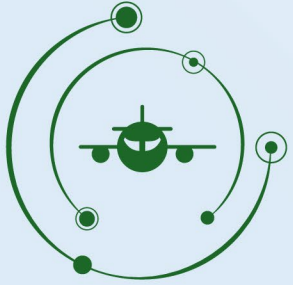


2023 Massachusetts State Freight Plan

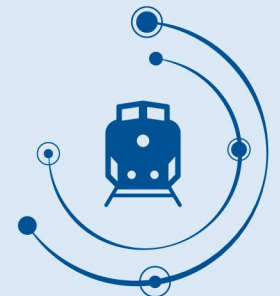
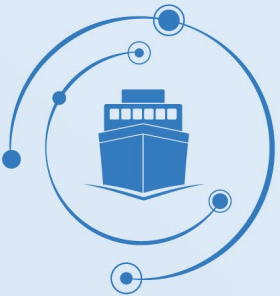


Freight Advisory Committee #3

presented to
Freight Advisory Committee Members

presented by
Cambridge Systematics, Inc.
City Point Partners
Toole Design

March 23, 2023



Zoom Webinar Controls for Meeting



- Ask a question and share comments



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- Raise your hand - *9 for users dialing in and Alt + Y to raise your hand



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Q&A



Interpretation



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Thank you for joining our meeting. We appreciate your participation!

Agenda

- **Welcome**
- **Recap of FAC Meeting #2**
- **Presentation of Draft 2023 Freight Plan**
- **Q&A**
- **Next Steps**

Recap of FAC Meeting #2

Recap of FAC Meeting #2

Discussed concurrent *Beyond Mobility* Long-Range Plan and related engagement opportunities

Presented the scenario planning process and results, brainstormed additional freight-related impacts

Discussed framework for 2023 Freight Plan recommendations, and suggestions for potential strategies

Q&A covered coordination with neighboring states and rail safety

Draft 2023 Massachusetts Freight Plan

Document Structure

1 – Introduction

2 – Vision, Goals, and Regulatory Context

3 – Stakeholder Outreach

4 – Key Industries and Recent Supply Chain Developments

5 – Freight Assets, Demand, and Needs

6 – Futures for Freight in Massachusetts

7 – Recommendations & Strategies

8 – Implementation Plan

9 – Freight Investment Plan

Appendices

Chapter 1

Introduction, Purpose, and Document Organization

Freight & Economic Indicators

Total population
(2022)

**6.98
million**



Total employment
(2021)

**3.58
million**



Total GDP
(Q3, 2022)

**\$693
billion**



seasonally adjusted, current-year-dollar

Personal Income
(Q2, 2022)

**\$594
billion**



seasonally adjusted, current-year-dollar,

Total freight-intensive
employment (2021)

**1.29
million**



27% of total workforce

Total freight-intensive GDP

**\$178
billion**

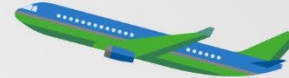


*seasonally adjusted, current-year-dollar,
26% of MA total*

Freight Infrastructure Assets

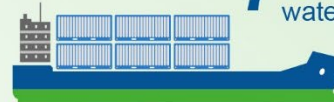
6

cargo-handling airports,
including Boston Logan
International which handles
99% of statewide volume



8

major seaports, including the Port
of Boston's Conley Terminal, and



7 major
waterways



MassDOT
owns

7,639

MassDOT
owns 7,639 out
of 10,713 NHS
lane-miles and

3,495

out of 5,268
total bridges

4

rail intermodal
terminals in
Worcester, West
Springfield,
and Ayer



117

public truck
parking facilities



1,138 of railroad miles
operated by

1 Class I railroads
AND **11** Class III railroads



Chapter 2

Vision, Goals, and Regulatory Context

2023 Freight Plan Vision

Supporting **safe, resilient, and secure** multimodal freight movement in Massachusetts through investing in key freight assets to improve **economic competitiveness**, provide **efficient and reliable** freight mobility, and support **healthy and sustainable** communities.

