

Supporting the Transportation System of the Future

Proposed FY25-29 CIP

Audit and Finance Subcommittee

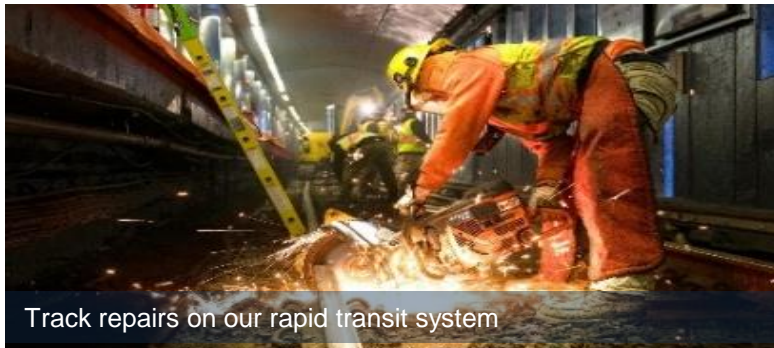
April 11, 2024



Transportation System of the Future: FY25-29 CIP

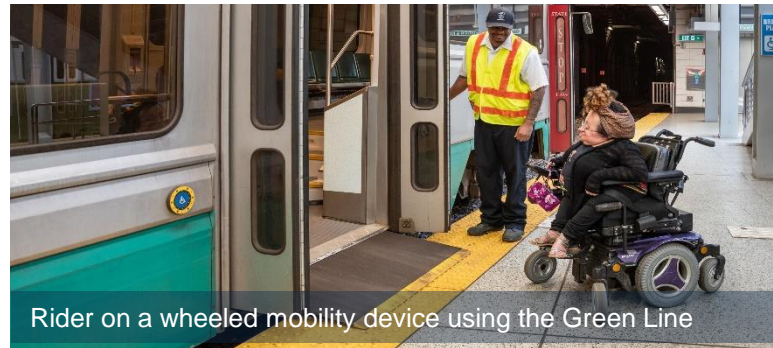
In accordance with Gov. Healey, Lt. Gov. Driscoll, Sec. Tibbitts-Nutt and GM Eng, the Proposed MBTA's FY25-29 CIP advances towards a transportation system of the future with investments that:

- ✓ Address critical asset needs,
- ✓ Keep the T on a path to better safety, service, and sustainability, and,
- ✓ Focus on the investment objectives listed below:



Track repairs on our rapid transit system

**Safety, Reliability, and
Modernization**



Rider on a wheeled mobility device using the Green Line

Accessibility



South Boston Power Plant

Sustainability and Resilience

What is the Capital Investment Plan (CIP)?


The **CIP contains all the MBTA's capital projects over the next five years.** Capital projects help us maintain, acquire, renew, construct or improve capital assets.

Every year, as per our legislative mandate, we update the CIP. This allows the T to allocate new funding to ongoing and/or new projects.

The CIP is a short-term, financially constrained investment plan. It accounts for the T's available sources and committed uses in the five-year window.



CIP step-by-step process

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- A vertical timeline diagram consisting of a central white line with seven white circular markers at regular intervals, each corresponding to a step in the CIP process.
- Identify capital needs
 - Evaluate and score project requests
 - Determine funds available
 - Prioritize projects for funding
 - Sequence investments
 - Release CIP annual update

Our Capital Program Strategy beyond the CIP

Under the leadership of GM Eng, we are revamping our capital program strategy to generate efficiencies and deliver projects on-time and on-budget as we face our challenges head-on. To advance the Commonwealth's vision, the Authority is:

- Reviewing prior projects in the CIP to ensure efficient spending, and course-correct as needed, while critically reviewing new project requests
- Using asset information to drive investments
- Restructuring the organizational delivery of capital projects
- Improving right-of-way access to minimize disruptions and construction costs
- Building internal workforce capacity to support State of Good Repair work
- Enhancing competitiveness and supplier and contractor diversity



Trade Offs: Safety, Reliability, and Modernization

To prioritize the safety of our riders, the reliability of our service, and the modernization of our assets, the Authority has made difficult decisions, grounded both in asset criticality and our ability to deliver, to repurpose and allocate new or additional funding to:

Track Improvement Program (resequencing of funds)



Track work during Red Line diversion as part of the Track Improvement Program.

- SGR initiative to remove all rapid transit slow zones.
- Funds allocated to Longfellow’s viaduct rehabilitation, a new Commuter Rail maintenance facility in Billerica, and track and signal upgrades on the Green Line’s Central Tunnel were **resequenced** to support the near-term needs of the Track Improvement Program. To stay on timelines, these projects will need to be refunded at the appropriate time in the future.

