

### Final FY23-27 Capital Investment Plan

**A&F Subcommittee** 

May 12, 2022

### **CIP Development Process**

Call for new needs New Request evaluation and their estimated Requests and scoring Sequencing costs Determine size across CIP 5of CIP programs Estimate future year window Updated spend Existing available funding forecasts collected Projects sources 01 02 03 04 05 **Identify needs & Evaluate requests & Set CIP program Prioritize projects** Allocate funds updated forecasts sources of funding sizes for FY23-27 across FY23-27 Projects are prioritized Funding requests for Program sizes are Funds are allocated New funding requests **FY23-27 CIP** across all programs determined based on new projects and based on project are scored\* and based on project development agency priorities, inspending forecasts for priority, delivery available funding scores, strategic flight projects, and existing projects are capacity, and funding process sources are determined priorities, and funding sources available collected constraints constraints

Full list of potential projects, including

scores and available funding sources

Prioritized list of projects within programs to be funded

CIP public comment period, publication & approval

05 06

Ite funds Develop

FY23-27 FY23-27 CIP

Proposed CIP is released for public comment, then finalized and presented for Board approval

FY23-27 CIP

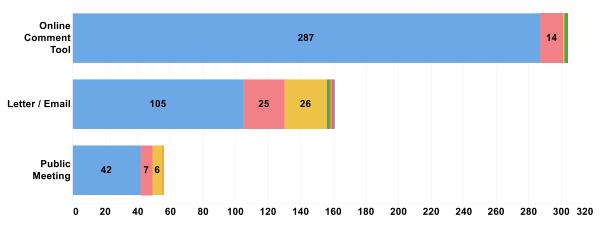
**Key Outputs** 

<sup>\*</sup>Requests are evaluated based on system preservation, mobility, cost effectiveness, environmental and health effects, policy support, social equity, economic impact, and safety.

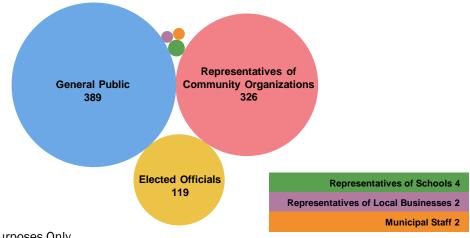
### Public Engagement | Participation

- The Proposed FY23-27 MBTA CIP public comment period took place from Thursday March 24, 2022, to Monday April 25, 2022
  - Staff hosted 3 virtual public meetings to provide an overview of the CIP and invite feedback from attendees
  - Members of the public could also provide comments via an online comment tool, email, or letter
  - Promotion via social media, mbta.com, in-station advertisements, and community stakeholder networks
- The MBTA received a total of 521 comments from 842 individuals and saw 70+ attendees at each public meeting
- Comments were analyzed as follows:
  - Each unique message received via letter, email, or online comment tool, or that was shared verbally or via chat during a public meeting, is considered a separate comment.
  - Individual refers to the person(s) sending or co-signing a comment.
     Some comments consist of a single letter or message cosigned by more than one individual.
  - Each comment is tagged to one or more mentions of a particular topic, such as Commuter Rail electrification or Fare Transformation.

#### Number of Comments Received, by Comment Format and Type of Commenter



#### Number of Individuals Submitting Comments, by Type of Commenter



### Public Engagement | Key Mentions

### **Rapid Transit**











- Support for Green Line E Branch accessibility and capacity improvements
- Support for Red-Blue Connector design funding and requests for full construction funding
- Requests for further extension of the Green Line south to Hyde Square and north to Rt. 16
- Requests for extension of the Blue Line to Lynn
- Requests for funding to address state of good repair at JFK/UMass and Porter Square
- Requests for future extension of the Red and Orange Lines

### Bus





- · Support for bus electrification
- Support for Arborway Bus Facility design and requests for full construction funding
- Support for bus stop accessibility improvements
- Support for transit priority infrastructure and requests to fund additional projects
- Requests for increased frequency of bus service
- Requests for expansion of Silver Line service

### **Commuter Rail**



- Support for a sound study near Readville station and facility
- Support for Commuter Rail electrification and requests for additional funding to accelerate this work
- Requests for full construction funding to rehabilitate South Attleboro, Lynn, Auburndale, West Newton, and Newtonville stations
- Requests for double tracking of the Greenbush Line to support South Coast Rail service
- Requests for expansion of service to Western MA, NH, and Cape Cod

### Systemwide / Other





- Support for increased transparency and engagement around the capital program and new format of the MBTA CIP
- Requests for improved rider communication, including station wayfinding and rider alerts
- Requests to accelerate fare technology upgrades and fare policy changes
- Requests for return of Lynn ferry
- Requests for bus or rail service linking North and South Stations
- Requests for rapid transit service between Salem and Peabody

### **Bus and Rail Electrification**





### **Bus Electrification**

The CIP supports the MBTA's Bus Electrification Strategy that seeks to achieve full bus electrification in 2040. It includes investments aligned with the 2027 goals of the Bus Electrification Strategy that target:

- Modernization of three bus facilities to provide facility capacity to electrify 30% of our fleet
- On-going conversion of bus fleet to zero emissions technology

The CIP includes projects focused on bus facility modernization and procurement of battery-electric buses (BEBs), including but not limited to:

- Quincy Bus Facility Modernization (P671a)
- Arborway Bus Facility Design Funding (P0671b)
- North Cambridge Bus Facility Retrofit (P0671c)
- Procurement of 40ft Battery Electric Buses and Related Infrastructure (P0653)



### **Commuter Rail Electrification**

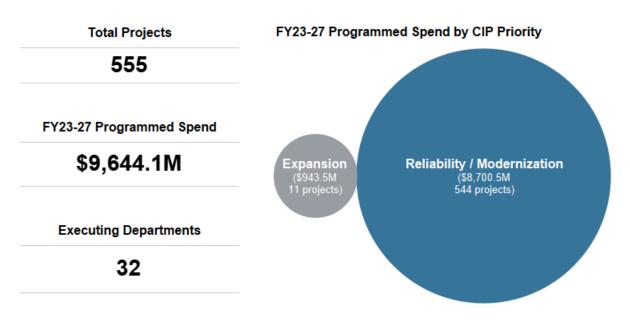
The CIP supports the MBTA's commitment to the first phase of Regional Rail Transformation as defined by the Fiscal Management and Control Board in 2019:

 To deliver electrified service to the Providence/Stoughton,
 Fairmount lines, and Environmental Justice Corridor (the Boston North Station to Beverly section of the Rockport line).

