EBC Evening Program:
Stephanie Pollack, Secretary & Chief Executive Officer
Massachusetts Department of Transportation
Welcome

Daniel K. Moon

Executive Director & President
Environmental Business Council
Welcome to Nutter

Mary K. Ryan

Partner

Nutter McClennen & Fish LLP

Environmental Business Council of New England
Energy Environment Economy
Program Introduction

Michael Scipione

Program Chair & Moderator

Chief Executive Officer, Weston & Sampson
Keynote Speaker

Stephanie Pollack

Secretary and Chief Executive Officer
Executive Office of Transportation
Commonwealth of Massachusetts
MassDOT works to . . .

- Ensure the safety of all transportation system users
- Maintain and modernize assets, investing capital strategically
- Manage roadway operations, actively and safely
- Improve customer service and experience
- Expand transportation options throughout the Commonwealth
- Reduce greenhouse gas emissions and increase resiliency
- Partner with cities and towns and the private sector
- Plan for and implement a multimodal transportation system
- Use data to shape decisions and improve performance
- Anticipate and prepare for a disruptive future
Planning for all modes, statewide
Anticipating a disruptive future

Recommendations of the Commission on the Future of Transportation in the Commonwealth:

- Modernize existing state and municipal transit and transportation assets to more effectively and sustainably move more people throughout a growing Commonwealth

- Create a 21st century “mobility infrastructure” that will prepare the Commonwealth and its municipalities to capitalize on emerging changes in transportation technology and behavior

- Substantially reduce greenhouse gas emissions from the transportation sector in order to meet the Commonwealth’s Global Warming Solutions Act (GWSA) commitments, while also accelerating efforts to make transportation infrastructure resilient to a changing climate

- Coordinate and modernize land use, economic development, housing, and transportation policies and investment in order to support resilient and dynamic regions and communities throughout the Commonwealth

- Make changes to current transportation governance and financial structures in order to better position Massachusetts for the transportation system that it needs in the next years and decades
Understanding congestion

CONGESTION IN THE COMMONWEALTH
REPORT TO THE GOVERNOR 2019

massDOT
Massachusetts Department of Transportation
SUSTAINABILITY
We can’t tackle climate change in Massachusetts without addressing transportation

Source: MassDEP’s Statewide GHG Emissions Baseline and Projection
When it comes to GHGs, transportation is not the same as the electricity sector

“How much energy we use to accomplish our social goals could instead be considered a measure less of our success than of our failure - just as the amount of traffic we must endure to get where we want to go is a measure not of well-being but rather of our failure to establish a rational settlement pattern. … Much of our prized personal mobility is really involuntary traffic made necessary by the settlement patterns that cars create. Is that traffic a cost or a benefit?”

Amory Lovins
Electric vehicles, alone, are not enough to meet aggressive GHG goals.

Q1: Electric vehicles are necessary but not sufficient to reduce transportation emissions.

What else should we do to move #BeyondEVs and create a cleaner, zero-carbon transportation future?

#BeyondEVs
“As the transportation sector is the largest contributor to carbon emissions in the Commonwealth, reducing transportation emissions is imperative to combating the causes of climate change and meeting Massachusetts’ aggressive greenhouse gas reduction targets,” said Governor Charlie Baker. “Our administration looks forward to building upon the work of our Commission on the Future of Transportation and statewide climate change and transportation listening tour by proactively collaborating with other states to develop a regional approach to addressing this vital climate issue.”
Transportation and Climate Initiative (TCI)

- Regional collaboration of 13 Northeast/Mid-Atlantic states, working to improve transportation, develop the clean energy economy, and reduce transportation emissions.

- Energy and Environmental Affairs (EEA), Department of Environmental Protection (MassDEP), Department of Transportation (MassDOT) working together to reduce carbon emissions through a “cap-and-invest” program or other mechanism that establishes a price for transportation emissions.
ELECTRIC BUSES
Bus Industry Overview

Trending towards advanced extended range hybrid and battery electric buses to reduce environment impacts and improve customer experience.

