



# MA FREIGHT PLAN 23

## EXECUTIVE SUMMARY



# INTRODUCTION

**Massachusetts' economic vitality and quality of life** depend on how well the freight transportation network moves goods regionally, nationally, and internationally. The Commonwealth's sophisticated network of railroads, highway corridors, seaports, and air cargo facilities connect raw materials to businesses and consumers – moving fish caught in Iceland to be processed in New Bedford and concrete from production in the Berkshires to construction sites in Kendall Square – as well as finished goods that are integral to today's economy. It is imperative that Massachusetts support its critical system assets and freight-related development, while also proactively preparing for growth.



Further compounding the challenges are the persistent and increasing threats of climate change and emissions, which compromise both the integrity of the multimodal freight system and the stability of homes, businesses, and communities.



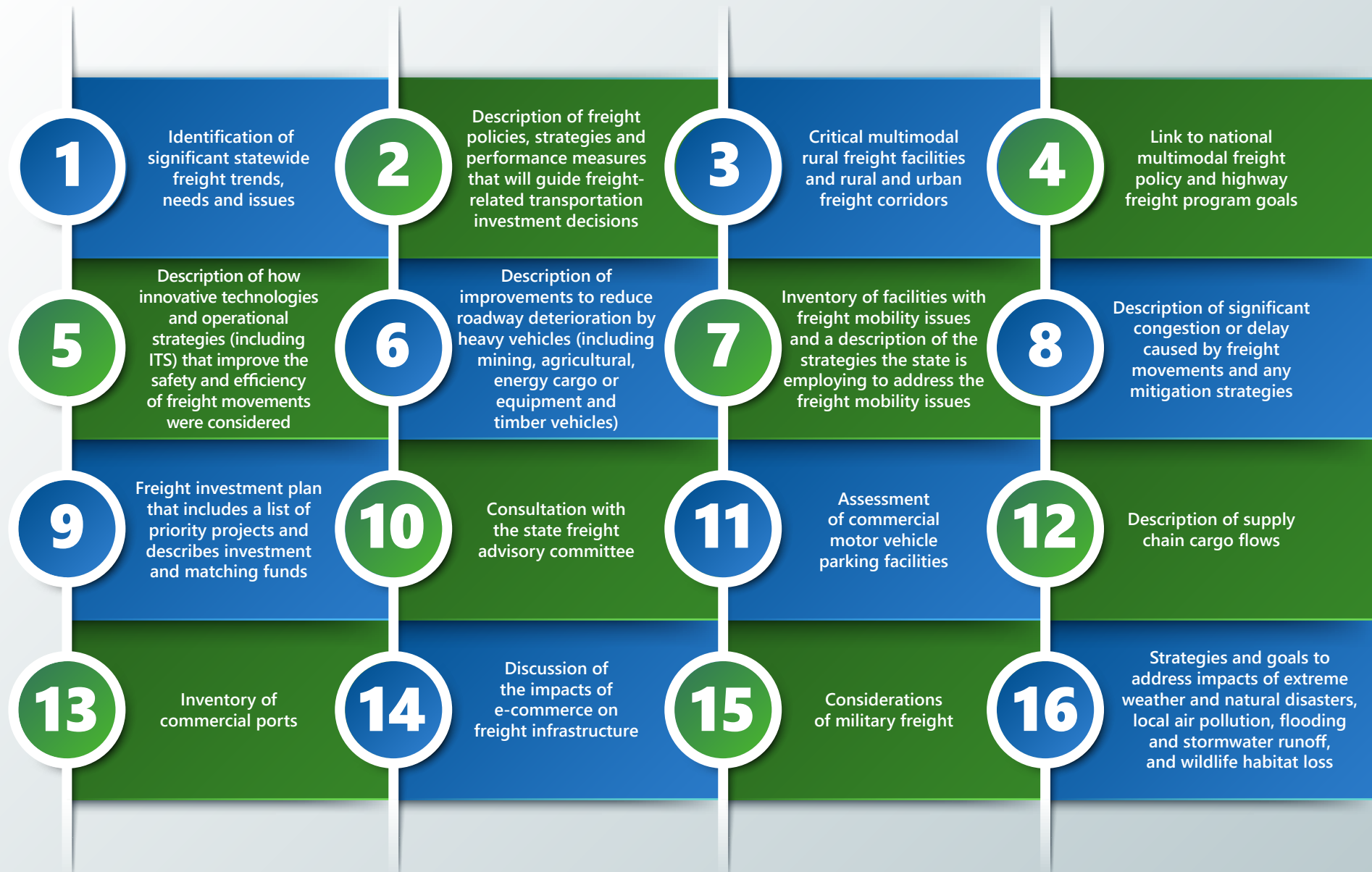
Understanding these complex systems and the role that MassDOT plays in supporting publicly funded projects, policies, and strategies is key to planning for multimodal freight mobility in an uncertain future. Together with the statewide long-range transportation plan, this Freight Plan ensures that Massachusetts has the right tools to keep the Commonwealth's businesses and communities thriving for decades to come.

