ACEC State Markets Conference
April 2018
• MBTA By The Numbers
• FY 2019-2023 Capital Investment Plan Update
  • Major Programs
  • Reliability
  • Modernization
  • Expansion
• FY 2018 Major Program Highlights
  • Red Line South Side Facilities
  • RL/OL Improvements Program
  • Commuter Rail Positive Train Control
• Doing Business with the MBTA
  • Awarded Contracts
  • Extra Work Order Letters
  • Streamlined Mini-Procurement Process
  • Streamlined Task Order Process
  • Capital Project Pipeline (Major Contract Awards in FY2018)
• Upcoming Professional Services Opportunities
MBTA By The Numbers

- 3000+ Revenue vehicles
- 128 Transit Stations/stops
- 137 Commuter rail stops
- 846 Miles of track
- 467 Bridges
- 21 Miles of tunnel
- 20 Maintenance shops
MBTA By The Numbers – HEAVY RAIL

**Red Line**
- 22 Stations
- 2 Branches
- 218 Cars

**Orange Line**
- 20 Stations
- 120 Cars

**Blue Line**
- 12 Stations
- 112 cars
Green Line
• 66 Stations & Stops
• 4 Branches
• 206 Cars

Mattapan Trolley
• 8 Stations
• 10 Cars
MBTA By The Numbers – Bus

- 8000+ Bus stops
- 175 Bus routes
- 700+ Bus route Miles
- 1,055 Vehicles
- 9 Garages
MBTA By The Numbers – Commuter Rail

- 5 North side lines
- 7 South side lines
- 137 Stations
- 90 Locomotives
- 420 coaches
- 394 track miles
- Operated by Keolis
• 7 Terminals
• 3 Routes
• 12 boats (3 owned by MBTA)
• Operated by Boston Harbor Cruises
FY 2018 Highlights

Red Line South Side Facilities Improvement Program

- North Quincy Station Transit-Oriented Development
  - Construction begins: Summer 2018
  - Garage completion: Summer 2019

- Wollaston Station
  - Station shutdown: January 8, 2018 – August 2019 (20 Month Closure)
  - Station opening: August 2019
  - Project completion: Winter 2020

- Quincy Center Demo
  - Demolition begins: End of March 2018
  - Project completion: February 2019

- Quincy Adams/Braintree Station Garages
  - Construction begins: Summer 2018
  - Project completion: Summer 2022

- Quincy Adams Station Elevator Replacement
  - Construction begins: Fall 2018
  - Project completion: December 2020
FY 2018 Highlights

Red Line/Orange Line Improvement Program

- **Red Line**
  - NEW VEHICLE PROCUREMENT PROGRAM: $1,009.00M
  - INFRASTRUCTURE IMPROVEMENTS PROGRAM: $470.36M
  - SIGNALS UPGRADE PROJECTS: $350.95M
  - STATE OF GOOD REPAIR PROJECTS: $151.72M

- **Orange Line**

Total $1,982.03M
FY 2018 Highlights

RLOL Infrastructure Improvements Program - Orange Line Projects

- Wellington Yard Expansion Tracks 33 to 38
- Orange Line Test Track at Wellington Yard
- Wellington Maintenance Facility
- Wellington Yard Rebuild

[Map of Wellington Yard with project boundaries labeled]
Commuter Rail Positive Train Control

The Rail Safety Improvement Act (RSIA) of 2008 defines a PTC System as a system designed to prevent:

- Train-To-Train Collisions
- Over Speed Derailments
- Incursions Into Established Work Zone Limits
- Movement of Trains Through Track Switches That May Have Been Left In the Incorrect Position
Commuter Rail Positive Train Control

- Design, installation, and implementation of PTC will impact every segment of the Commuter Rail system.

- Installation work will be performed on every Commuter Rail line, dispatch center, locomotive, and control car, impacting operations systemwide.

FY 2018 Highlights
Commuter Rail Positive Train Control

All PTC Systems are generally comprised of the same components:

- An On-Board Apparatus for the Locomotive controlling each applicable train
- Wayside devices, such as Wayside Interface Units (WIUs)
- A centralized dispatch system (Back Office)
- A communication system linking all components

FY 2018 Highlights
FY2019-FY2023
Capital Investment Plan Update
Overview: MBTA CIP Program Changes

- Proposed FY19-23 CIP is 10% larger than FY18-22 CIP

- New Project Based Programs

- Programs under Reliability, Modernization and Expansion have been renamed and resized.

