

Logan Airport 2022 Environmental Status and Planning Report Public Information Session

January 17, 2024



Logan Airport 2022 ESPR Pre-File Public Information Session

Agenda

- Welcome and Introductions
- Purpose and Overview of the 2022 ESPR
- Status Update on ESPR Chapters
 - Activity Levels/Forecast
 - Airport Planning
 - Regional Transportation
 - Ground Access
 - Noise Abatement
 - Air Quality and GHG Emissions Reductions
 - Environmental Compliance/Water Quality
 - Project Mitigation
 - Community Benefits, Sustainability, and Resiliency
- Report Format and Readability
- Future Meetings and Questions

Presenters

Massport

- Anthony Guerriero
- Brad Washburn
- Flavio Leo

MEPA/EEA

- Jennifer Hughes

Consultant Team

- Carol Lurie

EDRs/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 cumulative impacts
- Massport's EDRs and ESPRs describe and analyze operating and environmental conditions.
 - EDRs and ESPRs **do not propose any projects** but provide a **planning context** for airport-wide activities to complement the individual project-specific MEPA or NEPA filings.
 - MEPA Certificates issued for EDRs and ESPRs are not statutory EIRs and are not intended to substitute notification requirements or activities assessments for projects subject to MEPA.
- The MEPA process **evaluates projects** and identifies potential adverse environmental impacts.

Massport is the only
state agency that
prepares ESPRs/EDRs

Structure of the 2022 ESPR

1. Introduction and Executive Summary
2. **Community Benefits & Outreach, Sustainability and Resiliency**
3. Activity Levels/Forecasts
4. Airport Planning
5. Regional Transportation
6. Ground Access
7. Noise Abatement
8. Air Quality and GHG Emissions Reductions
9. Environmental Compliance/Water Quality
10. Project Mitigation
11. Appendices: A and B – Responses to Comments
12. Appendices: C – K – Supporting Technical Information

In response to the 2020/2021 EDR, the 2022 ESPR includes a new chapter which discusses community benefits, sustainability and resiliency as well as outreach to environmental justice communities

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Community Benefits & Outreach, Sustainability, and Resiliency

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

Massport Community Commitments and Initiatives

In addition to MEPA project specific mitigation (Section 61), Massport's engagement with impacted communities has resulted in:

- Massport has invested in an extensive 38-acre open space program. Green space initiatives:
 - a) Piers Park I
 - b) Airport Edge Buffers Program
 - c) Maintenance and Operation of Bremen Street Park
 - d) Mary Ellen Welch Greenway extension
 - e) Piers Park II
 - f) Thomas J. Butler Memorial Park
 - g) Bremen Street Dog Park
 - h) South Boston Maritime Park
- East Boston, South Boston, and Winthrop Foundations and Chelsea Development Agreement
- Updated Residential Sound Insulation Program

Massport Community Giving

- Provide 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.
- **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 \$650,000 in grants to support 280 summer youth employment positions in 2023.
- The **Cathy Leonard-McLean Community Room** is available for community and civic organizations for neighboring community groups to use



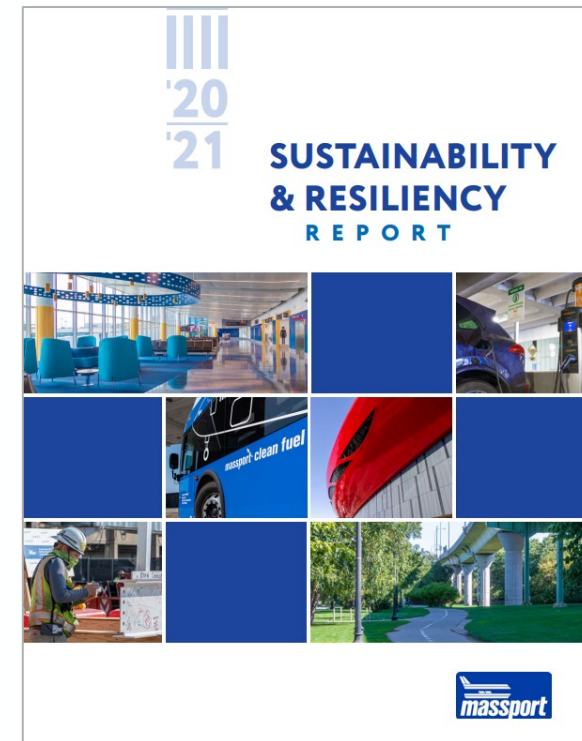
Massport is a national leader in sustainability and resiliency

- Net Zero GHG Emissions commitment by 2031 for **Massport-controlled** activities
- Support for airlines and tenants to reduce their GHG emissions
- Airports Council International - Airport Carbon Accreditation Program Certification application
- Massport's Sustainable and Resiliency Standards
- Sustainability rating certified facilities and infrastructure
- Climate change and resiliency planning – critical assets enhanced
- Commitment to community parks and open space development and management



Sustainability and Resiliency Report

- Logan Sustainability Management Plan (SMP) Completed in 2015, FAA funded
 - Expanded in 2019 to other Massport assets
- Update to the SMP coming in 2024