This Freight Plan also occupies a critical place in **MassDOT's family of modal plans**. Other documents in this set include:



The agenda for all multimodal planning in Massachusetts is set by the statewide long-range transportation plan – Beyond Mobility – and the findings of this Freight Plan provide valuable insights into the interactivity of moving people versus moving goods.

# FHWA REQUIREMENTS FOR STATE FREIGHT PLANS





# FREIGHT SUPPORTS THE COMMONWEALTH'S ECONOMY



## Freight & Economic Indicators

Total population  
(2022)

**6.98  
million**



Total employment  
(2021)

**3.58  
million**



Total GDP  
(Q3, 2022)

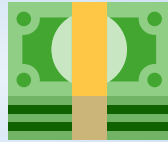
**\$693  
billion**



*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**

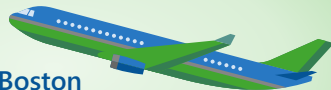


*seasonally adjusted, current-year-dollar, 26% of MA total*

## Freight Infrastructure Assets

**6**

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



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



**1,138**

railroad miles  
operated by

**1**

Class I  
railroad

AND

**11**

Class III  
railroads



**8**

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

**7**

major waterways



**117**

public truck  
parking facilities



# VISION & GOALS



## VISION, GOALS, AND GUIDING PRINCIPLES

The vision of the 2023 Massachusetts Freight Plan was approved by the Freight Advisory Committee and MassDOT, drawing from Beyond Mobility, the 2017 Massachusetts Freight Plan, and national best practices. **MassDOT will realize this vision through two guiding principles and five goals.**



**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.*

## GUIDING PRINCIPLES

### FOSTERING EQUITY AND COLLABORATION

Understanding the needs of all groups and ensuring that the right stakeholders are at the table.

### BUILDING ORGANIZATIONAL CAPACITY

Ensuring MassDOT has the staff and systems in place to accomplish its goals.

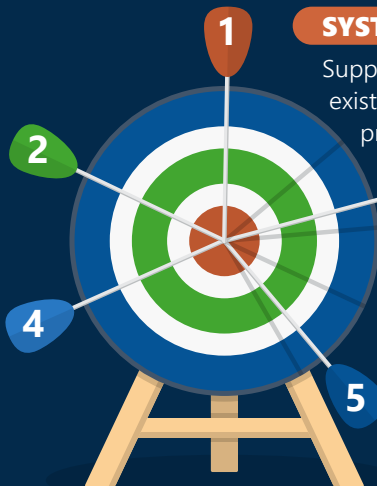
## GOALS

### SAFETY AND RESILIENCY

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

### ECONOMIC COMPETITIVENESS

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



### SYSTEM CONDITION

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

### MOBILITY AND RELIABILITY

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

### 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.

# STAKEHOLDER OUTREACH



**INPUT** is a key element in assisting MassDOT and its partners develop policies, programs, and projects that can help the Commonwealth grow its economy in safe and sustainable ways.

Stakeholder outreach for the 2023 Massachusetts Freight Plan focused on gaining a balance of insight and input on the goals of the plan from freight industry experts and the public. MassDOT conducted this stakeholder outreach through the following efforts.

## SUMMARY OF PUBLIC OUTREACH ACTIVITIES



## FREIGHT ADVISORY COMMITTEE MEMBERSHIP

### PUBLIC SECTOR

City of Cambridge  
Connecticut Department of Transportation  
Federal Highway Administration  
Massachusetts Association of Regional Planning Agencies  
Massachusetts Department of Transportation  
Massport  
Port of New Bedford

### PRIVATE SECTOR/INDUSTRY

Cumberland Farms  
Genesee & Wyoming Railroad  
Global Partners  
Maple Leaf Distribution Services  
Maritime International  
NFI Industries  
Trucking Association of Massachusetts  
Unistress Corp.



# KEY MASSACHUSETTS INDUSTRIES



## FISHING & SEAFOOD INDUSTRY



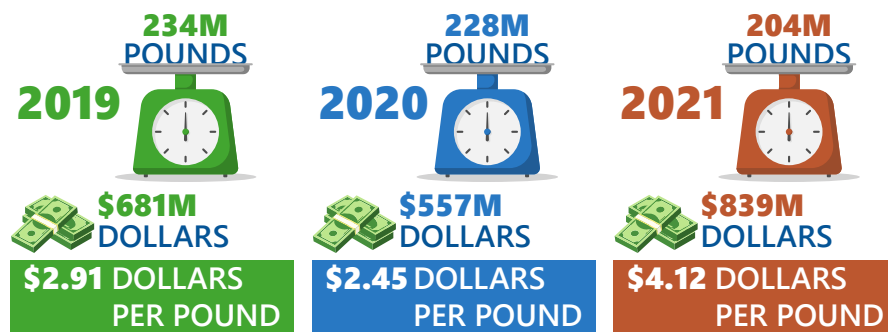
Massachusetts is **one of the top producers of seafood in the U.S.**, with *productive commercial fishing ports* in *New Bedford, Gloucester, Provincetown-Chatham, Boston, and Fairhaven.*

Massachusetts generated a **value** of **\$679 million** in **seafood landings**, *ranking second in the nation*, behind Alaska.



