

Supporting the Transportation System of the Future

Massachusetts Bay Transportation Authority FY25-29 Capital Investment Plan (CIP)

Proposed - April 2024



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Nondiscrimination Statement

Federal Title VI Rights and Protections

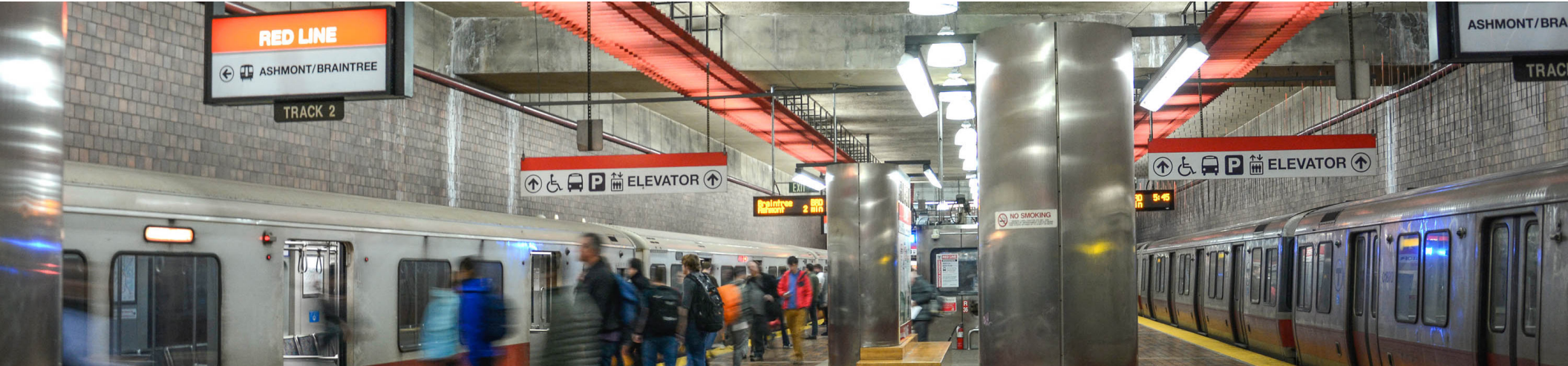
The Massachusetts Bay Transportation Authority (MBTA) operates its programs, services, and activities in compliance with federal nondiscrimination laws, including Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and related statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States shall, on the grounds of race, color, or national origin (including limited English proficiency), be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal assistance. Related federal nondiscrimination laws administered by the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), or both prohibit discrimination on the basis of age, sex, and disability. These protected categories are included within the MBTA's Title VI Program consistent with federal interpretation and administration. Additionally, the MBTA provides meaningful access to its programs, services, and activities to individuals with limited English

proficiency, in compliance with U.S. Department of Transportation policy and guidance on pursuant to federal Executive Order 13166.

State Nondiscrimination Protections

The MBTA also complies with the Massachusetts Public Accommodation Law, M.G.L. c 272 §§ 92a, 98, 98a, prohibiting making any distinction, discrimination, or restriction in admission to or treatment in a place of public accommodation based on race, color, religious creed, national origin, sex, sexual orientation, disability, or ancestry. Likewise, the MBTA complies with the Governor's Executive Order 526, section 4, which requires all programs, activities, and services provided, performed, licensed, chartered, funded, regulated, or contracted for by the state to be conducted without unlawful discrimination based on race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status (including Vietnam-era veterans), or background.





ADA / 504 Notice of Nondiscrimination

The MBTA does not discriminate on the basis of disability in admission to its programs, services, or activities; in access to them; in treatment of individuals with disabilities; or in any aspect of their operations. The MBTA also does not discriminate on the basis of disability in its hiring or employment practices. This notice is provided as required by Title II of the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973.

Request Information

To request information regarding Title VI and related federal and state nondiscrimination obligations, please contact:

MBTA Office of Diversity and Civil Rights, Title VI Unit
10 Park Plaza, Suite 3800, Boston, MA 02116
Phone: 857-368-8580
Fax: 617-222-3263
TTY: 711
Email: MBTACivilRights@mbta.com



Language Services

The MBTA offers various services (such as translation assistance and interpretation) to customers in a range of languages. If this information is needed in another language, please contact the MBTA Title VI Unit at 857-368-8580. Learn more about our language services at mbta.com/languageservices.

File a Discrimination Complaint

If your civil rights have been violated, you can file a complaint with the MBTA Office of Diversity and Civil Rights. Title VI prohibits discrimination on the basis of race, color, or national origin. File a complaint alleging violation of Title VI no later than 180 days from the date of the alleged violation.

To speak with our Customer Support team, call 617-222-3200. Learn more about filing a discrimination complaint at mbta.com/policies/file-discrimination-complaint.

List of Common MBTA Acronyms

A&F - Executive Office for Administration and Finance

ACE - Agile Carrier Ethernet

ADA - Americans with Disabilities Act of 1990

AFC - Automated Fare Collection

APC - Automated Passenger Counters

APS - Adaptive Power System

ATC - Automated Train Control

BCIL - Boston Center for Independent Living

BEB - Battery Electric Bus

BET - Boston Engine Terminal

BIL - Bipartisan Infrastructure Law

BLITS - Bus Location Instant Tracking Solution

BTC - Blind Trailer Coach

CNAI - Capital Needs Assessment and Inventory

CIP - Capital Investment Plan

CMF - Capital Maintenance Fund

CNG - Compressed Natural Gas

CRMF - Commuter Rail Maintenance Facility

CTC - Control Trailer Coach

CWR - Continuously Welded Rail

DMA - Dual Mode Articulated

DPU - Distributed Power Unit

DTX - Downtown Crossing Station

E&M - Engineering and Maintenance

EEH - Enhanced Electric Hybrid

EJ - Environmental Justice

ESS - Electronic Signage System

ETB - Electric Trolleybus

FHWA - Federal Highway Administration

FRP - Fiber Reinforced Polymer

FTA - Federal Transit Administration

GATRA - Greater Attleboro Taunton Regional Transit Authority

GLTPS - Green Line Train Protection System

GLTS - Green Line Tracking System

HSL - High Speed Line

HVAC - Heating, Ventilation, and Air Conditioning

IT - Information Technology

LRV - Light Rail Vehicle

MAAB - Massachusetts Architectural Access Board

MassDOT - Massachusetts Department of Transportation

MOW - Maintenance of Way

MPO - Metropolitan Planning Organization





NEC - Northeast Corridor

NNEPRA - Northern New England Passenger Rail Authority

NTD - National Transit Database

OCC - Operations Control Center

OCS - Overhead Contact System

OHS - Occupational Health and Safety

PA - Public Announcement

PATI - Plan for Accessible Infrastructure

PCB - Polychlorinated Biphenyl

PCC - Presidents' Conference Committee

PLC - Programmable Logic Controller

PM/CM - Project Management/Construction Management

PPE - Personal Protective Equipment

PRIIA - Passenger Rail Investment and Improvement Act of 2008

PSAC - Project Selection Advisory Council

PTC - Positive Train Control

PTIS - Passenger Train Information System

PVC - Polyvinyl Chloride

RCM - Reliability-Centered Maintenance

REP - Rail Enhancement Program

RFID - Radio Frequency Identification Detection

RGS - Rigid Galvanized Steel

RIDOT - Rhode Island Department of Transportation

ROW - Right-of-Way

RRIF - Railroad Rehabilitation and Improvement Financing

RTAG - Riders' Transportation Access Group

S&I - Service and Inspection

SCADA - Supervisory Control and Data Acquisition

SGR - State of Good Repair

SMS - Safety Management System

SONET - Synchronous Optical Network

STIP - State Transportation Improvement Program

SWAN - Security Wide Area Network

TAMP - Transit Asset Management Plan

TIFIA - Transportation Infrastructure Finance and Innovation Act

TIP - Track Improvement Program

TPSS - Traction Power Substation

VMF - Vehicle Maintenance Facility

WILD - Wheel Impact Load Detector



The Proposed FY25-29 Capital Investment Plan (CIP) Book

This book comprises the proposed State Fiscal Year 2025-2029 (FY25-29) Capital Investment Plan (CIP) of the Massachusetts Bay Transportation Authority (MBTA, T, or Authority). The book contains four sections that detail what the CIP is; the vision for this year's plan; our modal initiatives; and the resources at your disposal to provide feedback on the proposed plan.

Balance the needs of today as we build for the transportation system of the future. That is the vision of the MBTA's capital program. To rebuild, restore, and reimagine our system, the Proposed FY25-29 CIP includes investments that address critical asset needs and keep the T on a path to better safety, service, and sustainability.