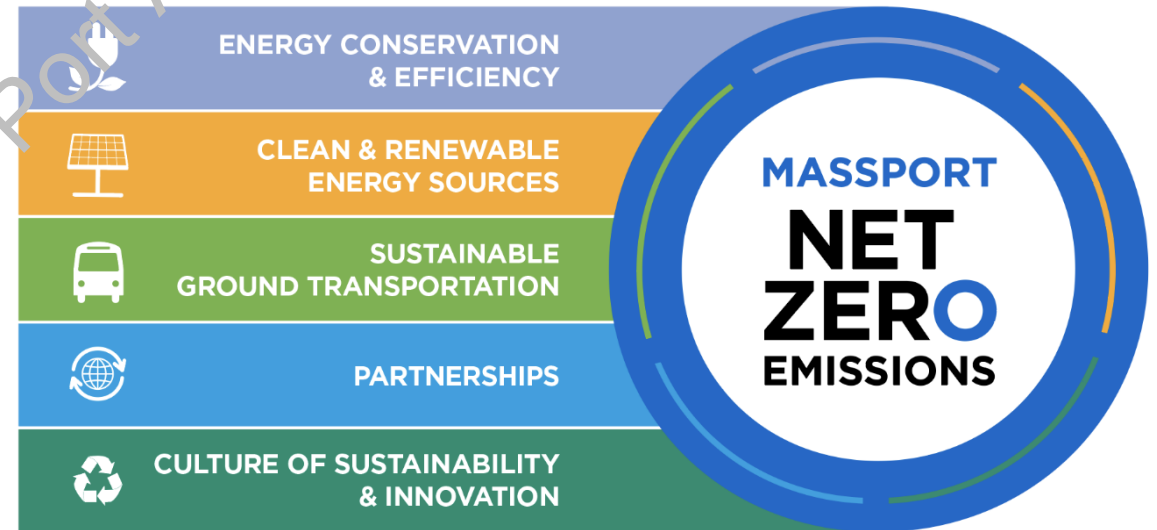


Massport has an ambitious GHG reduction goal

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

- Net Zero Roadmap identified five pathways towards implementation and prioritized future projects
- In March 2023, Massport committed to invest \$500 million in emissions reduction Projects
- Discussion of net zero GHG, sustainability and resiliency initiatives are compiled into new Chapter 2

Net Zero Roadmap



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Enhanced Outreach

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	April 2024
	Public Information Session 3 - During comment period	Late April-Early May 2024
	Continued community engagement	Ongoing

Massport will update 2022 ESPR format and future ESPRs/EDRs based on MEPA and community feedback

New features:

- Overall shorter document
- Refreshed format and writing style for readability
- Technical materials moved to appendices
- Older project mitigation reporting, historical data, and dense data tables in appendices
- Navigation guides, numbered sections, and chapter color coding added
- Key terminology tables for reference
- Callout boxes for key points and icons on key topics
- Updated chapter structure and enhanced graphics
- Prior ESPR/EDR information incorporated by reference with web links for access
- **New Chapter!**

Chapter 2: Community Benefits & Outreach, Sustainability and Resiliency

Activity Levels and Forecasts

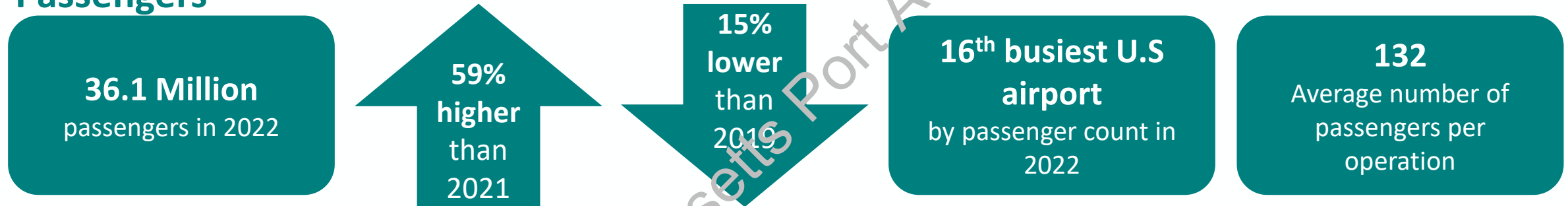
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Logan Airport 2022 Activity Levels are still below 2019 Levels

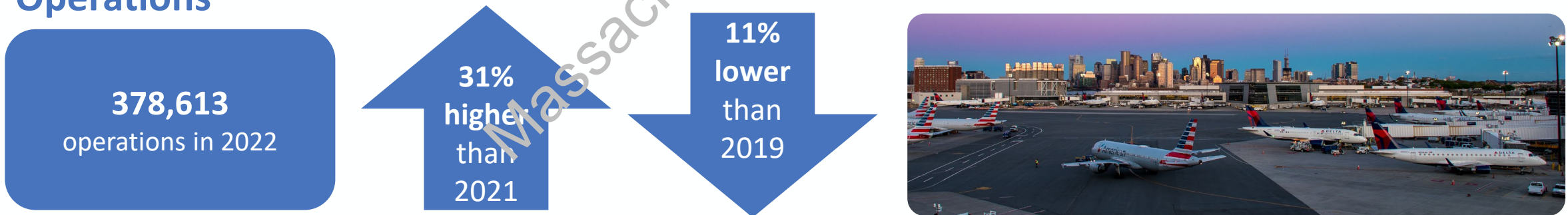
- Logan Airport and the aviation industry continued to recover from the impacts of the global COVID-19 pandemic