- New investment programs for “megaprojects” or sets of projects linked to a common goal or outcome (e.g. GLX, RL/OL Improvements)

- Program name changes intended to provide better transparency and accountability

- Updated sizes reflect results of planning efforts, policy decisions, or other commitments (e.g. Fleet and Facilities Plan, L264 agreement)
### New Project-Based Programs

The proposed FY19-23 MBTA CIP will include four new investment programs that represent large (>\$500M), complex, cross-cutting projects tied to specific strategic goals or outcomes.

<table>
<thead>
<tr>
<th>Program</th>
<th>Goal</th>
<th>Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Line Extension</td>
<td>• Extend the Green Line from Lechmere to College Ave</td>
<td>• Stations, Infrastructure, and Vehicles</td>
</tr>
<tr>
<td>Red Line/Orange Line Improvements</td>
<td>• Replace the Red Line and Orange Line fleet and build the infrastructure necessary to meet three minute headways goals</td>
<td>• Vehicles, Signals, Infrastructure</td>
</tr>
<tr>
<td>AFC 2.0</td>
<td>• Implement a new reliable and convenient fare payment and collection system, integrated across all modes, to replace Charlie Cards/Tickets and their supporting hardware and software</td>
<td>• Systems Integrator, Technology, Infrastructure</td>
</tr>
<tr>
<td>Commuter Rail Safety and Resiliency (PTC)</td>
<td>• Meet and exceed federal requirements to install PTC and ATC systems while improving overall resiliency of the CR network</td>
<td>• PTC Implementation, ATC Implementation, fiber installation, vegetation management</td>
</tr>
</tbody>
</table>
Reliability / MBTA / Bridges and Tunnels

**FY2018-2022 size:**

- $544.7 million over five years
- This program repairs, reconstructs and replaces MBTA commuter rail and transit bridges and tunnels system-wide.
- Maintains FY18-22 CIP Program Size

**Projects**

- Gloucester Draw
- Bridge Bundle Contract for six Commuter Rail bridges
- North Station Draw 1 and projects to inspect and repair bridges and tunnels system-wide

**FY2019-2023 size:**

- $544.7 million over five years
- $515 million underway
- $29 million available
Reliability / MBTA / Facilities

**FY2018-2022 size:**
- $112.6 million over five years

**FY2019-2023 size:**
- $388 million over five years
- $185 million underway
- $203 million available

**Projects:**
- Major projects currently underway are the Commuter Rail Iron Horse Operations Control Center, facility roof replacements, rail and bus lift upgrades, and upgrades to HVAC, exhaust, and fire safety systems
- Rebuild of Cabot and Wellington Yards is funded in the RL/OL Improvements program
Reliability / MBTA / Revenue vehicles

**FY2018-2022 size:**
- $1,703.0 million over five years

**FY2019-2023 size:**
- $1,289.9 million over five years
- $384 million underway
- $905 million available

**Program purpose:**
- This program rehabilitates and replaces the MBTA revenue fleet, which includes commuter rail, heavy rail, light rail, bus and ferry units.
**Reliability / MBTA / Stations**

**FY2018-2022 size:**
- $401 million over five years

**Projects:**
- Major projects underway include Wollaston Station, South Shore Garages, Ruggles Station Upgrade, Harvard Busway Repairs, and parking lot paving
- Projects primarily focused on SGR; accessibility-driven projects funded in Modernization/Accessibility program
- Updating station signage, wayfinding, and other customer improvements funded in Modernization/Customer Experience and Technology program

**FY2019-2023 size:**
- $401 million over five years
- $350 million underway
- $51 million available

[Image: Ruggles Station Platform Rendering]
Reliability / MBTA / System upgrades

FY2018-2022 size:
- $397.4 million over five years
- This program upgrades a wide range of MBTA systems including communications, computer technology, fare collection, asset management and environmental remediation systems. It also rehabilitates non-revenue vehicles and equipment.