### The FY23-27 CIP includes the following key capital investments:

- Rail Transformation Planning Studies (P0934)
  - Phase 1 Power Study & Battery EMU recommendation complete;
     Second phase underway to understand new electrification infrastructure needs
- Future Rolling Stock Fleet (P0918)
  - Planning future procurement; RFI released last year; dialogue to develop potential specification is ongoing with a decision to procure late FY23
- Rail Transformation Early Action Items (P0940)
  - Focus on investments to enable/improve 30-minute Urban Rail service starting with Haverhill Line (to Reading) EJ Corridor (Beverly) and Fairmont Line

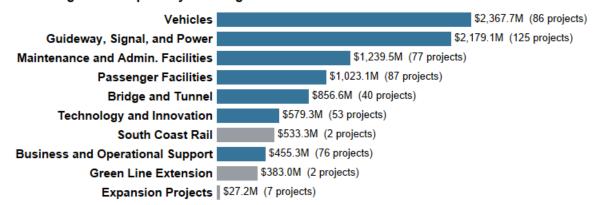
### Final FY23-27 CIP | Summary



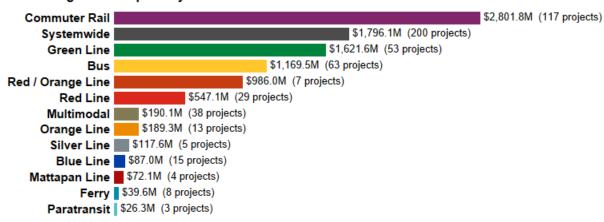
#### Top 10 Projects, by FY23-27 Programmed Spend

| CIP ID   | Project Name  | CIP Program                       | FY23-27 = Total | Authorized<br>Budget |
|----------|---|-----------------------------------|-----------------|----------------------|
| P0362    | Red / Orange Line Vehicles                          | Vehicles                          | \$579.0M        | \$1,073.5M           |
| P0160    | South Coast Rail Expansion                          | South Coast Rail                  | \$493.5M        | \$920.8M             |
| P0265    | Fare Transformation                                 | Technology and Innovation         | \$420.1M        | \$783.4M             |
| P0095    | Green Line Extension                                | Green Line Extension              | \$357.7M        | \$2,118.6M           |
| P0618    | Procurement of 40ft Enhanced Electric Hybrid Buses  | Vehicles                          | \$350.6M        | \$353.9M             |
| P0671a   | Quincy Bus Facility Modernization                   | Maintenance and Admin. Facilities | \$326.6M        | \$402.1M             |
| P0369    | Green Line Type 10 Vehicle Replacement Program      | Vehicles                          | \$311.2M        | \$1,000.0M           |
| P0285    | Signal Program - Red/Orange Line                    | Guideway, Signal, and Power       | \$240.5M        | \$289.1M             |
| P0551    | Longfellow Approach                                 | Bridge and Tunnel                 | \$185.2M        | \$210.0M             |
| P0606    | ATC Implementation - North Side Commuter Rail Lines | Guideway, Signal, and Power       | \$173.6M        | \$416.8M             |
| Grand To | otal  |                                   | \$3,437.9M      | \$7,568.1M           |

#### FY23-27 Programmed Spend by CIP Program



#### FY23-27 Programmed Spend by Mode



### Final FY23-27 CIP | Summary of Project Changes

**New Projects** - The following new projects or additional sources for existing projects have been incorporated into the final FY23-27 CIP

- Initial funding to support the agency's Capital Program Safety Assurance (P1164) program
- Full funding for the Lynn Station and Parking Garage Improvements Phase II (R0071) project, which is being advanced with funding support from the Boston MPO
- Additional funding to support the Forest Hills Improvement Project (P0163), as proposed in the Boston MPO FY23-27 draft TIP
- Federal discretionary grant awards to support the Catamaran Overhauls (P0633) and Quincy Bus Facility Modernization (P0671a) projects
- The **Concord Ave. Transit Signal Priority (P1026)** project which received funding from the Boston Region MPO Community Connections program.

**State Funding -** The following projects have been included in the final CIP to align with sources included in the State's FY2023-2027 Capital Investment Plan and the Federal COVID-19 Relief Funding Spending Bill

- The project State Match BIL Support (P1166) to align with the Commonwealth's published FY2023-2027 Capital Plan
- The project Transit Station Economic Development Improvements Norfolk County (P1165) to align with funding included in the ARPA appropriations bill

### CIP Document | Updated Structure

The Final FY23-27 CIP document is structured around four major components:



- 1 About the CIP
  - What is the CIP?
  - Structure of the CIP
  - Funding Sources

- Annual Development Process
- Social Equity

- 2 FY23-27 CIP Summary
  - Summary of public engagement process and key "mentions" from public comments
  - Summary of FY23-27 investments and overview of safety, accessibility, sustainability and resiliency efforts
- 3 FY23-27 Investments by Program
  - One-page overview for each CIP program summarizing program goals and planned investment levels for FY23-27

### FY23-27 Investments by Mode

 One-page overview of CIP investments by primary mode of the MBTA, highlighting key initiatives planned for FY23-27

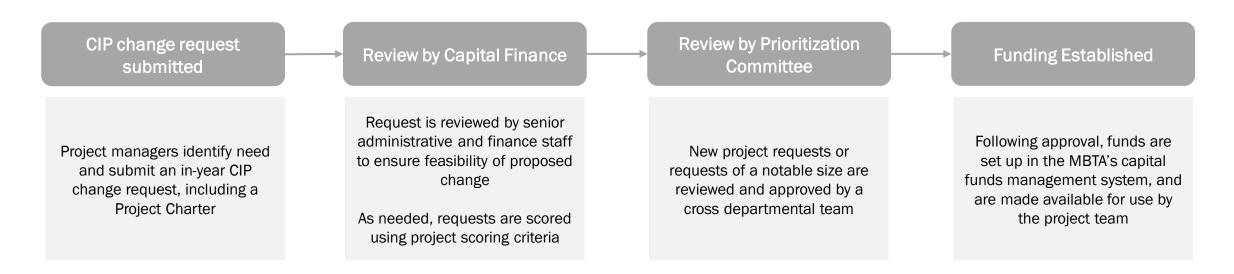




- 4 FY23-27 Project List
  - Detailed listing of all FY23-27 CIP projects, including description, phase, primary mode, planned five-year spend, and total authorized budget

### CIP Change Process | Overview

- To ensure flexibility, consistency and transparency the MBTA uses an in-year CIP change process to review, approve and track project budget or scope changes between annual CIP development cycles
  - o In-year changes include funding requests due to cost increases, urgent investment needs or routine administrative changes
  - Costs are primarily off-set using existing funds programmed within the capital program, but depending on the need may tap into surplus/contingency funds or request CMF funding
- Any competitive fund awards received during the fiscal year will be incorporated into Capital Investment Plan through the in-year CIP Change process