**National seafood exports** have been **declining** *since 2019 due to COVID*, but despite the decreases in weight, Massachusetts continues to be a **lead exporter by value**, *behind Alaska, Louisiana, Virginia, Oregon, and Mississippi.*

### MASSACHUSETTS SEAFOOD INDUSTRY EXPORTS, 2019 – 2021



Source: NOAA Fisheries.

## CHEMICALS & MATERIAL INDUSTRY



There are **317** **chemical industrial establishments** in Massachusetts, employing more than **14,700** **people** concentrated in *Middlesex, Suffolk, Essex, and Worcester counties.*

**Chemical product manufacturing** **ranked 2nd** among the Commonwealth's **top producing manufacturing sectors** (valued at \$11.6 billion).



## BIOMEDICAL INDUSTRY



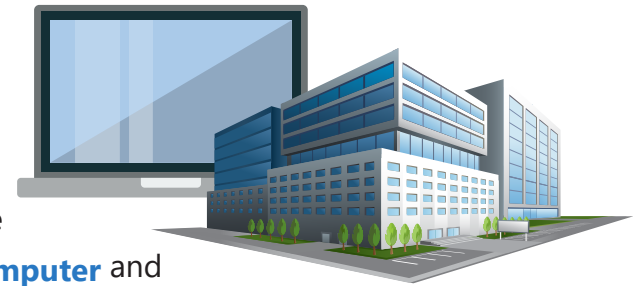
Massachusetts leads the U.S. in **medical product exports**, valued at **\$6.1 billion**, produced at about **500 medical-device manufacturing companies** employing **25,000 people** statewide.

In 2021, Massachusetts exported **\$2.7 billion** worth of vaccines for human use, **\$1.14 billion** worth of medical instruments and appliances, and **\$1 billion** worth of filtering/purifying machinery for liquids.



The **biotechnology sector** is expected to add **20 million square feet of laboratory and manufacturing space** by **2024** that would accommodate **40,000 new employees**.

## COMPUTER & ELECTRONICS INDUSTRY



There are **695 computer and electronic product establishments** in Massachusetts employing nearly **54,000 workers** concentrated in **Middlesex, Suffolk, Essex, and Worcester counties**.

Massachusetts is rapidly becoming an **incubator for clean technology ("cleantech") companies**, which work to **reduce environmental impacts** through **energy efficiency improvements, sustainable use of resources, and/or environmental protection activities**.