Projects:
- Major projects underway are System-wide radio upgrades, Non-Revenue Vehicles, and Transit Asset Management implementation

FY2019-2023 size:
- $245 million over five years
- $158 million underway
- $87 million available
Reliability / MBTA / Track, signals, and power

FY2018-2022 size:
- $1,285.6 million over five years

Projects:

- Major projects underway include Green Line Signal Program, North Station Signals, Orange Line Traction Power, Commuter Rail Tracks, Ties, and Switches, and various projects executed on the Northeast Corridor/Providence/Stoughton Line in partnership with Amtrak
- Major Green Line track renewal in development

FY2019-2023 size:
- $987.4 million over five years
- $676 million underway
- $312 million available
Modernization / MBTA / Accessibility

FY2018-2022 size:
- $224.2 million over five years

Projects:
- Major projects underway include elevator program and Symphony Station
- Accessibility projects often involve SGR improvements to stations as well

FY2019-2023 size:
- $268.8 million over five years
- $159 million underway
- $110 million available
Modernization / MBTA / Risk Management and Mitigation

FY2018-2022 size:
- $538.8 million over five years (as Federal Programs and Mandates)
- This program implements risk management initiatives as well as proactive efforts to improve workplace safety and system security

Projects:
- Major projects underway are Green Line Train Protection and systemwide security upgrades
- PTC now a CIP Major program on its own

FY2019-2023 size:
- $189 million over five years
- $124 million underway
- $65 million available
Modernization / MBTA / Process Improvements and Innovation

FY2018-2022 size:
- $0.0 million over five years (part of $622M System Improvements)

FY2019-2023 size:
- $15 million over five years
- $5 million underway
- $10 million available

Projects:
- Major projects underway are Green Line LEAN study, Commuter Rail vision, PMIS eBuilder implementation
Modernization / MBTA / Customer Experience and Technology

**FY2018-2022 size:**

- $0.0 million over five years (part of $622M System Improvements)

**Projects:**

- Major projects underway are Park Street Wayfinding, T Digital Service, and Green Line Real Time Tracking.
- This program will be primarily funded with Pay-Go/Lockbox

**FY2019-2023 size:**

- $124 million over five years
- $18 million underway
- $106 million available
Modernization / MBTA / AFC 2.0

FY2018-2022 size:

• $0.0 million over five years (part of $622M System Improvements)

• The AFC 2.0 program will implement a new reliable and convenient fare payment and collection system, integrated across all modes, to replace CharlieCards/Tickets and their supporting hardware and software.

• Total investment in $407 million over life of the project; program size reflects MBTA payments within the five-year CIP window

FY2019-2023 size:

• $168 million over five years
• $168 million underway
Modernization / MBTA / Red Line/Orange Line Improvements

<table>
<thead>
<tr>
<th>FY2018-2022 size:</th>
<th>FY2019-2023 size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• $0.0 million over five years (part of multiple programs)</td>
<td>• $1.477 billion over five years</td>
</tr>
<tr>
<td>• The Red Line and Orange Line Improvements program includes the set of vehicle and infrastructure investments needed to fully modernize the fleet and achieve the service goal of three minute headways</td>
<td>• $1.413 billion underway</td>
</tr>
<tr>
<td></td>
<td>• $64 million available</td>
</tr>
</tbody>
</table>

Includes:

• Red Line/Orange Line vehicle procurements previously in Revenue Vehicles program, Red Line Signals previously in Track, Signals, and Power program, and Cabot and Wellington Yard rebuild, previously in the System Improvements program
Modernization / MBTA / Commuter Rail Safety and Resiliency (PTC)

FY2018-2022 size:
- $0.0 million over five years (part of $538.8M Federal Programs and Mandates)
- This program includes projects that improve the safety and resiliency of the Commuter Rail network, including the implementation of Positive Train Control.

Components:
- Includes PTC Implementation from former Federal Programs and Mandates program, ATC implementation (new for FY19-23), tree trimming, and fiber installation (new for FY19-23).

FY2019-2023 size:
- $657.5 million over five years
- $344 million underway
- $314 million available
Expansion / MBTA / Green Line Extension

FY2018-2022 size:

- $1,587.0 million over five years
- The Green Line Extension program includes the vehicles, stations and infrastructure to extend the Green Line from a relocated Lechmere Station in East Cambridge to Union Square in Somerville and College Avenue in Medford
- Program size reflects funding sources for GLX.

