Began updating the Massport Sustainability and Resiliency Design Standards and Guidelines (2022)
- Added LEED®-certified facilities in 2022 and 2023 for a total of eight facilities certified
- Continued to invest in climate change and resiliency planning, including publishing the Floodproofing Design Guide



Sustainability and Resiliency Report

- Logan Sustainability Management Plan (SMP) Completed in 2015, FAA funded
- Expanded in 2019 to other Massport assets
- Most recent edition published in 2022, next in 2024

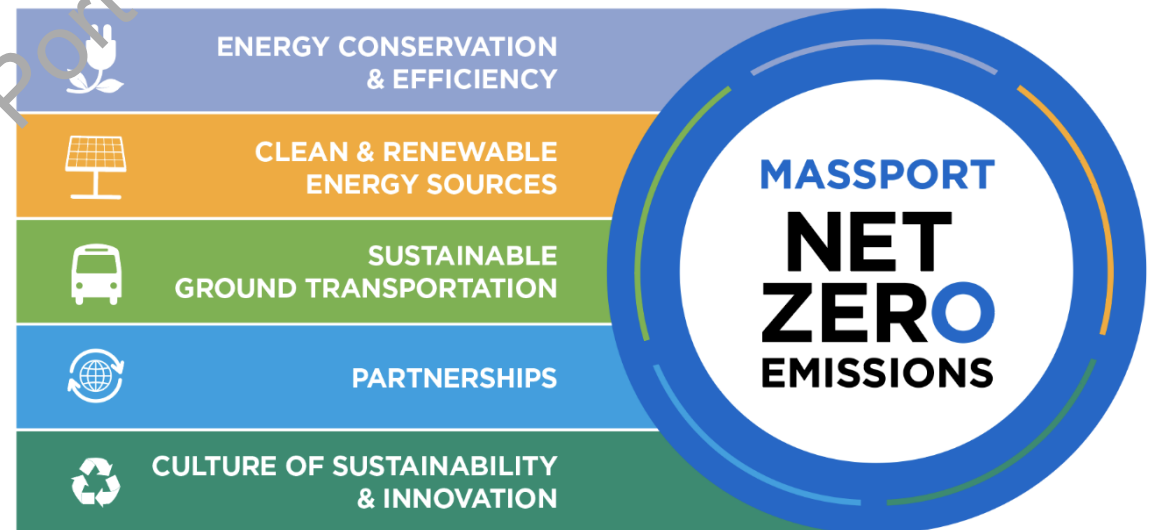


Massport has an ambitious GHG reduction goal to reach Net Zero by 2031

Massport will strive to achieve **net zero greenhouse gas emissions** for those activities under its control, by 2031, Massport's 75th anniversary

- Massport published its Roadmap to Net Zero by 2031 (Net Zero by 2031) in 2022
- Net Zero Roadmap identified five pathways towards implementation and prioritized future projects

Net Zero Roadmap Pathways



NET@ZERO

Massport community commitments and initiatives

- In addition to MEPA project-specific mitigation (Section 61), Massport's engagement with impacted communities has resulted in:
 - Approximately 40-acre extensive open space program.
Green space properties include:
 - Piers Park I and II
 - Bremen Street Park and Dog Park
 - Mary Ellen Welch Greenway Extension
 - East Boston Greenway Connector
 - Narrow-Gauge Connector
 - Airport Edge Buffers Program
 - South Boston Maritime Park
 - Thomas J. Butler Memorial Park
 - Support for East Boston, South Boston, and Winthrop Foundations
 - Community foundations awarded over \$600,000 in 2022
 - Update to the Residential Sound Insulation Program (RSIP)
 - Approved by the FAA for an initial grant to fund the beginning phase of a new RSIP



Massport continues to give to community programs

- Provides annual funding to the **East Boston Neighborhood Health Center** for Pediatric Asthma and COPD Prevention and Treatment Programs in East Boston and Winthrop.
- **Massport's Scholarship Program** provides \$50,000 per year for scholarships to students in neighboring communities as well as support for local high school scholarships.
 - Six local students received scholarships in 2022.
- **Massport's Charitable Contribution Program** distributes over \$250,000 in funding to local organizations for programs in areas like youth & education, arts & culture, social service, environment and athletics.
- **Massport's Community Summer Jobs Program** provides grant funds to local community organizations to support youth summer employment.
 - Funded \$600,000 in grants to support 275 summer youth employment positions in 2022.

Massport has a long history of community engagement

- For over 50 years, Massport has had an entire department dedicated to engagement: Community Relations and Government Affairs
- Massport Community Advisory Committee (Massport CAC), established in 2014, represents the interests of 35 communities; this Committee replaced the former Logan CAC
- Massport regularly holds:
 - Project-specific briefing sessions, including technical overviews and public involvement sessions
 - Meetings with interested parties and key community stakeholders and groups
 - City of Boston Officials
 - Winthrop Town Council
 - Harborview Neighborhood Association
 - Jeffries Point Neighborhood Association
 - Orient Heights Neighborhood Council
 - Piers Park Advisory Committee (PiersPAC)



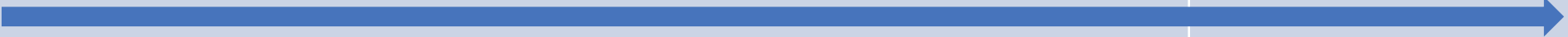
massport
community
advisory
committee



Environmental Justice and Public Health Existing Conditions

Massport has added new opportunities for community engagement*

	Meeting	Date
✓	Public Information Session 1- ESPR Overview / Forecasting Methodology*	June 26, 2023
✓	MEPA Briefing on ESPR *	November 28, 2023
✓	MEPA-hosted meeting with Community Groups on ESPR*	December 21, 2023
✓	ESPR Public Information Session 2 – ESPR Status update*	January 17, 2024
✓	File with MEPA	May 31, 2024
	Public Information Session 3 – During comment period	June 26, 2024
	Continued community engagement	Ongoing



Massport voluntarily conducted and Environmental Justice and public health existing conditions review

- In response to a MEPA request after the issuance of the 2020/2021 EDR Secretary’s Certificate, Massport voluntarily conducted an Environmental Justice (EJ) and public health existing conditions review
- Existing Conditions Study Overview
 - Logan Airport’s designated geographic area (DGA) includes 64 EJ block groups
 - The review used EEA’s 2021 EJ Policy, 2022 EJ Protocols, DPH EJ Tool, and U.S. EPA’s EJScreen, identifying factors like toxic air releases, traffic proximity, and outdated infrastructure
 - Pollution sources affecting population health conditions include transportation, manufacturing, construction, and industrial activities
 - Current data do not differentiate or quantify each pollution source's contribution, making direct effect assessments and associated actionable measures untenable at this time

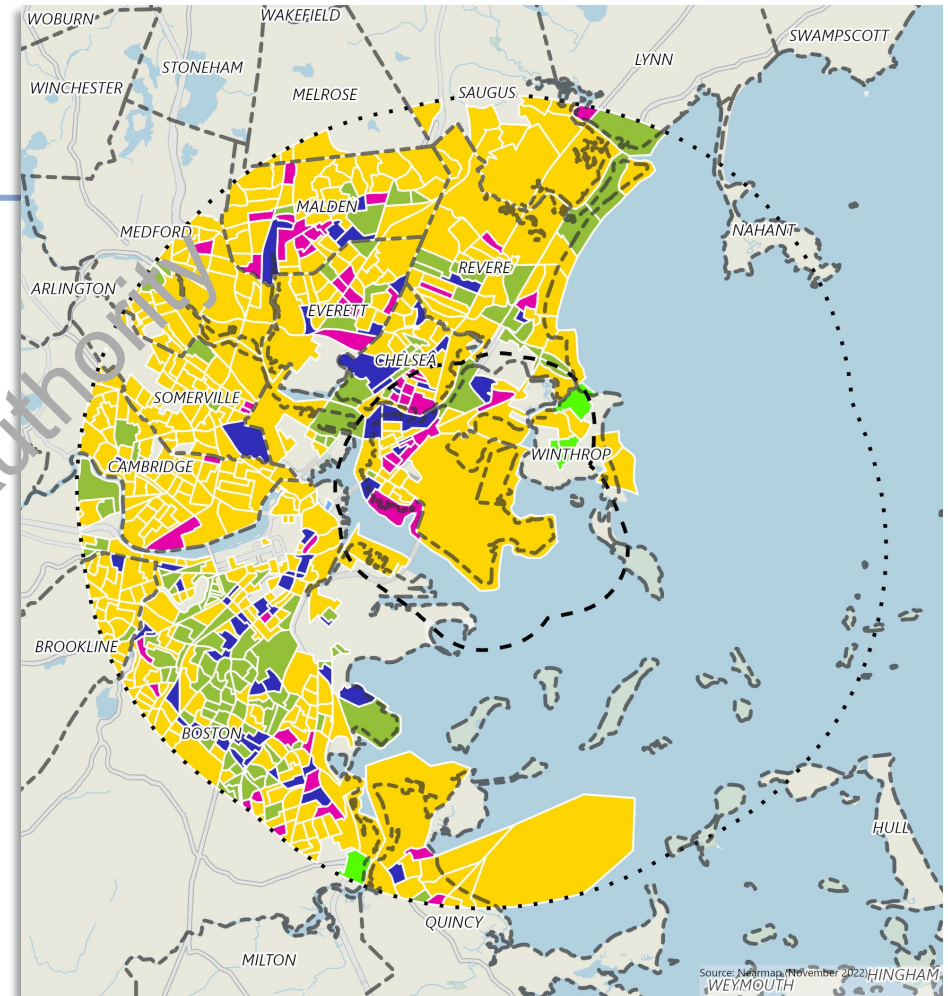
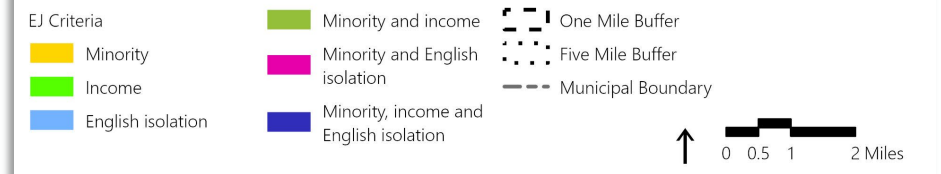