### FY23 Capital Spend Target

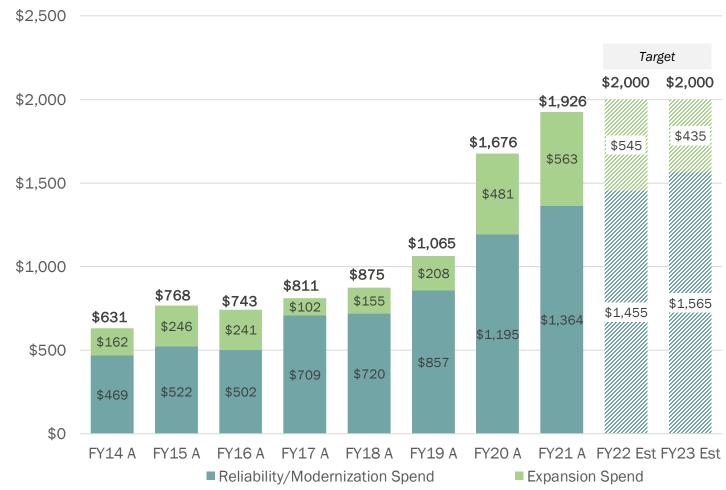
The MBTA has significantly increased capital investments and in FY21 achieved a record \$1.9 billion in capital spending.

The MBTA continues to sustain an unprecedented level of investment focused on the safety and reliability of our system, the modernization of our assets and the strategic expansion of our network.

For FY23 the MBTA has once again set an ambitious spending goal of \$2B:

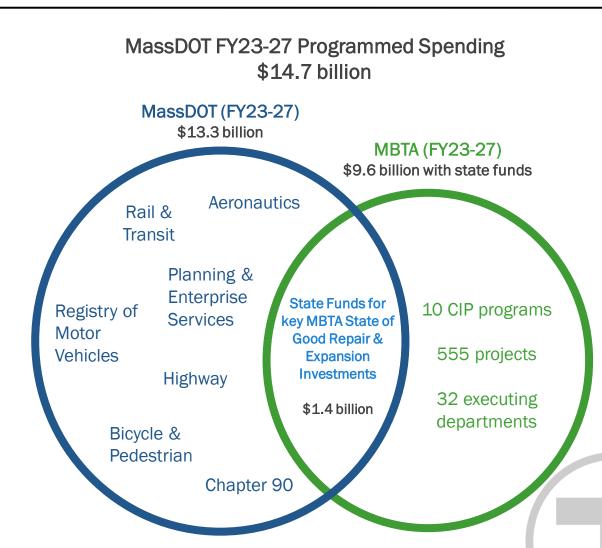
- \$1,565M in Reliability/Modernization
- \$435M in Expansion





### **Next Steps**

- MBTA's Final FY23-27 CIP will be finalized and published after Board approval
- The MBTA's state-funded CIP investments continue to be incorporated into MassDOT's Statewide CIP, which is expected to be released for public comment in May and approved in June
- General responses to public comments will be posted on the MBTA website by the end of the fiscal year



### Vote to Recommend

### VOTED:

To recommend that the Board of Directors approve the Fiscal Year 2023-2027 Capital Investment Program ("CIP"), as presented at the May 26, 2022 meeting of the MBTA Board of Directors and as attached hereto as Appendix A, and to authorize the General Manager, in the name of and on behalf of the Massachusetts Bay Transportation Authority, to take any steps he deems necessary and appropriate to provide notice to the Legislature and the public of the CIP, pursuant to M.G.L. c. 161A, §5.

# Appendix – CIP Program Summary Slides



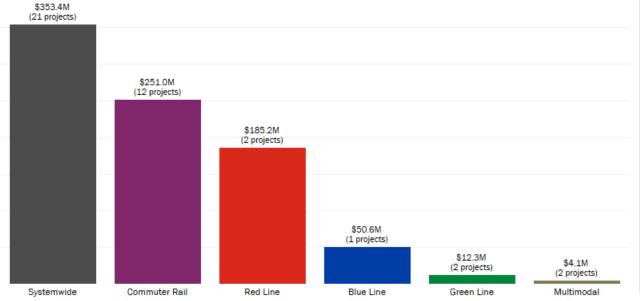
### Program Summary | Bridge and Tunnel

### **Program Purpose**

Repairs, reconstructs, and replaces Commuter Rail and transit bridges, tunnels, culverts, and dams

| Total Projects | FY23-27 Programmed Spend | <b>Executing Departments</b> |
|----------------|--------------------------|------------------------------|
| 40             | \$856.6M                 | 4                            |

