



MBTA Environmental Department Overview

MBTA Board of Directors/ Safety, Health & Environment Subcommittee

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Energy & Environment

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MBTA Environmental Department Responsibilities

MBTA Environmental & Sustainability Programs

Environmental Matters in
Capital Program

Environmental Review and
Permitting

Construction Period
Compliance

Sustainable Design Support

Environmental Matters in
Operating Program

Environmental Compliance

Audits & Training

Site Remediation

Environmental Legal Matters

Environmental Sustainability

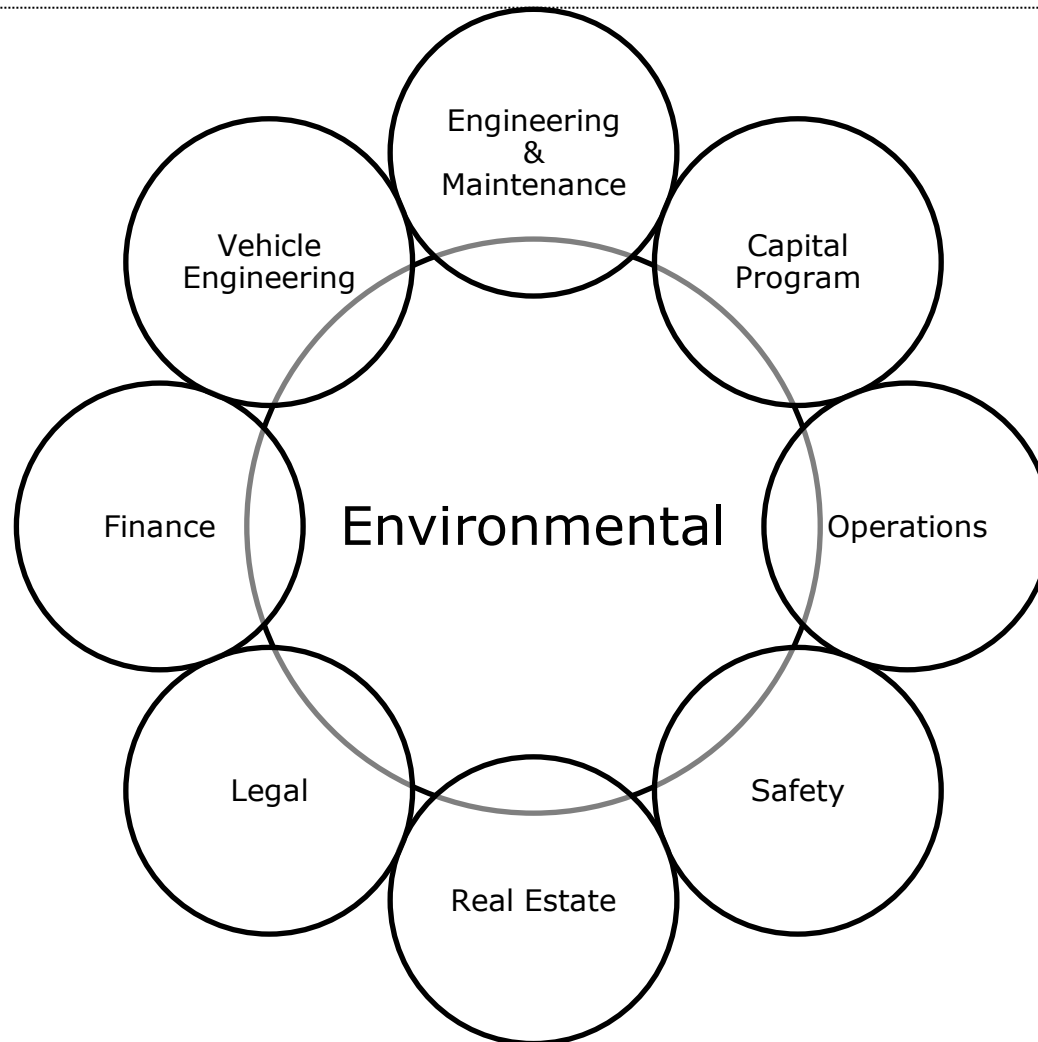
Energy Management

Climate Resiliency

Resource Conservation