Figure 2-4 EJ Populations within 1 and 5 miles of Logan Airport

2022 Environmental Status and Planning Report





Activity Levels and Forecasting

Logan Airport 2022 activity levels are still below 2019 Levels

- Logan Airport and the aviation industry continued to recover from the impacts of the global COVID-19 pandemic

Summary of activity levels in 2022

Passengers

36.1 Million
passengers

59%
higher
than
2021

15%
lower
than
2019

132
Average number of
passengers per
operation

Operations

378,613
operations

31%
higher
than
2021

11%
lower
than
2019



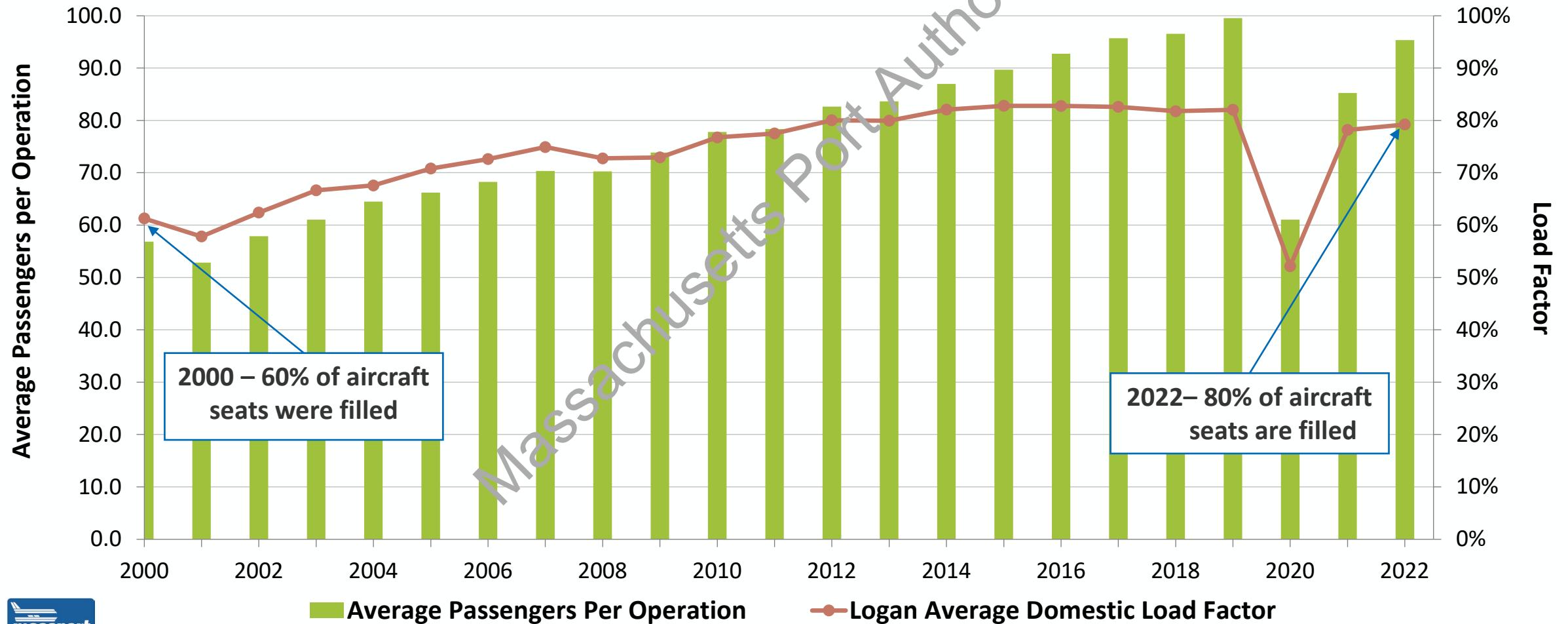
Over the long-term, the number of passengers has increased while flights have decreased

Between 1998 and 2022, there was a 36.1% rise in the annual passenger count accompanied by a 25.4% decrease in the annual number of aircraft operations



More passengers are being accommodated on fewer flights

- Load factor – Percentage of available seat capacity filled by passengers
- Domestic load factors are anticipated to be close to 84% in the future planning horizon



Forecast are updated every 5 years and are utilized to estimate probable future passenger demand, operations, and environmental conditions

- ESPR forecast methodology uses a blend of near-term trends and insights with long-term economic factors; including trends at local, regional, and national levels
- Very long-range forecasts are uncertain, therefore ESPR focuses on a more realistic 10- to 15-year timeframe
- **All forecast assumptions are revisited in each ESPR**
- Forecast outcomes are used to inform model inputs for predicted future conditions for:
 - On-airport vehicle use and traffic conditions,
 - Noise, and
 - Air quality and GHG emissions