2023 Freight Plan Goals

System Condition

Support an efficient and reliable supply chain through investments in existing infrastructure and supporting technologies to maintain and preserve the existing system.

Safety and Resiliency

Improve statewide safety by funding projects that reduce injuries and fatalities, reduce vulnerability, and improve the resiliency of the system.

Mobility and Reliability

Invest in the multimodal transportation system to improve mobility, connectivity, accessibility, and reliability for people and goods.

Economic Competitiveness

Support multimodal transportation system connectivity, efficiency, and mobility to support businesses and residents and increase national and regional economic competitiveness.

Equity and Environmental Sustainability

Support initiatives and investments that improve equity across the multimodal system, improve local air quality, and minimize impacts to natural, historic, and cultural resources.

Chapter 3

Stakeholder Outreach Activities

Activity	Date
Freight Advisory Committee Meeting # 1	January 10, 2023
Public Information Meeting #1	January 12, 2023
Freight Advisory Committee Meeting # 2	February 12, 2023
Neighboring State Interviews	February – March 2023
Freight Focus Groups and Survey	March 2023
Freight Advisory Committee Meeting # 3	March 23, 2023
Public Information Meeting #2	March 30, 2023
30-Day Public Review of Draft Freight Plan	March – April 2023

Chapter 4

Key Industries and Recent Supply Chain Developments

Profiles of Key Industries:

Fishing & Seafood

Biomedical Industry

Computer & Electronics

Chemicals & Material Products

- **In 2019, Massachusetts:**

- Generated \$679M in seafood landings, ranking 2nd in the nation behind Alaska
- Led the U.S. in medical product exports (\$6.1B)
- Had 695 computer & electronic product establishments employing 54,000 workers, primarily in Middlesex, Suffolk, Essex, and Worcester counties
- Had 317 chemical industrial establishments employing 14,700+, generating \$11.6B and ranking 2nd among top producing mfg. sectors in MA

Chapter 4

Key Industries and Recent Supply Chain Developments

Assessment of recent supply chain trends & developments covered:

- COVID-19 impacts
- Changes in intermodal shipping, incl. freight rail, ocean container movement, and trucking
- E-commerce
- Technology and automation, incl. advanced manufacturing, warehousing & distribution, and CAVs
- Redundancy and resilience, incl. stockpiling vs. just-in-time, thefts & fraud, and cyber attacks
- Employee access to freight jobsites