### FY23-27 Programmed Spend by Primary Mode



#### Top 15 Bridge and Tunnel Projects by FY23-27 Programmed Spend

| P0018 North Station Draw 1 Bridge Replacement Commuter Rail \$157.4M \$573  P0495 Bridge Bundling Contract Systemwide \$65.3M \$132  P0627 Systemwide Bridge Inspection and Rating Systemwide \$61.3M \$103  P0912 Systemwide Tunnel Flood Mitigation Program Systemwide \$54.5M \$149  P0631 Blue Line Infrastructure Improvements Blue Line \$50.6M \$73  P0852 Structural Repairs Systemwide Systemwide \$27.4M \$30  P0552 Dorchester Avenue Bridge Systemwide \$27.3M \$37  P1107 Bridge Program Pipeline - Rehabilitation, Repair and Replacement Systemwide \$20.0M \$20  P0907 East Street Bridge Replacement (Dedham) Commuter Rail \$18.0M \$18   | CIP ID | Project Name                               | Primary Mode  | FY23-27 = Total | Authorized<br>Budget |
|---|--------|--|---------------|-----------------|----------------------|
| P0495 Bridge Bundling Contract Systemwide \$65.3M \$132 P0627 Systemwide Bridge Inspection and Rating Systemwide \$61.3M \$103 P0912 Systemwide Tunnel Flood Mitigation Program Systemwide \$54.5M \$149 P0631 Blue Line Infrastructure Improvements Blue Line \$50.6M \$73 P0852 Structural Repairs Systemwide Systemwide \$27.4M \$30 P0552 Dorchester Avenue Bridge Systemwide \$27.3M \$37 P1107 Bridge Program Pipeline - Rehabilitation, Repair and Replacement Systemwide \$20.0M \$20 P0907 East Street Bridge Replacement (Dedham) Commuter Rail \$18.0M \$18  | P0551  | Longfellow Approach                        | Red Line      | \$185.2M        | \$210.0M             |
| P0627 Systemwide Bridge Inspection and Rating Systemwide \$61.3M \$103  P0912 Systemwide Tunnel Flood Mitigation Program Systemwide \$54.5M \$149  P0631 Blue Line Infrastructure Improvements Blue Line \$50.6M \$73  P0852 Structural Repairs Systemwide Systemwide \$27.4M \$30  P0552 Dorchester Avenue Bridge Systemwide \$27.3M \$37  P1107 Bridge Program Pipeline - Rehabilitation, Repair and Replacement Systemwide \$20.0M \$20  P0907 East Street Bridge Replacement (Dedham) Commuter Rail \$18.0M \$18  | P0018  | North Station Draw 1 Bridge Replacement    | Commuter Rail | \$157.4M        | \$573.8M             |
| P0912 Systemwide Tunnel Flood Mitigation Program Systemwide \$54.5M \$149  P0631 Blue Line Infrastructure Improvements Blue Line \$50.6M \$73  P0852 Structural Repairs Systemwide Systemwide \$27.4M \$30  P0552 Dorchester Avenue Bridge Systemwide \$27.3M \$37  P1107 Bridge Program Pipeline - Rehabilitation, Repair and Replacement Systemwide \$20.0M \$20  P0907 East Street Bridge Replacement (Dedham) Commuter Rail \$18.0M \$18  | P0495  | Bridge Bundling Contract                   | Systemwide    | \$65.3M         | \$132.2M             |
| P0631 Blue Line Infrastructure Improvements  Blue Line \$50.6M \$73  P0852 Structural Repairs Systemwide Systemwide \$27.4M \$30  P0552 Dorchester Avenue Bridge Systemwide \$27.3M \$37  P1107 Bridge Program Pipeline - Rehabilitation, Repair and Replacement Systemwide \$20.0M \$20  P0907 East Street Bridge Replacement (Dedham) Commuter Rail \$18.0M \$18  | P0627  | Systemwide Bridge Inspection and Rating    | Systemwide    | \$61.3M         | \$103.9M             |
| P0852 Structural Repairs Systemwide Systemwide \$27.4M \$30  P0552 Dorchester Avenue Bridge Systemwide \$27.3M \$37  P1107 Bridge Program Pipeline - Rehabilitation, Repair and Replacement Systemwide \$20.0M \$20  P0907 East Street Bridge Replacement (Dedham) Commuter Rail \$18.0M \$18   | P0912  | Systemwide Tunnel Flood Mitigation Program | Systemwide    | \$54.5M         | \$149.3M             |
| P0552 Dorchester Avenue Bridge Systemwide \$27.3M \$37  P1107 Bridge Program Pipeline - Rehabilitation, Repair and Replacement Systemwide \$20.0M \$20  P0907 East Street Bridge Replacement (Dedham) Commuter Rail \$18.0M \$18  | P0631  | Blue Line Infrastructure Improvements      | Blue Line     | \$50.6M         | \$73.7M              |
| P1107 Bridge Program Pipeline - Rehabilitation, Repair and Replacement Systemwide \$20.0M \$20.0M \$20.0M \$20.0M \$20.0M \$18.0M \$18.0M \$18.0M \$18.0M   | P0852  | Structural Repairs Systemwide              | Systemwide    | \$27.4M         | \$30.1M              |
| P1107 Replacement Systemwide \$20.0M \$ | P0552  | Dorchester Avenue Bridge                   | Systemwide    | \$27.3M         | \$37.1M              |
|   | P1107  |  | Systemwide    | \$20.0M         | \$20.0M              |
| R0074 Tunnel Inspection Systemwide Systemwide \$17.1M \$30  | P0907  | East Street Bridge Replacement (Dedham)    | Commuter Rail | \$18.0M         | \$18.0M              |
|   | R0074  | Tunnel Inspection Systemwide               | Systemwide    | \$17.1M         | \$30.6M              |
| P0006 Gloucester Drawbridge Replacement Commuter Rail \$16.7M \$100   | P0006  | Gloucester Drawbridge Replacement          | Commuter Rail | \$16.7M         | \$100.4M             |
| P1115 South Elm Street Bridge Replacement Commuter Rail \$15.2M \$15  | P1115  | South Elm Street Bridge Replacement        | Commuter Rail | \$15.2M         | \$15.2M              |
| PO466 Tunnel Repairs (On-Call) Systemwide \$14.6M \$28  | P0466  | Tunnel Repairs (On-Call)                   | Systemwide    | \$14.6M         | \$28.6M              |
| PO851 Norfolk Ave and East Cottage St Bridges Commuter Rail \$13.8M \$22  | P0851  | Norfolk Ave and East Cottage St Bridges    | Commuter Rail | \$13.8M         | \$22.1M              |

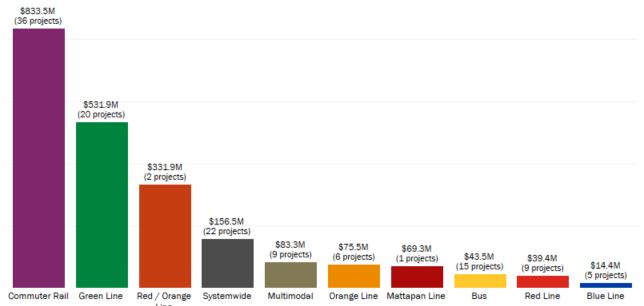
### Program Summary | Guideway, Signal, and Power

### **Program Purpose**

Rehabilitates, replaces, and upgrades guideway, signal, and power assets across Commuter Rail, transit, and bus

| Total Projects | FY23-27 Programmed Spend | <b>Executing Departments</b> |
|----------------|--------------------------|------------------------------|
| 125            | \$2,179.1M               | 11                           |

#### FY23-27 Programmed Spend by Primary Mode



#### Top 15 Guideway, Signal, and Power Projects by FY23-27 Programmed Spend

| CIP ID | Project Name   | Primary Mode         | FY23-27 =<br>Total | Authorized<br>Budget |
|--------|--|----------------------|--------------------|----------------------|
| P0285  | Signal Program - Red/Orange Line                       | Red / Orange<br>Line | \$240.5M           | \$289.1M             |
| P0606  | ATC Implementation - North Side Commuter Rail Lines    | Commuter Rail        | \$173.6M           | \$416.8M             |
| P0370  | Green Line Train Protection                            | Green Line           | \$168.4M           | \$212.9M             |
| P0591  | Green Line Central Tunnel Track and Signal Replacement | Green Line           | \$116.0M           | \$120.0M             |
| P0692  | PRIIA-NEC Baseline Capital Charges                     | Commuter Rail        | \$96.1M            | \$153.6M             |
| P0553  | Keolis Capitalization Initiatives and Extra Work       | Commuter Rail        | \$95.0M            | \$172.4M             |
| P0612  | Bury 100 Miles of Fiber Annually - Strategic Locations | Commuter Rail        | \$94.8M            | \$102.1M             |
| P0157  | Red Line / Orange Line Infrastructure Improvements     | Red / Orange<br>Line | \$91.3M            | \$470.4M             |
| P0923  | E Branch Accessibility & Capacity Improvements         | Green Line           | \$85.7M            | \$85.9M              |
| P0889  | Tower 1 Interlocking Early Action Project              | Commuter Rail        | \$71.1M            | \$89.8M              |
| P0857  | Mattapan HSL Transformation                            | Mattapan Line        | \$69.3M            | \$114.5M             |
| P0924  | B Branch Accessibility & Capacity Improvements         | Green Line           | \$66.3M            | \$220.9M             |
| P0516  | On-Call Track III                                      | Multimodal           | \$65.2M            | \$69.6M              |
| P0148  | Commuter Rail Positive Train Control                   | Commuter Rail        | \$45.1M            | \$444.2M             |
| P1145  | Keolis Mechanical Parts                                | Commuter Rail        | \$32.1M            | \$32.1M              |