Passengers 53.5 million

Future Planning Horizon



Operations 495,000

Forecasts track closely with actual activity levels



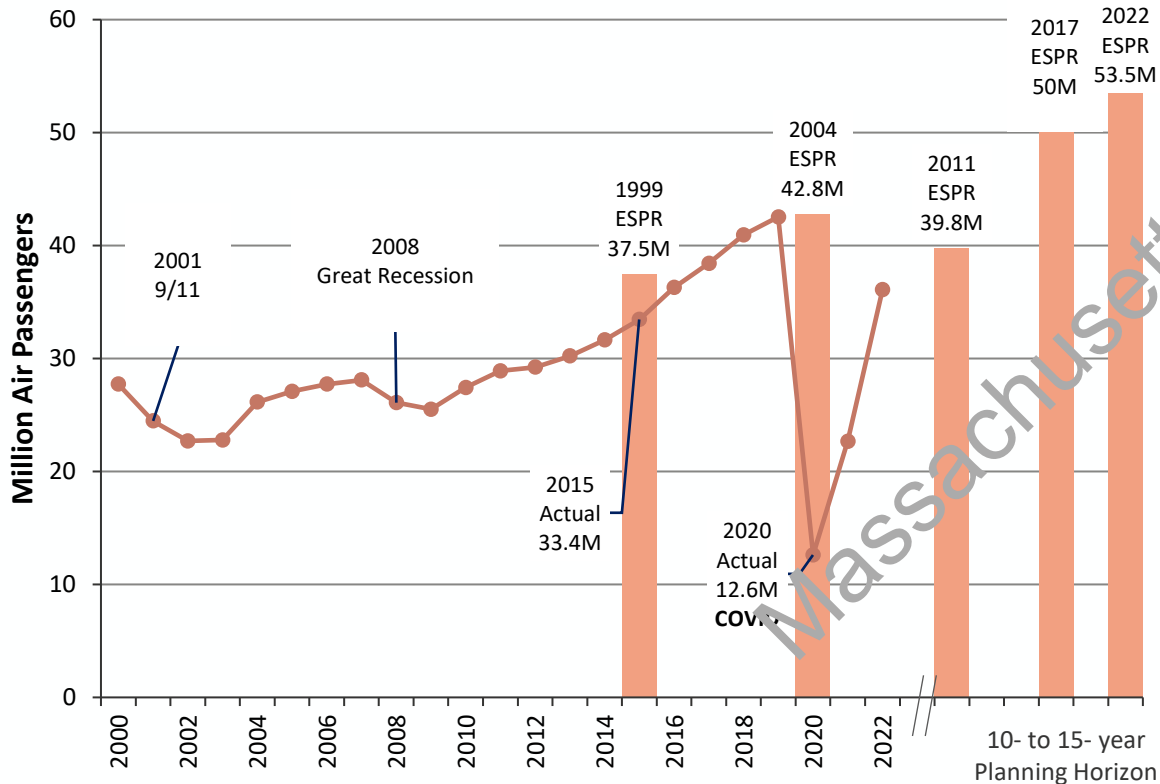
Passengers 53.5 million

Future Planning Horizon

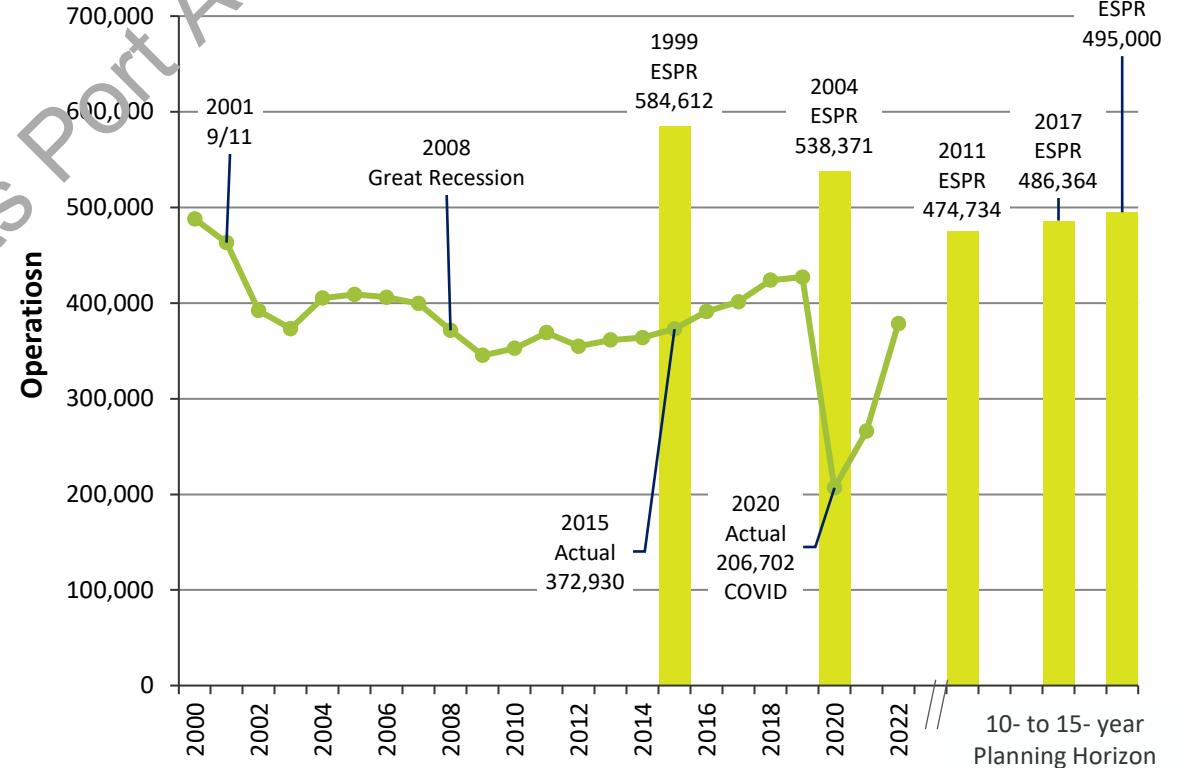
Operations 495,000



Air Passengers: Forecast vs. Actual



Aircraft Operations: Forecast vs. Actual



Airport Planning

Massachusetts Port Authority



As passenger activity recovers, Massport restores service and restarts select postponed projects

Deferred Projects or Services due to COVID	Status
Parking Garage in front of Terminal E	Permitted for 5,000 spaces. Project design and sizing of parking currently being evaluated and designed
Construction of 1,000 parking spaces at Framingham Logan Express	In design, anticipated to break ground in 2024
New Logan Express suburban locations	Added Quincy location and new employee site at Wonderland; New, expanded North Shore Logan Express in 2024
Terminal E Improvement Phase 1	Terminal E Phase 1 opened in October 2023 – 4 new gates
New urban Logan Express service	Current focus is on Wonderland employee parking, better service on SL1, SL3, and Back Bay Logan Express
Logan Express service from Peabody, Woburn, and Back Bay	Services fully restored in 2022, Peabody Logan Express at new North Shore location
Dedicated HOV bus lanes	HOV prioritization throughout Logan campus
Reduced headways from Braintree and Framingham Logan Express	Passenger capacity added to Braintree; New Quincy employee lot to help increase parking capacity at Braintree; pending expansion in Framingham

ESPR highlights safety and efficiency projects (example projects)

Ground Transportation and Parking Planning

- Logan Airport Parking Project

Terminal Area

- Terminal E Modernization

Airside

- Runway 27 RSA Safety Improvements
- Runway Protection Zone Enhancements
- Signature Flight Support Relocation

Service Area Planning

- North Service Area Optimization
- Green Bus Depot Operations Renovation
- Southwest Service Area Optimization
- Cargo Throughput Facility



Figure 4-1 Location of Airport Projects and Planning Concepts

2022 Environmental Status and Planning Report

- # Location of Project/Planning Concept. Color and ID match to Table 4-1.
- Service Areas
- █ Parking Facilities
- █ Terminal Buildings