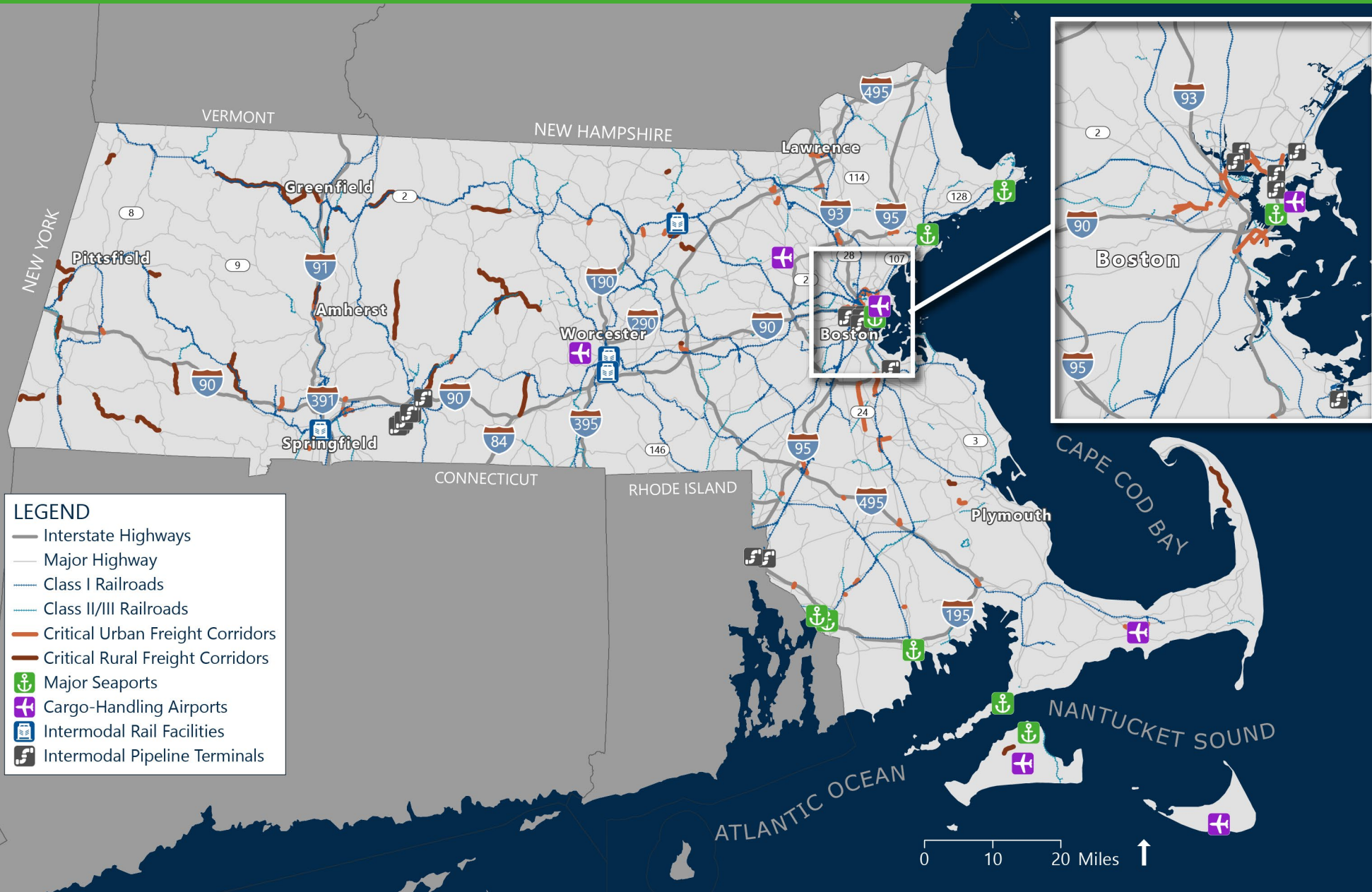


Companies in Massachusetts are expanding their research into this new technology, with **50,000 square feet of laboratory and manufacturing space** and **200 new jobs** expected by **2045**.





# MULTIMODAL NETWORK MAP



# FREIGHT DEMAND: BIG PICTURE



IN 2017, THE MULTIMODAL FREIGHT SYSTEM TRANSPORTED 253 MILLION TONS OF GOODS VALUED AT NEARLY \$502 BILLION TO, FROM, AND WITHIN MASSACHUSETTS, WHICH IS EXPECTED TO APPROACH 351 MILLION TONS VALUED AT \$888 BILLION BY 2045.

## HIGHWAY



**211.3 MILLION TONS VALUED AT \$359 BILLION,**  
PROJECTED TO GROW TO  
288.8 MILLION TONS VALUED AT  
\$608.3 BILLION BY 2045

|  |  |          |
|--|--|----------|
| <b>Top<br/>Commodities<br/>by Weight,<br/>2017</b> | Gasoline, Aviation Turbine Fuel, and Ethanol | 34.8 M   |
|  | Gravel and Crushed Stone                     | 27.4 M   |
|  | Non-Metallic Mineral Products                | 21.9 M   |
| <b>Top<br/>Commodities<br/>by Value,<br/>2017</b>  | Mixed Freight                                | \$50.2 B |
|  | Pharmaceutical Products                      | \$27.5 B |
|  | Electronics                                  | \$26.5 B |

## FREIGHT RAIL



**12.9 MILLION TONS VALUED AT \$117 BILLION**  
**IN 2017,** PROJECTED TO GROW TO  
21.6 MILLION TONS VALUED AT  
\$234.1 BILLION BY 2045

|  |  |          |
|--|--|----------|
| <b>Top<br/>Commodities<br/>by Weight,<br/>2017</b> | Waste and Scrap                        | 1.9 M    |
|  | Other Prepared Foodstuffs              | 1.2 M    |
|  | Pulp, Newsprint, Paper, and Paperboard | 0.9 M    |
| <b>Top<br/>Commodities<br/>by Value,<br/>2017</b>  | Pharmaceutical Products                | \$22.4 B |
|  | Textiles                               | \$17.5 B |
|  | Electronics                            | \$16.6 B |

## PORTS & WATERWAYS



**180,000 TONS VALUED AT \$45 MILLION,**  
PROJECTED TO DECREASE TO  
101,000 TONS VALUED AT  
\$30 MILLION BY 2045

|  |  |        |
|--|--|--------|
| <b>Top<br/>Commodities<br/>by Weight,<br/>2017</b> | Other Coal and Petroleum Products            | 0.1 M  |
|  | Gasoline, Aviation Turbine Fuel, and Ethanol | 0.06 M |
| <b>Top<br/>Commodities<br/>by Value,<br/>2017</b>  | Gasoline                                     | \$25 M |
|  | Mixed Freight                                | \$21 M |

## AIR CARGO



**142,000 TONS VALUED AT \$20.8 BILLION,**  
PROJECTED TO GROW TO  
259,000 TONS VALUED AT  
\$36.9 BILLION BY 2045

|  |                               |         |
|--|-------------------------------|---------|
| <b>Top<br/>Commodities<br/>by Weight,<br/>2017</b> | Electronics                   | 0.03 M  |
|  | Precision Instruments         | 0.02 M  |
|  | Meat, Poultry, Fish & Seafood | 0.02 M  |
| <b>Top<br/>Commodities<br/>by Value,<br/>2017</b>  | Electronics                   | \$7.8 B |
|  | Precision Instruments         | \$5.1 B |
|  | Pharmaceutical Products       | \$3.4 B |



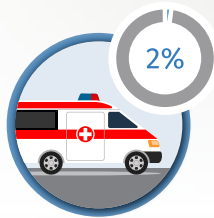
# MULTIMODAL FREIGHT NEEDS AND OPPORTUNITIES



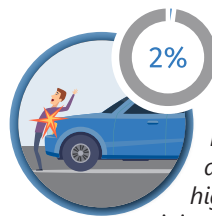
## ROAD INFRASTRUCTURE

### Safety

The Commonwealth of Massachusetts' top priority is ensuring the safety of all roadway users. Massachusetts has adopted the Safe System Approach, which anticipates that human mistakes will occur and focuses on lowering impact energy on the human body during collisions to below dangerous levels.