- Multiple bus manufactures capable of producing various propulsion types
- Reduced maintenance and operating costs
- Improved reliability and passenger amenities
- Electric bus infrastructure upgrades required
Electric buses for Regional Transit Authorities
Path to a Zero Emissions Fleet for the MBTA

2000: Compressed Natural Gas (CNG) Buses

2004: Electric Trolley Bus (ETB) Fleet

2004: Dual Mode Articulated (DMA) - Silver Line Fleet

2010: 60’ Diesel Hybrid Fleet

2015: 40’ Diesel Hybrid Fleet

2015: 40’ Hydrogen Fuel Cell Bus

2017-18: 40’ Battery Electric Bus (BEB) Feasibility Study

2019: 60’ New Flyer XDE60 – Extended Range Hybrid Bus

2019: 60’ New Flyer XE60 – Prototype Battery Electric Buses
Future of MBTA Bus

In accordance with:
• Fleet and Facilities Plans
• Focus 40
• Better Bus Program

Key Objectives:
• Improve performance of advanced hybrid buses with extended engine-off operations (upwards of 30% fuel savings)
• Reduced GHG emissions
• Improved overall service, accessibility, and mobility
• Add passenger amenities and safety features

Upcoming plans include:
• 194 New Flyer hybrid buses – delivery commencing in August 2019 through 2020
• Continued evaluation of five New Flyer prototype battery electric buses
• Purchase of additional battery electric buses – RFI released to the industry
• Purchase of next fleet of advanced hybrid buses – RFI released to the industry
RESILIENCY
Addressing Resiliency Needs

“As we continue to prioritize emission reductions to address the causes of climate change, we must also implement strategies to prepare for a rapidly changing climate, and once again our role is not only to protect our own communities, but to develop solutions and policy approaches that can be shared outside the borders of our Commonwealth.” – Governor Baker

Executive Order 569
- establishes an aggressive, integrated strategy to further reduce greenhouse gas emissions and to, for the first time, prepare state government and local communities for the climate challenges ahead
- calls on Executive Office of Energy and Environmental Affairs and Executive Office of Public Safety and Security to use the best available climate change science and risk assessments to develop a State Hazard Mitigation and Climate Adaptation plan (released last Fall)
- places climate change coordinators in each Secretariat, the completion of agency vulnerability assessments for critical assets, and directed financial and technical support to local resilience planning and implementation through the Municipal Vulnerability Preparedness, or MVP program

Environmental Bond Bill authorized over $2.4 Billion in spending for projects ranging from climate change adaptation to land protection, including over $200 Million specifically for climate change resiliency efforts
Making our infrastructure resilient
Many culverts and small bridges are in need of replacement today – they are poorly located, deteriorated, or undersized and often exacerbate road flooding, cause road washouts during extreme storms and prevent fish and wildlife passage – Secretary Theoharides
ACCELERATING CAPITAL DELIVERY AT THE MBTA
The System | Addressing the Needs of the T

MBTA light & heavy rail infrastructure require upgrades to track, signals, vehicles and stations to improve service for riders

<table>
<thead>
<tr>
<th>System-wide</th>
<th>~4,889,280 Feet of Track (926 miles)</th>
<th>30+ Years Average Age of Track</th>
<th>260 Rail Stations (unique, excluding Bus)</th>
<th>1.20M Riders Each Day (MBTA Performance, June 19)</th>
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<tbody>
<tr>
<td>SW</td>
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<tr>
<td>2 Light Rail Lines (GL, Mattapan)</td>
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<tr>
<td>3 Rapid Transit Lines (RL, OL, BL)</td>
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<tr>
<td>13 Commuter Rail Lines</td>
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<tr>
<th>GL</th>
<th>242,600 Feet of Track (46 miles)</th>
<th>30 Years</th>
<th>66 Stations 53 at surface level</th>
<th>150k Riders Each Day</th>
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<tr>
<td>Green Line*</td>
<td>Light Rail (2-car consists)</td>
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<tr>
<td>RL</td>
<td>257,600 Feet of Track (50 miles)</td>
<td>31 Years</td>
<td>22 Stations +8 on Mattapan</td>
<td>240k Riders Each Day</td>
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<tr>
<td>Red Line</td>
<td>Rapid Transit (6-car trains)</td>
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<tr>
<td></td>
<td>Light Rail (Mattapan)</td>
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<tr>
<td>OL</td>
<td>121,400 Feet of Track (23 miles)</td>
<td>38 Years</td>
<td>20 Stations</td>
<td>210k Riders Each Day</td>
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<tr>
<td>Orange Line</td>
<td>Rapid Transit (6-car trains)</td>
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<tr>
<td>BL</td>
<td>63,360 Feet of Track (12 miles)</td>
<td>23 Years</td>
<td>12 Stations</td>
<td>80k Riders Each Day</td>
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<tr>
<td>Blue Line</td>
<td>Rapid Transit (6-car trains)</td>
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<tr>
<td>CR</td>
<td>4,202,880 Feet of Track (796 miles)</td>
<td>30+ Years</td>
<td>138 Commuter Rail Stations +Foxboro (special events)</td>
<td>120k Riders Each Day</td>
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<tr>
<td>Commuter Rail</td>
<td>Commuter Rail Cars (varying lengths)</td>
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<tr>
<td>Other modes: Bus, Trolleybus (Silver Line) and Ferry</td>
<td>Age of track is only one factor in determining replacement priority; in addition, track condition is assessed through regular inspections and testing</td>
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*Green Line Extension (GLX) numbers currently not included
Long-Term Capital Plan will address capital needs for asset condition and modernization, transformation, safety, capacity, and expansion.
Red Line Improvement Program