This book summarizes how the T proposes to program our capital expenditures in the next five years to build towards that vision. The document is divided into four sections:

- **About the Capital Investment Plan**
Includes information about what the CIP is, how it is developed each year, and the funding sources that support our capital expenditures.
- **Proposed FY25-29 CIP: Overview**
Overview of the vision, priorities, and investment objectives guiding the Proposed FY25-29 CIP, including the challenges the Authority faces and how we are revamping our Capital Program Strategy to face them.

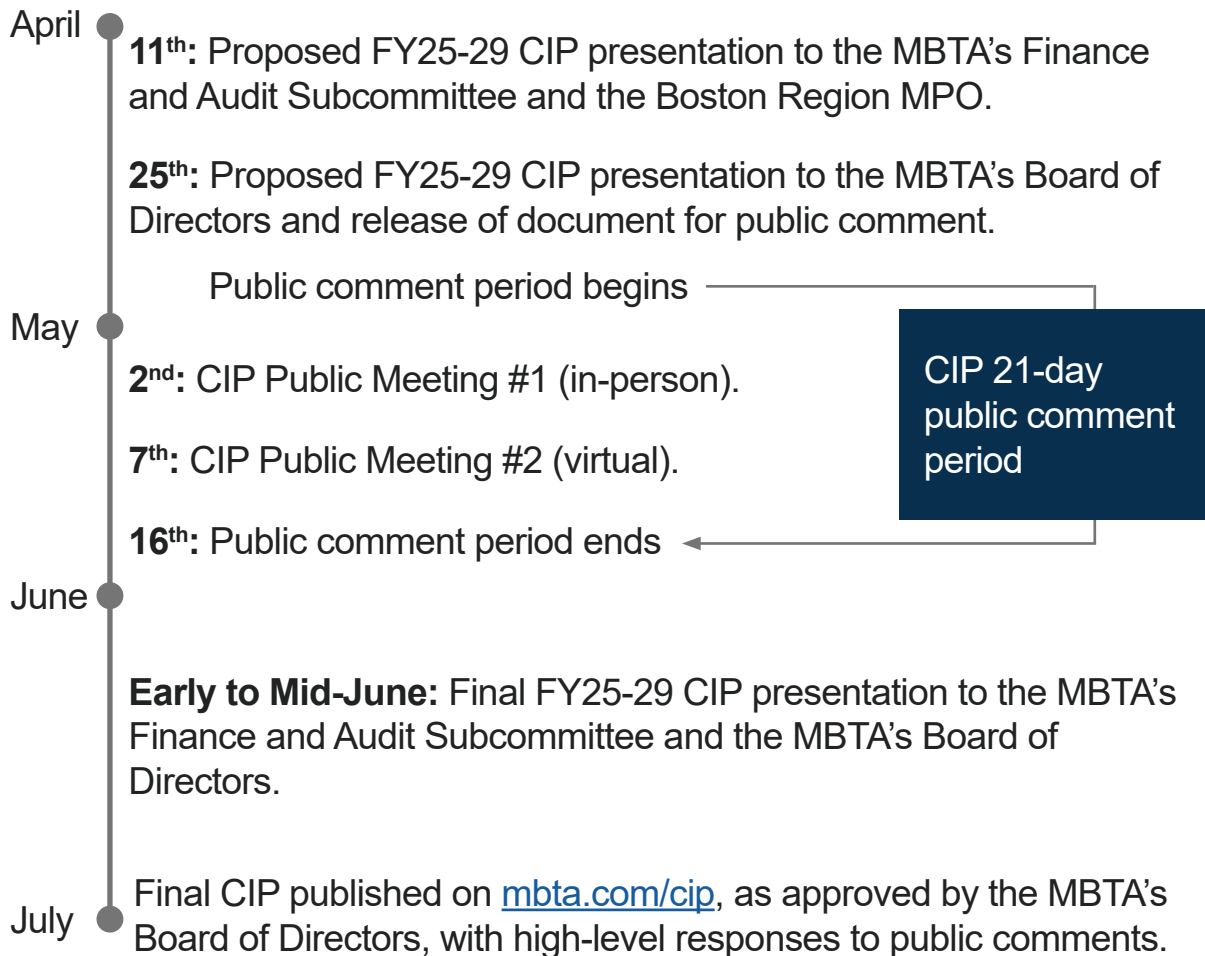
- **Proposed FY25-29 CIP: Modal Initiatives**
Summarizes proposed program goals, investment levels, and key initiatives for each of our modes in the FY25-29 window, encompassing: Rapid Transit (Red, Orange, Blue, Green, and Mattapan Lines), Bus (Bus and Silver Line), Commuter Rail, Ferry, and Paratransit.
- **Proposed FY25-29 CIP: Public Engagement and Resources**
Details the public engagement process for the Proposed FY25-29 CIP and highlights additional resources to learn more about this year's capital plan update such as the Proposed FY25-29 CIP's project list.

The Proposed FY25-29 CIP Book is a full draft of the five-year CIP and includes both existing projects and new investments. The CIP Book and respective project list are assembled and posted for public comment. We then refine the CIP further and submit it to the MBTA's Board of Directors for approval. Once approved, it is finalized and published as per the roadmap to the Final CIP.



Roadmap to the Final CIP

The Proposed FY25-29 CIP will be released for public comment on April 25, 2024. It will be further refined before being submitted to the MBTA Board of Directors for approval in June and goes into effect in July.





About the Capital Investment Plan (CIP)



What is the Capital Investment Plan (CIP)?

The Massachusetts Bay Transportation Authority's CIP includes all capital expenditures planned in the next five years.

The T's Capital Investment Plan is a short-term, financially constrained investment document that funds the planning, construction, and capital maintenance of assets across the MBTA. It accounts for the T's available sources and committed uses in the CIP's five-year window to fund our capital projects. These projects help us maintain, acquire, renew, construct, or improve our capital assets.

The CIP is updated annually, as required per our legislative mandate. Therefore, it is considered a "rolling" plan. The CIP's yearly update provides the T with the opportunity to allocate new funding towards ongoing and/or new projects, to solicit public feedback, and to respond to needs and challenges as they arise. The yearly update is done in coordination with the Massachusetts Department of Transportation (MassDOT) and the Boston Region Metropolitan Planning Organization (MPO).

The annual CIP development runs from September to June. The cycle begins with a call for projects, which are then evaluated and scored, so that funding can be prioritized in alignment with the T's strategic plan. A proposed five-year CIP, including in-flight projects and new funding allocated to existing and new projects, is posted for public comment and the plan is further refined before it is submitted to the MBTA Board of Directors.



CIP development process:

1. Identify capital needs

Funding requests for new and existing projects are collected.

2. Evaluate project requests

Projects requesting new funding are scored and evaluated.

3. Determine funds available

Available sources and committed uses are determined for financial constraint.

4. Prioritize projects

New funding is prioritized based on project scores, strategic priorities, and financial constraint.

5. Sequence investments

Funds are allocated in the five-year CIP window based on project priority and capital delivery capacity.

6. Release CIP annual update

The proposed CIP is released for public comment, then refined, and presented for Board approval.

How is the MBTA's Capital Investment Plan Structured?

The CIP is structured in two overarching priorities: **Reliability and Modernization**, and **Expansion**. These priorities are further broken out into **CIP Programs** that include asset-based capital projects or targeted expansion efforts. These programs are sized annually to align with the MBTA's needs and strategic goals.

Reliability and Modernization: focus on State of Good Repair (SGR), service reliability, and asset modernization.



Structures

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



Guideway, Signal, and Power

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



Maintenance and Administrative Facilities

Rehabilitates and upgrades maintenance and administrative facilities.



Passenger Facilities

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



Vehicles

Rehabilitates and replaces the revenue and non-revenue fleet and equipment for reliable and safe operations.



Business and Operational Support

Investments in asset management, safety and security, communications, and other systems.



Technology and Innovation

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

Expansion: target investments to increase system capacity or multimodal options.



Green Line Extension (GLX)

Extension of Green Line service from Lechmere to Somerville and Medford.



South Coast Rail (SCR)

Extension of Commuter Rail service to Fall River, New Bedford, and Taunton on the South Coast of Massachusetts.



Expansion Projects

Planning and design of targeted expansion projects identified as next priorities.



How is the MBTA's Capital Investment Plan Funded?

The CIP is funded by a mix of Federal, State, and local sources, as well as third-party reimbursements. The flexibility of these four primary funding sources varies. Some must be spent on specific policy goals or modes, while others may be applied across the transportation network.