FY2019-2023 size:

- $1,364.5 million over five years
- $1.227 billion underway
- $137 million available
Doing Business with the MBTA
Awarded Professional Services Contracts

# Awarded

- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
Value of Professional Services Contracts

$ Millions


Streamlined Mini Procurements

- A process to engage consultant services under existing GEC contracts when the value of services is estimated to be over $1M
- Consultants must have sufficient contract capacity to receive a Request for Letters of Interest.
- Letters of Interest generally limited to 6 pages
- May or may not include interviews

**Evaluation Criteria**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel Qualifications</td>
<td>35%</td>
</tr>
<tr>
<td>Relevant Project Experience</td>
<td>30%</td>
</tr>
<tr>
<td>Special Project Expertise</td>
<td>15%</td>
</tr>
<tr>
<td>Ability to Deliver Services</td>
<td>10%</td>
</tr>
<tr>
<td>Overall Evaluation</td>
<td>10%</td>
</tr>
</tbody>
</table>

**GOAL:**

*Issue a Notice to Proceed to selected consultant within three months of issuing Requests for Letter of Interest.*
Extra Work Order Letter (EWOL)

- Structured for rapid engagement of consultant

- Goal is to authorize start of work within 3 business days of receipt of consultant proposal for full scope of services.

- Authorizes up to 90 days of work for emergency or time sensitive professional services while associated Task Order or Amendment is processed and approved.
LEAN Task Order Process

• New simplified process structured to support three approval tracks
  • Task Order execution time to be reduced from 9 months to 3 months
• Scope definition standards have been established
  • Improves quality
  • Reduces rework
• Standardized internal support resources and tools
  • Checklists
  • SOPs
  • Form templates
## Upcoming Professional Services Opportunities

<table>
<thead>
<tr>
<th>Project</th>
<th>Value</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Consulting &amp; Program Management Services for Procurement of New Revenue Fleet Buses</td>
<td>TBD</td>
<td>Apr-18</td>
</tr>
<tr>
<td>Longfellow Approach and Charles/MGH Station Upgrades</td>
<td>$4,300,000</td>
<td>Apr-18</td>
</tr>
<tr>
<td>General Engineering Consultant (GEC) Services</td>
<td>TBD</td>
<td>Apr-18</td>
</tr>
<tr>
<td>Green Line Tunnel Interlocking Signal Design</td>
<td>$6,713,820</td>
<td>Apr-18</td>
</tr>
<tr>
<td>Blue Line Signal System State of Good Repair Improvements</td>
<td>$1,106,604</td>
<td>Apr-18</td>
</tr>
<tr>
<td>Bridge Inspection &amp; Ratings</td>
<td>$5,000,000</td>
<td>Apr-18</td>
</tr>
<tr>
<td>Construction Management &amp; Construction Phase Support (CM/CPS) Services</td>
<td>$5,000,000</td>
<td>Apr-18</td>
</tr>
<tr>
<td>Vertical Transportation &amp; GEC Services</td>
<td>TBD</td>
<td>May-18</td>
</tr>
<tr>
<td>Downtown Crossing Phase II Vertical Transportation</td>
<td>TBD</td>
<td>May-18</td>
</tr>
</tbody>
</table>
## Upcoming Professional Services Opportunities

<table>
<thead>
<tr>
<th>Project</th>
<th>Value</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lynn Garage Improvements Design and Construction Phase Services</td>
<td>TBD</td>
<td>May-18</td>
</tr>
<tr>
<td>Symphony Station Final Design and CPS</td>
<td>TBD</td>
<td>May-18</td>
</tr>
<tr>
<td>Underground Stations &amp; Geotechnical GEC</td>
<td>TBD</td>
<td>May-18</td>
</tr>
<tr>
<td>Bridges GEC</td>
<td>$5,000,000</td>
<td>May-18</td>
</tr>
<tr>
<td>Owner's Representative GEC</td>
<td>$3,000,000</td>
<td>Jun-18</td>
</tr>
<tr>
<td>Tunnel Inspection GEC Services</td>
<td>$5,000,000</td>
<td>Aug-18</td>
</tr>
<tr>
<td>Winchester Station Final Design and CPS</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Stations/Facilities Accessibility Improvements GEC</td>
<td>$5,000,000</td>
<td>TBD</td>
</tr>
<tr>
<td>Infrastructure/ ROW Transit &amp; Commuter Rail GEC</td>
<td>$5,000,000</td>
<td>TBD</td>
</tr>
</tbody>
</table>
## Capital Project Pipeline