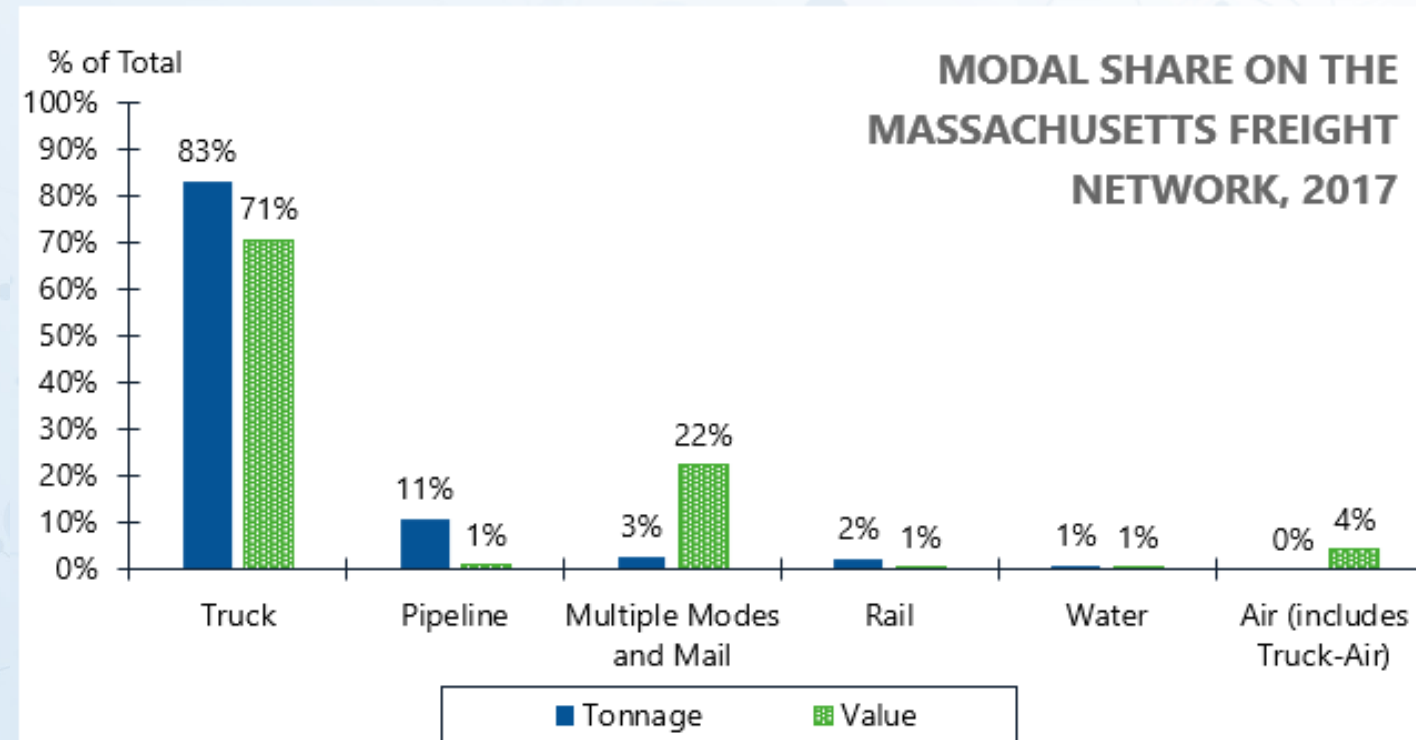
Chapter 5

Freight Assets, Demand, and Needs

Components:

- Commodity flows
- Modal profiles
 - Included roads, freight rail, ports & waterways, and air cargo
 - Analysis focused on inventory, demand, and needs

In 2017, the multimodal freight system moved 253M tons valued at nearly \$502B to, from, and within Massachusetts, expected to approach 351M tons valued at \$888B by 2045.



Source: FHWA Freight Analysis Framework, Version 5.4

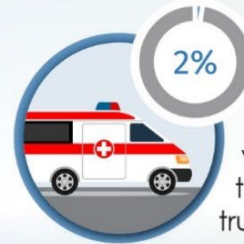
Chapter 5

Freight Assets, Demand, and Needs | Road Infrastructure

Components:

- Road inventory & designations
- Truck volumes (AADT)
- Safety
- Congestion & delay
- Highway bottlenecks
- Truck parking
- Pavement & bridge condition
- OS/OW vehicle and hazardous cargo movements

Truck-Involved Crashes in Massachusetts, 2017-2021



Only 2% of collisions involving a pedestrian or cyclist also involved a truck.

However, people walking and bicycling are at much higher risk of death or severe injury in a collision involving a truck (compared with smaller vehicles).



Pedestrians:



Bicyclists:

Motorists are equally likely to be killed or seriously injured in crashes involving a truck versus involving only smaller vehicles.