Funding Type	Funding Source	Limited to Specific Uses	Programming Assumptions	Programming Behavior
Federal	Formula	Yes, once obligated	Established in Federal legislation, with formulas based on population as well as service-related metrics.	Available in the Federal Fiscal Year they are appropriated to the MBTA, then programmed and expended over subsequent years.
	Discretionary	Yes	Aligns with awarded competitive funding grants.	After award, programmed to align with project cashflows.
State	REP and Bond Cap	Yes	Funds authorized via the Transportation Bond Bill.	Programmed to align with project cashflows.
	FTA Directive	Yes	Funds for spending related to FTA special directive response.	Programmed to align with project cashflows.
	Fair Share	Yes	Allocated to specific project types as identified through the State's annual budget process.	Programmed to align with project cashflows.
MBTA	Bonds	No	Aligned with the MBTA's bonding capacity and coverage ratio, currently set at \$590 million per year in FY25 and \$650 million per year from FY26-FY29.	Funds are programmed in the year they are made available, but roll over if not spent.
	Loans (TIFIA and RRIF)	Yes		Aligned with project cashflows.
	Capital Maintenance Fund (CMF)	No	Limited fund held by the Authority to be used at the CFO's discretion for urgent/emergency needs that arise during the fiscal year.	Funds are not programmed during CIP development. Funds are distributed throughout the fiscal year as needs arise.
Reimbursable	Various	Yes	Based on agreements with outside entities.	Programmed based on agreements and aligned with project cashflows.





Proposed FY25-29 CIP: Overview



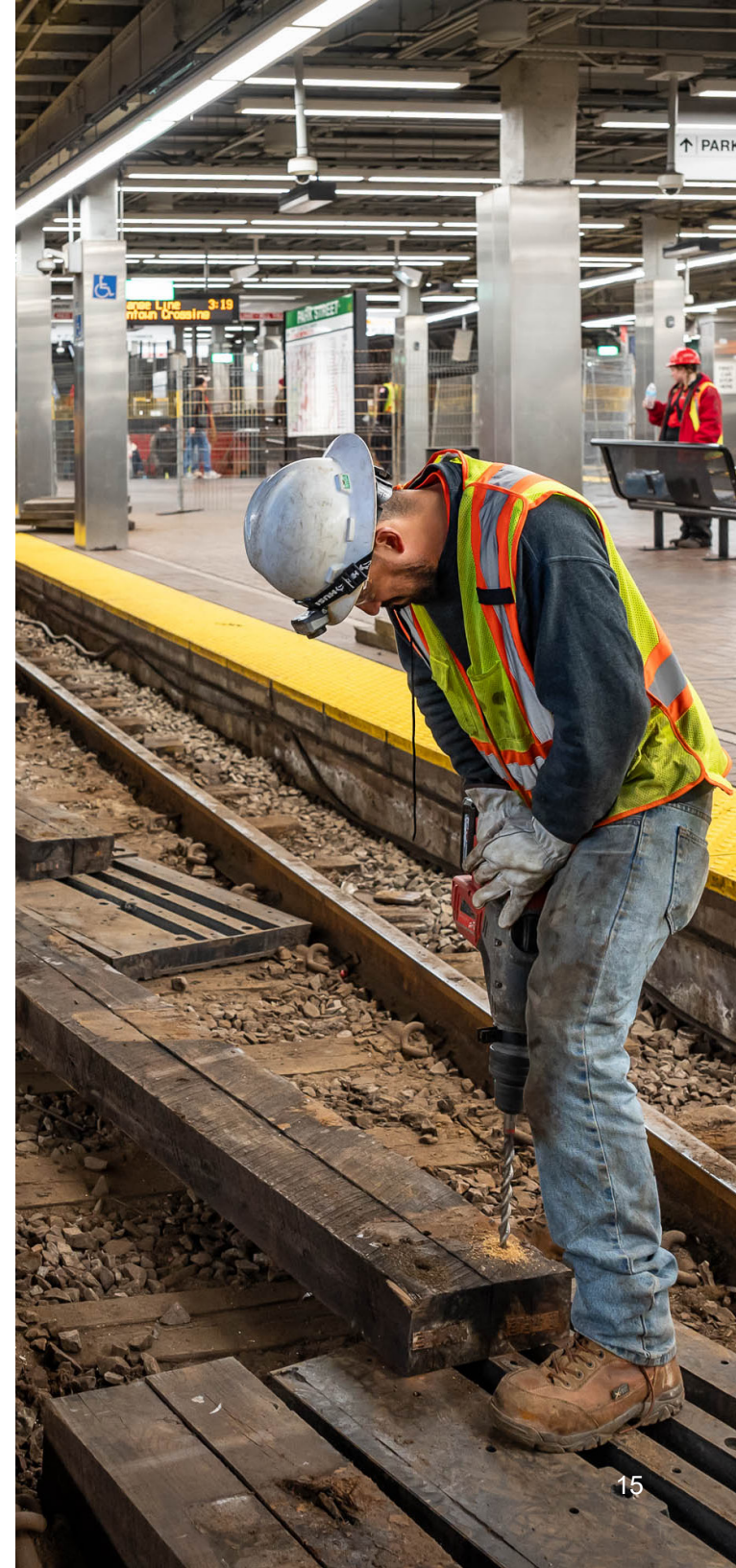
The Vision for the MBTA's FY25-29 CIP

In accordance with Gov. Healey, Lt. Gov. Driscoll, Sec. Tibbits-Nutt, and GM Eng, the Proposed MBTA's FY25-29 CIP advances towards a future transit system with projects that seek to rebuild, restore, and reimagine our system.

The Proposed FY25-29 CIP needs to balance the needs of today as we build for the transportation system of the future. To rebuild, restore, and reimagine our system, the CIP includes investments that **address critical asset needs** and **keep the T on a path to better safety, service, and sustainability**. To support these goals, the capital projects in the Proposed FY25-29 CIP are focused on the investment objectives listed below:

- **Safety, Reliability, and Modernization:** prioritize and promote safety, improve connectivity, modernize assets, and give riders more dependable and frequent service.
- **Accessibility:** ensure access for all riders when using our transit system.
- **Sustainability and Resilience:** help the State achieve its climate and mobility goals through electrification, resource efficiency, and the hardening of the system against extreme weather events.

Each project in the CIP may help fulfill more than one investment objective. Additionally, the Proposed FY25-29 CIP is also informed by priorities that help the MBTA target investments to revitalize our transit system.



What Priorities Help Guide the CIP?

In addition to the Healey-Driscoll Administration's FY25 H.1 budget recommendation, the development of the Proposed FY25-29 CIP is informed by the mission, values, and goals set forth in the MBTA's Strategic Plan. Additionally, our capital plan is informed by asset data derived from the 2023 Capital Needs Assessment, an analysis that helps to prioritize critical needs.

MBTA's Strategic Plan: Our Values and Goals

The MBTA Strategic Plan sets forth values of safety, service, equity, sustainability, and culture that guide our work at the T. The Proposed FY25-29 CIP incorporates this framework into project scoring and prioritization to ensure that capital investments help the MBTA meet the demands required to best serve our riders.

Asset Condition and the Capital Needs Assessment

The Capital Needs Assessment and Inventory (CNAI) is a routine analysis of the overall condition of the assets that make up our transit system. Last updated in 2023, it is a tool to help the MBTA identify the assets in need of, and ready for replacement, and develop a strategy to prioritize our most critical needs. The 2023 CNAI also calculates the SGR Index, which reflects the baseline cost necessary to bring all existing assets into SGR. Asset condition and criticality data from the 2023 CNAI is a key input into the Proposed FY25-29 CIP and supports the effective allocation of resources to assets most in need. Please visit [mbta.com/cnai](https://www.mbta.com/cnai) to learn more.

Ongoing Efforts

The CIP is also informed by other short- and long-term efforts, including, but not limited to:

- Focus40: The 2040 Investment Plan for the MBTA,
- Federal Transit Administration's Safety Management Inspection,
- Transit Safety Plan,
- Safety Improvement Plan,
- Transit Asset Management Plan,
- Plan for Accessible Transit Infrastructure (PATI),
- Sustainability and Vulnerability Assessments,
- Bus Network Redesign, and
- Rail Vision.

