MBTA Sustainability Program

Presentation to the MBTA Fiscal Management Control Board

May 16, 2016
SUSTAINABILITY OVERVIEW

- Environmental and Sustainability Management System (ESMS)
- Resource Conservation
- Clean Vehicles
- Sustainable Design
- Climate Change Adaptation and Resiliency
ESMS is the management of our environmental programs in a comprehensive, systematic, planned and documented manner.

A **continual improvement process** that is regularly reviewed and updated to react to the changes in our organization or our operations.

- Development of Standard Operating Procedures, Protocols and Training Programs on a variety of aspects

- Facility staff receive training and awareness on how to properly handle issues and the environmental consequences of not complying
BENEFITS OF THE ESMS TO THE MBTA

- Better understanding of our infrastructure and our systems and their environmental conditions via auditing

- New SOP’s to ensure compliance and consistency across the system

- Allows us to do smarter financial planning for infrastructure improvements

- Provides for cross-fertilization of ideas across the authority

- Focus on Worker Health and Safety

- Better relationship with state and federal environmental regulators
ENVIRONMENTAL SUSTAINABILITY AND MANAGEMENT SYSTEM (ESMS)
Focus on Energy and Water Management

MBTA is a large consumer of energy as well as water.

- History of price swings over time
- Conservation acts as a hedge against cost increases

Electricity Savings

- Since 2012, we have invested $2.28M in MBTA funds which resulted in $1.75M savings annually -- $3.75M to date.
- Projects in the pipeline expected to save $5 to $6 million annually
FOCUS ON VEHICLES

DEVELOPING A TRANSIT FLEET THAT RUNS CLEANER AND CONSUMES LESS FUEL

• New Hybrid Buses
  › 20% More Fuel Efficient

• New Locomotives
  › Meeting stricter EPA Standards

• New Orange and Red Line Vehicles
  › More Energy Efficient

• Hydrogen Fuel Cell Pilot Project
SUSTAINABLE DESIGN STANDARDS

HINGHAM FERRY TERMINAL

• Green Roof

• Geothermal Heat Exchange System

• High Energy Efficient Lighting

• Maximizes the Use of Natural Light

• Water Smart Landscaping

• Use of Low Toxic Paints and Sealants

Meets LEED Gold Standards
CLIMATE CHANGE ADAPTATION AND RESILIENCY

MBTA infrastructure and operations subject to severe impacts due to the effects of Global Climate Change

Potential Impacts on the MBTA due to:

- Flooding: Sea level rise, storm surge, hurricanes and Nor’easters
- Extreme Winter Storms and Extreme Cold
- High Heat Days
- High Winds

Extreme Weather Conditions are expected to grow more severe over time and become more frequent.

These storm events have the potential to destroy or severely degrade our infrastructure and cause major impacts – short and long term – to service delivery.
Flooding due to Hurricane Sandy October 2012

Flood analysis prepared by Boston Harbor Now
If Hurricane Sandy had hit at high tide
ELEMENTS OF THE MBTA’s CLIMATE CHANGE RESILIENCY PLAN

• Vulnerability Assessment to identify critical resources

• Integrating Assessment into Asset Management and Capital Planning. Prioritize Projects that:
  » **Harden** Assets Against Future Natural Disasters
  » **Reduce Risk** of Disruptions from Natural Disasters
  » **Cost-Effective** Projects that Assist in Post Event Recovery

• Develop New Design and Construction Standards and Specifications for Resiliency

• Incorporate Information into Operations and Maintenance Plans
Current/Early Action Elements of the MBTA’s Plans

- Coordinating MBTA Assets in the Highway Divisions Resiliency Assessment

- New Climate Resiliency Design Standards for Design and Construction Projects

- New Climate Change Resiliency Projects
  › Fenway Portal Project
  › Charlestown Seawall
For Additional Information on the MBTA’s Sustainability Program, go to
www.mbta.com/sustainability