About 2% of crashes lead to deaths and severe injuries, whether or not they involve trucks.

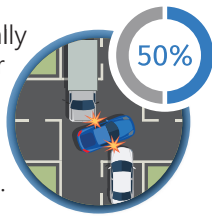


Only 2% of collisions involving a pedestrian or cyclist also involved a truck. However, people walking and bicycling are at much higher risk of death or severe injury in a collision involving a truck (compared with smaller vehicles).



Of nearly 13,000 fatal and severe injury crashes that occurred in Massachusetts, 6% involved trucks.

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



### Hot Spots for Truck-Involved Crashes

#### ROAD SEGMENTS WITH THE HIGHEST NUMBER OF TRUCK-INVOLVED FATAL AND SERIOUS INJURY CRASHES, 2017 – 2021

| ROAD SEGMENT                                       | LOCATION         | NO. OF INCIDENTS |
|--|------------------|------------------|
| I-290/I-495 Interchange                            | Marlborough      | 10               |
| Riverdale Street                                   | West Springfield | 4                |
| I-495/US-1 Interchange                             | Plainville       | 4                |
| Belmont Street                                     | Brockton         | 3                |
| I-495 Interchange 108 (Broadway/MA-97)             | Haverhill        | 3                |
| Cottage Street                                     | Springfield      | 3                |
| Eastern Avenue                                     | Chelsea          | 3                |
| I-290 Interchange 25 (Main Street)                 | Shrewsbury       | 3                |
| I-90/I-95 Interchange                              | Weston           | 3                |
| I-93/I-495 Interchange                             | Andover          | 3                |
| Main Street  | Worcester        | 3                |
| North Montello Street                              | Brockton         | 3                |
| I-495 Interchange 107 (River Street/MA-110/MA-113) | Haverhill        | 3                |
| MA-24 Interchange 20 (US-44)                       | Raynham          | 3                |
| US-6   | Eastham          | 3                |



## Congestion, Delay, and Bottlenecks

Congestion, delay, and bottlenecks contribute to increased cost of shipping and increased emissions from freight transportation. There are 17 highway bottlenecks in Massachusetts, including two identified by the American Transportation Research Institute (ATRI) as being in the top 100 truck bottlenecks nationally in 2023 (I-95 at I-90 ranked 90<sup>th</sup>; I-95 at I-93 ranked 99<sup>th</sup>).

### LIST OF HIGHWAY BOTTLENECKS IN MASSACHUSETTS, 2022



## Truck Parking

Safe, secure truck parking is essential for public safety, driver quality-of-life, and economic competitiveness in Massachusetts.

Truck drivers must take breaks at regular intervals to comply with federal hours-of-service (HOS) regulations. Just as importantly, truck drivers need parking to stage (or wait) for customer pick-ups and drop-offs to ensure on-time arrivals. In particular, truck parking areas at service plazas along I-90 were frequently overcrowded. MassDOT continues to study this issue and look for solutions.



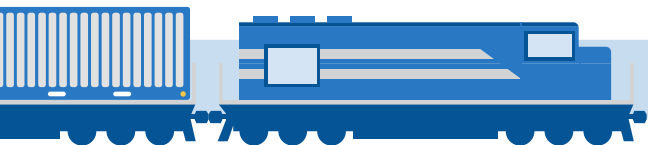
## Pavement and Bridge Condition

Massachusetts bridges are **25 years older than the national average**, and the Commonwealth is **47<sup>th</sup> in the nation for bridge condition**. Significant and ongoing investment is needed to rehabilitate or replace legacy infrastructure and sufficiently fund maintenance and preservation.

### MASSDOT TARGETS FOR HIGHWAY INFRASTRUCTURE CONDITION, 2021 – 2025

| PERFORMANCE MEASURE                       | CURRENT (2021) | 2-YEAR TARGET (2023) | 4-YEAR TARGET (2025) |
|---|----------------|----------------------|----------------------|
| Bridges in good condition                 | 16%            | 16%                  | 16%                  |
| Bridges in poor condition                 | 12.2%          | 12%                  | 12%                  |
| Interstate Pavement in good condition     | 71.8%          | 70%                  | 70%                  |
| Interstate Pavement in poor condition     | 0%             | 2%                   | 2%                   |
| Non-Interstate Pavement in good condition | 34%            | 30%                  | 30%                  |
| Non-Interstate Pavement in poor condition | 3%             | 5%                   | 5%                   |





## FREIGHT RAIL



### Safety and Security

Freight rail safety includes grade crossing safety, incidents involving rail equipment, hazmat releases, and other injuries/illnesses. Grade crossing incidents are highly preventable, yet the cause of the most injuries and fatalities of the rail industry nationwide.

**Derailments represented nearly 80% of all incidents in Massachusetts**, with 13 derailments resulting in 38 damaged hazmat cars, two of which released hazardous materials.