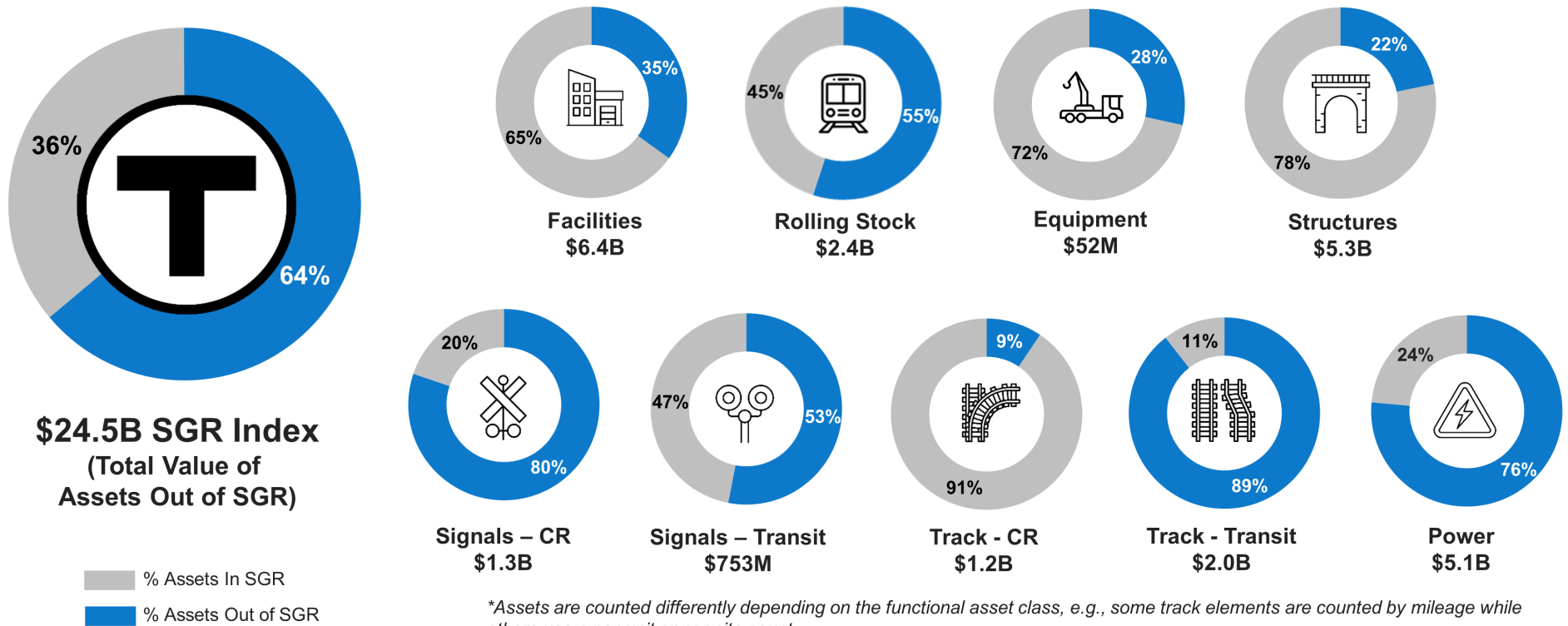
These and other priorities help guide the T in addressing two key challenges: significant SGR needs and limited financial resources. These key challenges require the MBTA to make tough decisions and prioritize capital expenditures that meet the needs of today, while modernizing assets to build towards the transportation system of the future.



The MBTA has Significant State of Good Repair Needs

Addressing critical asset needs is one of the key challenges that the T faces when investments are prioritized in the CIP's annual update process. The 2023 CNAI has highlighted that 64% of the 75,000+ assets that support our transit system are in need of, and ready for, replacement. The CNAI will help us develop a strategy to prioritize our Reliability and Modernization 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).

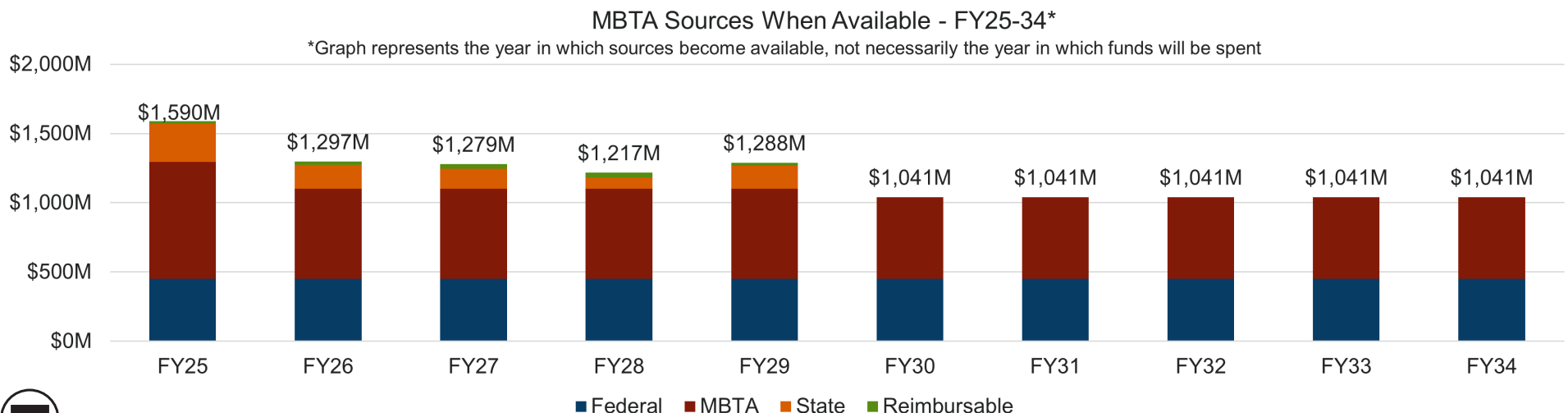


CIP Funding Sources are Expected to Decline

The MBTA has increased capital spend significantly over the past decade, building from \$631M in FY14 to a record-high of \$1.9B in FY22. However, based on current assumptions we project declining funding source availability for future CIPs. Given these projections, the Authority is going to be constrained in how much we can invest to address our critical needs.

Current out-year funding source projections, shown below, reflect a downward trend driven in part by the absence of State funds from FY30 on. Current State sources, tied to specific projects (such as Green Line Extension, South Coast Rail, and Red and Orange Line Vehicles) will continue to be drawn down up to FY29. Additionally, our projections assume a relatively flat level of MBTA revenue bond issuance, as increasing issuance would have significant impacts on the operating budget. Finally, we have made conservative assumptions on the availability

of Federal funding beyond FY26, the final year that the Bipartisan Infrastructure Law will be in effect. Given these projections and considering the \$9.7B programmed in the FY24-28 CIP, future CIPs beyond the FY25-29 window may be roughly half that size (\$5.2M over five years). This level of programmed spend will be far below what is necessary to support recent annual spending levels of approximately \$1.6 to \$1.9B. As the T faces these challenges, the Authority is revamping its Capital Program Strategy to efficiently spend our limited financial resources.



Rebuilding, Restoring, and Reimagining the System

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. The Authority has begun to restructure the organizational delivery of capital projects and is evaluating ongoing efforts to chart a path for efficiently improving our system.

The MBTA system is large, complex, and among the oldest in the United States. Our system is supported by more than 75,000 individual assets, some dating back more than 50 years. As demonstrated by the 2023 CNAI, our SGR needs are significant, but **we can fix this**.

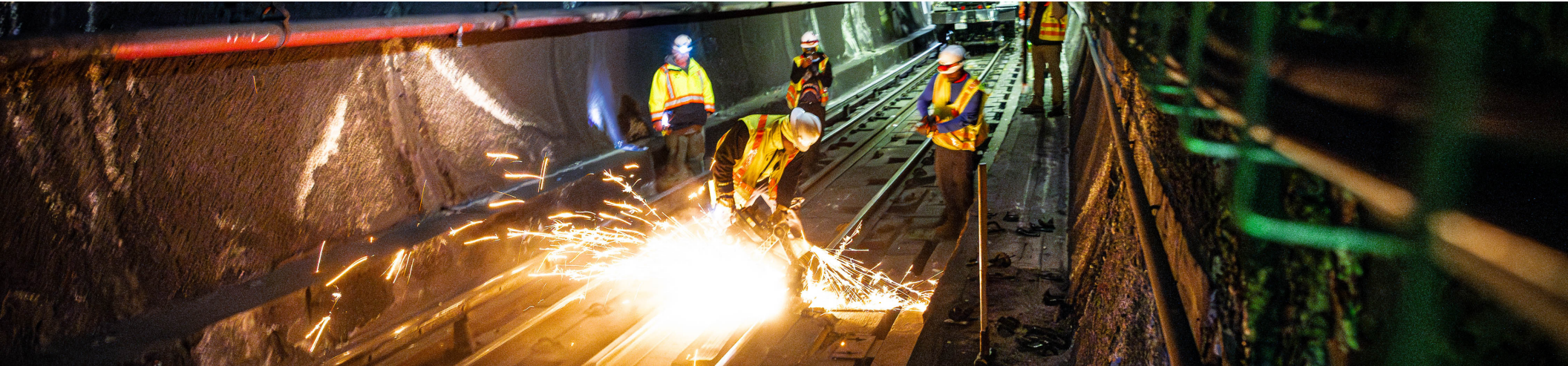
The vision for the T's capital program is to offer riders the transit system they expect and deserve by rebuilding service reliability and safety and reimagining the system towards the transportation system of the future.