Summary of activity levels in 2022

Passengers

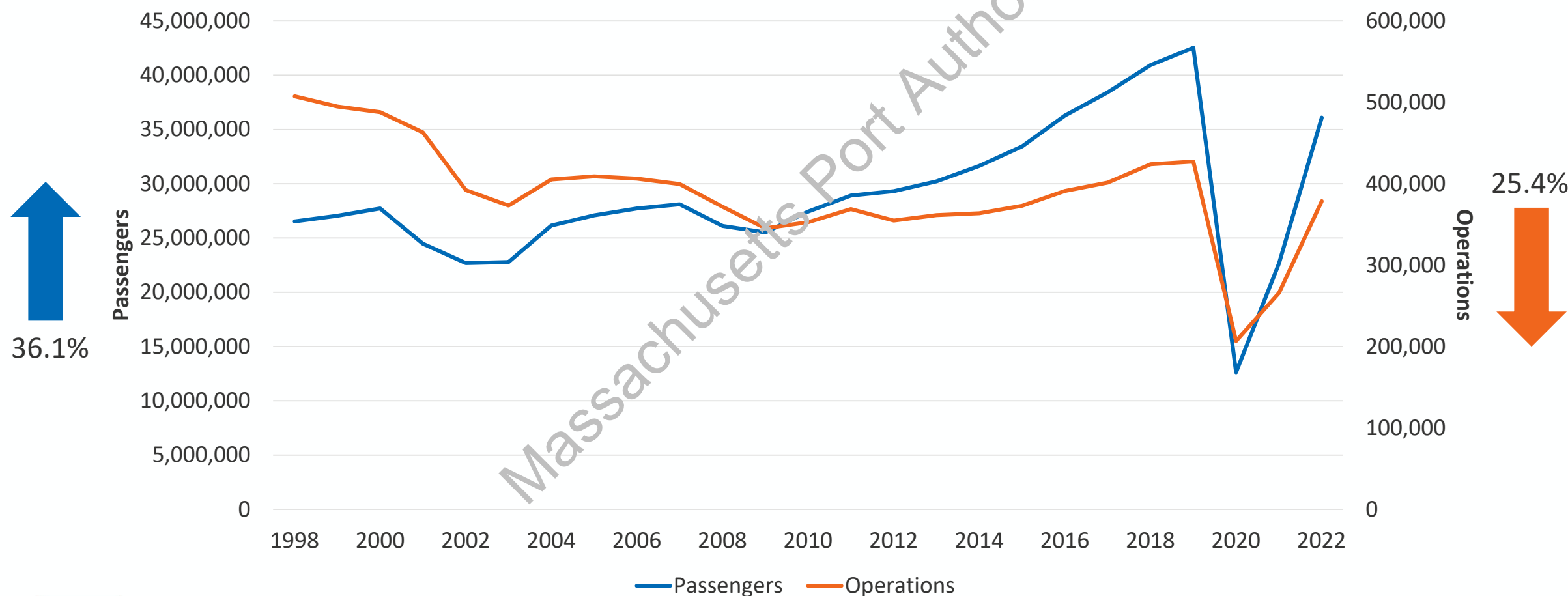


Operations



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

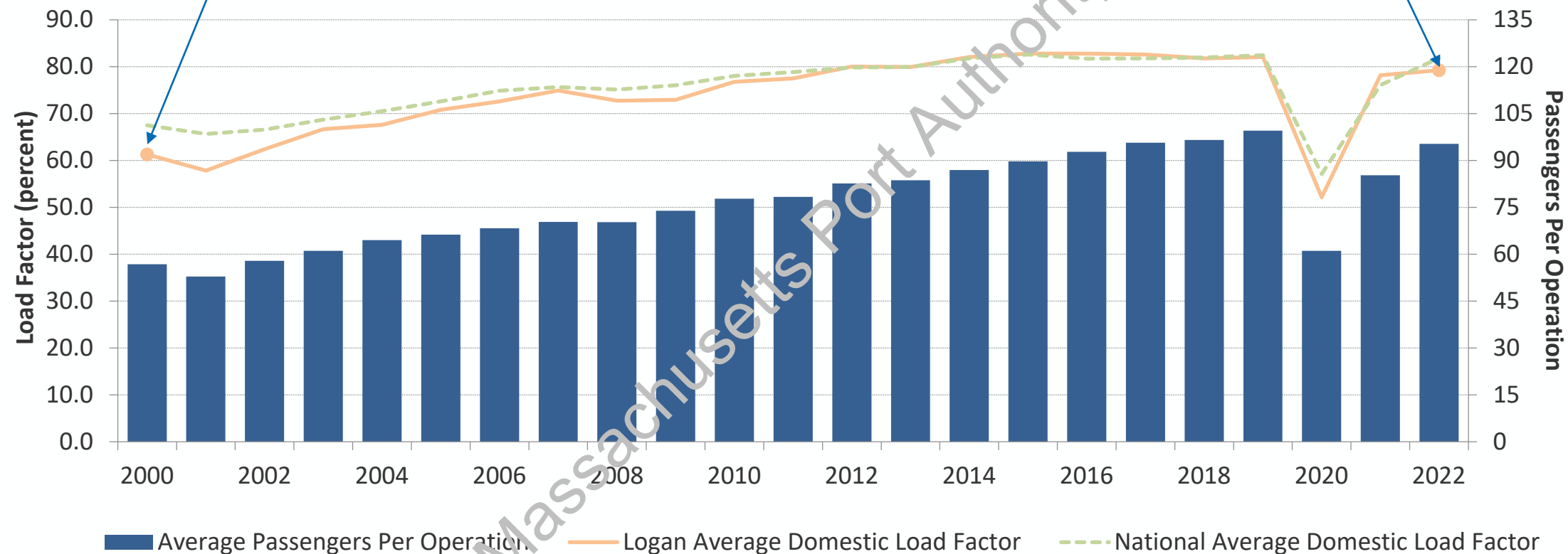
Between 1998 and 2022, there was a 36.1% rise in the annual passenger count accompanied by a 25.4% decrease in the annual number of aircraft operations



More passengers are being accommodated on fewer flights

2000 – 60% of aircraft seats were filled

2022 – 80% of aircraft seats are filled



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



ESPR forecast methodology uses a blend of near-term trends and insights with long-term economic factors

Industry best practices forecasting methods consider

- 10+ years of historical passenger traffic patterns
- Recent trends and “shocks” at the Airport and in the industry
- Future aviation demand based on national and regional economic factors
- Logan Airport’s role in the regional transportation system
- Airline and passenger activity data
- US Department of Transportation data on passengers, flights, routes, aircraft
- Flight schedules filed by the airlines
- International and domestic passenger and aircraft operations data
- Passenger terminal usage
- Future aircraft types likely to be in the fleet



Recent trends in airline seats available and development plans reported by airlines



Massport provided information and air service insights



General airline industry conditions, like airline profits, staffing levels, etc.