### Critical Needs

Ensuring that the rail industry has a **workforce** that is well trained and sufficient in size to handle anticipated rail traffic efficiently.

**Improving system resiliency and market relevance** by supporting competitive service, achieving a state of good repair and addressing the impacts associated with climate change.

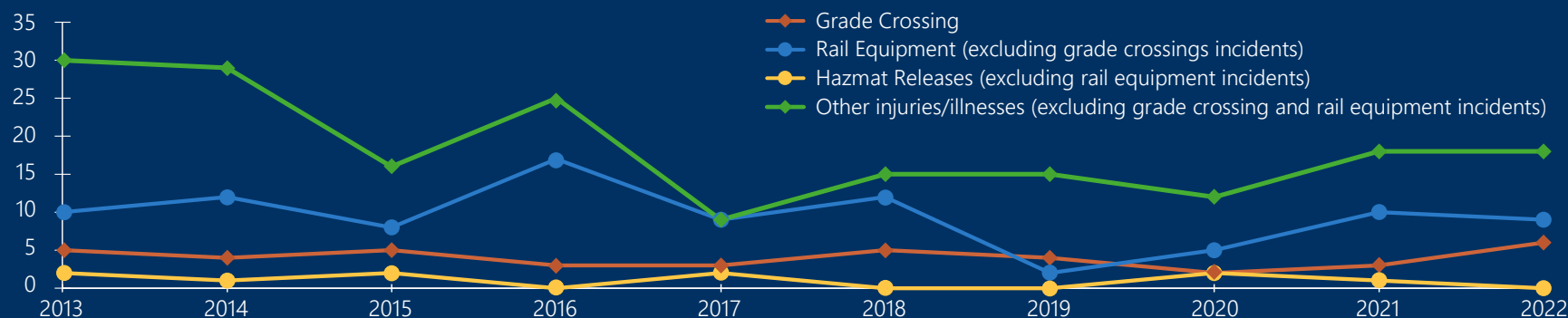
For **carload service**, a major long-term concern is ensuring continued availability and access to suitable land parcels for rail-oriented industries. For **intermodal service**, ensuring sufficient capacity at terminals to accommodate continued growth to serve existing markets and (potentially) additional ones.

Ensuring that the interests of **freight rail users** are reflected in decision making for publicly owned rail lines.

Continued support of the Commonwealth's **Industrial Rail Access Program** (IRAP).

Public support in transitioning to a **zero emissions future**.

### MASSACHUSETTS FREIGHT RAILROAD INCIDENTS, 2013 – 2022



Source: FRA Forms 54, 55A, and 57. PHMSA Incident Statistics.

## PORTS AND WATERWAYS

### Port of Boston



#### **Waterside Conditions: Berthing and Dredging**

Massport has continued to pursue an expansion and enhancement of waterside facilities at Conley Terminal, and has dredged the Boston Harbor channel to a depth of 47 feet (previously 40 feet).

**These improvements will allow larger container ships to call at Boston and increase the port's competitiveness on the Eastern Seaboard.**

**Landside Connectivity** – Increased traffic congestion and conflicts between commercial and passenger traffic continue to threaten truck access to Conley Terminal. The neighboring Seaport District has experienced unprecedented development over the last 20 years, attracting thousands of new residents and jobs.

**Careful planning is needed to balance the transportation needs of the industrial park businesses, seaport businesses, and South Boston residents.**

#### **Expanded Infrastructure and Service Offerings –**

Developing South Boston Marine Multiport's North Jetty as a multi-purpose cargo handling facility in a public-private partnership to become a distribution center for bulk goods and project cargo (such as components for offshore wind development).

**The revitalization of the North Jetty would provide an opportunity to meet dry bulk and special cargo demands in Boston and throughout the New England region.**

There also exists a long-term need to protect railroad right-of-way in Charlestown, which provides the only viable future rail connection to any port in Massachusetts.

## AIR CARGO

### *Landside Connectivity*



There is a need for a better roadway connections to Logan Airport's North Service Area and North Cargo Area. The Coughlin Bypass plays a key role in connecting to key industrial areas in Chelsea, Everett, and beyond – and along with other connecting truck routes – is essential for goods movement to and from Logan facilities.

**Protecting freight access and designated freight corridors is increasingly important given the surge in residential and commercial development in South Boston.**



### *Cargo-Handling Facilities*

There is an increasing demand for air cargo – largely attributed to growing demand for e-commerce. However, capacity for dedicated air cargo has shrunk over time.

**Massport continues to pursue opportunities to make air cargo processing at Logan more efficient to get the most value out of limited space, such as off-airport processing to allow cargo to move through the facility without being stored at the airport.**

Massport continues to explore opportunities to increase Worcester Regional Airport's attractiveness as a gateway for additional air freight and has invested more than \$100 million on upgrades and marketing of this location in recent years.








# FUTURES FOR FREIGHT IN MASSACHUSETTS



**Scenario Planning** brings awareness of uncertainty and risk into decision-making. For this Freight Plan, MassDOT has carried forward the scenario planning process from Beyond Mobility including the variables and plausible futures. This aligns the Freight Plan with the Department's long-range plan and helps ensure consistency in recommendations.