To deliver on that vision, we are working to institutionalize an asset-focused, information-driven, coordinated, and disciplined strategy to capital investments, both within and beyond the CIP. To revamp its Capital Program Strategy, the T is implementing improvements to:

- **Use asset information to drive investment:** our asset management program continues to mature, and we are working to use more sophisticated asset information to drive project scoping and investment decisions.

- **Restructure the organizational delivery of capital projects:** capital delivery departments have been restructured with the purpose of improving the T's track record and accountability to deliver on-time and on-budget. Project management and delivery guidelines are also being reevaluated.
- **Improve right-of-way (ROW) access to minimize service disruption:** we are focused on improving ROW access across our system to support crucial maintenance, project construction, and ultimately fewer diversions for our riders in the long-term.
- **Build internal workforce capacity to support SGR:** the MBTA is also building internal workforce capacity to support maintenance and SGR work, creating efficiencies to deliver critically needed work for our system and to give riders the system they deserve.
- **Enhance competitiveness and focus on supplier and contractor diversity:** to spend more efficiently, the





Authority is evaluating how to better utilize consultant support, improve supplier diversity, and develop capital delivery mechanisms that work best for our needs and the needs of our riders.

- **Aggressively pursue grant opportunities:** in partnership with the State’s Federal Funds & Infrastructure Office, the T will continue to pursue discretionary grant funds and Federal funds. To date, the T has successfully secured \$252.7M in new funding through discretionary grant opportunities linked to the Bipartisan Infrastructure Law. This has helped the Authority advance key capital programs, such as Safety, Bus Electrification, System Accessibility, and Passenger Facilities.
- **Balance the needs of today as we build for the future:** to rebuild, restore, and reimagine our system, the T will remain focused on State of Good Repair while modernizing the system in the process. Taking advantage of these opportunities for innovation will allow

us to advance key initiatives such as the infrastructure for decarbonized service on the Commuter Rail’s Fairmount Line, funded in this year’s CIP.

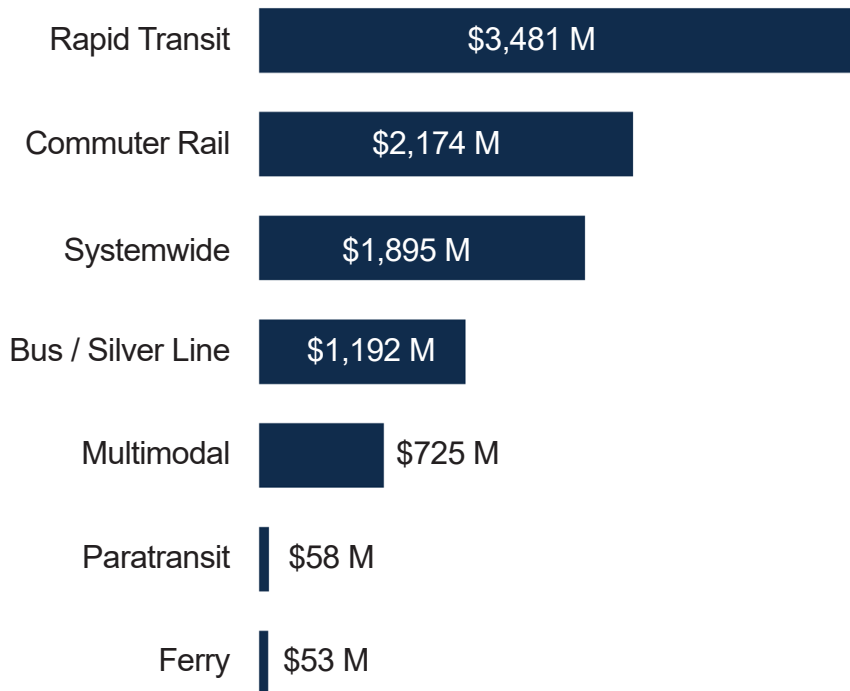
As part of these actions, we are undertaking a review of projects included in the prior FY24-28 CIP to understand the challenges the Authority is facing to deliver capital projects on-time and on-budget. This process will support the MBTA in establishing best practices to improve how we spend our limited financial resources to deliver system improvements effectively and efficiently.

Moving forward, the MBTA will continue to develop a capital strategy that prioritize the interests of our riders and workforce and ensure on-time and on-budget project delivery to meet the needs of today and of the future. The Proposed FY25-29 CIP serves as a first step in that direction as we continue to revamp our capital program.

Proposed FY25-29 CIP By the Numbers

The Proposed FY25-29 CIP includes over 630 capital projects. These projects account for a proposed programmed spend of \$9.6B over the next five fiscal years, which includes \$843M in new funding assigned to both existing and new projects. Bridge, track, and station improvements, as well as Bus and Rail modernization efforts, are major investments in this CIP.

FY25-29 Programmed Spend by Primary Mode



FY25-29 Proposed CIP Key Investments

Structure Improvements: along with full funding for North Station Draw 1 Bridge Replacement, the T is investing in urgent structural needs and life-extending bridge rehabilitation and repair, prioritized by asset condition and criticality.

Track Improvements: investments also focus on vital track upgrades, ROW access improvements, and measures to improve climate resiliency and redundancy on our system.

Station Improvements: we are funding accessibility improvements on the Green Line, Commuter Rail, and Ferry to ensure safe and accessible stations. Programmed funds also target station inspections and repairs.

Bus and Commuter Rail Modernization: we are advancing capital efforts to support Bus Network Redesign and Bus Transit Priority. We are also funding infrastructure upgrades for decarbonized service on the Fairmount Line.



Supporting the Transportation System of the Future

Our vision for the transportation system of the future is one of safe, reliable, electrified, resilient, and accessible service for the riders and communities that we serve. To advance towards this vision, the Proposed FY25-29 CIP allocates new and current funding to future of transit capital projects and key initiatives in alignment with our investment objectives.



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.



Enhanced and improved accessibility for the communities that we serve. Keeps the T on a path to accessible service across all modes.



Climate action responsive to weather resilience and decarbonization. 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.



Safety, Reliability, and Modernization

Capital projects tied to this investment objective seek to promote more dependable and frequent service, prioritize safety, modernize assets, and bring our system into a State of Good Repair (SGR). Many of the programmed investments in the Proposed FY25-29 CIP are focused on Safety, Reliability, and Modernization to give riders the system they deserve.

Programmed investments in the Proposed FY25-29 CIP seek to **bolster our track, power, structures, and asset management programs**. In alignment with the results of the Capital Needs Assessment and Inventory (CNAI) and the T's SGR Index, the CIP is focused on modernizing and bringing these assets into a State of Good Repair.

Additionally, the CIP aims to **enhance right-of-way (ROW) access on the Red Line and evaluate ways to improve project delivery**. Limited ROW access in our rapid transit system hinders our ability to perform vital maintenance and capital works, which results in diversions and slow zones. The CIP includes projects to increase ROW access and explore ways to continue this work across rapid transit lines to improve and maintain service reliability.

To give riders the system they deserve, proposed funding is also allocated to **strengthen inspections, repairs, and modernization of passenger and maintenance facilities**. This includes general repairs and facility upgrades to help the T advance toward a transportation system of the future.

Safety, Reliability, and Modernization Summary

- Over 490 projects in the CIP are linked to these objectives, comprising most of our investments.
- These projects focus on our track, power, and structures assets, in alignment with the results of our CNAI.
- Similarly to last year's CIP, Safety, Reliability, and Modernization continue to be the focus of the capital plan.
- The CIP continues to fund critical activities tied to the Corrective Action Plans that resulted from the Federal Transit Administration's Safety Management Inspection.
- In FY24, the State's budget allocated \$100M to the MBTA to help advance this investment objective.



Modernizing our System

Bringing our assets into a State of Good Repair is an opportunity to upgrade the transit system. Assets that have reached the end of their useful life are frequently replaced with more innovative and modern equipment.