Red and Orange Line Vehicles (new and repurposed funds)



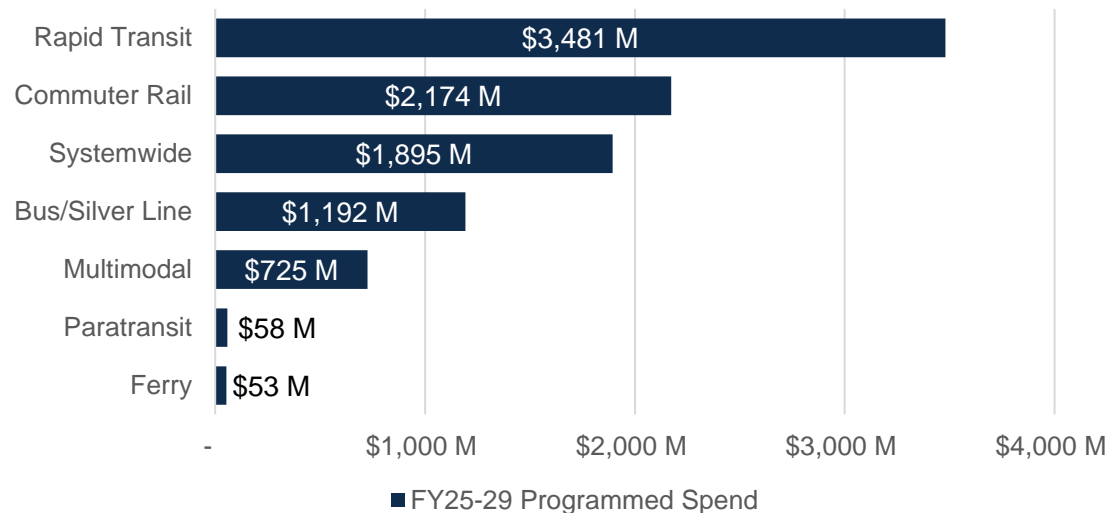
New Red Line vehicle providing service to riders at Park Station.

- Replacement of the aging Red and Orange Line fleets. The new vehicles are 4x more reliable.
- New funding available in FY25-29 CIP and funding **repurposed** from Arborway Bus Facility design funding, Copley to Arlington Track Replacement, and other projects will support CRRC’s contract “reset” for new fleet delivery by the end of 2027. Ongoing project activities will not be impacted.

Proposed FY25-29 CIP: Summary and Sources

The CIP includes over 630 projects for a programmed spend of \$9.6B over the next five fiscal years, including \$843M in new funding:

FY25-29 Programmed Spend by Mode (Millions)



Funding the Proposed FY25-29 MBTA's CIP

38% in Federal Funds

Includes formula funds, which are distributed to each state based on certain metrics, and discretionary grant awards for specific projects.

11% in State Funds

General and special obligation bonds dedicated to specific projects and initiatives, as authorized in a state Transportation Bond Bill, plus FTA directive response funding and funding from Fair Share tax revenues.

50% in MBTA Funds

Primarily MBTA-issued bonds, currently estimated at between \$590M (FY25) and \$650M (FY26-29)/year. Also includes loans and other pay-go funding.

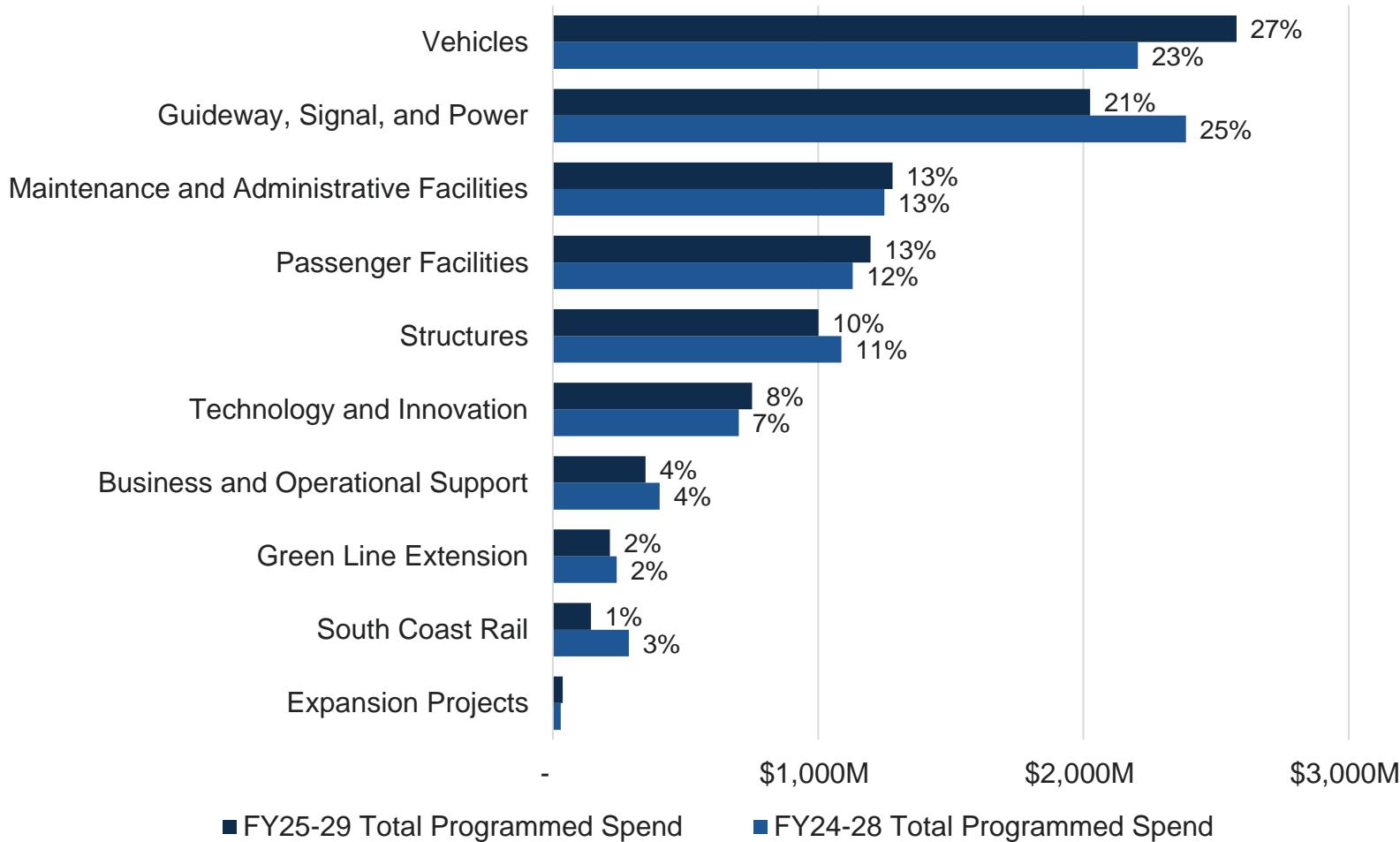
1% in Reimbursable Funds: Various agreements.