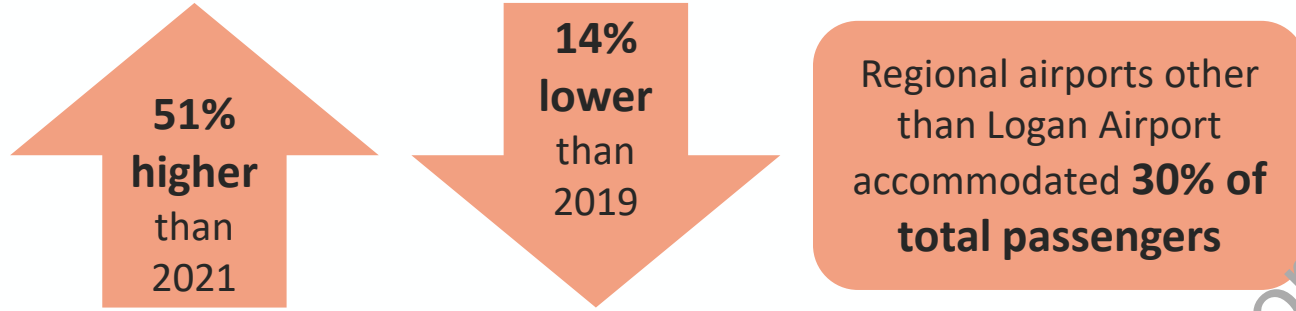


Regional Transportation

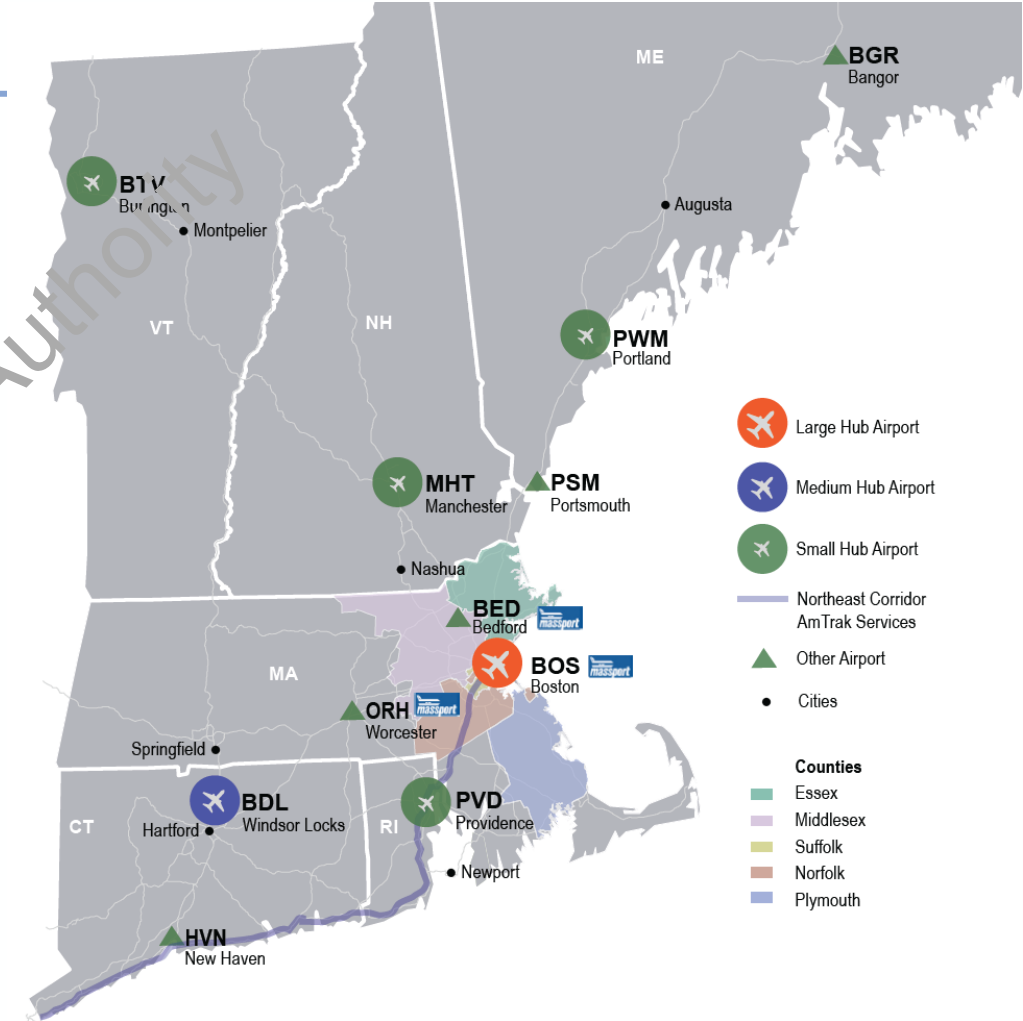
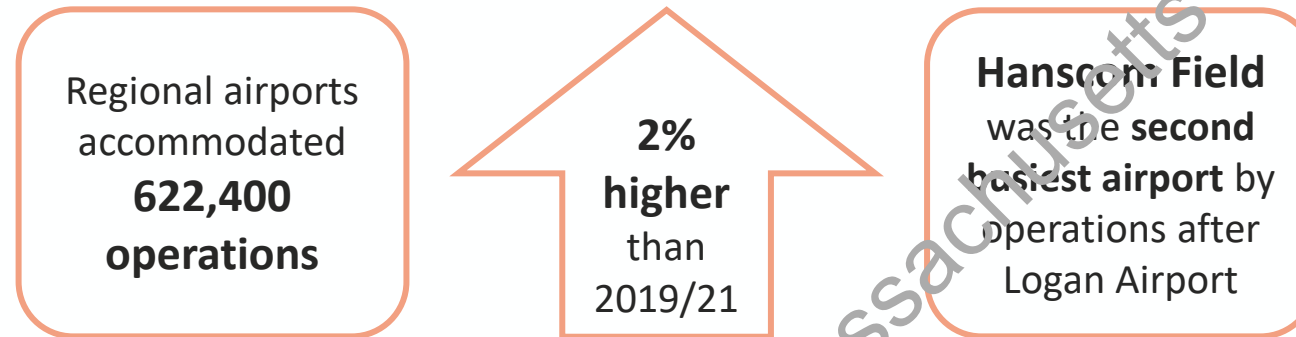
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Regional Transportation 2022 Findings

Summary of New England Regional Passenger Activity in 2022:



Summary of New England Regional Operations in 2022:





Ground Access

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In 2022 Ground Access mode share continued to show impacts from the pandemic

- All types of ground transportation services increased ridership in 2022, a return to pre-pandemic usage levels
- *2022 Air Passenger Ground Access Survey* showed COVID-19's impact on passenger travel choices
- Post-pandemic, Logan Airport continued to prioritize long-term parking and comply with the Logan Airport Parking Freeze

Vehicle miles traveled (VMT) in 2022:

Average weekday on-Airport VMT was **164,625 average daily miles traveled**

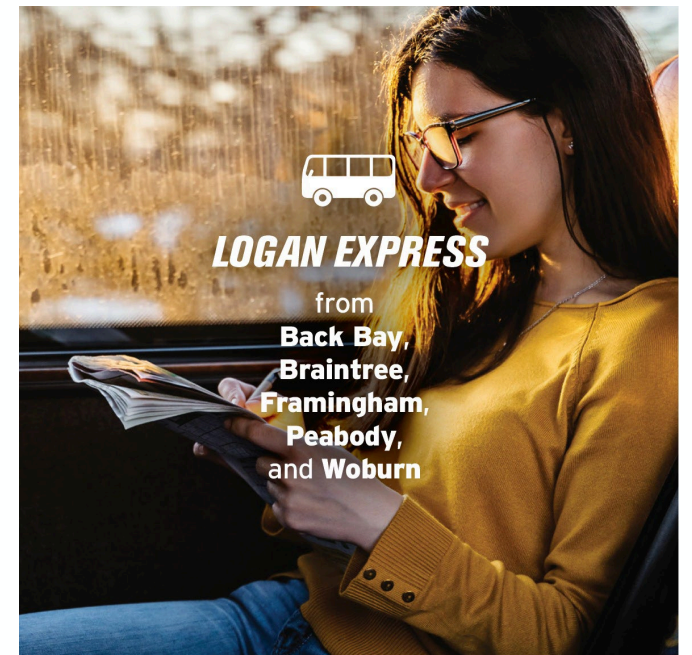
38% higher than 2021

27.5% lower than 2019

High Occupancy Vehicles (HOV) in 2022:

HOV mode share reached **38.4%**, exceeding Massport's goal of 35.5% HOV mode share by 2022.

Logan Airport is expected to remain a **top U.S. airport for high-occupancy vehicle (HOV) and transit mode share.**



Curbside Dwell Time Study in line with previous model assumptions

- As requested by the community, Massport conducted a curbside dwell time study to:
 - Better understand conditions at the curb (an input of the traffic model)
 - Inform emission calculations for the air quality analysis
- Terminal A curb was chosen as a pilot terminal due to ongoing construction at other terminals

Methodology

- Visual observations recorded how long various types of vehicles stayed at the curb throughout the average day
- Vehicle Types observed
 - Arrivals – taxis, airport shuttles, Silver Line and Logan Express buses, and personal vehicles
 - Departures – personal vehicles

Findings

- Observed dwell times are generally in line with those modeled
- Personal vehicle dwell times are longer during some times of the day, primarily outside of the peak travel times that are modeled (when fewer people are curbside)

Next Steps

- Massport plans to conduct dwell time studies for other terminal curbs
- Findings will be used to inform the ESPR and EDR ground access and air quality analyses
 - Updated dwell times are one of several components within modeling for on-Airport-emissions

Massport will continue to make investments and incentivize HOV use, including Logan Express

- Massport has and continues to make **investments into Logan Express** to accommodate future passenger needs
- Logan Express investments include:
 - Increasing parking availability at key Logan Express sites
 - Enhancing service frequency, and
 - Expanding service locations, including a new urban location.
- Massport continues to **incentivize HOV** use for travel to and from the Airport including measures such as:
 - Prioritizing certain Airport roadways to optimize bus operations
 - Investing in and the expansion of Silver Line 1
 - Continuing on-going and future improvements to the Blue Line, and
 - Continuing partnerships with private bus companies to encourage HOV use



In addition to HOV planning, Massport continues to identify infrastructure and operational modifications to aid vehicular traffic flow

- Massport continues to identify infrastructure and operational modifications that would **improve vehicular traffic flow** at the Airport
 - Terminal B/C Roadway Project and RideApp access planning efforts are already complete and will have a lasting benefit to future operations at the Airport
 - Prioritization of transit on Logan Airport roadways to optimize bus flow
 - Construction of a new parking garage adjacent to Terminal E.
 - Optimization of curbside operations
- In the Future Planning Horizon, VMT is **anticipated to increase by 1 percent** (212,022 VMT) compared to 2019 VMT values