FAA Terminal Area forecasts and Aerospace forecasts



Long-term trends in aircraft fleet development



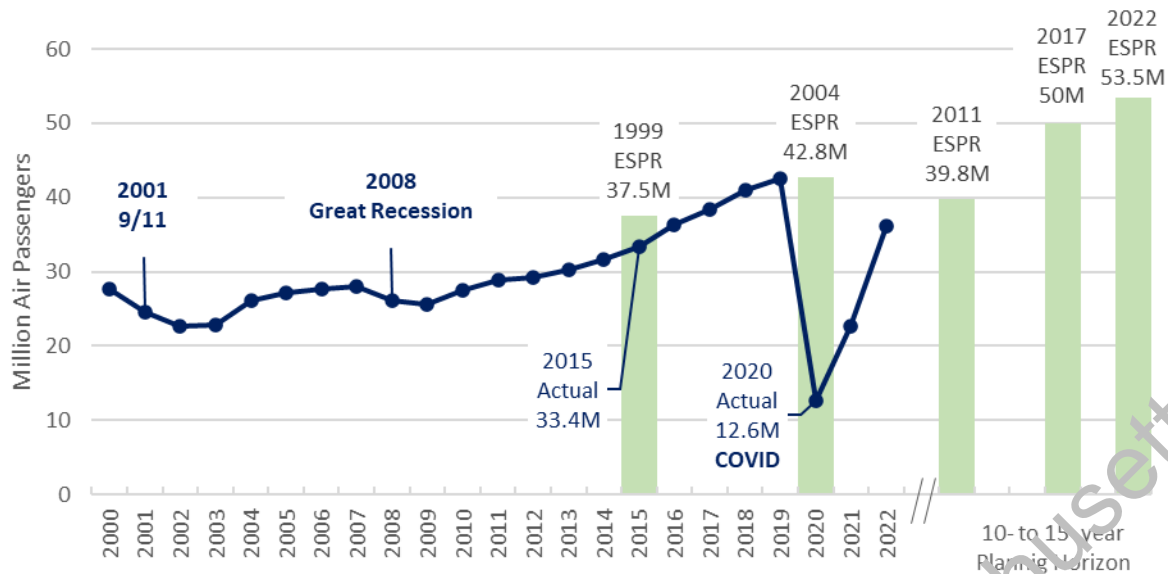
Benchmark industry forecasts



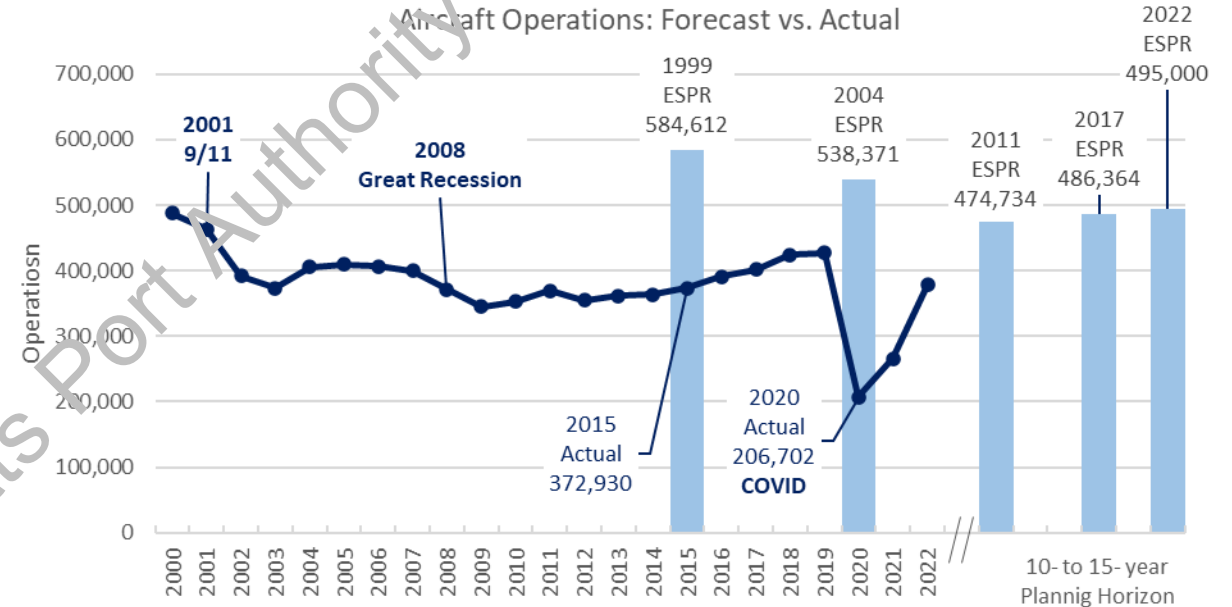
Potential economic indicators such as regional and national GDP, personal income, population, airline ticket prices, and fuel prices

Forecast are updated every 5 years and tend to track closely with actual activity levels

Air Passengers: Forecast vs. Actual



Aircraft Operations: Forecast vs. Actual



Future Planning Horizon



Passengers 53.5 million

Operations 495,000



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

Airport Planning

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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 or early 2025
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 will be implemented (example projects)

Airside

- Runway 27 RSA Safety Improvements
- Signature Flight Support Relocation

Terminal Area

- Garage in front of Terminal E

Logan Airport Service Area

- North Service Area Optimization
- Green Bus Depot Operations Renovation
- Southwest Service Area Optimization
- Cargo Throughput Facility
- Terminal E, Phase 2

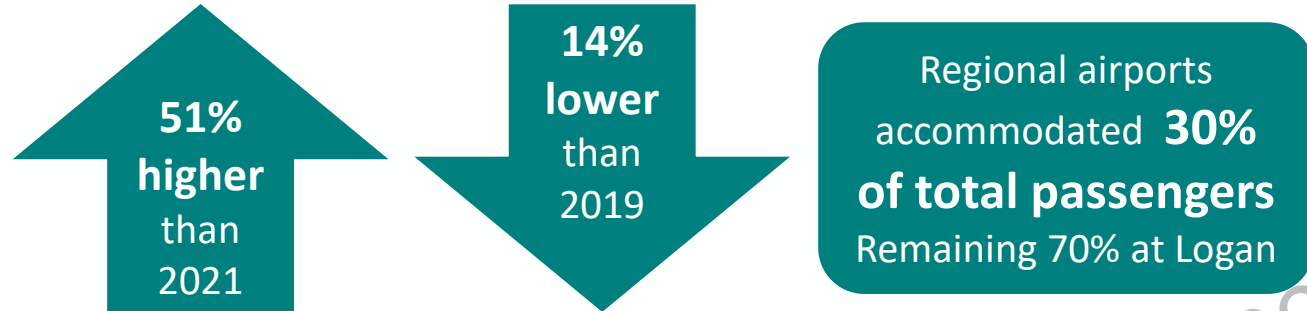


Regional Transportation

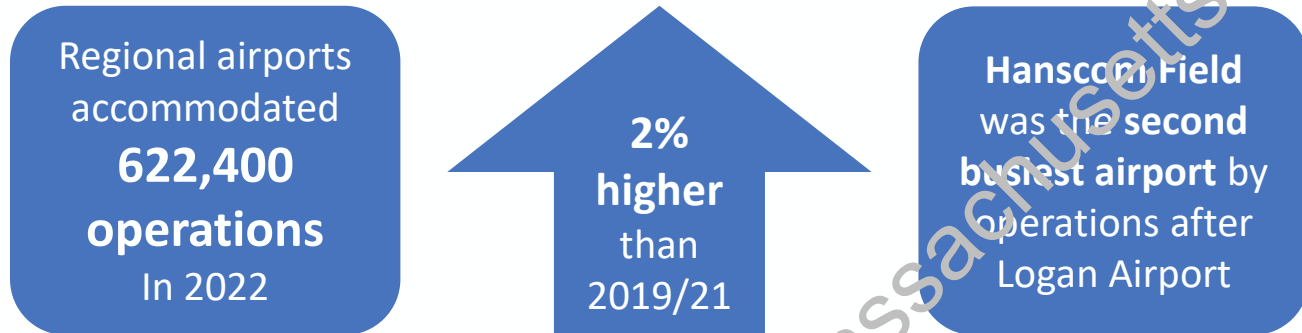
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Regional Transportation 2022 Findings