Programmed based on funding agreements with other public and private entities.



Proposed FY25-29 CIP: Spend by Program

Programmed Spend by CIP Program - Proposed FY25-29 CIP vs. Final FY24-28 CIP







- This chart shows projected spending in the proposed FY25-29 CIP by program, compared to the FY24-28 CIP.
- In the proposed FY25-29 CIP, the Vehicles program makes up the largest percentage of spend at 27%, followed by Guideway, Signal, and Power at 21%
- This marks a shift from the FY24-28 CIP, where the Guideway, Signal, and Power program made up the highest percentage programmed spend (25%), and is the result of a number of ongoing, large-scale vehicle procurements and overhauls.



Advancing the Transportation System of the Future

New funding in the FY25-29 CIP keeps the MBTA on a path to better safety, service, and sustainability, with investments focused on, but not limited to:

-  **Safety, reliability, and modernization to give riders the system they deserve**
Keeps the T on a path to reliable operations, project delivery, and fewer diversions in the long-term
-  **Enhanced and improved accessibility for the communities that we serve**
Keeps the T on a path to accessible service across all modes
-  **Climate action in line with the Commonwealth's decarbonization and climate resilience goals**
Keeps the T on a path to address sustainability and resilience
-  **Modal Initiatives, including Bus and Rail Modernization, to give riders the system they expect**
Keeps the T on a path to advance the transportation system of the future



Proposed FY25-29 CIP Highlights

Major Investments



Structure Improvements

- Full funding for North Station Draw 1 Bridge Replacement
- Urgent, near-term structural repair work systemwide
- Life-extending repairs on multiple bridges



Commuter Rail & Ferry

- 20-minute Decarbonized Service on the Fairmount Line
- Ferry infrastructure, including accessibility improvements



Track Improvements

- Vital track improvement work on rapid transit lines
- Hi-Rail access tunnel on the Red Line
- Washout prevention along the Commuter Rail system



Station Improvements

- Accessibility Improvements along the Green Line, including Newton Highlands
- Station repairs, from stairs to lighting fixtures
- Programmed station inspections and improvements



Bus Network

- Bus Network Redesign implementation
- New bus procurement
- Transit Priority quick build and major corridor projects



Sustainability and Resilience

- Climate change vulnerability and adaptation planning
- Energy efficiency improvements
- Increased number of EV charging stations systemwide



Bus and Rail Modernization

Bus Modernization



Left: North Cambridge bus facility retrofit; Right: transit priority service (dedicated bus ROW).

The CIP includes new funding for:

- Phase 2 implementation of Bus Network Redesign.
- Transit priority to continue bus service modernization.

Additionally, current funding supports:

- Construction of new Quincy Facility and retrofit of North Cambridge bus garages for battery-electric buses (BEBs).
- Procurement of BEBs and overhaul of existing fleet to support ongoing electric fleet transition.