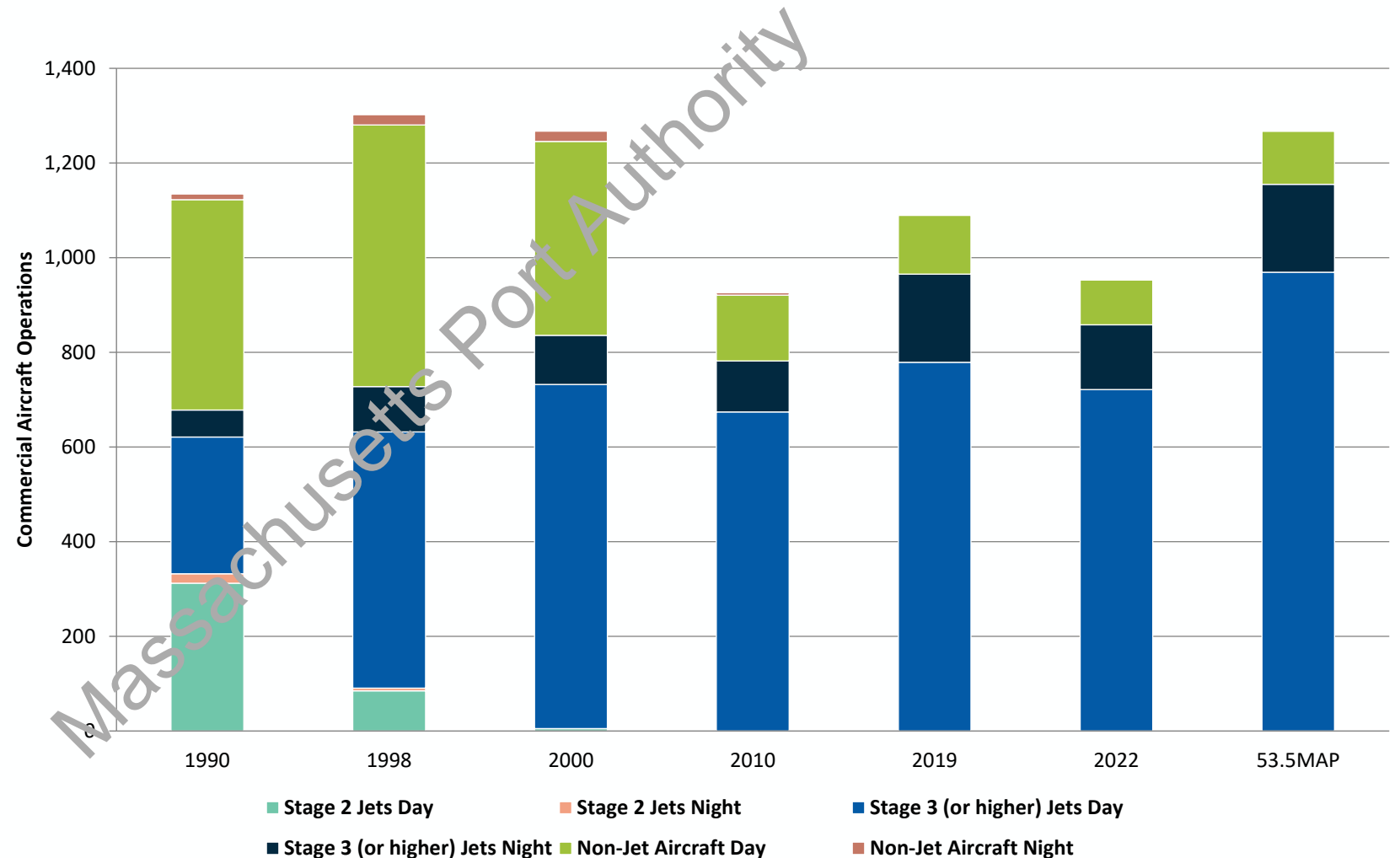


Noise

Massachusetts Port Authority

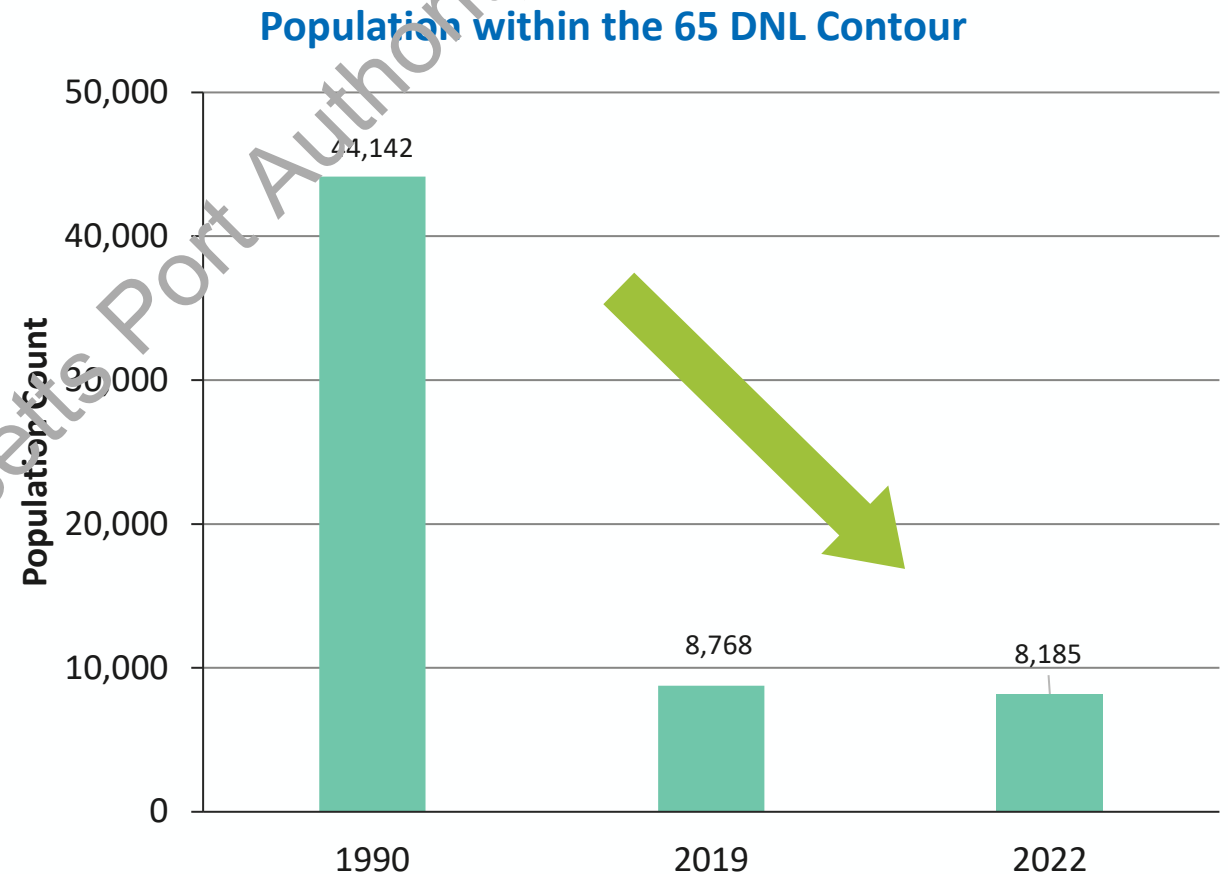
New technology improvements are resulting in reduced noise and air quality impacts

- Aircraft are getting quieter, moving away from noisier Stage 2 aircraft to Stage 5 aircraft
- Aircraft and vehicle emissions are also getting cleaner
- Growing share of sustainable aviation fuel replacing jet fuel
- Vehicular emission factors have decreased due to improved engine efficiencies and growing share of EVs



Population within DNL 65 dB contours remain well below historic peaks

- 2022 Day-Night level (DNL) noise contours are similar to and smaller than 2019 due to fewer aircraft operations and quieter aircraft fleets
- The 65 dB threshold is the standard used by the FAA
- 8,815 estimated population within the 2022 DNL 65 dB contour - **7% below 2019** level
- 2022 Nighttime aircraft operations were **14% of total operations**, with 83% occurring either before midnight or after 5:00 AM
 - Total nighttime flights were 26% less than in 2019



Massport recently upgraded its Noise Monitoring System

- Noise and Operations Monitoring System (NOMS) was upgraded **replacing 29 of 30 monitors**
- Massport has invested over \$170 million in sound insulation and sought additional funding for noise mitigation in 2022
- The Logan Airport noise mitigation program includes:
 - Operational restrictions on certain runways
 - Limits to engine runup locations
 - Late night runway preference
 - Noise abatement turns