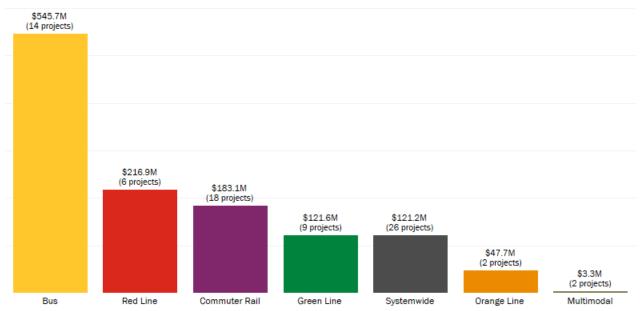
### Program Summary | Maintenance and Administrative Facilities

### **Program Purpose**

Rehabilitates and upgrades maintenance and administrative facilities that support operations

| Total Projects | FY23-27 Programmed Spend | <b>Executing Departments</b> |
|----------------|--------------------------|------------------------------|
| 77             | \$1,239.5M               | 10                           |

#### FY23-27 Programmed Spend by Primary Mode



#### Top 15 Maintenance and Admin. Facilities Projects by FY23-27 Programmed Spend

| CIP ID | Project Name  | Primary Mode  | FY23-27<br>Total | Authorized<br>Budget |
|--------|---|---------------|------------------|----------------------|
| P0671a | Quincy Bus Facility Modernization                                     | Bus           | \$326.6M         | \$402.1M             |
| P0512  | Cabot Yard Complete Upgrade   | Red Line      | \$116.5M         | \$162.2M             |
| P0679  | Codman Yard Expansion and Improvements                                | Red Line      | \$94.7M          | \$98.7M              |
| P1144  | Commuter Rail Facilities State of Good Repair                         | Commuter Rail | \$78.7M          | \$78.7M              |
| P0952  | Future Regional Rail Layover Planning                                 | Commuter Rail | \$69.5M          | \$70.3M              |
| P0942  | Bus Facility Interim Improvements                                     | Bus           | \$65.3M          | \$81.5M              |
| P0671  | Bus Facility Modernization Program                                    | Bus           | \$62.9M          | \$96.4M              |
| P1010  | Riverside Vehicle Maintenance Facility Modifications & Upgrades       | Green Line    | \$49.4M          | \$49.4M              |
| P0514  | Wellington Yard Complete Upgrade                                      | Orange Line   | \$46.5M          | \$96.1M              |
| P0671b | Arborway Bus Facility - Design Funding                                | Bus           | \$36.0M          | \$36.0M              |
| P0126  | Facility Roof Replacement   | Systemwide    | \$31.6M          | \$52.5M              |
| P1103  | Reservoir Yard and Non-Revenue Track Optimization and Reconfiguration | Green Line    | \$28.8M          | \$30.5M              |
| P0671c | North Cambridge Bus Facility Retrofit                                 | Bus           | \$25.0M          | \$25.0M              |
| P0925  | Green Line Yards - Track Upgrades                                     | Green Line    | \$15.0M          | \$15.0M              |
| P0564  | Sprinkler & Fire Life Safety Systems - Transit Facilities             | Systemwide    | \$14.8M          | \$21.0M              |
|        |   |               |                  |                      |

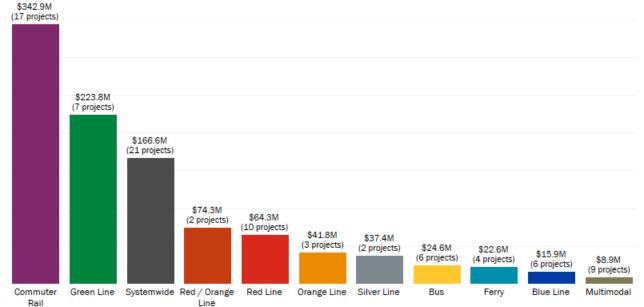
### Program Summary | Passenger Facilities

### **Program Purpose**

Rehabilitates and upgrades stations, stops and parking facilities to improve accessibility and the customer experience

| Total Projects | FY23-27 Programmed Spend | <b>Executing Departments</b> |
|----------------|--------------------------|------------------------------|
| 87             | \$1,023.1M               | 12                           |

#### FY23-27 Programmed Spend by Primary Mode



#### Top 15 Passenger Facilities Projects by FY23-27 Programmed Spend

| CIP ID | Project Name   | Primary Mode         | FY23-27 = Total | Authorized<br>Budget |
|--------|--|----------------------|-----------------|----------------------|
| P0168  | Symphony Station Improvements  | Green Line           | \$83.2M         | \$91.4M              |
| P0074  | Downtown Crossing Vertical Transportation Improvements<br>Phase 2        | Red / Orange<br>Line | \$73.7M         | \$77.8M              |
| P0856  | Ruggles Station Improvements Phase 2                                     | Commuter Rail        | \$72.9M         | \$93.0M              |
| R0071  | Lynn Station and Parking Garage Improvements Phase II                    | Commuter Rail        | \$72.5M         | \$74.3M              |
| P0395  | Worcester Union Station Accessibility and Infrastructure<br>Improvements | Commuter Rail        | \$59.0M         | \$70.6M              |
| P1009  | Short Term Accessibility Improvements - FTA Compliance Actions           | Green Line           | \$56.5M         | \$57.5M              |
| P0179  | Winchester Center Station  | Commuter Rail        | \$52.1M         | \$60.9M              |
| P1165  | Transit Station Economic Development Improvements – Norfolk County       | Systemwide           | \$50.0M         | \$50.0M              |
| P0075  | Elevator Program Multiple Location Design                                | Systemwide           | \$41.5M         | \$54.7M              |
| P0626  | Hynes Convention Center Station  | Green Line           | \$40.1M         | \$45.7M              |
| P0163  | Forest Hills Improvement Project   | Orange Line          | \$35.4M         | \$39.0M              |
| P0605  | Alewife Garage Rehabilitation  | Red Line             | \$32.6M         | \$79.0M              |
| P0108  | Back Bay Station Ventilation   | Commuter Rail        | \$31.2M         | \$43.1M              |
| P0174  | Natick Center Station Accessibility Project                              | Commuter Rail        | \$29.8M         | \$49.6M              |
| P0129  | Newton Highlands Green Line Station Accessibility Project                | Green Line           | \$28.6M         | \$32.2M              |