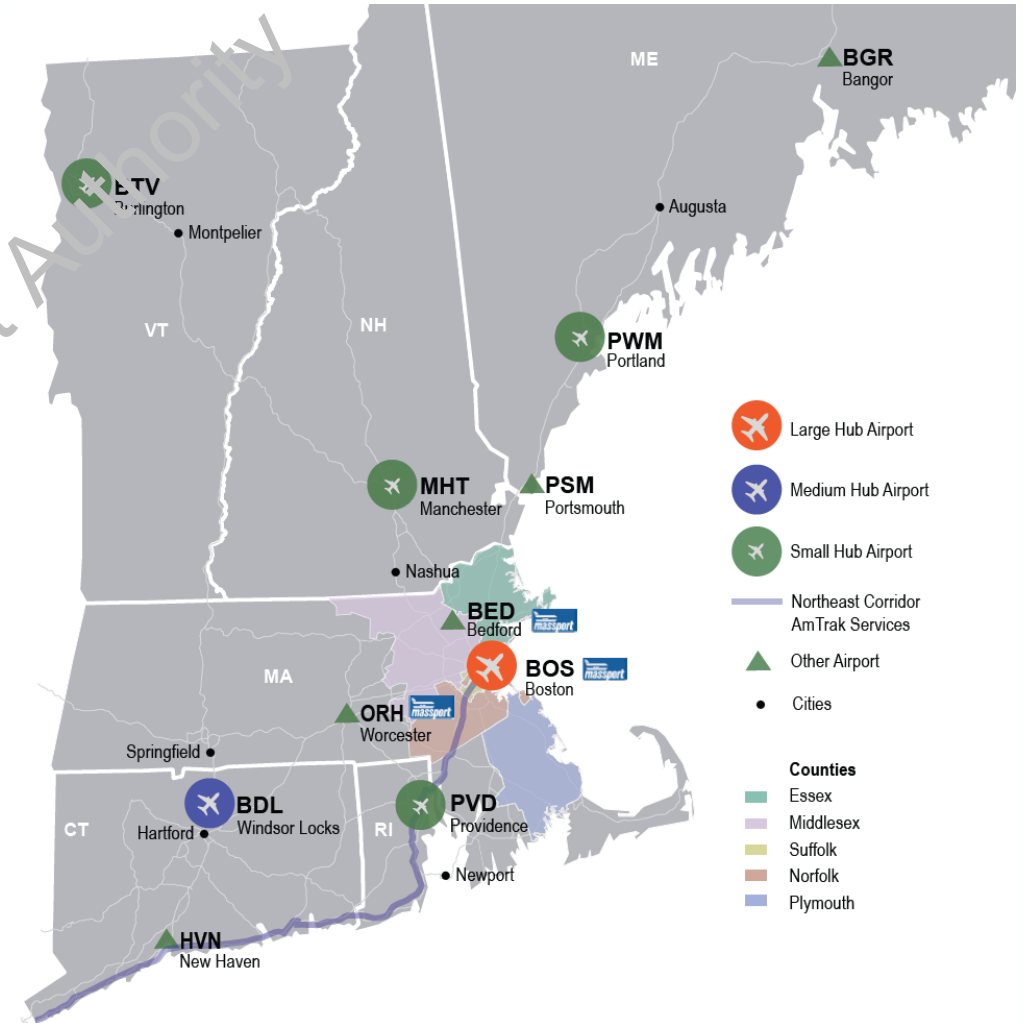
Summary of New England Regional Passenger Activity in 2022:



Summary of New England Regional Operations in 2022:



- General aviation traffic increased during the pandemic due to charter and private business jet activity but tapered off in 2022
- Worcester accommodated more than 200,000 passengers in 2023



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Ground Access

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

- Average weekday on-Airport vehicle miles traveled (VMT) was **164,625 average daily miles** traveled, **27.5% lower than in 2019**
- All types of ground transportation services increased ridership in 2022, a return to pre-pandemic usage levels
- *2022 Air Passenger Ground Access Survey* showed pandemic's impact on passenger travel choices [with more people using private automobiles]
- HOV mode share reached 38.4% exceeding Massport's goal of 35.5% HOV mode share by 2022.
- Post-pandemic, Logan Airport is expected to remain **a top U.S. airport for high-occupancy vehicle (HOV) and transit mode share**
- In 2022, Logan Airport continued to prioritize Long Term parking and comply with the Logan Airport Parking Freeze



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 (input to traffic model)
 - Inform emission calculations within 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 as they are complete
- Findings will be used to inform the ESPR and EDR ground and air analyses
 - Updated dwell times are one of several components within modeling for on airport-emissions