Figure 7-16 Noise Monitor Locations

2022 Environmental Status and Planning Report

- Noise Monitors
- ▲ Airport Reference Point
- Municipal Boundary

↑ 0 5,000 10,000 Feet

Modeled noise future conditions remain below historic peaks

- The DNL 65 dB contour for the future planning horizon remains within areas included in Massport's Residential Sound Insulation Program
- The future planning horizon predicts 9,435 people exposed to noise levels of DNL 65 dB or greater, a 15.2% increase from 2022, but **still well below historic peaks**
- Aircraft in the future forecast fleet are expected to have **quieter and more efficient engines** than older aircraft in the current fleet
- The future forecast DNL contours are a **conservative estimate of future noise levels**, with actual noise levels expected to be lower due to advancements in aircraft technology
- Nighttime operations are expected to increase from 2022 to the future planning horizon but remain below 2019 levels.
 - In the future planning horizon, nighttime flights will represent 14% of total operations

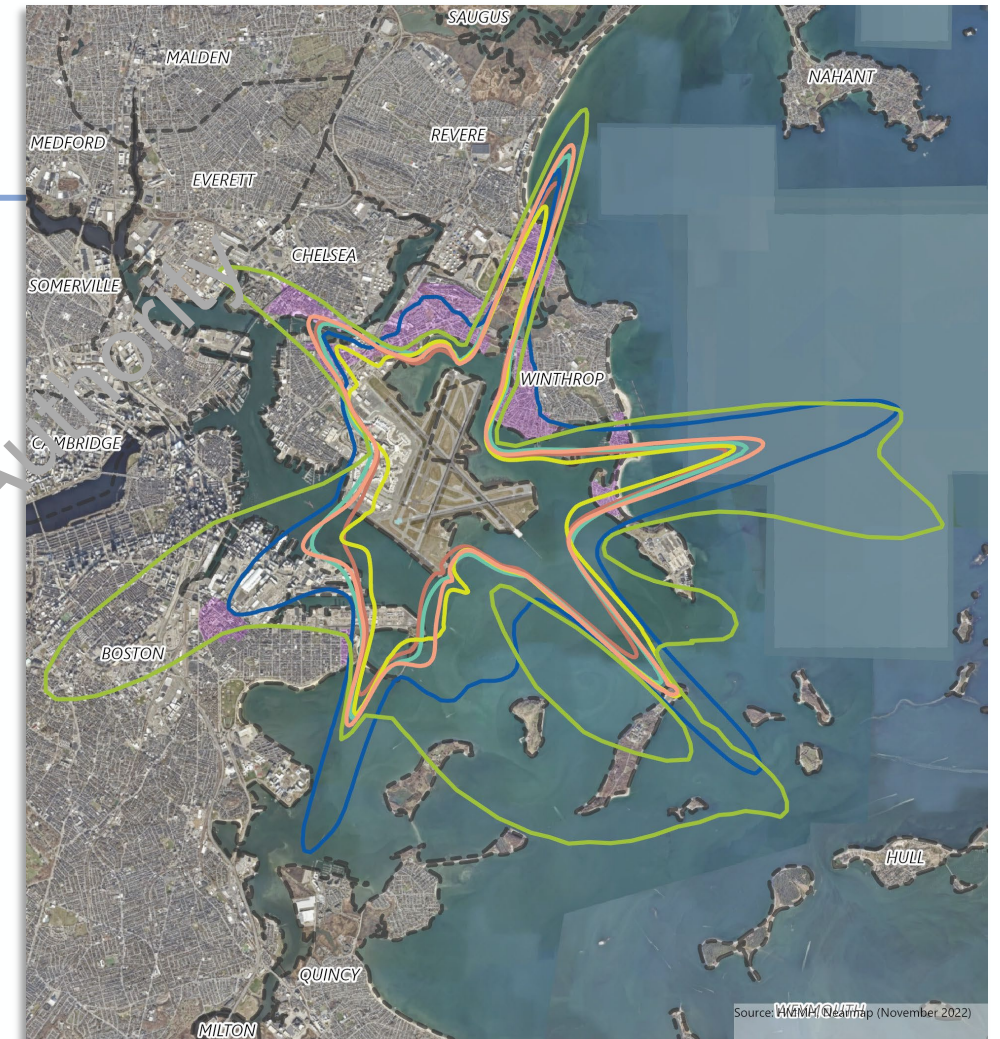
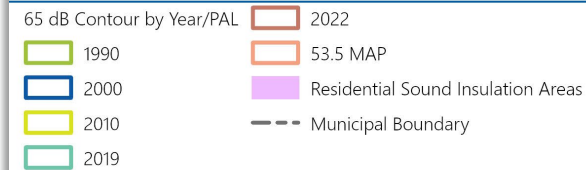


Figure 7-19 Comparison of 1990, 2000, 2010, 2019, 2022, and 53.5 MAP 65 dB Contours

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0 5,000 10,000 Feet

Air Quality and Greenhouse Gas Emissions

Massachusetts Port Authority

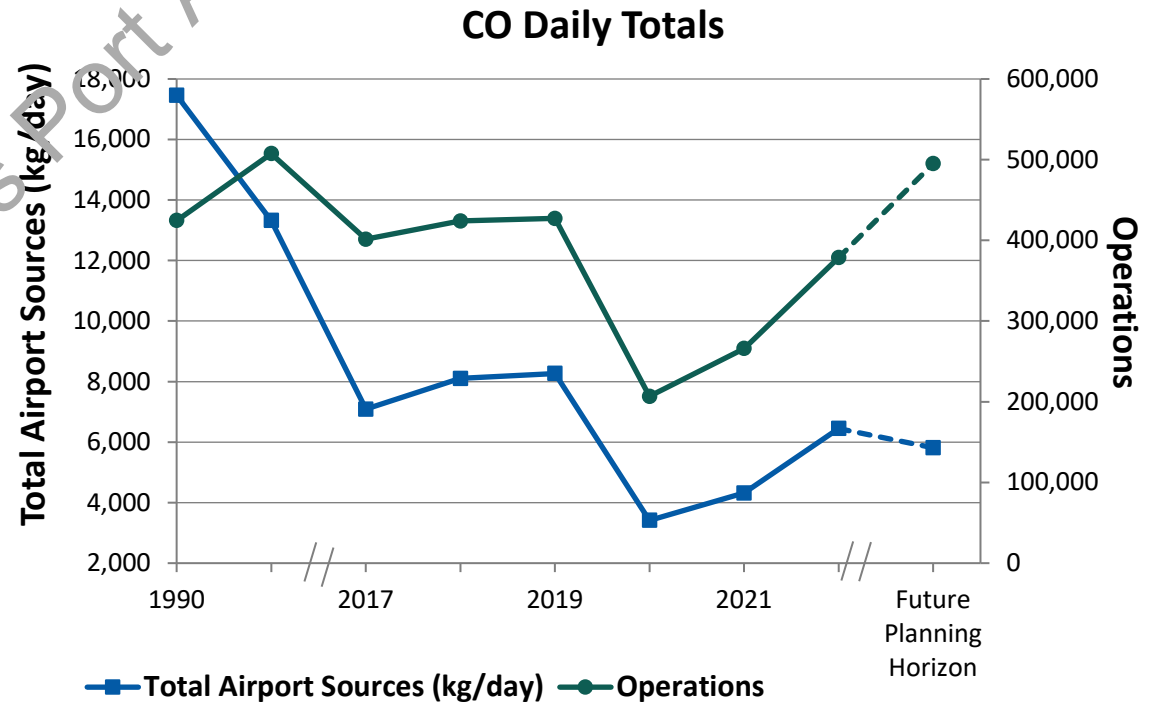
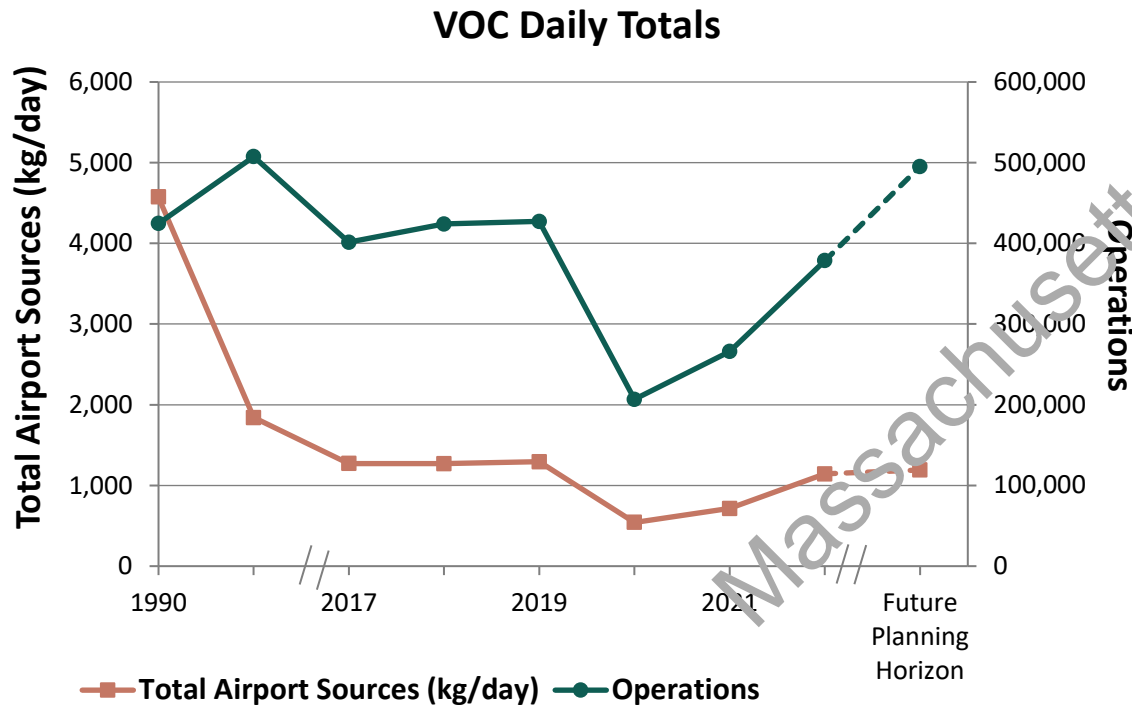
Logan Airport and the Boston Metropolitan Area meet Federal Air Quality Requirements (i.e., NAAQS)