Rail Modernization



Conceptual designs of potential decarbonized Commuter Rail trains provided by Stadler & Alstom

The CIP includes new funding for:

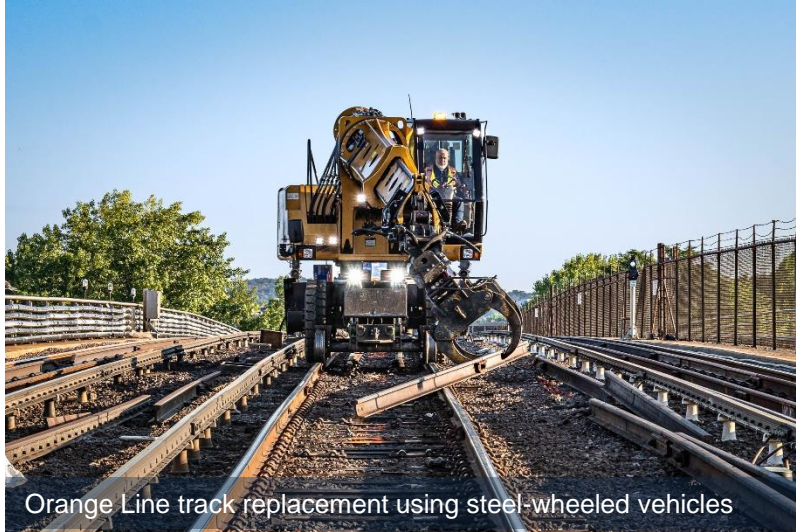
- Infrastructure to support 20-minute decarbonized service in the future on the Fairmount Line.
- Planning funds to continue advancing Rail Modernization.

Additionally, current funding supports:

- Design activities for decarbonized service on the Environmental Justice Corridor through Lynn and the Beverly section of the Rockport Line.
- Infrastructure improvements to deliver modernized 30-minute frequencies in the future on the Framingham/Worcester Line.

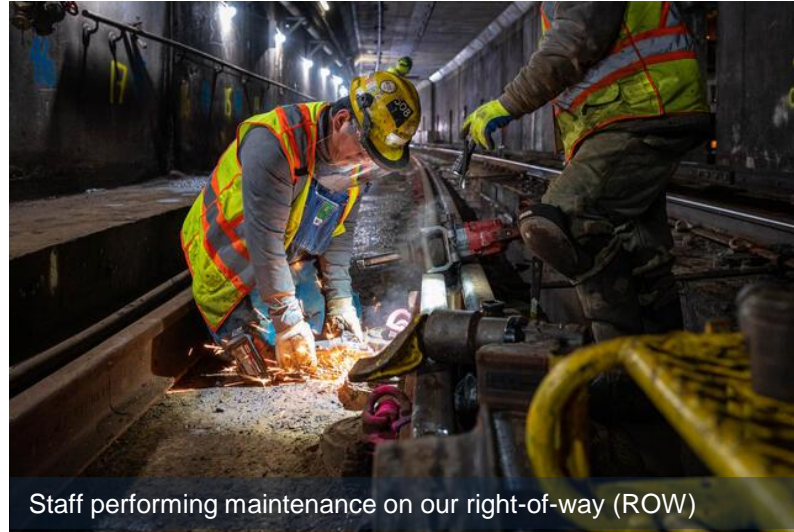
Safety, Reliability, and Modernization

Encompasses projects that promote more dependable and frequent service, prioritize safety, modernize assets, and bring our system into a State of Good Repair. New CIP funding as well as FY24 Fair Share funds will allow the T to:



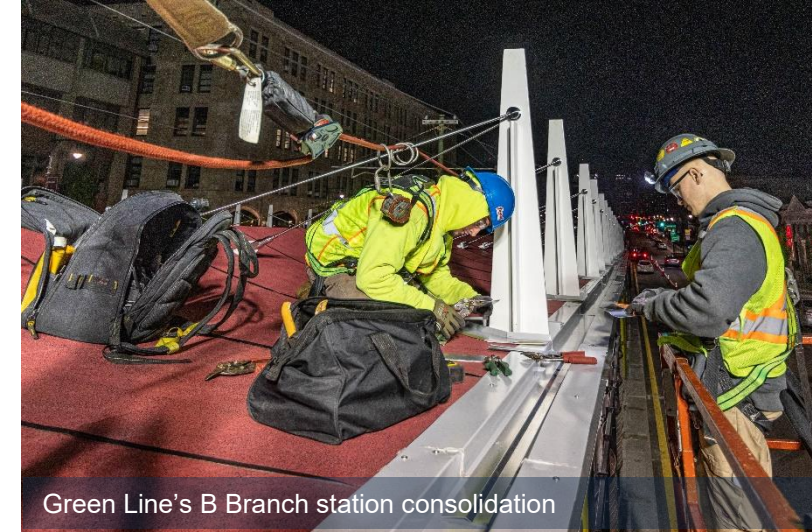
Orange Line track replacement using steel-wheeled vehicles

Bolster our track, power, structures, and asset management programs



Staff performing maintenance on our right-of-way (ROW)

Enhance ROW access on the Red Line and evaluate ways to improve project delivery



Green Line's B Branch station consolidation

Strengthen efforts to inspect, repair, and modernize our facilities



Safety, Reliability, and Modernization

New and current funding assigned to projects that bring our system into a state of good repair also represents an opportunity to modernize and upgrade our assets, revitalizing the system to be more reliable, accessible, and sustainable:

North Station Draw 1 Bridge Replacement (new funding)



Existing 1930's North Station Draw 1 Bridge.

- Replacement of the deficient 1930's drawbridge that will ensure continuity of all service on the North Side of the Commuter Rail and Amtrak's Downeaster.
- The project will also provide new tracks to improve on-time performance and additional arrival/departure capacity for the North Station Terminal.