Below are examples of SGR capital projects that the MBTA utilizes as an opportunity to innovate and modernize the service we provide to our riders:

- **Green Line Type 10 Vehicle Procurement:** this new fleet will feature improved accessibility, increased capacity, and the latest generation of crash-safety technology.
- **North Station Draw 1 Bridge Replacement:** replacement of the deficient 1930's drawbridge that will ensure the continuity of all service on the North Side of the Commuter Rail and Amtrak's Downeaster. Includes new tracks to support reliability, improve on-time performance, and add arrival/departure capacity to the North Station's rail terminal.
- **Commuter Rail Safety and Resilience Program:** replacement of outdated signal assets with Positive Train Control (PTC) and Automatic Train Control (ATC) technology to monitor a train's location, direction, and speed in real time. This modern equipment can alert of potentially unsafe conditions and automatically stop trains if necessary.

The modernization of our transit system can also support other investment objectives focused on Accessibility, and Sustainability and Resilience.



Accessibility

Accessibility-related investments in the CIP include capital projects that provide significant accessibility benefits. These projects seek to ensure access for all riders, ranging in scale and scope, to support our commitment to build a fully accessible transit system from our fleet to our passenger facilities.

Accessibility-related investments comprise three major categories: **accessible passenger facilities**, **accessible vehicles and vessels**, and **improvements to accessibility features** throughout our transit system.

Projects related to **accessible passenger facilities** range from large-scale station projects to targeted improvements of our elevators, escalators, ramps, platforms, bus stops, and other assets to ensure access to all riders.

Regarding **accessible vehicles and vessels**, our focus is on ensuring that our revenue fleet is fully accessible. New fleet procurement provides an opportunity for accessibility improvements such as wider doors and improved announcement systems on our new Red and Orange Line cars.

These improvements as well as other **accessibility features** tied to wayfinding and accessible information help the T advance towards its goal of becoming a model for accessible public transit.



Accessibility Summary

- The CIP includes major accessibility upgrades at over 40 locations in our system, including both new and existing programmed investments.
- Most of our accessibility-related investments comprise projects focused on our passenger facilities and vehicles, given how proximate these assets are to our riders.
- Ridership, number of older adults and people with disabilities, existing barriers to access, and ease of implementation are some of the factors that the MBTA Department of System-Wide Accessibility evaluates to establish priorities for accessibility-related investments.
- In FY24, the State's budget allocated \$70M to the MBTA to help advance this investment objective.

Access in Motion

The MBTA is more accessible than ever. Over the past decade, we've made thousands of improvements, and new funding in the CIP is aimed at continuing that track record to further advance accessibility priorities.

Below are examples of accessibility-related capital projects that the MBTA is proposing to fund to ensure access to all riders that rely on our system:

- **Accessible Passenger Facilities:** the MBTA is proposing to fully fund, through construction, major accessibility upgrades at the following inaccessible stations: Waban, Beaconsfield, Elliott, Chestnut Hill, Newton Highlands, and Symphony Station on the Green Line. Winchester Center, North Wilmington and Natick Center on the Commuter Rail Station.
- **Redundant and Modernized Elevators:** the MBTA also proposes funding for new and modernized elevators at several key locations including Downtown Crossing (first ever accessible connection between the Red and Orange lines), Central Square, Jackson Square, and Forest Hills.
- **Bus and Ferry Accessibility Improvements:** the Authority proposes to continue funding accessibility improvements at priority bus stops in accordance with the Plan for Accessible Transit Infrastructure (PATI). Additional funds are also allocated to infrastructure improvements in our Ferry system, which includes a range of accessibility improvements.



Sustainability and Resilience

Capital investments across the T in the Proposed FY25-29 CIP support the State's climate and mobility goals by increasing the sustainability and resilience of our transit system through electrification, resource efficiency, and the hardening of our system against the effects of a changing climate.

The proposed FY25-29 CIP includes projects dedicated to system **resilience** and **sustainability**, as well as State of Good Repair projects which significantly benefit the MBTA's climate resilience and service redundancy.

Sustainability-related investments help reduce the MBTA's carbon footprint and greenhouse gas emissions. In the Proposed FY25-29 CIP, we are funding fleet upgrades, bus priority work, energy efficiency measures, and electric vehicle charging stations to reduce emissions and support the Commonwealth's climate goals.

Resilience-related investments help harden the system against extreme weather events, encompassing climate adaptation and vulnerability solutions. Investments with significant resilience benefits also include those that increase system redundancy. The Proposed FY25-29 CIP continues to fund climate change vulnerability assessments and adaptation planning, as well as track and signal work on our system to support service redundancy and reliability.

Sustainability and Resilience Summary

- Over 170 projects in the proposed CIP provide significant benefits to sustainability and/or resilience.
- Most of our projects with sustainability and resiliency benefits focus on our fleet, facilities, track, signal, and power assets. Additionally, climate change mitigation and adaptation planning and assessments are funded through the CIP.
- Asset vulnerability to climate change, weather resilience improvements, air quality, greenhouse gas emissions, and resource consumption are some of the key factors that the Environment Department at the MBTA evaluates to establish priorities for sustainability and resilience investments.
- In FY24, the State's budget allocated \$110.8M to the MBTA to support projects with significant sustainability and resilience benefits.



Climate Mitigation and Adaptation at the T

Our climate change strategy, supported by new funding in the CIP, is designed to mitigate the impact of greenhouse gas emissions and adapt to the effects of a changing climate by building a resilient system.

Below are examples of sustainability and resilience-related capital projects that the T is proposing to fund to support climate mitigation and adaptation:

- **Commuter Rail Washout Prevention Program:** immediate and long-term drainage improvements to address track and retaining wall washout vulnerabilities exacerbated by flooding and extreme rainfall events.
- **MBTA Electric Vehicle Charging Stations:** implementation of electric vehicle supply equipment at our facilities. This infrastructure is critical to meeting statewide emission reduction targets and supporting the electrification of our fleet.
- **Climate Change Vulnerability Assessments and Adaptation Planning:** evaluations of the impact of climate change on assets, facilities, and systems across all modes. Aligned with organizational priorities, these assessments identify climate adaptation and mitigation strategies for our system.

Capital projects that focus on our investment objectives also support our Modal Initiatives as we build towards a future transit system.





Proposed FY25-29 CIP: Modal Initiatives



Rapid Transit | Overview

The MBTA's transit rail, or rapid transit, system covers 128 miles of revenue track and consists of five rail lines (Red, Orange, Blue, Green, and Mattapan Lines) connecting riders across the Boston region.

3

heavy rail lines

128

miles of revenue track

383,321

average weekday rides
(Oct-23)

2

light rail lines

153

stations

\$3,481M

FY25-29 CIP investment

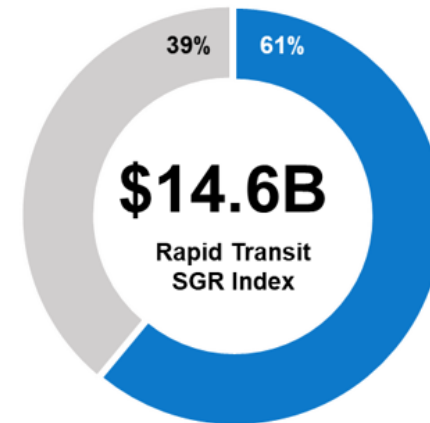
Rapid Transit | Needs and Investment

The rapid transit system is the core of the MBTA transit network. It is a legacy of early streetcar systems that were built in Boston in the 19th century and includes some of our oldest infrastructure. The first subway tunnels built in the United States are still in use today connecting Government Center, Park Street, and Boylston stations on the Green Line.

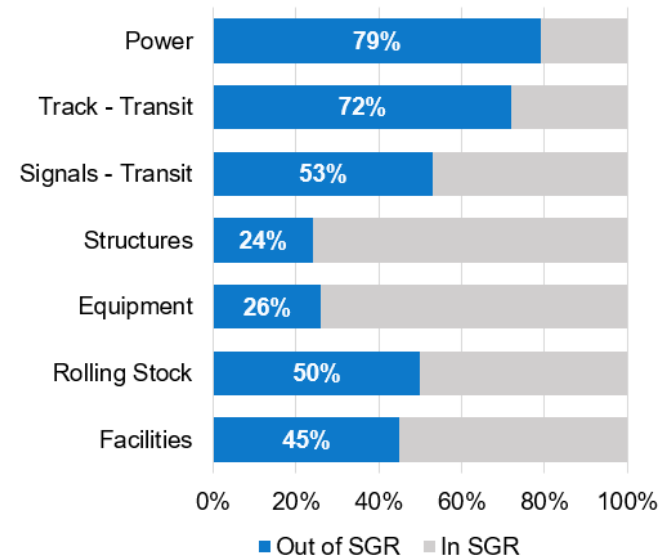
Due to the age of this part of the network, our capital needs for rapid transit are significant. As demonstrated by the 2023 Capital Needs Assessment and Inventory that relies on 2021 asset data, 53% of our transit signals, 72% of our transit track, and 79% of our power assets are out of a State of Good Repair. Much of the vehicle fleet is in need of replacement, and our stations and facilities require upgrades to make them more reliable, efficient, and accessible.