- Logan Airport is a part of the Boston Metropolitan Area as designated by the Clean Air Act (CAA)
- The CAA designates areas as either attainment, nonattainment, or attainment/maintenance in relation to the National Ambient Air Quality Standards (NAAQS)
- Boston Metropolitan Area **meets all pollutant standards** (attainment) as per NAAQS, except for Carbon Monoxide (CO)
 - The area is in a state of attainment/maintenance, meaning it is maintaining the standards **without any measured exceedance since 1995**

Pollutant	Designation
Ozone (8-hour, 2008 Standard)	Attainment
Ozone (8-hour, 2015 Standard)	Attainment
Carbon Monoxide (CO)	Attainment/Maintenance ¹
Nitrogen Dioxides (NO ₂)	Attainment
Particulate Matter (PM ₁₀)	Attainment
Particulate Matter (PM _{2.5})	Attainment
Sulfur Dioxide (SO ₂)	Attainment
Lead (Pb)	Attainment

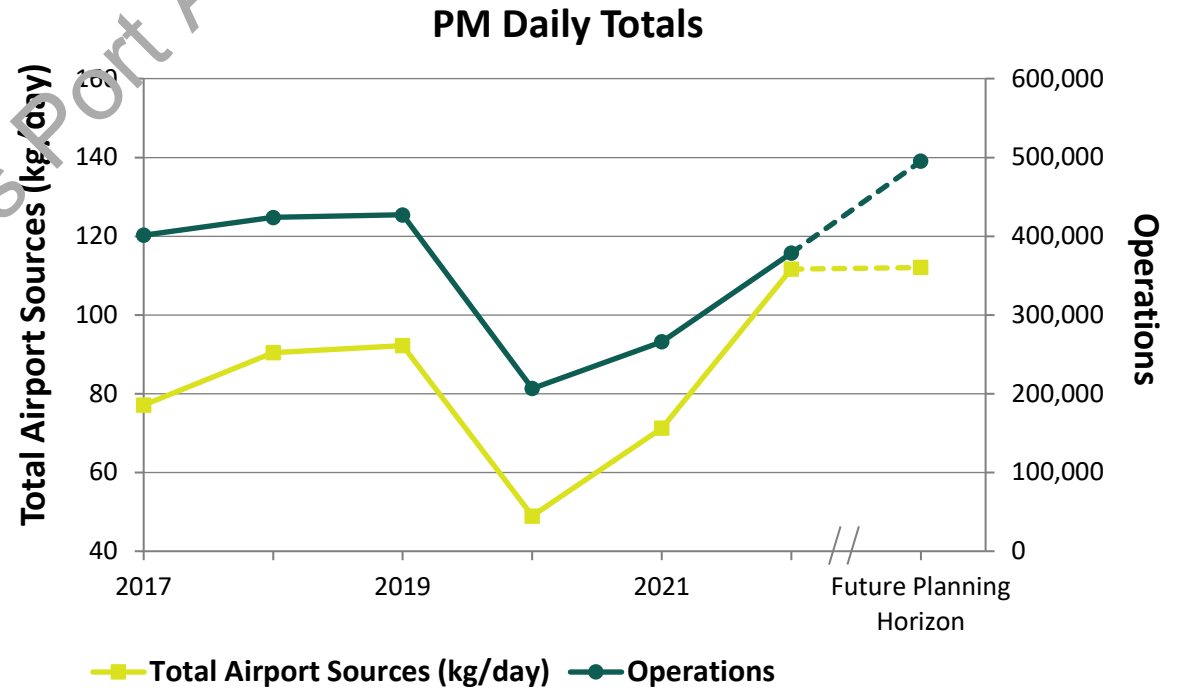
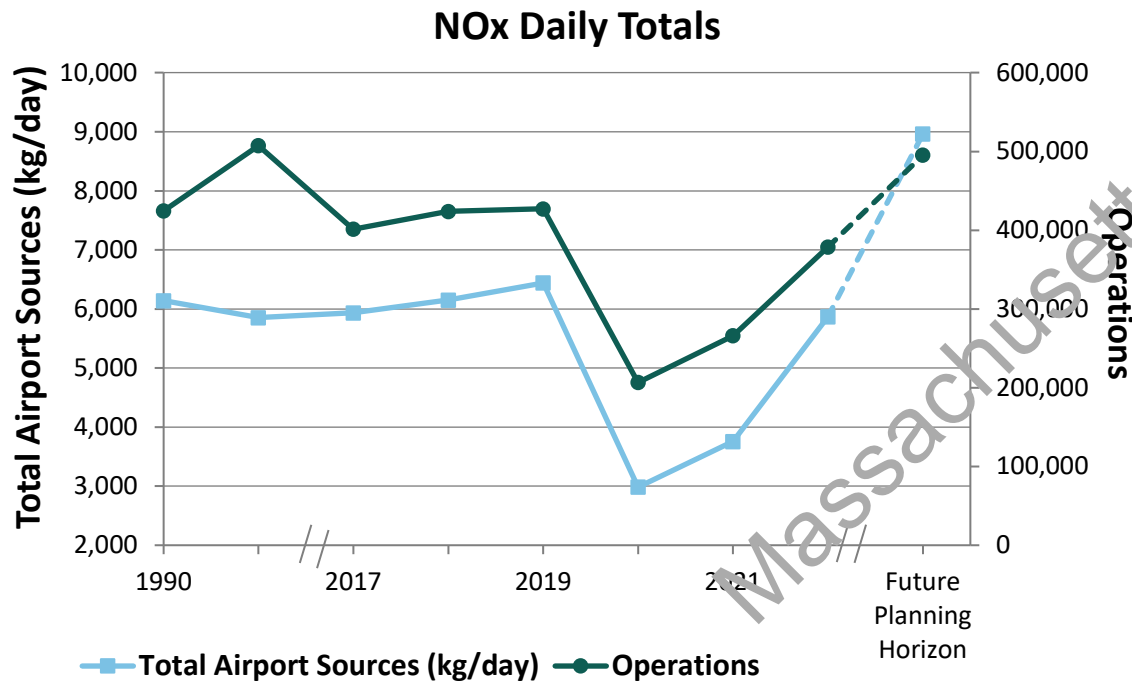
With new technology, reduction in VOCs and CO Emissions over the long run

- Criteria pollutants CO and VOCs are predicted to decrease in the future due to:
 - Changes in aircraft fleet mix and increased use of sustainable aviation fuel (SAF)
 - Conversion of fleet vehicles and GSE to EV or viable alternatives
 - Cleaner aircraft engine and motor vehicle technologies