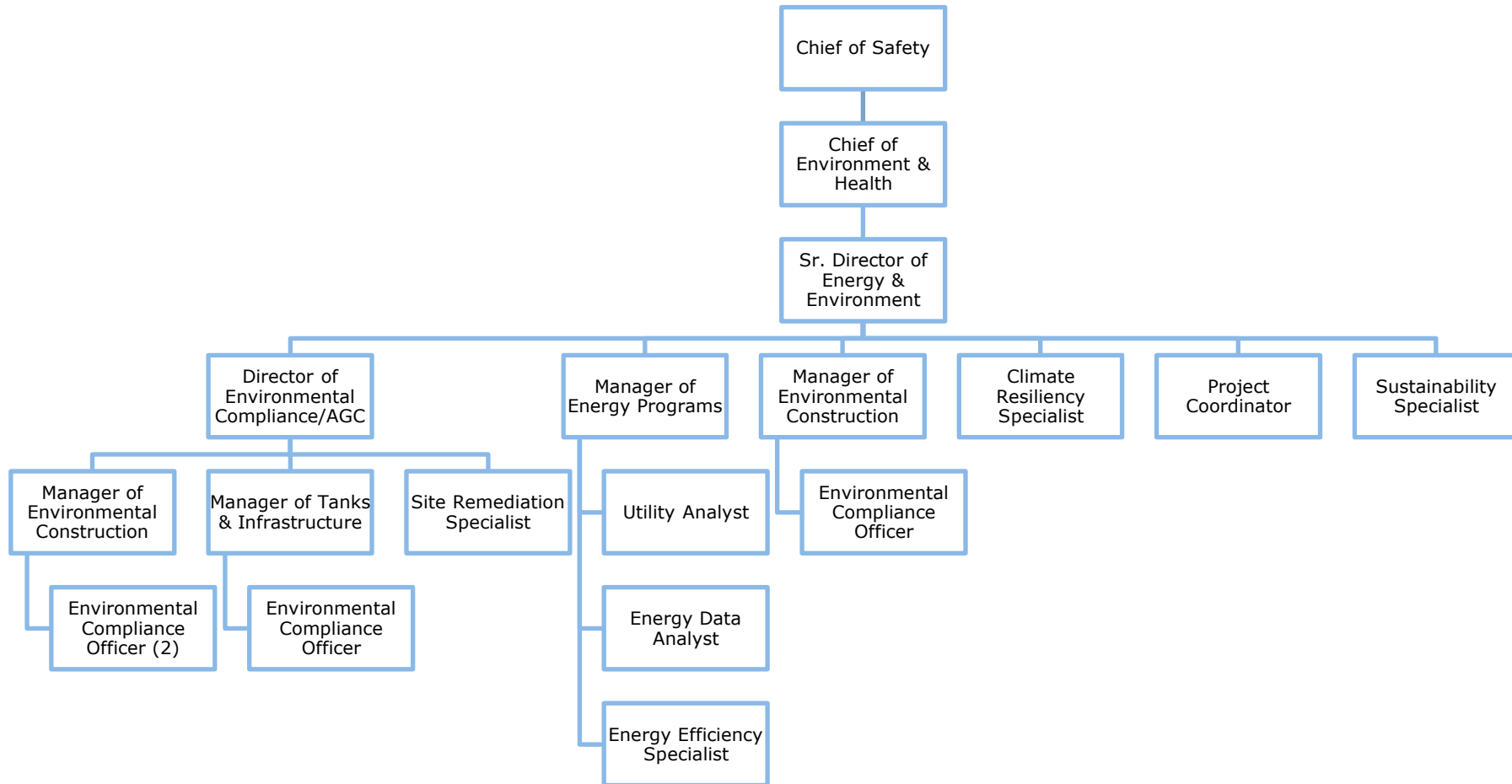


CROSS DEPARTMENTAL COORDINATION





ENVIRONMENTAL DEPARTMENT ORGANIZATIONAL CHART





Environmental Review and Permitting of the Capital Program

Manage Environmental Review and Permitting of Capital Projects

- State and Federal Environmental Programs
- Approvals During Design and Monitor Compliance During Construction
 - Wetlands and Waterways Permitting
 - Soil & Waste Management
 - Endangered Species Protection
 - Historic Preservation

Embed Environmental Sustainability into Projects

- Build Climate Resiliency into Planning & Design
- Incorporate Energy Efficiency and Water Conservation Systems
- Promote Use of Sustainable Materials
 - Seeking to build LEED Certified and Envision Certified Projects