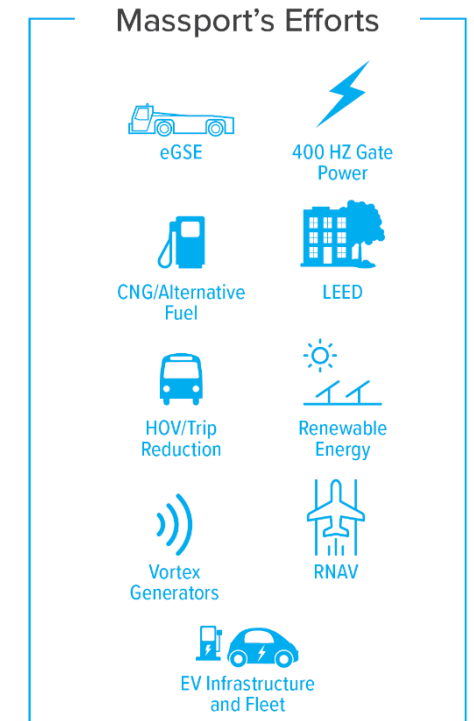
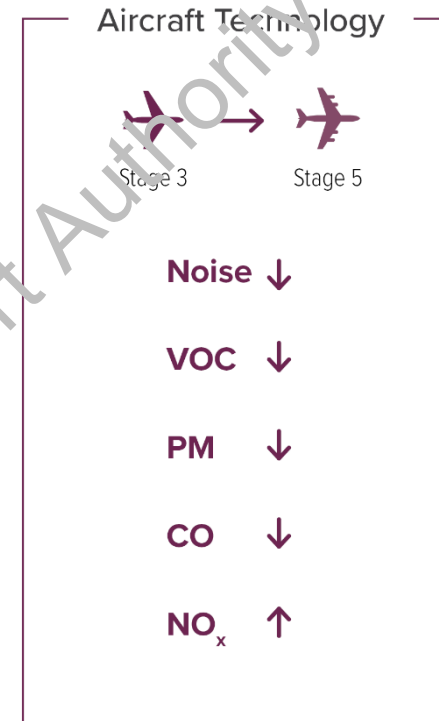
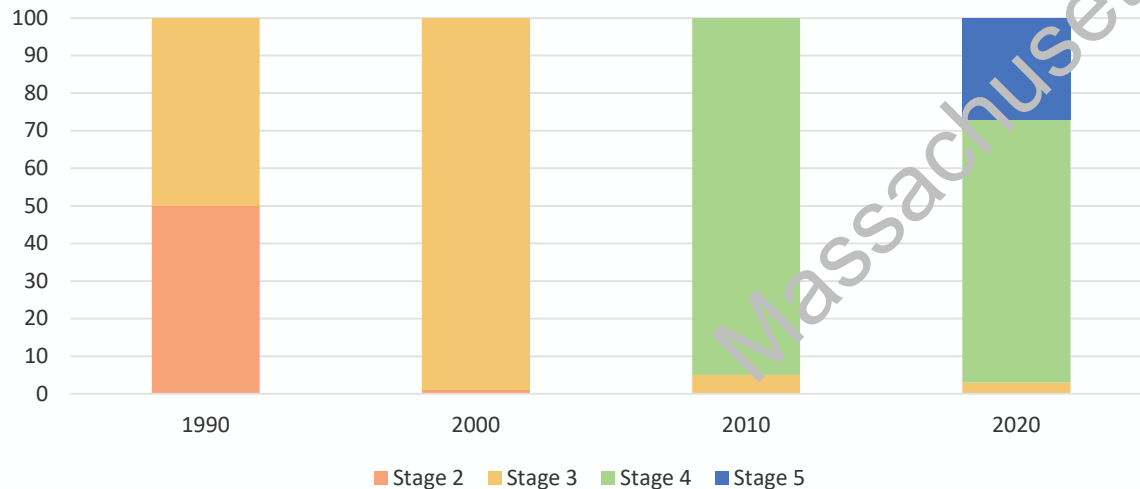
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Noise Abatement

Technology improvements are resulting in reduced noise and air quality impacts

- Aircraft are getting quieter, moving 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

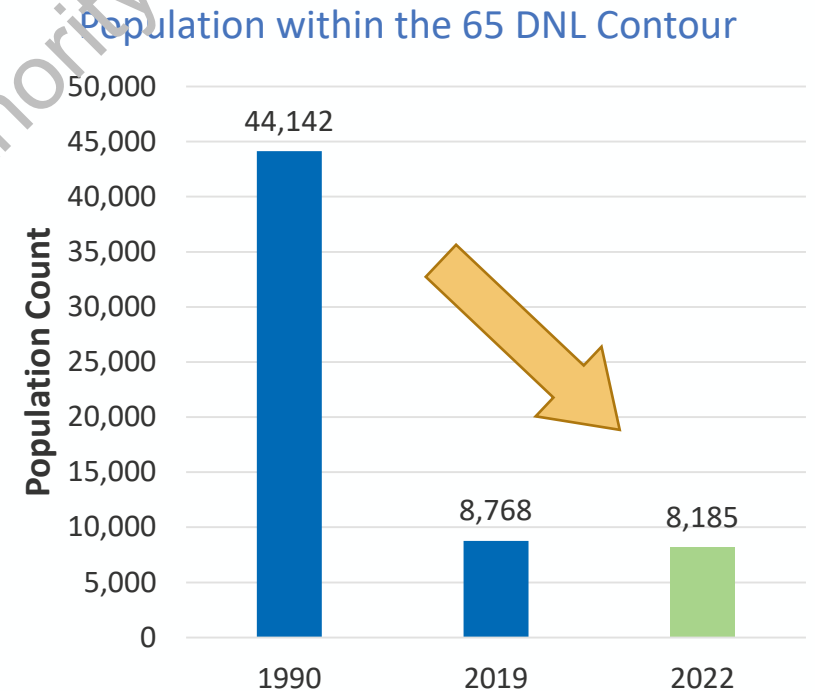
Quieter Aircraft in Fleet Mix



Aircraft engine technology has evolved over time

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 was 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