PM will decrease overtime despite recent increases while NOx will increase

- PM_{2.5} will also decrease over time, but model assumptions for motor vehicles reflect an increase for 2022
- PM₁₀ will decrease due to Changes in aircraft fleet mix and increased use of SAF
- Most NO_x emissions from aviation do not occur near the ground, and more than 90% occur above 3,000 feet.
- NO_x will likely increase in the future due to changing aircraft fleet and engine technology



Logan Airport Scope 1 and 2 GHG emissions remain well below 2019 levels

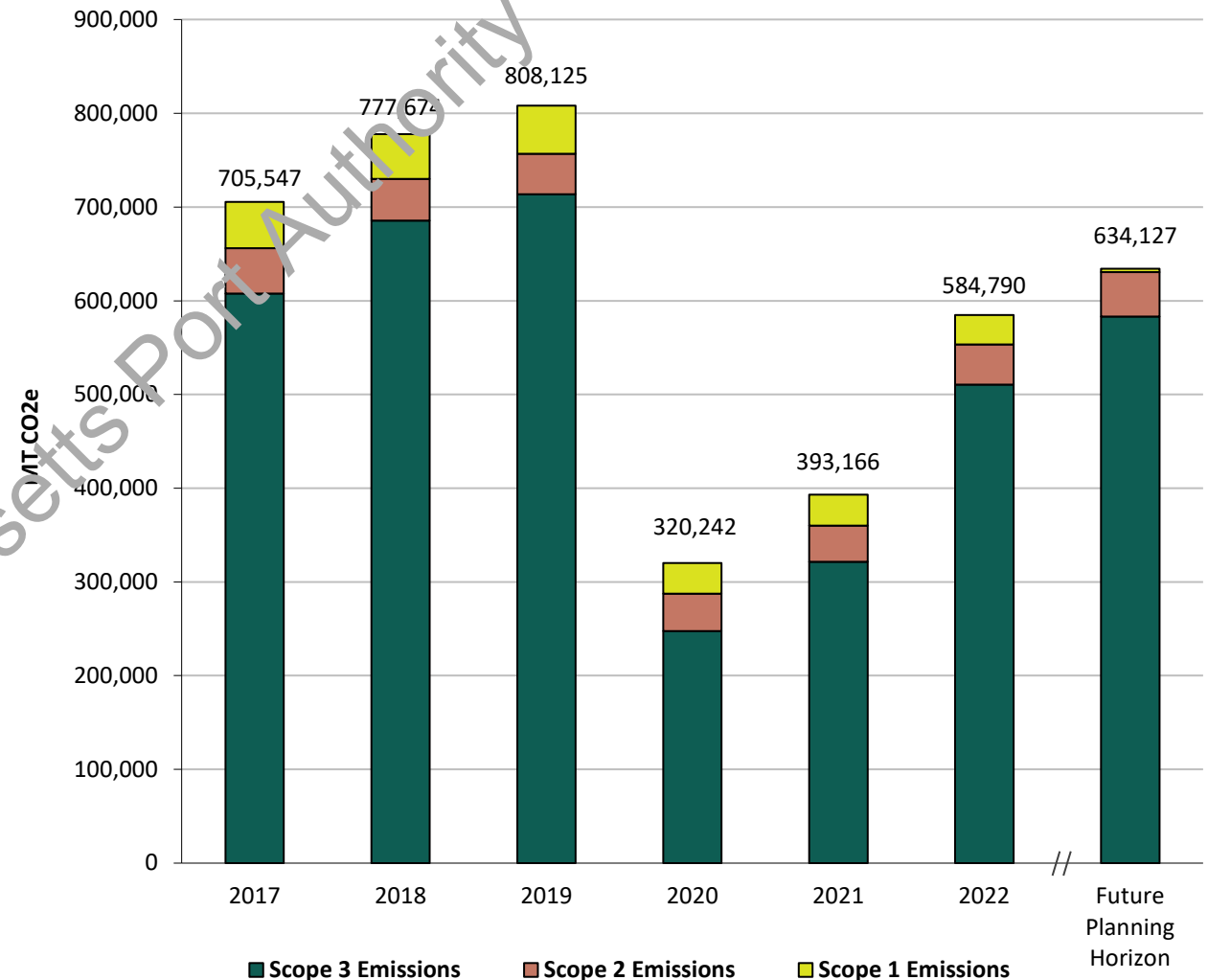
- Reductions attributable to
 - Lower passenger and aircraft activity levels than 2019
 - Recategorized parking lots to Scope 3 in line with ACA reporting protocols
 - Substantial reduction in use of #2 Fuel (higher emission factor than other fuels)
 - Greater accuracy of monthly utilities data reporting

**Logan Airport GHG emissions represent:
Less than 1 % of Massachusetts' emissions**

SCOPE	2019 MT of CO ₂ e	2022 MT of CO ₂ e	Percent difference
Scope 1 Emissions	51,360	31,415	-39%
Scope 2 Emissions	43,226	42,853	-1%
Scope 3 Emissions	713,539	511,452	-28%
Total Emissions	808,125	585,720	-28%
Percent of State Totals	1%	<1%	<1%

Scope 1 GHG emissions are anticipated to decrease by nearly 90 percent in the Future Planning Horizon compared to 2022

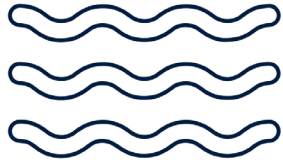
- The Future Planning Horizon extends beyond the 2031 date for Massport's Net Zero goal
- Through the Future Planning Horizon, Massport has made progress towards achieving goal of Net Zero emissions
- However, Scope 2 and 3 emissions are anticipated to increase from 2022 levels
- For instances when GHG emissions under Massport control cannot be reduced to zero, Massport plans to **invest in carbon offsets** to reach the target
 - Massport aims to be net zero for GHG emissions without offsets by 2040





Water Quality

Environmental Compliance and Management



- In 2022, Massport performed environmental compliance inspections, conducted its annual *Stormwater Pollution Prevention Plan* (SWPP) update meeting, and submitted the 2022 Annual Certificates of Compliance to the U.S. Environmental Protection Agency (U.S.EPA) and Massachusetts Department of Environmental Protection (MassDEP)
- In 2022, over **97 percent of stormwater samples** collected were in compliance with standards for pH, oil and grease, and total suspended solids (TSS)
- In 2022, 3 fuel spill incidents were over 10 gallons, but **none of these resulted in pollutant exposure to stormwater infrastructure or the discharge of pollutants to the aquatic environment**
- Massport continues to assess, remediate, and bring its Massachusetts Contingency Plan (MCP) sites to regulatory closure

Project Mitigation



Massachusetts Port Authority

Massport continues to implement project specific mitigation commitments

- Within the MEPA process, Project Mitigation” refers to specific project measures to “avoid, minimize and mitigate environmental impacts” which are outlined within a required Environmental Impact Report (EIR) for a project and are required by law under Massachusetts General Law (MGL) Chapter 30, Section 61
- Projects and programs deferred during COVID-19 have begun to resume
- Massport continues to comply with its project mitigation commitments

Projects with on-going Section 61 commitments:

- West Garage Project
- International Gateway Project
- Replacement Terminal A Project
- Logan Airside Improvements Planning Project
- Southwest Service Area Redevelopment Program
- Logan Airport Runway Safety Areas Project
- Terminal E Modernization Project
- Logan Airport Parking Project
- Runway 27 End Runway Safety Area Improvement Project



Massachusetts Port Authority

Next Steps

Terminal **E**
Airport Exit

Passenger Drop off

← Passenger Drop Off
Passenger Drop Off →

← Passenger Drop Off
Buses Only →

The anticipated next document in the ESPR/EDR series will be the 2023/2024 EDR

- Massport is proposing the next EDR to be a combined document covering the years 2023 and 2024
- The 2022 ESPR includes a proposed scope for the 2023/2024 EDR. Notable new items include:
 - Presented as a shorter annual update on the pertinent findings from the reporting years
 - Additional technical information will be moved to the appendices, as appropriate
- Prior to the next filing, Massport will develop a page on the Massport website for information specific to ESPRs and EDRs. This page will include:
 - Upcoming meeting notices
 - Past meeting presentations
 - Links to data that is frequently updated and cited within the EDR and ESPR
 - The most recent ESPR/EDR filing
- Massport will continue to work on making the EDR/ESPR series more concise, readable, and accessible

Comment Submissions and Questions

Submit comments on the 2022 ESPR by August 6th, 2024 to:

The Honorable Rebecca Tepper, 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/>

If you have any questions, please contact
Brad Washburn at bwashburn@massport.com