Green Line Type 10 Vehicle Procurement (current funding)



Rendering of the future Type 10 Green Line light rail vehicle.

- Replacement of the aging Type 7 and Type 8 Green Line fleets with modernized vehicles.
- The new fleet will feature increased capacity, upgraded comms systems, improved accessibility, and the latest generation of crash-safety technology, prioritizing safety and reliability.

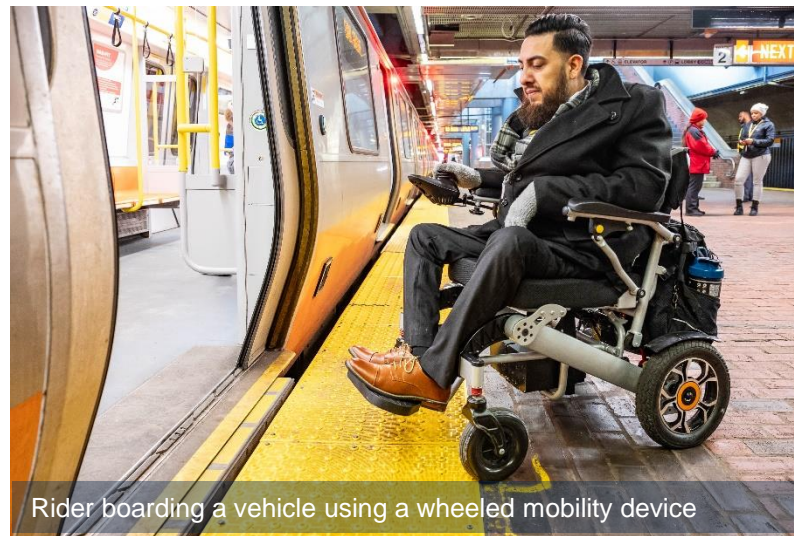
Accessibility

Includes projects that seek to provide equitable access for all riders. These projects target currently inaccessible stations/stops and other priority locations, focusing on:



Rendering of fully accessible Newton Highlands Station

Accessible passenger facilities
(elevators, escalators, ramps, platforms, bus stops, among others)



Rider boarding a vehicle using a wheeled mobility device

Accessible vehicles and vessels
(rapid transit, bus, Commuter Rail, ferry, and paratransit)



Two-way communication display at Government Center Station

Accessible information, wayfinding, and other accessibility features

Accessibility

New funding in the CIP includes accessibility and infrastructure improvements on the Green Line, Bus, Commuter Rail, and Ferry. Current funding, including FY24 Fair Share allocations, continues to support accessibility improvements to our passenger facilities:

Green Line and Bus Improvements

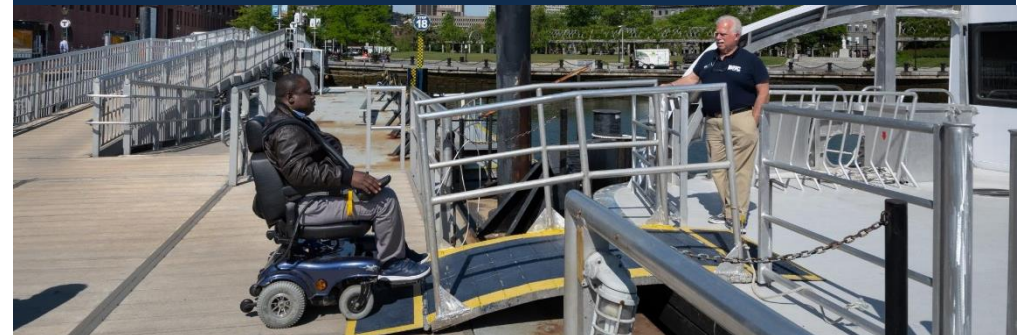


Upgraded accessible grade crossing on the Green Line's C Branch.

The MBTA is proposing to fully fund, through construction, major accessibility improvements at:

- Waban, Beaconsfield, Elliott, Chestnut Hill, Newton Highlands, and Symphony Green Line Stations.
- Priority bus stops in accordance with the Plan for Accessible Transit Infrastructure (PATI).

Commuter Rail and Ferry Improvements



Rider on a wheeled mobility device accessing a ferry vessel.

The CIP includes funding for:

- Construction of accessibility upgrades at Winchester Center, Natick Center, and North Wilmington Commuter Rail Stations.
- Infrastructure and accessibility improvements to our ferry system.