The process began with identifying “**drivers of the future**” through a collaborative effort of subject matter experts from across MassDOT in late 2021. Each trend was studied as a combination of several related variables and freight-specific considerations. The scenarios represent a status quo in Massachusetts that accelerates changes, continues on a straight line, or begins to revert in some areas.

## BEYOND MOBILITY TRENDS AND VARIABLES, AND FREIGHT-SPECIFIC CONSIDERATIONS

| TREND  | VARIABLES   | FREIGHT-SPECIFIC CONSIDERATIONS  |
|--|---|--|
|  <b>Climate Change</b>        | <ul style="list-style-type: none"> <li>• Sea level rise</li> <li>• Extreme temperatures energy needs</li> <li>• Severe weather</li> </ul>                         | <ul style="list-style-type: none"> <li>• Threats to the well-being of the freight workforce</li> <li>• Damage and disruptions to critical electricity, roadways, runways, railroad tracks, and businesses/facilities</li> <li>• Changes to patterns of national and global trade</li> <li>• Limitations on future development</li> </ul>   |
|  <b>Future-of-Work</b>       | <ul style="list-style-type: none"> <li>• Flexible work schedules</li> <li>• Labor shortage</li> <li>• Telepresence</li> </ul>                                     | <ul style="list-style-type: none"> <li>• Challenges with attracting and retaining workers in freight-intensive sectors</li> <li>• Barriers to job access such as childcare, affordable housing, transportation, and workforce readiness</li> </ul>   |
|  <b>People &amp; Places</b> | <ul style="list-style-type: none"> <li>• Aging population</li> <li>• Household size</li> <li>• Migration</li> <li>• Housing</li> <li>• Workplaces</li> </ul>      | <ul style="list-style-type: none"> <li>• Changes to consumer demand exacerbated by same-day or next-day delivery expectations</li> <li>• Conflicts between residential areas and the traffic and noise generated by freight facilities</li> <li>• Vehicle size and weight concerns</li> <li>• Friction between residential and industrial land uses in an era of high land values and a shortage of housing</li> </ul>                     |
|  <b>Prosperity</b>          | <ul style="list-style-type: none"> <li>• Cost of transportation</li> <li>• Income inequality</li> <li>• Knowledge Economy</li> <li>• Racial wealth gap</li> </ul> | <ul style="list-style-type: none"> <li>• Unpredictable product shortages and freight transportation services</li> <li>• Concerns with wage growth, as well as the size and diversity of labor pool</li> <li>• Economic benefits are not equal across freight-intensive sectors</li> </ul>  |
|  <b>Technology</b>          | <ul style="list-style-type: none"> <li>• Automation</li> <li>• E-Commerce</li> <li>• Electricity &amp; alternative energy</li> <li>• New mobility</li> </ul>      | <ul style="list-style-type: none"> <li>• Complicated relationship between new technologies, regulations, infrastructure, and behaviors</li> <li>• New vehicle types have different energy, size/weight, and safety considerations</li> <li>• Increased vehicle miles traveled results in more congestion and wear and tear</li> <li>• Intelligent transportation system and active transportation and demand management systems</li> </ul> |

# RECOMMENDATIONS & STRATEGIES

The **2023 Massachusetts Freight Plan recommendations** were informed by the multimodal needs assessment and scenario planning process, derived from findings from research and technical analysis, MassDOT priorities, priorities from other Commonwealth agencies, industry priorities, and national best practices.

They are comprised of three types –



1. INFRASTRUCTURE IMPROVEMENTS,



2. OPERATIONAL INNOVATIONS, AND



3. POLICIES & PEOPLE.

Each **strategy** is organized into **four categories**, designed to help MassDOT prioritize when each should be actioned.



## Immediate Strategies

address a current or near-term need. They are worthwhile ideas today, no matter what the future holds.

*For example, improving the condition of freight system assets.*



## Robust Strategies

address issues that are expected to arise in the future and will likely be appropriate across all possible scenarios.

*For example, protecting freight system assets and operations from climate change and extreme weather impacts.*



## Hedging Strategies

might not be needed, but if they are, we would need to start implementing them now.

*For example, encouraging low-impact freight and industrial development in urban locations.*



## Shaping Strategies

allow Massachusetts agencies to influence – and hopefully direct – trends for the future.

*For example, improving and preserving freight connections to/from Boston's waterfront freight facilities.*



## STRATEGIES AND RECOMMENDATIONS – IMMEDIATE

### TYPE

### IMMEDIATE STRATEGIES



#### Infrastructure Improvements

- Improve the condition of freight network assets
- Build and expand truck parking facilities on primary truck routes across Massachusetts in alignment with recent studies and recommendations
- Resolve identified truck bottlenecks
- Upgrade freight rail lines in Massachusetts to 286K standard
- Maintain uncongested last-mile access to freight-generating facilities
- Build right-sized distribution centers inside Route 128
- Develop delivery areas in urban districts and town centers
- **Analyze and improve lighting conditions on corridors with higher rates of truck-involved crashes**
- **Improve safety at highway-rail grade crossings**
- **Incorporate rumble strips into new and existing interstate & rural roadways**