Environmental Compliance – Environmental & Sustainability Management System



Environmental Compliance Areas

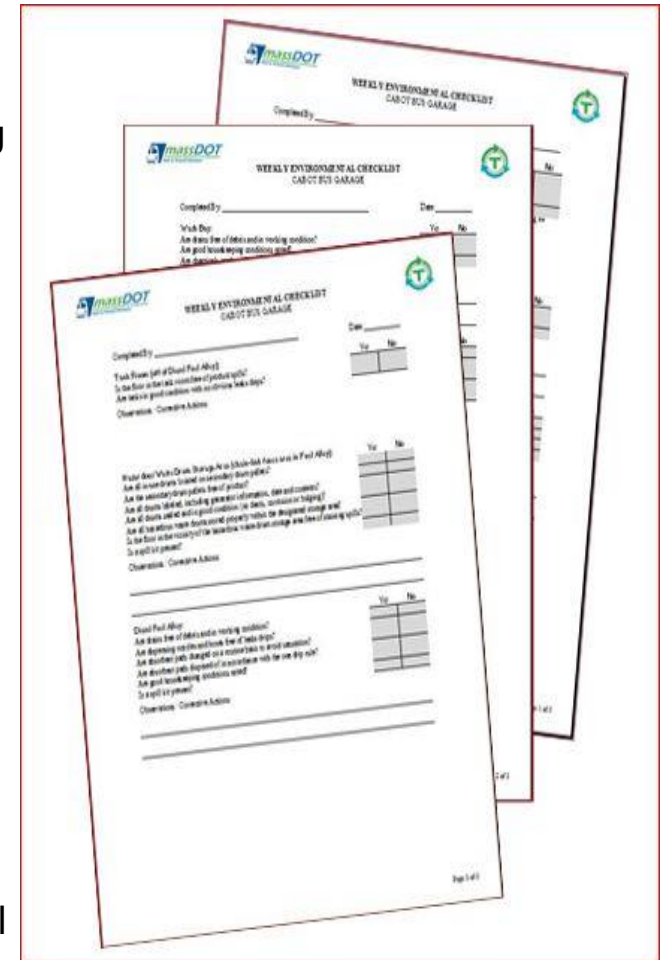
- Underground and Above Ground Storage Tanks
- Wastewater Treatment Plants
- Air Emissions
- Stormwater Management
- Spill Prevention Plans
- Hazardous Materials Management
- Soil & Groundwater Remediation
- Vegetation Management
- Vehicle Compliance



ENVIRONMENTAL SUSTAINABILITY AND MANAGEMENT SYSTEM (ESMS)

BENEFITS OF THE ESMS TO THE MBTA

- Better understanding of our infrastructure and our systems and their environmental conditions via auditing
- Regularly develop or upgrade 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
- Overlap with the Authority's Worker Health and Safety programs
- Better relationship with state and federal environmental regulators





Environmental Sustainability – Energy Program



Manage and Track all Energy Consumption

- Established an Energy Enterprise Management System to track and control the nearly 600 utility accounts at the MBTA.
- Provides us with a data-based tool to make smart energy management decisions