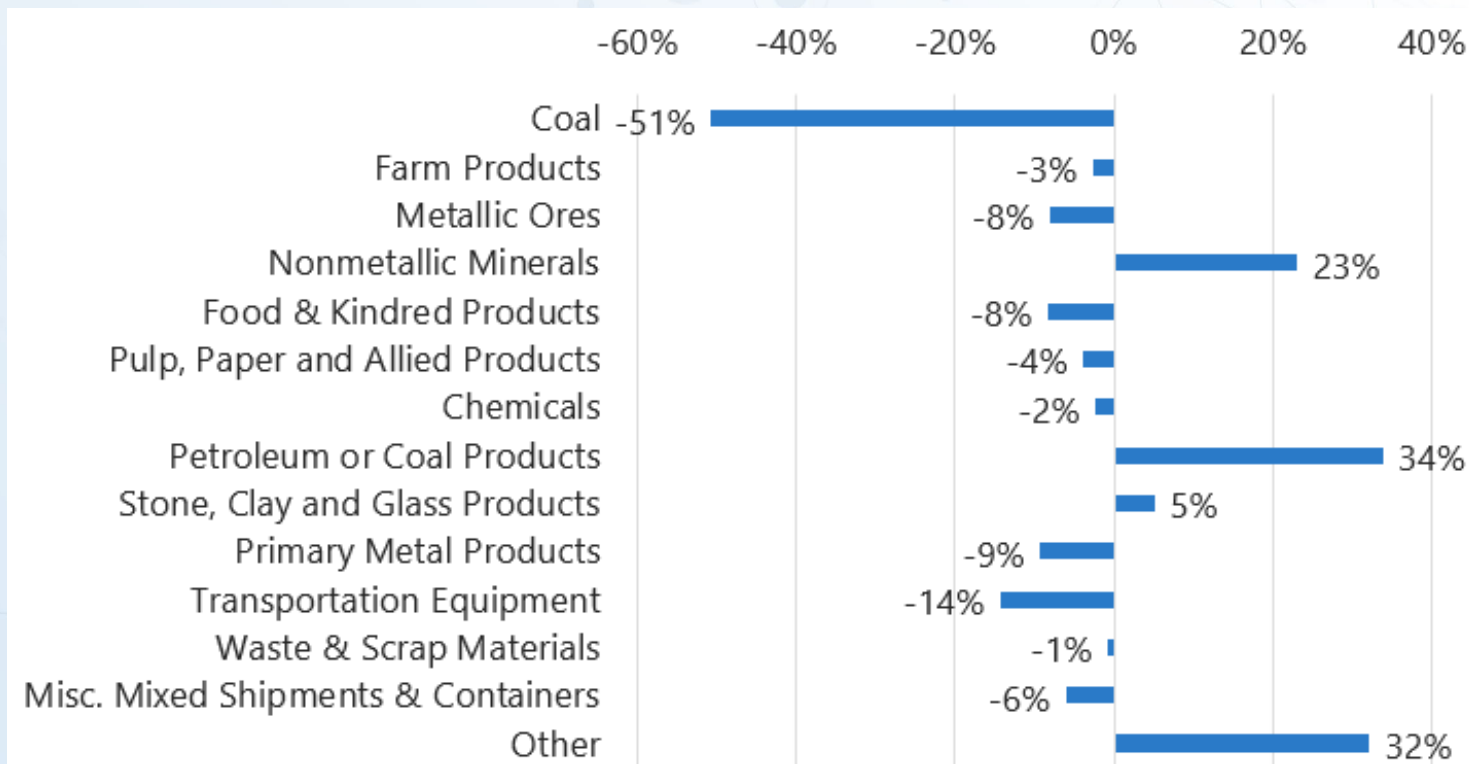
Chapter 5

Freight Assets, Demand, and Needs | Freight Rail

Components:

- Railroad ownership & operators
- Intermodal facilities & rail yards
- Demand & primary commodities
- National trends
- Grade crossing safety
- Rail equipment incidents
- Hazmat releases