### Major Contract Awards in FY2018

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Engineer's Estimate ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue Vehicles</strong></td>
<td></td>
</tr>
<tr>
<td>Green Line Type 10 (Design)</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Track, Signal, &amp; Power</strong></td>
<td></td>
</tr>
<tr>
<td>Reservoir to Riverside Signal and Track Improvements</td>
<td>$70M</td>
</tr>
<tr>
<td>Commuter Rail Tracks, Ties, Switches (On-Call)</td>
<td>$24</td>
</tr>
<tr>
<td>Transit Track and Tie Replacement (On-Call)</td>
<td>$25</td>
</tr>
<tr>
<td>Franklin Double Track</td>
<td>$25</td>
</tr>
<tr>
<td>Red Line Test Track</td>
<td>$21</td>
</tr>
<tr>
<td>Commuter Rail Right of Way Improvements (On-Call)</td>
<td>$17</td>
</tr>
<tr>
<td>Power Improvements (On-Call)</td>
<td>$20</td>
</tr>
<tr>
<td>Systemwide Transformers Phase 2</td>
<td>$20</td>
</tr>
<tr>
<td>Orange Line Direct Fixation</td>
<td>$15</td>
</tr>
<tr>
<td>Green Line Grade Crossings</td>
<td>$15</td>
</tr>
<tr>
<td>SCADA System Upgrades</td>
<td>$5</td>
</tr>
<tr>
<td><strong>Bridge &amp; Tunnel</strong></td>
<td></td>
</tr>
<tr>
<td>Bridge Bundle D/B</td>
<td>$102</td>
</tr>
<tr>
<td>Gloucester Drawbridge Replacement</td>
<td>$57</td>
</tr>
<tr>
<td>Orange Line Tunnel Repairs</td>
<td>$25</td>
</tr>
<tr>
<td>Tunnel Repairs (On-Call)</td>
<td>$15</td>
</tr>
<tr>
<td>Bridge Repairs</td>
<td>$10</td>
</tr>
<tr>
<td><strong>Capacity &amp; System Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>AFC 2.0 Systems Integrator</td>
<td>TBD</td>
</tr>
<tr>
<td>Red / Orange Line Signal Upgrades D/B</td>
<td>$185</td>
</tr>
<tr>
<td>Wellington Yard Rebuild</td>
<td>$103</td>
</tr>
<tr>
<td>Cabot Yard &amp; Maintenance Facility Improvements</td>
<td>$216</td>
</tr>
<tr>
<td><strong>Stations</strong></td>
<td></td>
</tr>
<tr>
<td>✓ South Shore Garages</td>
<td>$64M</td>
</tr>
<tr>
<td>✓ Parking &amp; Paving (On-Call)</td>
<td>$22</td>
</tr>
<tr>
<td>✓ Harvard Busway</td>
<td>$15</td>
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<tr>
<td>✓ Fenway Portal</td>
<td>$8</td>
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<tr>
<td>Sullivan Sq Improvements</td>
<td>$5</td>
</tr>
<tr>
<td>Back Bay Ventilation, Package 1</td>
<td>$5</td>
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<tr>
<td>Knowledge Corridor Canopies</td>
<td>$3</td>
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<tr>
<td><strong>Facilities</strong></td>
<td></td>
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<tr>
<td>Roofing Repairs (On-Call)</td>
<td>$17</td>
</tr>
<tr>
<td>Iron Horse Park Operations Control Center</td>
<td>$28</td>
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<tr>
<td>Facility Improvements (On-Call)</td>
<td>$25</td>
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<tr>
<td><strong>Accessibility</strong></td>
<td></td>
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<tr>
<td>Quincy Adams Elevators</td>
<td>$8</td>
</tr>
<tr>
<td>Bus Stop Accessibility Improvements</td>
<td>$5</td>
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<tr>
<td>Park Street Elevator</td>
<td>$3</td>
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<tr>
<td><strong>Federal Programs / Mandates</strong></td>
<td></td>
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<tr>
<td>Green Line Train Protection</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>System Upgrades / Other</strong></td>
<td></td>
</tr>
<tr>
<td>Green Line Extension Design / Build</td>
<td>$1,080</td>
</tr>
<tr>
<td>Chelsea Commuter Rail Station (Silver Line Gateway)</td>
<td>$22</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$2,277M</td>
</tr>
</tbody>
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**Notes:**
- ✓ = Awarded this year
- TBD = To Be Determined
Questions?