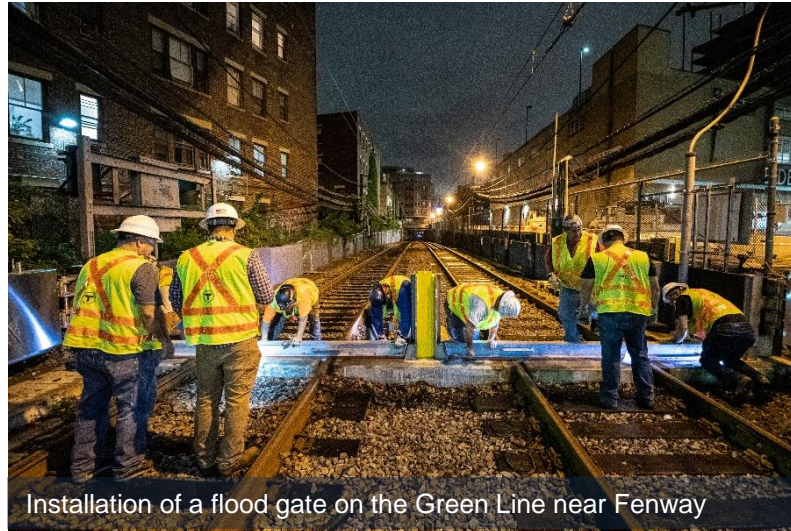
Sustainability and Resilience

These initiatives support the Commonwealth and MBTA's climate and mobility goals and increase the sustainability and resilience of our transit system. These projects include:



Silver Line Battery Electric Bus (BEB) with en-route charging

System electrification
(facilities, buildings, revenue fleet, non-revenue fleet, among other assets)



Installation of a flood gate on the Green Line near Fenway

System resilience
(hardening our assets against extreme weather events)



MBTA's wind turbine for renewable energy generation

Energy efficiency program and other sustainability, mitigation, and remediation initiatives



Sustainability and Resilience

New and current funding in the CIP includes vulnerability assessments, adaptation planning, and decarbonization actions tied to our lighting and heating systems. These projects support:

Climate planning and action



Flood plank deployment for flood mitigation at Aquarium Station.

- **The CIP includes new funding for:**
 - A sustainability assessment across our modes and assets to identify actions items and a critical path for a sustainable and resilient transit system.
 - This funding will help support the climate action work to be developed by our new Climate Policy and Planning Office.

Electric charging and non-revenue fleet



Non-revenue electric fleet at our Cabot maintenance facility.

- **The CIP includes new funding for:**
 - Electric charging stations at our maintenance and parking facilities.
 - Ongoing procurement and modernization of our non-revenue fleet to support our operations and service reliability.

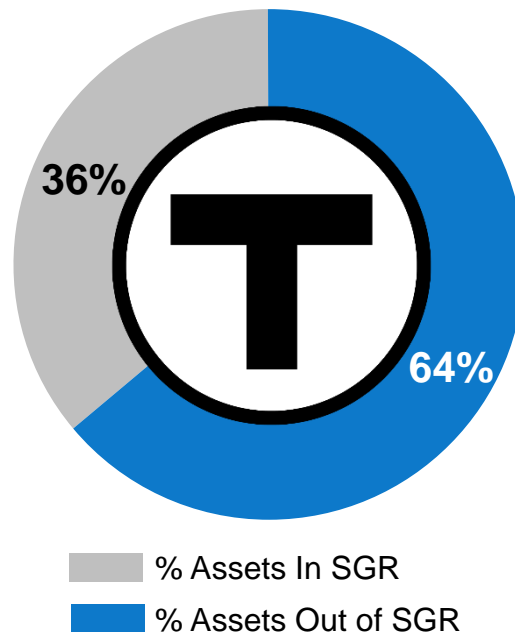
What challenges do we face to meet this vision?

Significant State of Good Repair Needs

The 2023 Capital Needs Assessment (CNAI) identified baseline capital needs to bring our system into a State of Good Repair (SGR).

While these needs are being addressed through our Reliability and Modernization programs, there's a significant amount of work to be done.

\$24.5B SGR Index
(Total Value of Assets Out of SGR)



Declining CIP funding sources

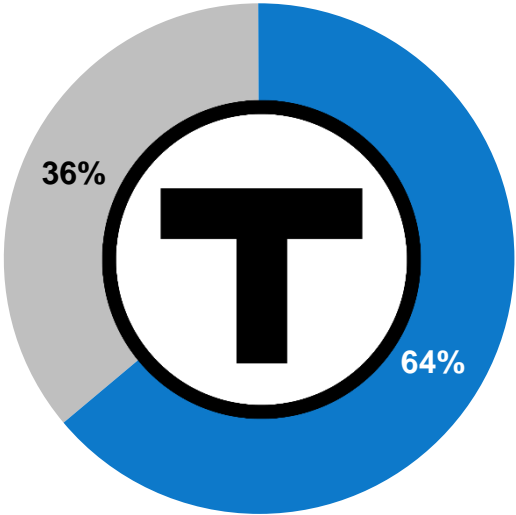
The FY24-28 CIP included \$9.7B in programmed spend. Future capital plans may be roughly half that size (\$5.2M over 5-years) given declining funding sources tied to:

- Uncertainty on Federal funding levels beyond FY26,
- Absence of State funds as existing sources, which are tied to specific projects, continue to be drawn down, and,
- Projections that assume a relatively consistent level of MBTA revenue bond issuance in the out-years.