Cumulative Growth in Class I Rail Traffic Tonnage by Commodity, 2010-2022



Source: Association of American Railroads

■ 2010-2022 Cumulative Growth

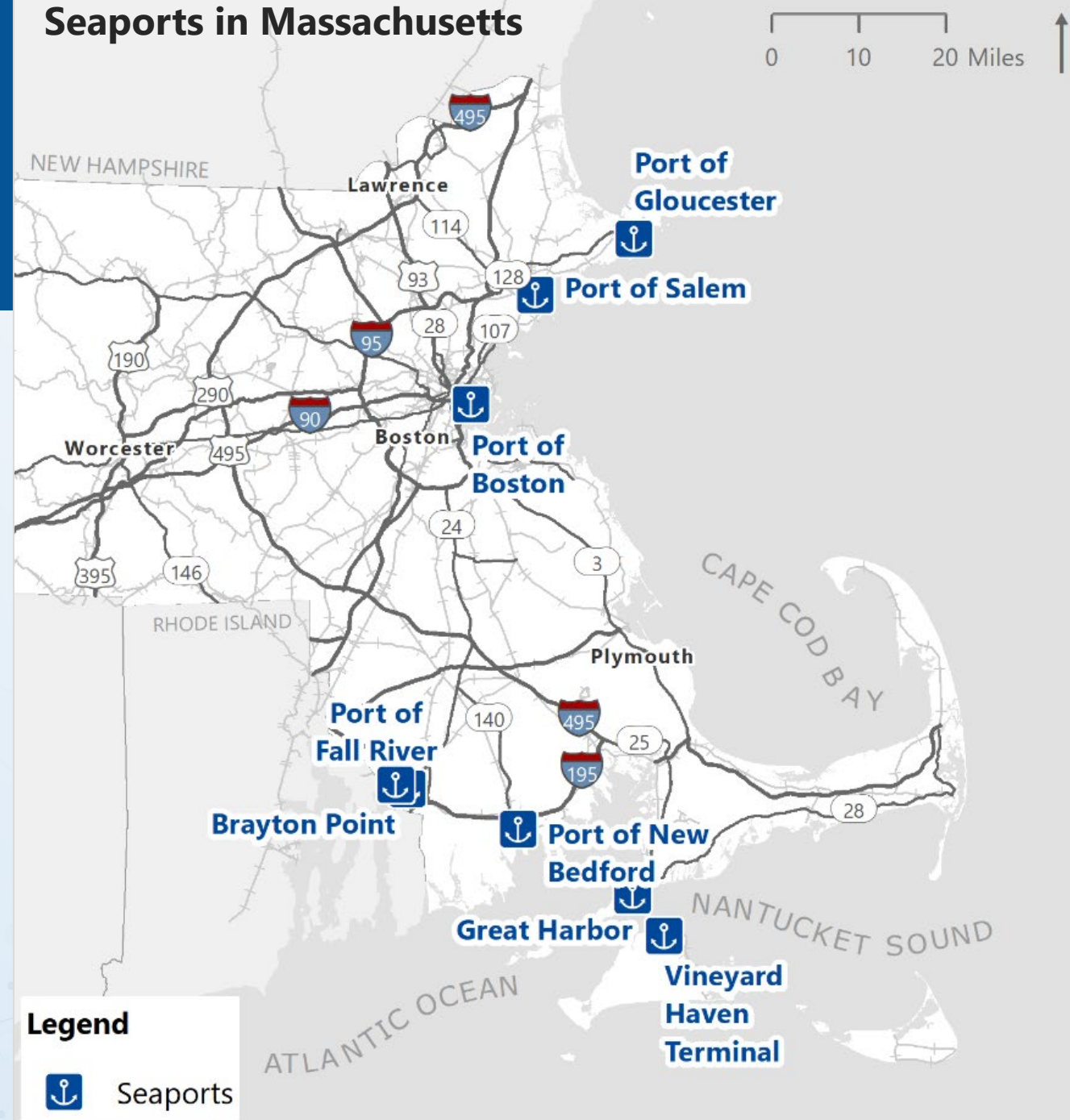
Chapter 5

Freight Assets, Demand, and Needs | Ports and Waterways

Components:

- Seaport facility and waterway inventory
- Demand – statewide and Port of Boston, container traffic, vehicles landed at Boston Autoport
- Needs, including berthing & dredging, landside connectivity, etc.