Renewable Energy

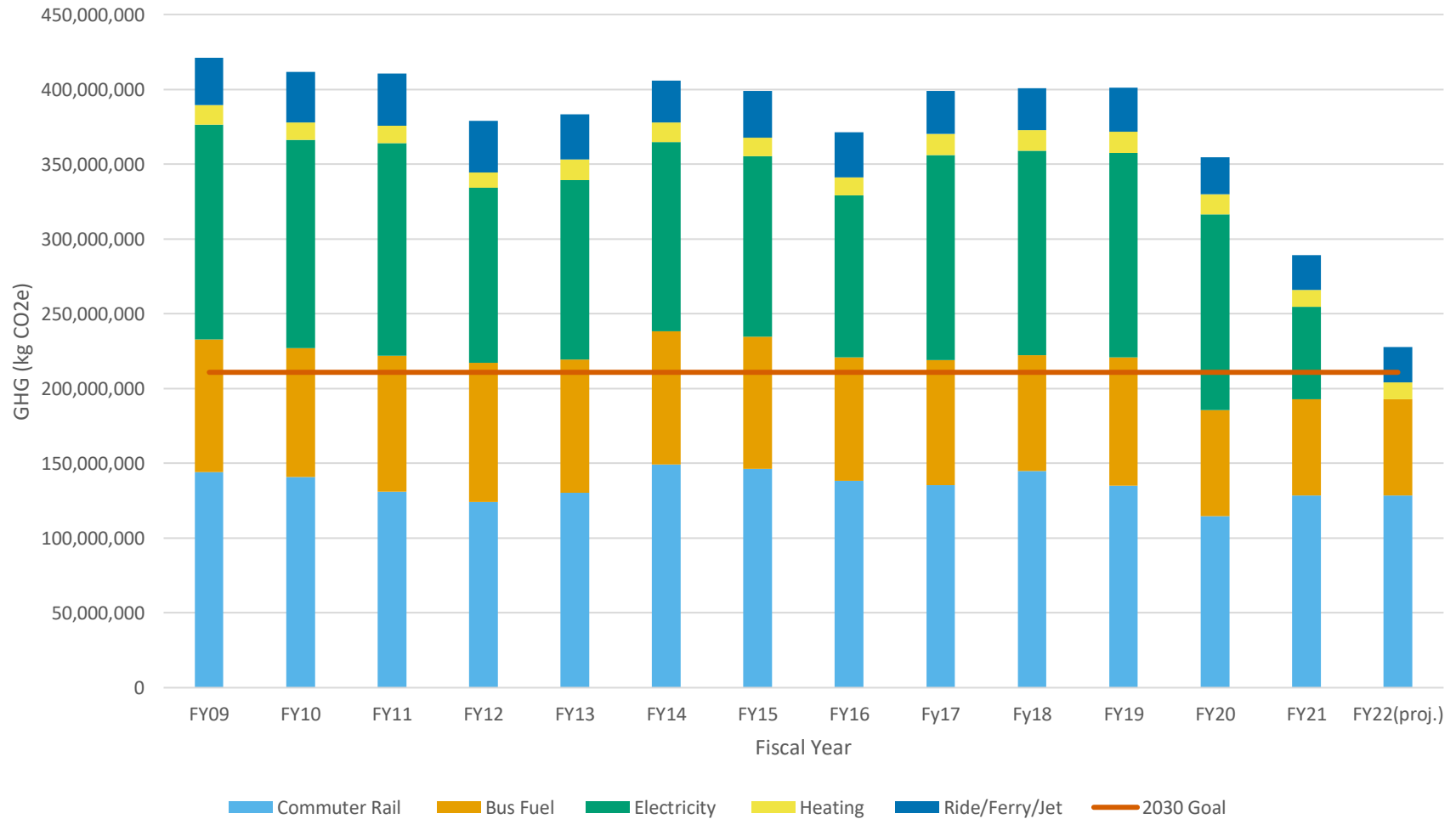
- MBTA now purchases 100% of its electricity from renewable sources
- Incorporate renewable energy (solar, wind & geothermal) into energy portfolio

Energy Efficiency Upgrades

- Over 100 energy efficiency upgrades resulting in yearly savings of \$1m/year & 75m kWh and 117 m pounds of GHG's
- Local utilities paid over 60% of the capital costs



Annual System-wide Greenhouse Gas Emissions





Environmental Sustainability – Climate Change Resiliency

Identify those parts of the system that are likely to be affected by the extreme storm events due to Climate Change:

- Flooding, sea level rise, extreme heat, winter conditions, wind, *etc.*
- Perform analysis based on anticipated changes in future storm events (*i.e.*, 2030, 2050, 2070 and 2100)
- Assess risk to the system based on those storm conditions

Develop Projects that make the MBTA more resilient to the effects of extreme storms:

- Flood Protection Barriers
- Seawalls
- Cooling Projects for Extreme Heat

Develop concepts for resiliency projects and work to embed resiliency into “non-resiliency” projects

- Elevating New Projects
- Using Weather Resistant Materials





Environmental Sustainability – Resource Conservation

Programs to reduce waste and conserve resources:

- Enforce and oversee “land bans”
 - Plastic, metals, wood, cardboard, glass, *etc.*
- Universal waste
 - Batteries, fluorescent light bulbs
- Waste oil and used antifreeze
- Hazardous waste and emergency response
- Customer facing recycling programs





Questions and Comments?