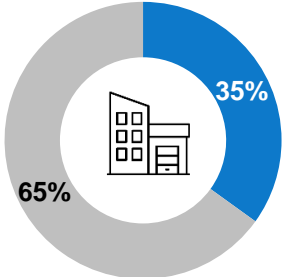


The T has significant State of Good Repair Needs

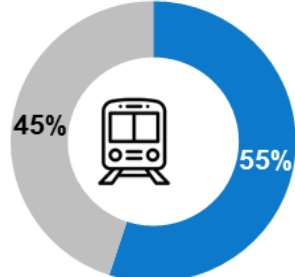
The MBTA's 2023 Capital Needs Assessment (CNAI) identified an estimated SGR Index, or baseline SGR need, of **\$24.5B**. Approximately 64% of the assets included in this analysis have been identified as being out of SGR*. The analysis relied on updated asset inventory data, condition ratings, and cost estimates (in 2022 dollars).



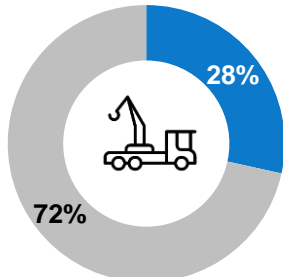
\$24.5B SGR Index
(Total Value of Assets Out of SGR)



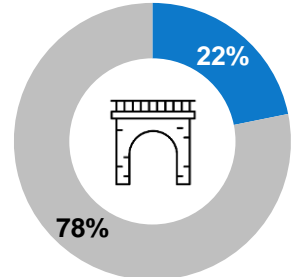
Facilities
\$6.4B



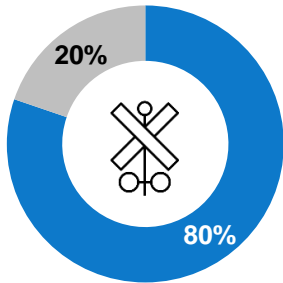
Rolling Stock
\$2.4B



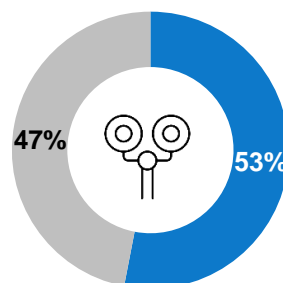
Equipment
\$52M



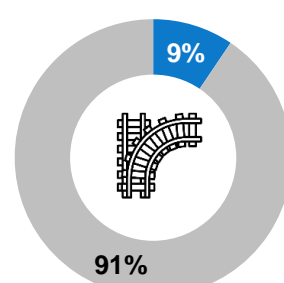
Structures
\$5.3B



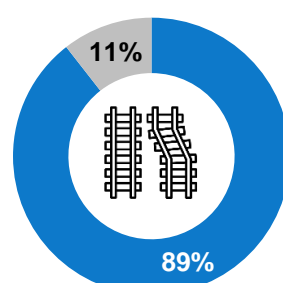
Signals - CR
\$1.3B



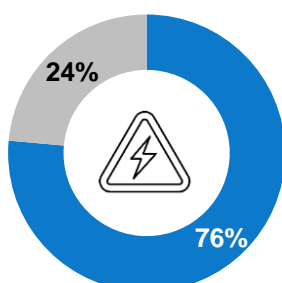
Signals - Transit
\$753M



Track - CR
\$1.2B



Track - Transit
\$2.0B



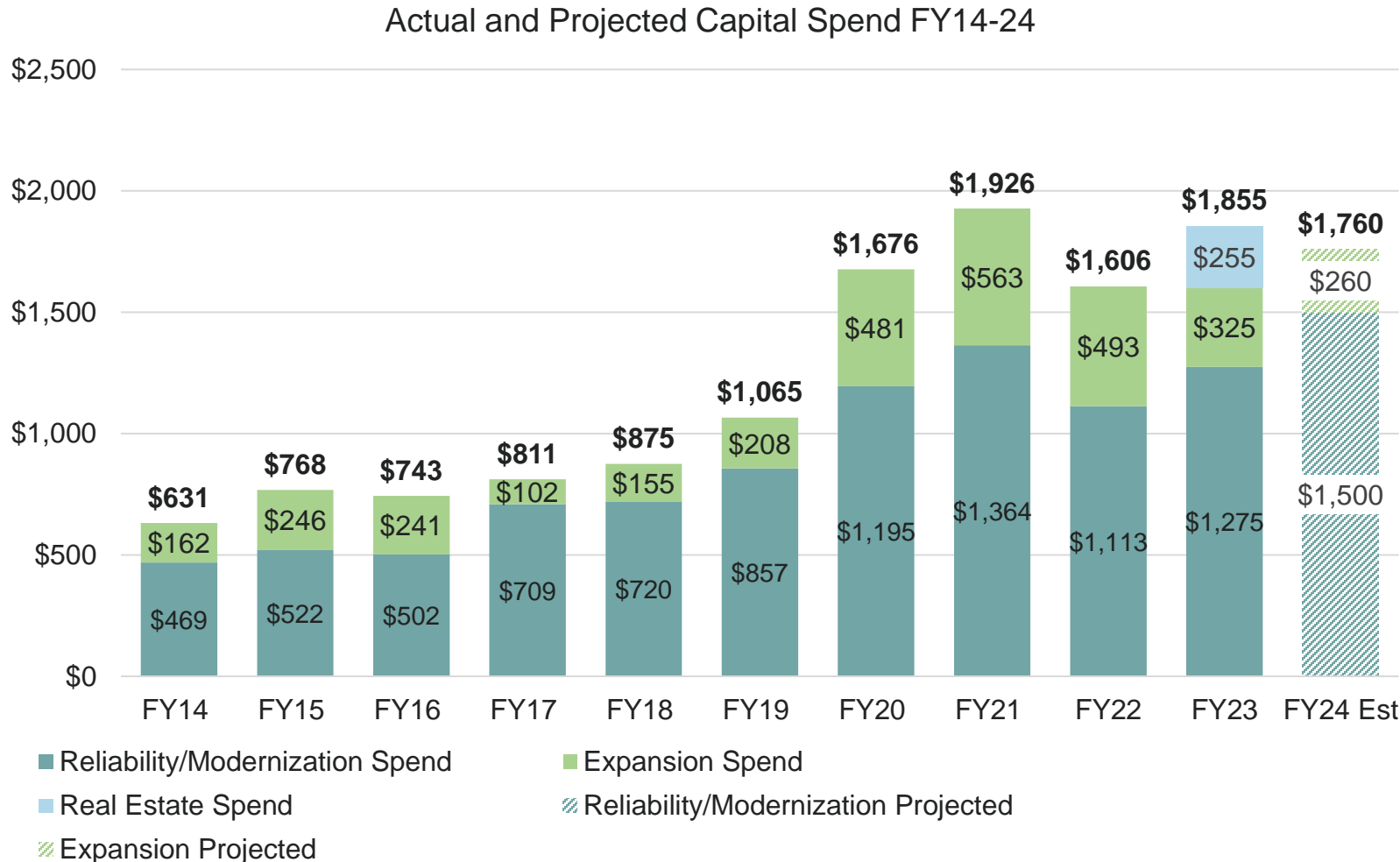
Power
\$5.1B



% Assets In SGR
 % Assets Out of SGR

*Assets are counted differently depending on the functional asset class, e.g., some track elements are counted by mileage while others use a per-unit or per-site count.

Historic Levels of Capital Spending Continue