Seaports in Massachusetts



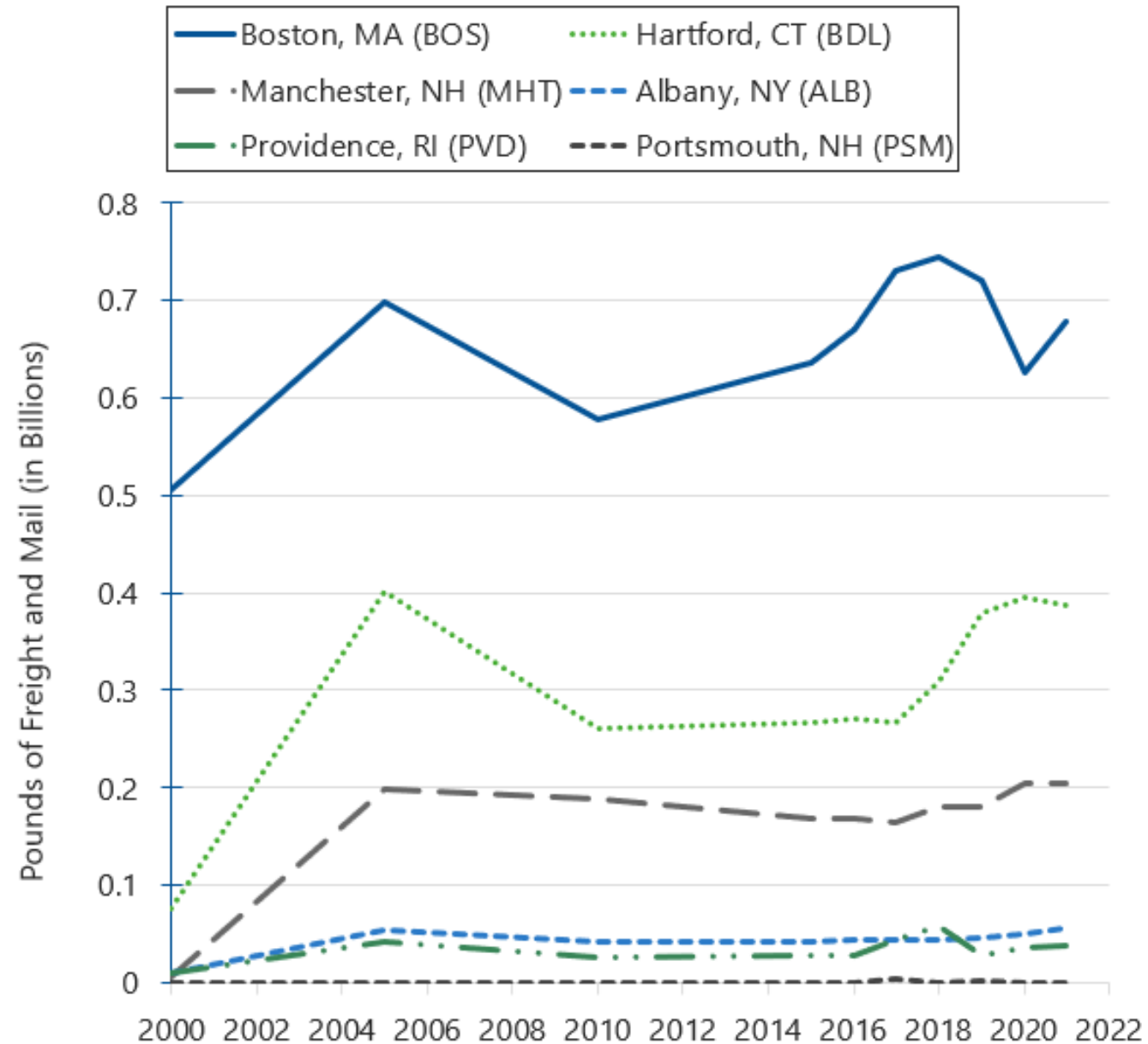
Chapter 5

Freight Assets, Demand, and Needs | Air Cargo

Components:

- Inventory of cargo-handling facilities and regional competition
- Demand for cargo and mail operations
- Cargo-handling facility needs and opportunities

Freight and Mail by Year at Airports Serving Massachusetts, 2000-2021



Source: Federal Aviation Administration, T-100 All Carrier Statistics Data

Chapter 6

Futures for Freight in Massachusetts

Components:

- Scenario planning and trends analysis
- Focus on freight-related impacts
- Connection between scenario planning process and Plan recommendations

Hybrid and Diverse | Increased automation, telework, and flexible scheduling transform work in Massachusetts. At the same time, we see more international in-migration and domestic out-migration due to rapid technological innovation and climate change.