#### Operational Innovations

- Develop Intelligent Transportation Systems (ITS) and Active Transportation and Demand Management (ATDM)
- **Establish a framework for prioritizing multimodal freight projects with a focus on equity**
- **Emphasize the need for timely and accurate reporting of crash data involving freight vehicles or at-grade rail crossings**






#### Policies & People

- Support policies to reduce greenhouse gas emissions from transportation
- Harmonize interstate oversize/overweight movements, permitting, and large truck restrictions across New England
- Coordinate freight planning with neighboring states
- Support and promote freight-related workforce development
- Provide collaborative guidance and support to MPOs and local governments in integrating freight, distribution, and loading into their planning and zoning land use decision-making processes
- **More fully integrate freight planning into MassDOT activities**
- **Promote driver education on stopping distances when operating at higher speeds and/or on high-speed roads**
- **Promote road user education on safe vehicle operation and visibility around trucks**

Note: Strategies denoted in **bold** are new to the 2023 Massachusetts Freight Plan.

## STRATEGIES AND RECOMMENDATIONS – ROBUST, HEDGING, AND SHAPING

| TYPE   | ROBUST STRATEGIES   | HEDGING STRATEGIES   | SHAPING STRATEGIES   |
|--|---|--|--|
|  <b>Infrastructure Improvements</b> | <ul style="list-style-type: none"> <li>• Protect freight system assets and operations from climate change and extreme weather impacts</li> <li>• Build standardized small package drops</li> <li>• Encourage increased use of underutilized gateway infrastructure (ports and airports)</li> <li>• Identify and preserve appropriate existing industrial sites for freight-intensive development</li> </ul> | <ul style="list-style-type: none"> <li>• Electrify truck stops</li> </ul>  | <ul style="list-style-type: none"> <li>• Reduce the number of at-grade crossings</li> <li>• Improve and preserve freight connections to/from Boston's waterfront freight facilities</li> <li>• Build out EV charging network for medium- and heavy-duty vehicles traveling long distances</li> </ul>   |
|  <b>Operational Innovations</b>     | <ul style="list-style-type: none"> <li>• Study and perform curbside demand management</li> <li>• Explore and incorporate real-time and other new data sources to better understand freight movements</li> <li>• Use critical freight corridors to support and advance projects that improve multimodal freight mobility</li> </ul>  | <ul style="list-style-type: none"> <li>• Improve the efficiency of air cargo processing at Logan Airport and in surrounding areas</li> </ul>   | <ul style="list-style-type: none"> <li>• Encourage e-bicycle/cargo bicycle delivery</li> <li>• Deploy safety upgrades such as convex/crossover mirrors, lane departure warning, blind spot detection, and backup cameras in MassDOT truck fleet</li> <li>• Deploy lateral protective devices (side guards) in MassDOT truck fleet</li> </ul>   |
|  <b>Policies &amp; People</b>     | <ul style="list-style-type: none"> <li>• Consider opportunities to improve MassDOT design guidance, policies, and procedures to protect against extreme weather and reduce local air pollution, flooding &amp; stormwater runoff, and wildlife habitat loss</li> <li>• Promote efforts to increase fatigue awareness among truck drivers and operators</li> </ul>   | <ul style="list-style-type: none"> <li>• Improve freight worker access to transit</li> <li>• Support low-impact freight and industrial development in urban locations</li> <li>• Support action to preserve industrial land uses in the Boston area</li> </ul> | <ul style="list-style-type: none"> <li>• Study and update building codes to allow for more efficient deliveries</li> <li>• Study and modify municipal zoning codes to allow for neighborhood micro-hubs and other in-town warehouse spaces</li> <li>• Support efforts to reduce distracted driving and control the use of handheld electronic devices while driving</li> <li>• Study and support the development of Advanced Air Mobility (AAM)</li> </ul> |

Note: Strategies denoted in **bold** are new to the 2023 Massachusetts Freight Plan.



# IMPLEMENTING THE 2023 MASSACHUSETTS FREIGHT PLAN

As the demand for the movement of freight in Massachusetts grows, it is increasingly important to invest in the multimodal freight system to ensure that the state's freight network can meet the needs of industry and consumers.

The Federal Highway Administration's National Highway Freight Program (NHFP) provides funding for freight projects. However, designated program funding for freight projects is limited relative to the many freight needs across all modes in Massachusetts. The Infrastructure Investment and Jobs Act (IIJA) maintained and created numerous discretionary grant programs with eligibilities for multimodal freight projects. Massachusetts has had past success with some of these programs, and MassDOT will continue to support future efforts and leverage its available resources when feasible.

Successful implementation of the 2023 Massachusetts Freight Plan can only be achieved with the participation and collaboration of public- and private-sector users and owners of the transportation system, including freight industry stakeholders and federal, state, regional, and local agencies. For this reason, the MassDOT will continue to seek opportunities to collaborate with freight stakeholders into the future.



## WHERE DOES FUNDING COME FROM?



### Federal Aid

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

### State Aid to Municipalities

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

### Public-Private Partnerships

- Industrial Rail Access Program
- Truck Parking Facilities

### Agencies

- MassDOT bonds and revenue
- Massport revenue

**MA** FREIGHT  
PLAN 23

## MASSDOT PROJECT DEVELOPMENT PROCESS