- The MBTA continues to sustain an unprecedented level of investment focused on the safety and reliability of our assets and the strategic expansion of the network.
- The FY25-29 CIP has programmed \$9.6B of programmed spend over the next five years, indicating that the MBTA anticipates this historic level of spend to continue.
- However, declining source availability in future years endangers the MBTA's ability to continue spending at this pace

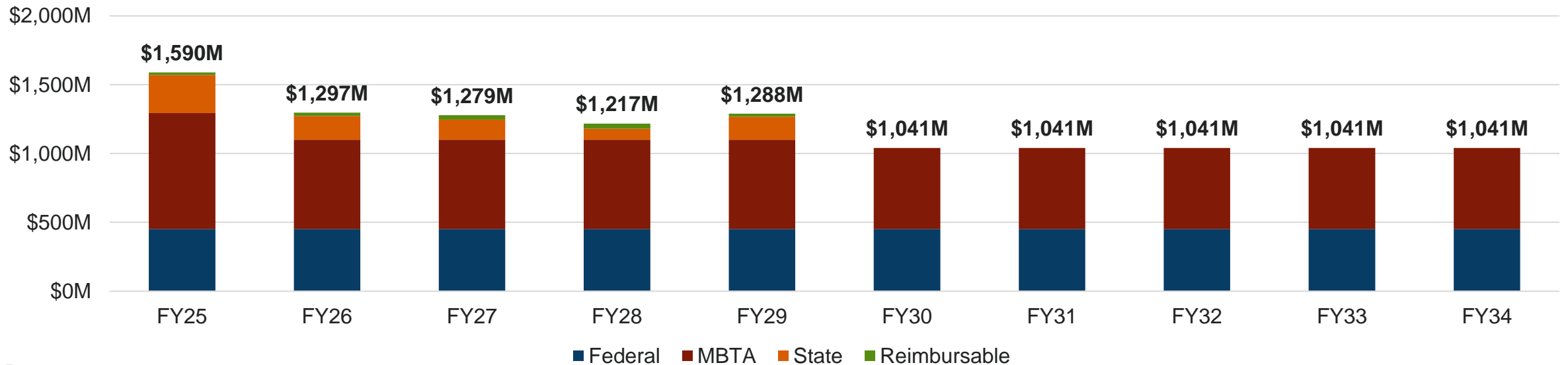


Funding sources for capital projects are declining

The MBTA has increased capital spend significantly, growing from \$631M in FY14 to a record-high \$1.9B in FY22. However, in future CIPs, our funding sources are expected to decline:

- Uncertainty regarding Federal funding levels beyond FY26 (when BIL expires), and the continued draw-down of State sources tied to specific projects and initiatives, indicate future capital plans may be half the size of the \$9.6B FY25-29 CIP.
- The chart below does not account for potential Fair Share tax revenue, or other state sources, that could be made available in future years
- These projections account for a relatively flat annual MBTA revenue bond issuance

MBTA Sources When Available - FY25-34*



Next Steps for the FY25-29 CIP