Modeled Noise Future Conditions

- 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

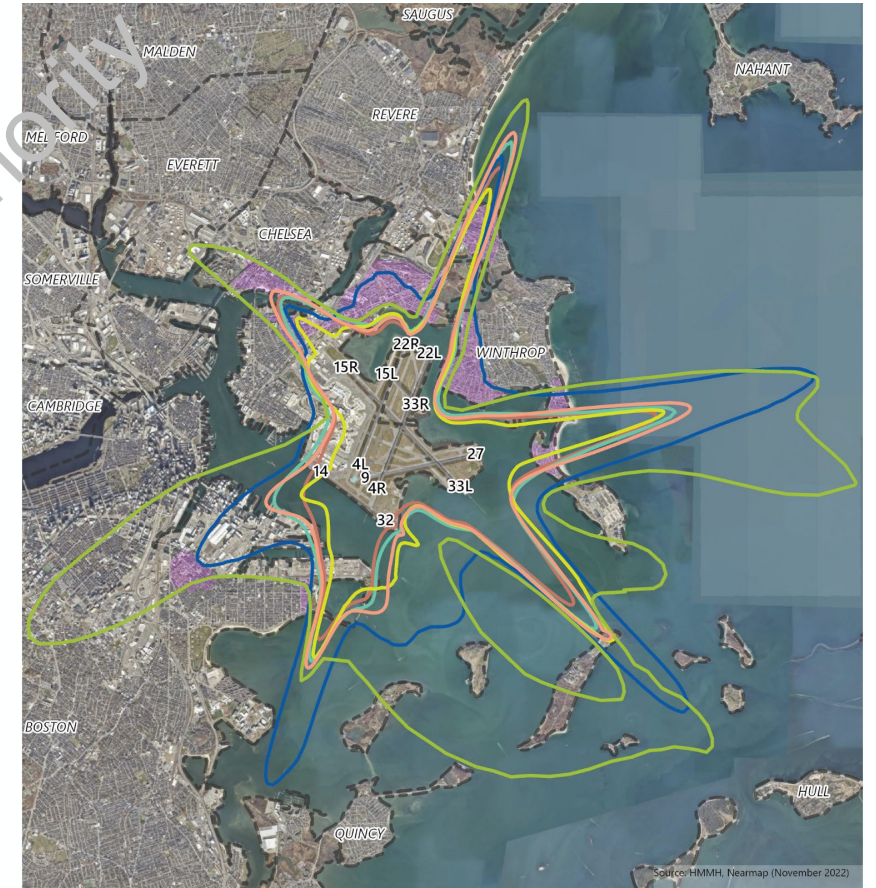
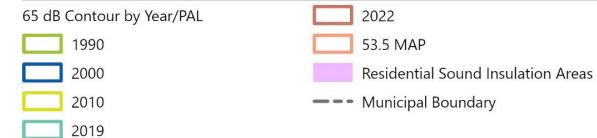


Figure 7-22 Comparison of 1990, 2000, 2010, 2019, 2022, and 53.5 MAP 65 dB Contours

2022 Environmental Status and Planning Report



0 3,500 7,000 Feet

Air Quality and GHG Emissions Reductions

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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

Air Quality Designation Status for the Boston Metropolitan Area

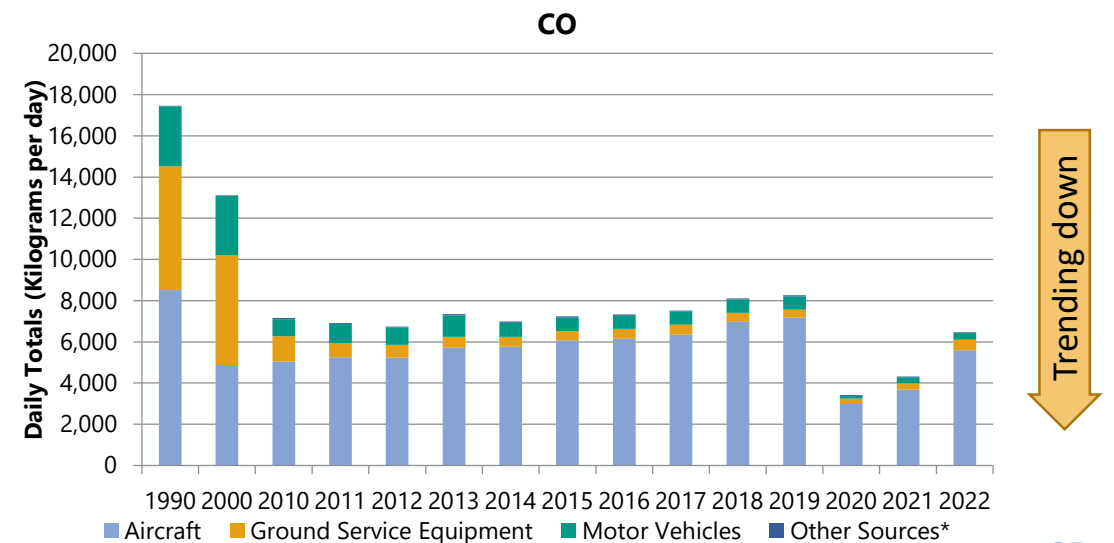
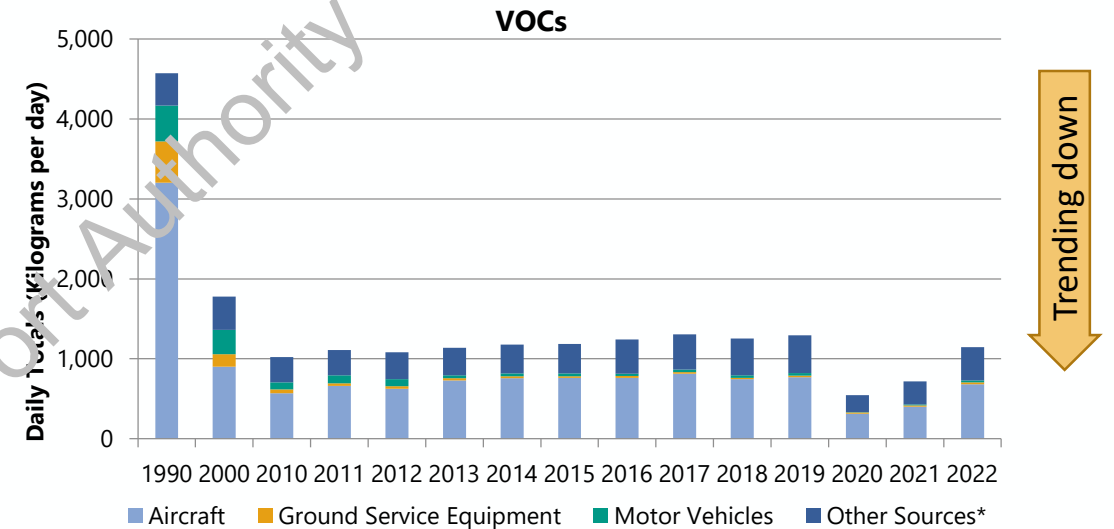
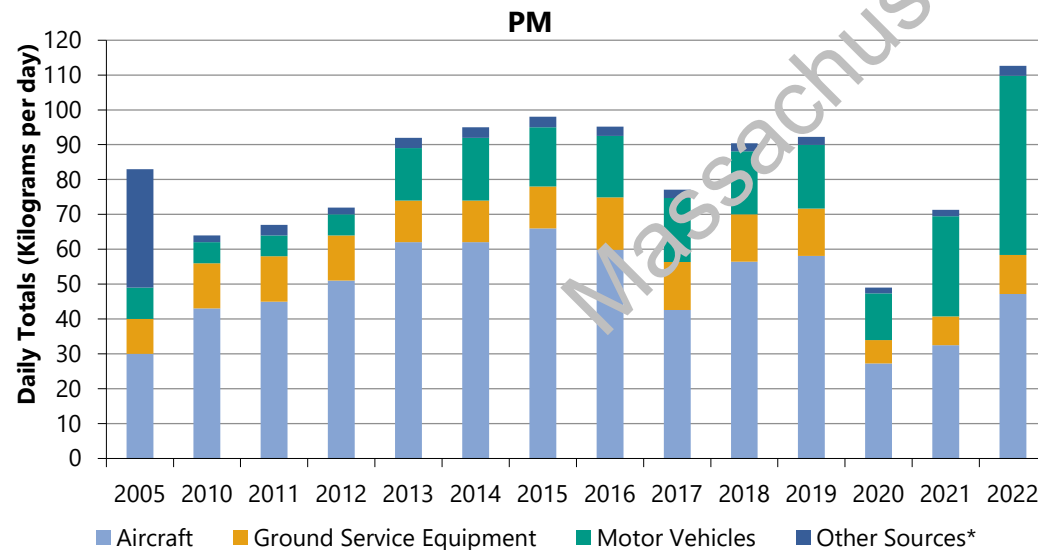
Pollutant	Designation
Ozone (8-hour, 2008 Standard)	Attainment
Ozone (8-hour, 2015 Standard)	Attainment
Carbon Monoxide (CO)	Attainment/Maintenance ¹
Nitrogen Dioxides (NO ₂)	Attainment
Particulate Matter (PM ₁₀)	Attainment
Particulate Matter (PM _{2.5})	Attainment
Sulfur Dioxide (SO ₂)	Attainment
Lead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