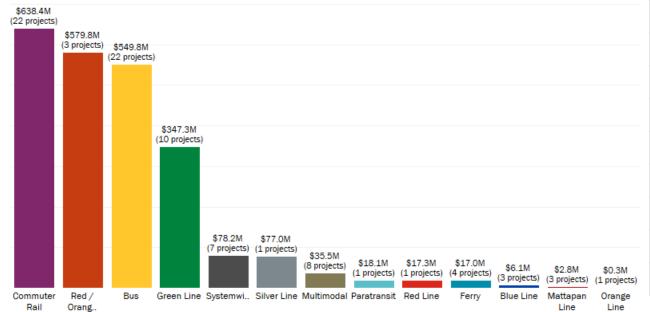
### Program Summary | Vehicles

### **Program Purpose**

Rehabilitates and replaces revenue fleets and non-revenue vehicle equipment for reliable and safe operations

| Total Projects | FY23-27 Programmed Spend | <b>Executing Departments</b> |
|----------------|--------------------------|------------------------------|
| 86             | \$2,367.7M               | 7                            |

#### FY23-27 Programmed Spend by Primary Mode



#### Top 15 Vehicles Projects by FY23-27 Programmed Spend

| P0362Red / Orange Line VehiclesRed / Orange Line\$579.0M\$1,073.5MP0618Procurement of 40ft Enhanced Electric Hybrid BusesBus\$350.6M\$353.9MP0369Green Line Type 10 Vehicle Replacement ProgramGreen Line\$311.2M\$1,000.0MP0927Rolling Stock - Locomotive and Coach State of Good Repair and ResiliencyCommuter Rail\$173.1M\$174.1MP1152Procurement of Hyundai Rotem Bi-Level Coaches - OptionCommuter Rail\$147.7M\$160.9MP0893Procurement of 67 Bi-Level Commuter Rail CoachesCommuter Rail\$147.3M\$276.1MP0653Procurement of 40ft Battery Electric Buses and Related InfrastructureBus\$100.8M\$101.2MP0619Procurement of 60ft Enhanced Electric Hybrid BusesSilver Line\$77.0M\$89.4MP0547Work Car ProcurementSystemwide\$57.4M\$63.9MP0239F40 Commuter Rail Locomotive OverhaulCommuter Rail\$53.6M\$126.2MP0918Future Rolling Stock FleetCommuter Rail\$50.0M\$50.0MP0652Procurement of 100 Bi-Level Commuter Rail CoachesCommuter Rail\$42.5M\$43.8MP0860Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881)Bus\$38.9M\$41.7MP0349Green Line Type 8 Reliability ImprovementsGreen Line\$26.6M\$66.5MP0911Hybrid and CNG Bus OverhaulBus\$26.0M\$26.0M  | CIP ID | Project Name   | Primary Mode  | FY23-27 = Total | Authorized<br>Budget |
|--|--------|--|---------------|-----------------|----------------------|
| P0369 Green Line Type 10 Vehicle Replacement Program Green Line \$311.2M \$1,000.0M P0927 Rolling Stock - Locomotive and Coach State of Good Repair and Resiliency Commuter Rail \$173.1M \$174.1M P1152 Procurement of Hyundai Rotem Bi-Level Coaches - Option Commuter Rail \$147.7M \$160.9M P0893 Procurement of 67 Bi-Level Commuter Rail Coaches Commuter Rail \$147.3M \$276.1M P0653 Procurement of 40ft Battery Electric Buses and Related Infrastructure Bus \$100.8M \$101.2M P0619 Procurement of 60ft Enhanced Electric Hybrid Buses Silver Line \$77.0M \$89.4M P0547 Work Car Procurement Systemwide \$57.4M \$63.9M P0239 F40 Commuter Rail Locomotive Overhaul Commuter Rail \$53.6M \$126.2M P0918 Future Rolling Stock Fleet Commuter Rail \$50.0M \$50.0M P0652 Procurement of 100 Bi-Level Commuter Rail Coaches Commuter Rail \$42.5M \$43.8M P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881) Bus \$38.9M \$41.7M P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M  | P0362  | Red / Orange Line Vehicles                             | ,             | \$579.0M        | \$1,073.5M           |
| PO927 Rolling Stock - Locomotive and Coach State of Good Repair and Resiliency  P1152 Procurement of Hyundai Rotem Bi-Level Coaches - Option Commuter Rail \$147.7M \$160.9M  P0893 Procurement of 67 Bi-Level Commuter Rail Coaches Commuter Rail \$147.3M \$276.1M  P0653 Procurement of 40ft Battery Electric Buses and Related Infrastructure  P0619 Procurement of 60ft Enhanced Electric Hybrid Buses Silver Line \$77.0M \$89.4M  P0547 Work Car Procurement Systemwide \$57.4M \$63.9M  P0239 F40 Commuter Rail Locomotive Overhaul Commuter Rail \$53.6M \$126.2M  P0918 Future Rolling Stock Fleet Commuter Rail Coaches Commuter Rail \$50.0M \$50.0M  P0652 Procurement of 100 Bi-Level Commuter Rail Coaches Commuter Rail \$42.5M \$43.8M  P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881) Bus \$38.9M \$41.7M  P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M  | P0618  | Procurement of 40ft Enhanced Electric Hybrid Buses     | Bus           | \$350.6M        | \$353.9M             |
| P1152 Procurement of Hyundai Rotem Bi-Level Coaches - Option Commuter Rail \$173.1M \$160.9M P0893 Procurement of 67 Bi-Level Commuter Rail Coaches Commuter Rail \$147.7M \$160.9M P0893 Procurement of 40ft Battery Electric Buses and Related Infrastructure Buses and Related Procurement of 60ft Enhanced Electric Hybrid Buses Silver Line \$77.0M \$89.4M P0619 Procurement Systemwide \$57.4M \$63.9M P0547 Work Car Procurement Systemwide \$57.4M \$63.9M P0239 F40 Commuter Rail Locomotive Overhaul Commuter Rail \$53.6M \$126.2M P0918 Future Rolling Stock Fleet Commuter Rail \$50.0M \$50.0M P0652 Procurement of 100 Bi-Level Commuter Rail Coaches Commuter Rail \$42.5M \$43.8M P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881) Bus \$38.9M \$41.7M P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M  | P0369  | Green Line Type 10 Vehicle Replacement Program         | Green Line    | \$311.2M        | \$1,000.0M           |