The FY25-29 CIP includes a variety of capital projects to address maintenance and asset preservation with an eye toward modernizing and upgrading the transit system. Vehicle overhaul and replacement, track renewal, station renovation, bridge rehabilitation, and power and signal upgrades are just some of the investments we are making.

Percent of Assets Out of SGR | Rapid Transit



Percent of Assets Out of SGR by Asset Class | Rapid Transit



Rapid Transit | Key Initiatives

Track Improvement Program (TIP)

The MBTA is completing a major track repair and replacement initiative to eliminate all speed restrictions in existence as of November 2023 (191 speed restrictions in total) by the end of 2024. This program will help give riders the system they expect and deserve, ensure the continued safety of our customers and employees, and address critical asset needs regarding our transit track infrastructure.

Red and Orange Line Vehicle Replacement

The existing Red and Orange Line heavy rail fleets are currently being replaced with vehicles that feature more spacious interiors, modern audio and visual communication systems, additional accessibility areas, and onboard diagnostics for operations and maintenance staff.

Symphony Station Accessibility Improvements

Symphony Station serves the E Branch in one of Boston's busiest cultural and historic neighborhoods and is not currently accessible to people with wheeled mobility devices. We're working on major improvements to the station including raised platforms, accessible bathrooms, improved wayfinding, and the addition of four elevators to make this station accessible and safer for riders.



Bus | Overview

The MBTA bus system covers over 150 routes across Greater Boston, five of which operate as Silver Line bus rapid transit routes. There are also 15 frequent bus routes, providing increased service and frequency to areas that experience high ridership.

150+
bus routes

454K
weekly miles of
weekday service

320,056
average
weekday rides
(Oct-23)

5
Silver Line Rapid
Transit Routes

7,000
bus stops

\$1,192M
FY25-29 CIP
investment



Bus | Needs and Investment

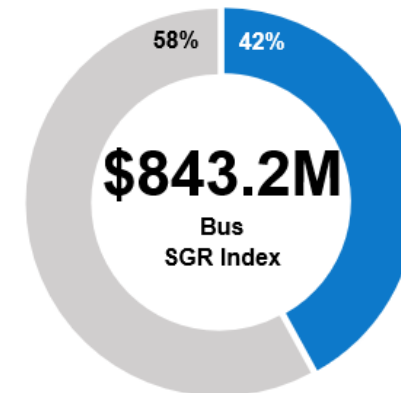
The MBTA bus system is essential to regional mobility in our transit network carrying 40% of our system’s ridership. Buses have grown to represent the largest portion of the revenue vehicle fleet.

Today the bus network connects neighborhoods in Greater Boston, and offers service to several surrounding cities and towns, from Bedford and Medford to Saugus and Salem. The service area includes more than 150 routes that run between five and seven days a week.

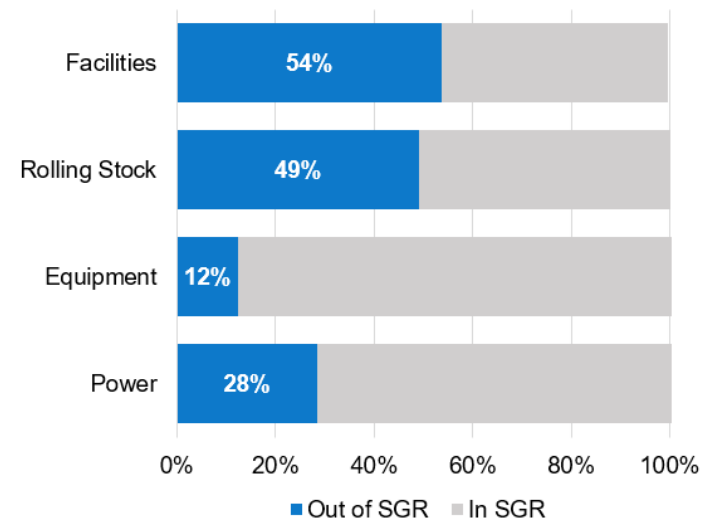
The bus network relies on a variety of capital assets including vehicles, support facilities, passenger facilities, and transit priority infrastructure such as bus lanes. As demonstrated by the 2023 Capital Needs Assessment and Inventory that relies on 2021 asset data, 49% of our bus fleet, 54% of our bus facilities, and 12% of our non-revenue equipment assets supporting bus are out of a State of Good Repair. Additionally, many of our bus stops lack shelters and real-time customer communications.

The FY25-29 CIP includes investments in the ongoing replacement and electrification of our bus fleets, modernization of our bus facilities, and customer-facing upgrades to our bus stops and transit priority infrastructure.

Percent of Assets Out of SGR | Bus



Percent of Assets Out of SGR by Asset Class | Bus



Bus | Key Initiatives

Bus Network Redesign (BNR)

Many MBTA bus routes follow historic trolley corridors that do not reflect how people travel today. In 2022, the MBTA adopted BNR system changes to be implemented over the next five years. To implement them, the CIP continues to fund BNR's capital needs to add more frequent and all-day service to busy neighborhoods, better connections to more places in our service area, and make the T's bus network easier for riders to use.

Bus Transit Priority

The MBTA adopted a Transit Priority Vision in 2023 to invest in areas with chronic delays and high ridership. To build towards this vision, the CIP funds the implementation of additional dedicated bus lanes, shared bus/bike lanes, and transit signal priority systemwide. In partnership with municipalities, the MBTA is advancing quick build and major corridor projects to reduce delay and improve bus reliability.

Bus Facility Modernization and Electrification

Five of our ten bus maintenance facilities were built before 1942 and one is a temporary facility built in 2004. To support bus reliability and to prepare for a battery electric fleet, the MBTA is committed to replacing or renovating our obsolete facilities. As part of a phased approach, we are **retrofitting the North Cambridge garage and building a brand-new Quincy facility for electrified bus service.**



Commuter Rail | Overview

The MBTA Commuter Rail provides Regional Rail style, all day service over 370 route miles from Boston into eastern and central Massachusetts, as well as parts of Rhode Island. The system consists of 14 lines, five of which run service from North Station and nine from South Station.

5

north-side lines

700+

miles of revenue
track

98,205

average
weekday rides
(Oct-23)

9

south-side lines

137

stations and
stops

\$2,174M

FY25-29 CIP
investment



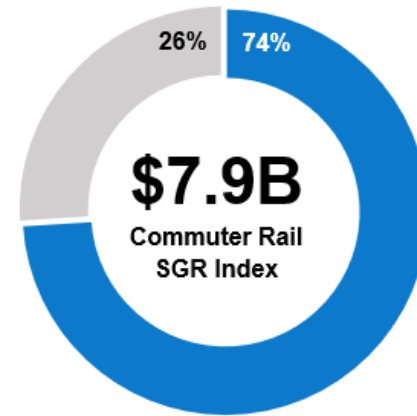
Commuter Rail | Needs and Investment

The MBTA Commuter Rail system is a critical transit connection between Boston and its surrounding region in eastern Massachusetts and Rhode Island. It is a legacy of the region's robust railroad network built in the 19th and 20th centuries which started as a Regional Rail style service linking towns and cities.

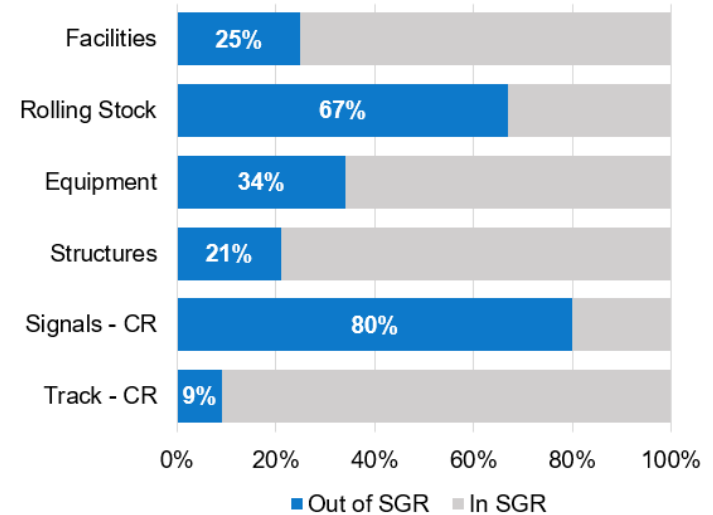
The age and scale of the Commuter Rail network contribute to a large amount of capital need. As demonstrated by the 2023 Capital Needs Assessment and Inventory that relies on 2021 asset data, 80% of our Commuter Rail signals, 67% of our rolling stock, and 34% of our equipment (non-revenue vehicle) assets are out of a State of Good Repair. Additionally, many of our bridges, stations, and facilities require upgrades to make them more reliable, efficient, and accessible.