- Assembly of 252 new Red Line cars has begun in Springfield, MA
- Test Track in South Boston, required for acceptance testing of the new cars, will be complete this Fall
  - Once accepted by the MBTA, these new higher capacity cars will be placed in service

Expected in 2022:

- Expanded and modernized Cabot Yard Maintenance Facility
- Single System project completion
Orange Line Improvement Program

• On August 14, the first 6 of 152 new cars entered service

• Single System project was procured with the Red Line and is expected to be complete in 2022

Spring of 2021:

• Wellington Yard expansion anticipated completion (underway)

• Wellington Maintenance Faculty anticipated completion (underway)
Better Bus Project and Investments

- Early morning and evening service pilots have been made permanent
- Silver Line 3 has opened and ridership continues to grow
- Continuing to work with municipalities to create dedicated lanes for buses on municipal roadways
  - Shorten trip times, increased reliability and frequency
- September 1: first round of 47 route changes implemented

- Average age of fleet down to 6.8 years after delivery of 194 new 40' advanced diesel-electric hybrid buses (2020)
  - Better reliability
- Additional off peak service coming this fall
- FMCB to take up additional peak service soon
Accelerating Capital Delivery  Maximizing Productivity

A surge eliminates repeated setup/breakdown time to enable more complex work by getting to 700 productive hours sooner.
# Planned Weekend Outages & Diversions

**Fall 2019 (September-October)**

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<thead>
<tr>
<th>September</th>
<th>October</th>
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<td>9/7-8</td>
<td>10/5-6</td>
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<td>9/14-15</td>
<td>10/12-13</td>
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<td>9/21-22</td>
<td>10/19-20</td>
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<td>9/28-29</td>
<td>10/26-27</td>
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<td><strong>Existing outages &amp; diversions</strong></td>
<td><strong>New outages &amp; diversion to support acceleration</strong></td>
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**Legend**

- Existing outages & diversions
- New outages & diversion to support acceleration

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Draft for Discussion & Policy Purposes Only
# Planned Weekend Outages & Diversions

**Fall 2019 (November-December)**

*Note: no diversions currently scheduled for weekend of 11/30-12/1 following Thanksgiving*

### Legend
- Existing outages & diversion
- New outages & diversions to support acceleration

<table>
<thead>
<tr>
<th>November</th>
<th>December</th>
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<tr>
<td>11/2-3</td>
<td>12/7-8</td>
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<td>11/9-10</td>
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<td>11/16-17</td>
<td>12/21-22</td>
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<tr>
<td>11/23-24</td>
<td>12/28-29</td>
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- **Orange Line – SW Corridor**
- **Orange Line – Tufts to Sullivan**
- **Red Line – Broadway to Kendall**
- **Red Line - Mattapan**
- **Green Line – D Branch**
- **Green Line – C Branch**
- **Green Line – B Branch**

### Special Events
- **BC Game**
- **Spartan Race (Fenway)**
- **Liver Disease Conf. (Hynes)**
- **Camp Citython 5k**
- **Jonas Brothers (Garden)**
- **Pri-Med Conference (BCEC)**

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*Draft for Discussion & Policy Purposes Only*
THE BOND BILL: THE NEXT GENERATION OF INVESTMENTS
Federal and state transit investment

- The American Association of State Highway and Transportation Officials (AASHTO) annually compiles data on state funding for public transportation.

- The 2019 report (based on 2017 data) found that Massachusetts provides the highest amount of funding per-capita of any state.

- According to AASHTO, states spent $19.04 billion in transit funding, while federal funds totaled only $11.88 billion.

- In the 2020-2024 Capital Investment Plan, federal funding for the MBTA provides $3.7 billion while state (and other) funding provides $4.5 billion, making Massachusetts one of only 15 states who provide more state than federal funding for public transportation.