Source: U.S. Environmental Protection Agency (EPA), "Nonattainment Areas for Criteria Pollutants (Green Book)," accessed on August 30, 2023, <https://www.epa.gov/green-book>.

¹ The Boston Metropolitan Area was redesignated to attainment/maintenance for CO on April 1, 1996. MassDEP released a Second 10-Year Limited Maintenance Plan in 2018, outlining strategies to keep CO levels below the NAAQS standards.

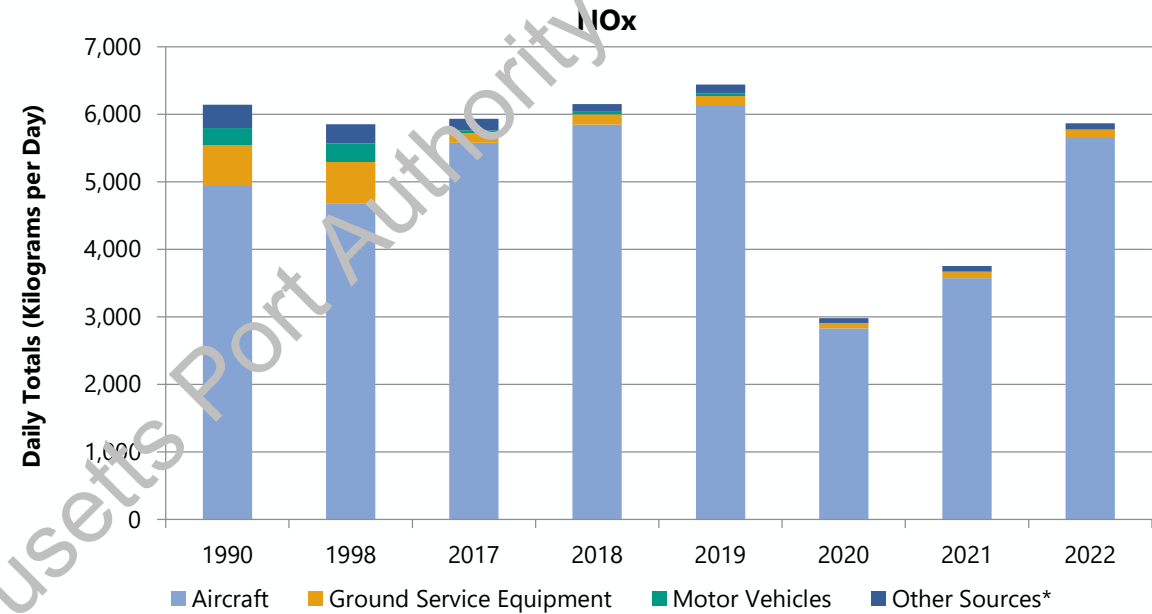
With new technology, reduction in VOCs and CO Emissions over the long run

- Criteria pollutants CO and VOCs are predicted to decrease in the future due to:
 - Changes in aircraft fleet mix and increased use of SAF
 - Conversion of fleet vehicles and GSE to EV or viable alternatives
 - Cleaner aircraft engine and motor vehicle technologies
- PM10/PM2.5 will also decrease over time, but model assumptions for motor vehicles reflect an increase for 2022



NOx has trended downward since 2019 due to reduced operations

- Most NOx emissions from aviation do not occur near the ground, and more than 90% occur above 3,000 feet.
- NOx 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**

- GHG emissions are anticipated to trend downwards due to:
 - Improved aircraft technology and increased use of SAF
 - Introduction of electric aircraft (in long-term)
 - Implementation of Massport's Net Zero GHG Roadmap

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%

Environmental Compliance and Management/Water Quality

Massachusetts Port Authority

Environmental Compliance and Management

- Massport maintains a Spill Prevention Control and Countermeasure Plan (SPCC) for its facilities and require Tenants meeting certain thresholds to prepare their own SPCC for their facilities.
- Track Massport's and tenants' compliance with the Massachusetts Contingency Plan
- Provides status update on tank management plan
- Reports on compliance with water quality requirements according to state and federal regulations for the airport/stormwater outfalls and the Fire Rescue Fighting Facility

Questions

**For more information contact Brad Washburn
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