Ahead as Before | A strong knowledge economy is challenged by high cost-of-living and a racial wealth and income gap in the Boston Area, while new opportunities arise in manufacturing and energy in other regions of Massachusetts.

Close and Connected | Employment largely resumes in-person. Substantial growth in manufacturing – spurred in part by 3D printing and micromanufacture – and a weakening information sector spread housing demand more evenly in a divided economy.

Chapter 7

Recommendations & Strategies

Sources for Plan Recommendations



Findings from research and technical analysis



MassDOT priorities, as documented in ongoing or recent prior studies, such as the COVID-19 Freight Study



Priorities for other Massachusetts agencies and organizations engaged in freight, including Commonwealth agencies, Massport, RPAs, and municipalities



Industry priorities as gathered through stakeholder interviews and engagement with the Freight Advisory Committee



Best practices from FHWA, other states, municipalities, and academia



Recommendations Framework

- **Immediate Strategies** address a current or near-term need. They are worthwhile ideas today, no matter what the future holds.
- **Robust Strategies** address issues that are expected to arise in the future but should be appropriate no matter what the future holds.
- **Hedging Strategies** might not be needed, but if they are, we need to start implementing them now.
- **Shaping Strategies** allow Massachusetts agencies to influence – and hopefully direct – trends for the future.
- **Deferred Strategies** might not be necessary, and it is safe to wait and see what happens.

Types of Recommendations



Infrastructure improvements – specific freight projects and investments



Operational innovations – planning, engineering, and public works improvements



Policies and people – programming, coordination, initiatives, and policies

Strategy Themes From 2017 Freight Plan



Improve condition of freight network assets



Truck parking



Congestion/bottlenecks, including last-mile access



Upgrade freight rail lines to 286K standard



Strategies to address deliveries and curbside demand in urban districts and town centers



Policies to reduce greenhouse gas emissions from transportation



Coordinate with states in the region on freight planning



Freight-related workforce development

Strategy Themes New to 2023 Freight Plan



Roadway safety



Improved highway-rail grade crossings



Better integrate freight planning into MassDOT activities



Alternative fuels/zero-emission freight vehicles



Real-time and other new data sources



Improve and preserve freight connections to/from Boston's waterfront freight facilities

Chapters 8 & 9

Implementation Plan and Freight Investment Plan

Implementation Plan Components

- **Strategy and Strategy Type**
- **Project Proponents:** MassDOT, Massport, railroads, municipalities, industry, general public, etc.
- **Funding:** Federal aid, MassDOT, P3s, discretionary grants, other Commonwealth agencies, etc.
- **Management:** MassDOT, private operators, municipalities, railroad owners, RMV, law enforcement, etc.

Potential Funding Sources

Federal aid

- FHWA formula funding programs
- U.S. DOT discretionary grant opportunities
- FAA Airport Improvement Program

Agencies

- MassDOT bonds and revenue
- Massport revenue

State Aid to Municipalities

- Chapter 90
- Municipal Small Bridge Program
- Complete Streets Program
- Local Bottleneck Reduction Program

Public-Private Partnerships (P3s)

- Industrial Rail Access Program
- Truck parking facilities

Freight Investment Plan

- **Proposed for FFY 2023 – FFY 2027**
 - East Deerfield Freight Intermodal Project Flex to Federal Railroad Administration
 - Roadway Reconstruction – Hopkinton-Westborough Reconstruction of I-90/I-495 Interchange
- **Other Potential Future Project Types**
 - Highway/bridge projects
 - ITS and other freight technologies
 - Truck parking facilities
 - Projects to improve freight flow to/from intermodal facilities

Questions and Answers



- “Raise your hand” to be unmuted for verbal questions (Alt + Y if using a phone)



- Submit your questions and comments using the Q&A button



- Please state your name before your question



- Please share only 1 question or comment at a time, limited to 2 minutes, to allow others to participate