| P0893 Procurement of 67 Bi-Level Commuter Rail Coaches Commuter Rail \$147.3M \$276.1M P0653 Procurement of 40ft Battery Electric Buses and Related Infrastructure Buses and Related P0619 Procurement of 60ft Enhanced Electric Hybrid Buses Silver Line \$77.0M \$89.4M P0547 Work Car Procurement Systemwide \$57.4M \$63.9M P0239 F40 Commuter Rail Locomotive Overhaul Commuter Rail \$53.6M \$126.2M P0918 Future Rolling Stock Fleet Commuter Rail \$50.0M \$50.0M P0652 Procurement of 100 Bi-Level Commuter Rail Coaches Commuter Rail \$42.5M \$43.8M P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881) Bus \$38.9M \$41.7M P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M  | P0927  |  | Commuter Rail | \$173.1M        | \$174.1M             |
| Procurement of 40ft Battery Electric Buses and Related Infrastructure  Procurement of 60ft Enhanced Electric Hybrid Buses  Silver Line  \$77.0M \$89.4M  Procurement of 60ft Enhanced Electric Hybrid Buses  Silver Line  \$77.0M \$89.4M  Procurement  Systemwide  \$57.4M \$63.9M  Procurement  Procurement  Commuter Rail  Commuter Rail  Solution  Future Rolling Stock Fleet  Commuter Rail  Commuter Rail  Commuter Rail  Solution  Procurement of 100 Bi-Level Commuter Rail Coaches  Commuter Rail  Procurement of 100 Bi-Level Commuter Rail  Solution  Solution | P1152  | Procurement of Hyundai Rotem Bi-Level Coaches - Option | Commuter Rail | \$147.7M        | \$160.9M             |
| Infrastructure  P0619 Procurement of 60ft Enhanced Electric Hybrid Buses  Silver Line  \$77.0M \$89.4M  P0547 Work Car Procurement  Systemwide  \$57.4M \$63.9M  P0239 F40 Commuter Rail Locomotive Overhaul  Commuter Rail  \$53.6M \$126.2M  P0918 Future Rolling Stock Fleet  Commuter Rail  \$50.0M \$50.0M  P0652 Procurement of 100 Bi-Level Commuter Rail Coaches  Commuter Rail  \$42.5M \$43.8M  P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881)  Bus  \$38.9M \$41.7M  P0349 Green Line Type 8 Reliability Improvements  Green Line  \$66.5M   | P0893  | Procurement of 67 Bi-Level Commuter Rail Coaches       | Commuter Rail | \$147.3M        | \$276.1M             |
| P0547 Work Car Procurement Systemwide \$57.4M \$63.9M  P0239 F40 Commuter Rail Locomotive Overhaul Commuter Rail \$53.6M \$126.2M  P0918 Future Rolling Stock Fleet Commuter Rail \$50.0M \$50.0M  P0652 Procurement of 100 Bi-Level Commuter Rail Coaches Commuter Rail \$42.5M \$43.8M  P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881) Bus \$38.9M \$41.7M  P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M   | P0653  |  | Bus           | \$100.8M        | \$101.2M             |
| P0239 F40 Commuter Rail Locomotive Overhaul Commuter Rail \$53.6M \$126.2M  P0918 Future Rolling Stock Fleet Commuter Rail \$50.0M \$50.0M  P0652 Procurement of 100 Bi-Level Commuter Rail Coaches Commuter Rail \$42.5M \$43.8M  P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881) Bus \$38.9M \$41.7M  P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M  | P0619  | Procurement of 60ft Enhanced Electric Hybrid Buses     | Silver Line   | \$77.0M         | \$89.4M              |
| P0918 Future Rolling Stock Fleet Commuter Rail \$50.0M \$50.0M  P0652 Procurement of 100 Bi-Level Commuter Rail Coaches Commuter Rail \$42.5M \$43.8M  P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881) Bus \$38.9M \$41.7M  P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M  | P0547  | Work Car Procurement                                   | Systemwide    | \$57.4M         | \$63.9M              |
| P0652 Procurement of 100 Bi-Level Commuter Rail Coaches Commuter Rail \$42.5M \$43.8M  P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881) Bus \$38.9M \$41.7M  P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M  | P0239  | F40 Commuter Rail Locomotive Overhaul                  | Commuter Rail | \$53.6M         | \$126.2M             |
| P0860 Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881) Bus \$38.9M \$41.7M  P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M   | P0918  | Future Rolling Stock Fleet                             | Commuter Rail | \$50.0M         | \$50.0M              |
| P0349 Green Line Type 8 Reliability Improvements Green Line \$26.6M \$66.5M  | P0652  | Procurement of 100 Bi-Level Commuter Rail Coaches      | Commuter Rail | \$42.5M         | \$43.8M              |
|  | P0860  | Hybrid Bus Overhaul (New Flyer XDE40 - SR 1881)        | Bus           | \$38.9M         | \$41.7M              |
| PO911 Hybrid and CNG Bus Overhaul Bus \$26.0M \$26.0M  | P0349  | Green Line Type 8 Reliability Improvements             | Green Line    | \$26.6M         | \$66.5M              |
|  | P0911  | Hybrid and CNG Bus Overhaul                            | Bus           | \$26.0M         | \$26.0M              |

### Program Summary | Business and Operational Support

Green Line

### **Program Purpose** Investments in asset management, safety and security, communications, and other systems supporting operations **Total Projects** FY23-27 Programmed Spend **Executing Departments** 76 \$455.3M 20 FY23-27 Programmed Spend by Primary Mode \$354.8M (63 projects) \$30.0M \$24.0M \$24.0M (2 projects) (1 projects) (1 projects) \$7.9M \$7.8M \$5.8M \$1.0M (1 projects) (3 projects) (4 projects) (1 projects)