![Bar chart showing funding by state]
Overview

- Purpose of the bill is to build on foundation laid in past four years and accelerate investment in modernizing our transportation system to modernizing a transportation system that meets the needs of residents, businesses and cities and towns statewide.

- Increasing investment in roads and bridges: Levels of investment based on asset management planning
  - Bridges: $1.25 in additional authorization (Grant Anticipation Notes)
  - Non-interstate National Highway System pavement, both state- and municipally-owned
    - $155 million increase for non-Interstate pavement
    - $100 million Municipal Pavement program
MBTA Investments

• **MBTA: Sources**
  • $300 million in bond cap
  • Reauthorization and expansion of Rail Enhancement Program
  • Authorization of bonds backed by revenue from Transportation and Climate Initiative

• **Uses**
  • $2.7 billion in new (unexpended) REP funding for uses including Green Line transformation, buses
  • Separate $400 million REP authorization for commuter rail locomotives and coaches and piloting new service models after Commuter Rail vision is complete
  • $50M program for bus infrastructure partnerships with municipalities (MBTA and RTAs)
Multimodal investments

- $330 million for the Regional Transit Authorities
- $100 million to implement the Statewide Bicycle and Pedestrian Plans.
- $25 million for matching grants for municipal water transportation
- $250 million for the Allston Multimodal Project.
- Increase transit tax credit to match federal limit
Accelerating Capital Delivery

• Approval for the MBTA and MassDOT to enter into competitively procured real estate deals or other projects with private parties that include mitigation and the private construction of facilities that will be owned by the agency.

• Job order contracting for MBTA to deliver smaller projects (e.g., station improvements) and preserve MBTA staff for other capital needs.

• Clear authority for the MBTA and MassDOT to enter into public-private partnership (‘P3’) arrangements.

• An increase in threshold for required public bidding of construction projects for the MBTA and MassDOT from $50,000 to $100,000.

• Authorization for the MBTA and MassDOT to use the design/build project delivery method for all construction and repair projects, not just those with budgets over $5 million.

• Authorization for the MBTA to utilize an alternative project delivery method (Design/Build/Finance/Operate/Maintain) in order to contract with a private entity for all aspects of a capital project.
CONGESTION: THE REPORT AND WHAT COMES NEXT
CONGESTION IN THE COMMONWEALTH

REPORT TO THE GOVERNOR 2019
Guiding Policy Priorities

• **Reliability** - The goal in tackling congestion must be to reduce the variability that now makes it so difficult for people to plan for how long it will take to get where they are going.

• **Accessibility** - People need to get where they need to go within a reasonable period of time. There are many ways to improve accessibility, including providing alternative mobility options – such as transit – and increasing the number of Massachusetts residents who can live closer to where they work.

• **Sustainability** - The challenges of congestion and climate change must be faced simultaneously, as the Commonwealth cannot meet its goal of reducing overall GHG emissions 80 percent by 2050 without substantially reducing transportation sector carbon emissions.

• **Equity** – We must collaborate and think about regional equity, creating a portfolio of congestion solutions that work for residents of cities and of rural communities, workers who can stay home or shift their travel time and those who cannot, and travelers who would like to use transit or share a ride and those who need to drive.
Roads in the Study Network
Key Findings

1. Congestion is bad because the economy is good.
2. The worst congestion in the Commonwealth occurs in Greater Boston.
3. Congestion can and does occur at various times and locations throughout the Commonwealth.
4. Many roadways are now congested outside of peak periods.
6. Simple changes in travel time on an average day do not capture the severity of the problem.
7. Massachusetts has reached a tipping point with respect to congestion.
8. Many commuting corridors have become unreliable, with lengthy trips on bad days.
9. Congestion has worsened to the point where it reduces access to jobs.
10. We should be worried about congestion on local roads, too.
Changes in travel time on an average day do not capture the severity of the problem.
Many commuting corridors have become unreliable, with lengthy trips on bad days.
Recommendations for Next Steps

- Address local and regional bottlenecks where feasible
- Actively manage state and local roadway operations
- Reinvent bus transit at both the MBTA and Regional Transit Authorities
- Increase MBTA capacity and ridership
- Work with employers to give commuters more options
- Create infrastructure to support shared travel modes
- Increase remote work and telecommuting
- Produce more affordable housing, especially near transit
- Encourage growth in less congested Gateway Cities
- Explore the potential for congestion pricing via managed lanes
Thank You for Listening. Questions or Comments?
Moderated Discussion

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