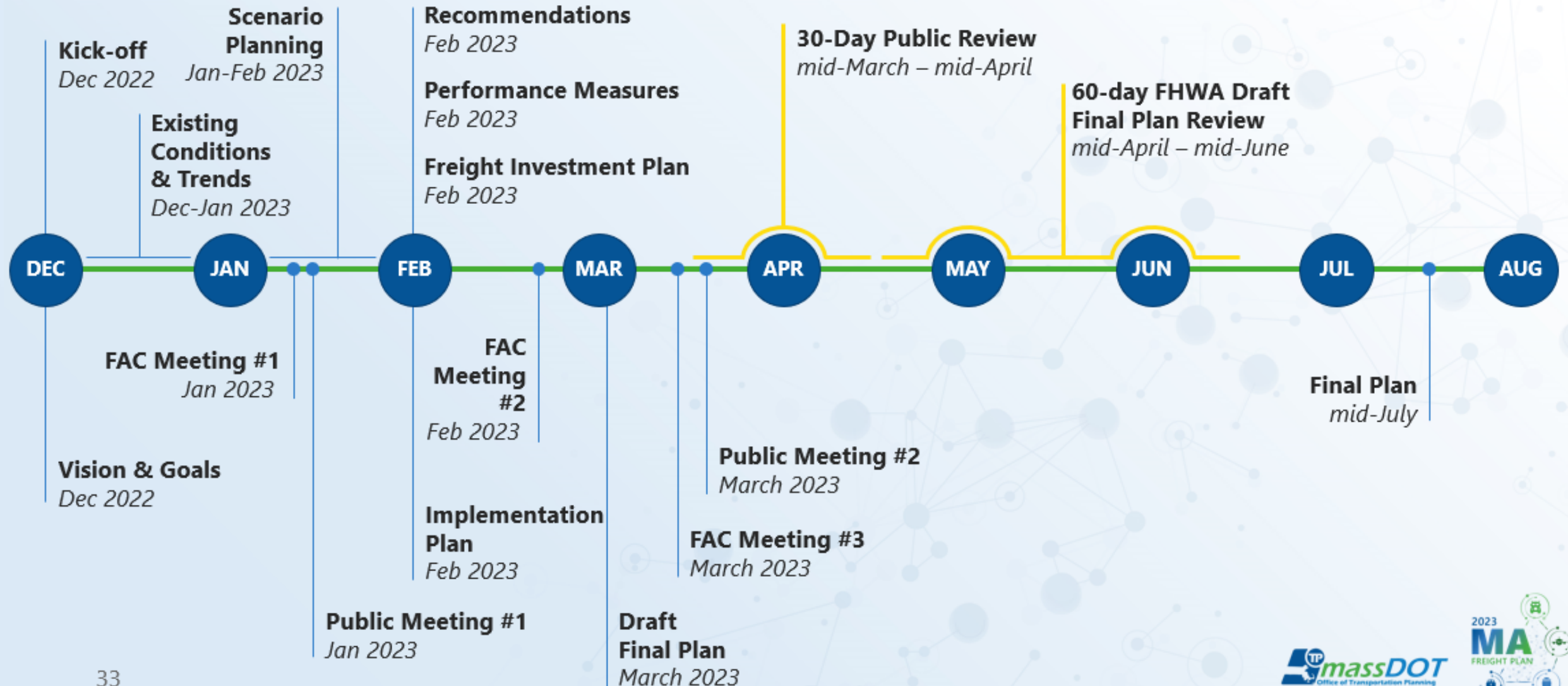


- To ask a question via phone, dial *9 and the moderator will call out the last 4-digits of your phone number and unmute your audio when it is your turn

All questions and comments are subject to disclosure for public records. Please use these functions for project related business only.

Next Steps

Schedule and Key Milestones



Next 30 Days



**30-Day Public Review Period of
Draft 2023 Massachusetts
Freight Plan**



**Respond to Comments,
Document in Appendix, and
Complete Needed Revisions**



**Submit Draft Freight Plan to
FHWA for Review & Approval**

Thank you!



For more information on the Freight Plan,
please visit our website

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