Systemwide

Orange Line

Red Line

#### Top 15 Business and Operational Support Projects by FY23-27 Programmed Spend

| CIP ID | Project Name  | Primary Mode | FY23-27 =<br>Total | Authorized<br>Budget |
|--------|---|--------------|--------------------|----------------------|
| P1166  | State Match - BIL Support   | Systemwide   | \$145.0M           | \$145.0M             |
| P1014  | Near-Term Transformational Investments                              | Multimodal   | \$30.0M            | \$30.0M              |
| P1012r | Red Line - PM/CM Professional Services                              | Red Line     | \$24.0M            | \$25.1M              |
| P10120 | Orange Line - PM/CM Professional Services                           | Orange Line  | \$24.0M            | \$25.1M              |
| P0886  | Capital Program Support   | Systemwide   | \$20.7M            | \$24.5M              |
| P0683  | Project Connect - Financial Systems Transformation                  | Systemwide   | \$15.7M            | \$28.8M              |
| P0645  | OHS Program Development and Implementation                          | Systemwide   | \$14.6M            | \$22.3M              |
| P0932  | Electrical Safety - Incident Energy Analysis and System<br>Upgrades | Systemwide   | \$14.0M            | \$16.2M              |
| R0128  | Workforce Modernization Program - HASTUS                            | Systemwide   | \$12.5M            | \$40.5M              |
| P1139  | Systemwide Asset Management Program Phase 4                         | Systemwide   | \$12.0M            | \$12.0M              |
| P0931  | Safety Management System (SMS) Implementation                       | Systemwide   | \$10.1M            | \$11.3M              |
| P0321  | Bond Costs / SOMWBA   | Systemwide   | \$10.0M            | \$48.6M              |
| P0690  | Design Standards and Guidelines                                     | Systemwide   | \$9.4M             | \$10.9M              |
| P0676  | Systemwide Security Upgrades  | Systemwide   | \$9.3M             | \$20.7M              |
| P0904  | Systemwide Asset Management Program Phase 3                         | Systemwide   | \$8.0M             | \$11.5M              |

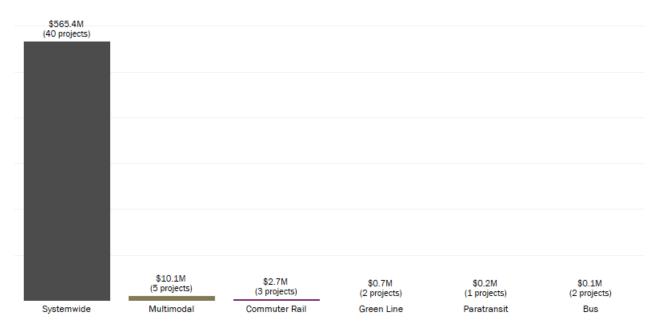
### Program Summary | Technology and Innovation

### **Program Purpose**

Investments in technology to enhance productivity, modernize the system, and improve the quality of service

| Total Projects | FY23-27 Programmed Spend | <b>Executing Departments</b> |  |
|----------------|--------------------------|------------------------------|--|
| 53             | \$579.3M                 | 15                           |  |

### FY23-27 Programmed Spend by Primary Mode



#### Top 15 Technology and Innovation Projects by FY23-27 Programmed Spend

| CIP ID | Project Name   | Primary Mode  | Total    | Authorized<br>Budget |
|--------|--|---------------|----------|----------------------|
| P0265  | Fare Transformation  | Systemwide    | \$420.1M | \$783.4M             |
| P0301  | Systemwide Radio   | Systemwide    | \$73.3M  | \$81.2M              |
| P0946  | ACE Network  | Systemwide    | \$13.7M  | \$15.0M              |
| P0972  | PA/ESS Critical Upgrades   | Systemwide    | \$8.6M   | \$9.4M               |
| P1122  | Safety Dispatch Technology and Data Modernization for Light Rail and Bus | Multimodal    | \$8.2M   | \$8.2M               |
| P0908  | Communications Rooms Remediation   | Systemwide    | \$7.6M   | \$9.6M               |
| P0945  | IT Disaster Recovery Plan  | Systemwide    | \$7.1M   | \$7.9M               |
| P0265a | Accessible Fare Gate Opener  | Systemwide    | \$6.9M   | \$9.0M               |
| P0635  | IT Security Modernization  | Systemwide    | \$4.9M   | \$17.9M              |
| P0491a | Customer Technology Access Initiatives                                   | Systemwide    | \$4.0M   | \$4.3M               |
| P06890 | Rider Service Alerts Resiliency & Improvements                           | Systemwide    | \$3.5M   | \$3.9M               |
| P0944  | IT Infrastructure State of Good Repair                                   | Systemwide    | \$3.1M   | \$4.9M               |
| P0434  | Energy Management System   | Systemwide    | \$2.7M   | \$3.5M               |
| P0693  | Automated Passenger Counters   | Commuter Rail | \$2.2M   | \$15.0M              |
| P0948  | Performance Data Modernization   | Systemwide    | \$2.1M   | \$2.3M               |
|        |  |               |          |                      |

FY23-27

Authorized

## Program Summary | Expansion South Coast Rail, GLX, and Expansion Projects

#### **Program Purpose**

**South Coast Rail**: Extension of Commuter Rail service to Fall River and New Bedford on the South Coast of Massachusetts

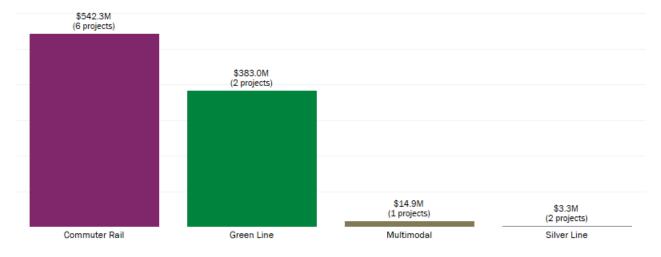
**Green Line Extension**: Extension of Green Line service from Lechmere to Somerville and Medford

Expansion Projects: Planning and design of targeted expansion projects identified as next

priorities

| Total Projects | FY23-27 Programmed Spend | Executing Departments |
|----------------|--------------------------|-----------------------|
| 11             | \$943.5M                 | 7                     |

### FY23-27 Programmed Spend by Primary Mode



Top 7 South Coast Rail, Green Line Extension, and Expansion Projects, by FY23-27 Programmed Spend

| CIP ID | Project Name                         | Primary Mode  | FY23-27 F | Authorized<br>Budget |
|--------|--------------------------------------|---------------|-----------|----------------------|
| P0160  | South Coast Rail Expansion           | Commuter Rail | \$493.5M  | \$920.8M             |
| P0095  | Green Line Extension                 | Green Line    | \$357.7M  | \$2,118.6M           |
| P0160a | South Coast Rail - Coach Procurement | Commuter Rail | \$39.9M   | \$69.0M              |
| P0095a | Green Line Extension - Vehicles      | Green Line    | \$25.3M   | \$170.0M             |
| P0866  | Red-Blue Connector - Planning        | Multimodal    | \$14.9M   | \$15.0M              |
| P0100  | Knowledge Corridor                   | Commuter Rail | \$9.0M    | \$122.6M             |
| P0496  | Silver Line Gateway - Phase 2        | Silver Line   | \$3.3M    | \$40.6M              |