The FY25-29 CIP includes a variety of capital projects to replace and modernize the system and to enable the transition to a decarbonized Regional Rail service which better meets the needs of riders. Additionally, we are investing in vehicle overhaul and replacement, track renewal, station renovation and accessibility upgrades, bridge rehabilitation, and power and signal replacement.

Percent of Assets Out of SGR | Commuter Rail



Percent of Assets Out of SGR by Asset Class | Commuter Rail



Commuter Rail | Key Initiatives

Rail Modernization

Our Regional Rail Modernization efforts include targeted investments on the North and South Sides of the Commuter Rail that support future electrified, all-day, bidirectional regional rail service, high frequency urban rail service, and a decarbonized fleet. The Proposed FY25-29 supports key modernization efforts on the Commuter Rail:

Fairmount Line Infrastructure for Decarbonized Service

Along with facility improvements, the MBTA is upgrading track, signal, and power infrastructure to operate a pilot decarbonized 20-minute service along the Fairmount Line.

Environmental Justice Corridor Decarbonized Service

Planning and design activities necessary for frequent, decarbonized service are ongoing, including power upgrades, track changes, and platform improvements. This corridor encompasses service from North Station through Lynn and the Beverly section of the Rockport Line.

Commuter Rail Signal State of Good Repair Program

Improvements to the Commuter Rail signal system are vital for improved service reliability and resiliency. With over 275 grade crossings and hundreds of signal interlockings, the system is expansive. The MBTA is bringing signal assets into a State of Good Repair with programmed repairs and replacements to grade crossings, signal interlockings, communications systems, and safety systems.



Ferry and Paratransit | Overview

The MBTA's ferry system provides service through the Boston Harbor with connections to Charlestown Navy Yard, East Boston, Logan Airport, Winthrop, Lynn, Hull, Hingham, and Quincy.

13

ferry terminals

5,019

average
weekday rides
(Oct-23)

\$53M

FY25-29 CIP
investment

The RIDE is the MBTA's on-demand paratransit service, and is available in 58 cities and towns in the Greater Boston area.

58

communities

3,806

average
weekday rides
(Oct-23)

\$58M

FY25-29 CIP
investment



Ferry and Paratransit | Needs and Investment

Ferry

Water transportation has long been a part of Boston's transportation history, with the area's first ferry opening in 1631 supporting service between the Shawmut Peninsula and Charlestown. Today, for residents of Massachusetts' North or South shores, the ferry remains a popular option for commuting to work and for scenic routes into the city.

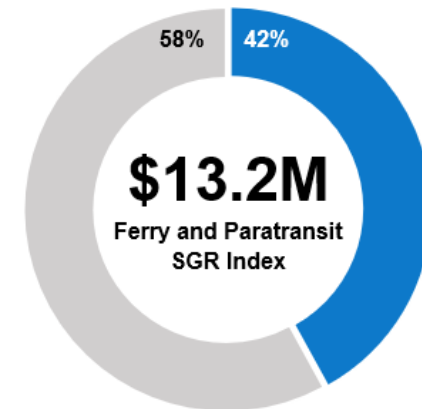
The FY25-29 CIP includes investments in the ongoing maintenance of our ferry vessel fleet, as well as funding to support dock and terminal improvements and the procurement of additional vessels.

Paratransit

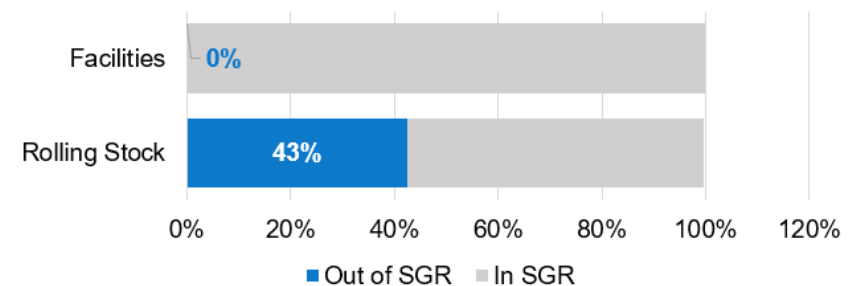
The RIDE paratransit service provides door-to-door, shared-ride public transportation to people who can't use the subway, bus, or trolley all or some of the time due to temporary or permanent disability. It complements the fixed-route network and operates in compliance with the Federal Americans with Disabilities Act (ADA).

The FY25-29 CIP includes funding to support the ongoing replacement of RIDE vans and sedans that have reached the end of their useful life, as well as investment in a new software solution to better serve our customers.

Percent of Assets Out of SGR
Ferry and Paratransit



Percent of Assets Out of SGR by Asset Class |
Ferry and Paratransit



Ferry and Paratransit | Key Initiatives

Ferry Accessibility Improvements

Existing ferry docks across the MBTA system are being upgraded with accessibility improvements, including low-boarding apparatuses, ADA-compliant gangways, and more effective transition plates, as directed from the recent comprehensive accessibility assessment for the MBTA ferry system.

The RIDE Vehicle Procurement

The MBTA replaces The RIDE paratransit service vehicles on an ongoing basis to ensure the full fleet is in a State of Good Repair with reliable in-vehicle technology. Our ongoing vehicle procurement improves safety, reliability, and our customer experience.



Systemwide and Multimodal Initiatives

The Proposed FY25-29 CIP programs over \$1,890M towards systemwide initiatives and more than \$720M towards multimodal initiatives. These initiatives are crucial for the safety, reliability, and modernization of our system.

Systemwide initiatives are projects that have impacts across all modes, or which cannot be attributed to a particular mode. **Multimodal initiatives** are those projects that can be equally attributed to more than one specific mode.

These initiatives target the inspection, repair, and upgrade of our assets (e.g., facilities, bridges, tunnel, track, power) and fleet throughout the system. They also include efforts related to fare technologies, as well as flood mitigation and other resiliency measures to harden the system against extreme weather events.

Key examples of systemwide and multimodal initiatives receiving new funding in the CIP include critical structural repairs to our tunnels and structures; the repair and rehabilitation of our bridges; and our asset management and stormwater management programs. Proposed funding also supports our systemwide non-revenue fleet and power assets, which are crucial equipment for system maintenance and reliability.

To know more about our projects, please visit [mbta.com/projects](https://www.mbta.com/projects). For additional CIP resources, please visit [mbta.com/cip](https://www.mbta.com/cip) and refer to the Public Engagement and Resources section of this book.





Proposed FY25-29 CIP: Public Engagement and Resources



CIP Public Engagement

We want to hear from you! The MBTA is seeking comments from the public on the Proposed FY25-29 CIP. Tell us how we can improve our transit system, support the transportation system of the future, and give riders the system they expect and deserve. Public feedback is important to the CIP development process, and we appreciate your input.

Attend a public meeting

Join us for one of our public meetings, where we will provide an overview of the Proposed FY25-29 CIP and invite attendees to share their comments:

- **Thursday, May 2, 2024, 6:30 pm (in-person meeting)**
Location: MassDOT Conference Rooms #2 and #3,
10 Park Plaza, Boston, MA 02116
- **Tuesday, May 7, 2023, 6:30 pm (virtual meeting)**
Virtual public meeting via Zoom

Meeting registration links, presentation materials, and recordings will be made available on [mbta.com/cip](https://www.mbta.com/cip).

Submit your feedback

If you are unable to attend a public meeting, you are welcome to share your comments by:

- Completing our CIP online comment form available at [mbta.com/cip](https://www.mbta.com/cip).
- Sending an email to cipengagement@mbta.com
- Sending a letter to: MBTA Capital Investment Plan
c/o MBTA General Manager
10 Park Plaza, Suite 3830
Boston, MA 02116

The public comment period for the Proposed FY25-29 MBTA CIP will open on April 25, 2024, and close on May 16, 2024. All comments will be reviewed by MBTA staff, and summary responses will be shared on [mbta.com/cip](https://www.mbta.com/cip).



CIP Additional Resources

The CIP Book summarizes the vision for the MBTA's FY25-29 capital update and our Capital Program Strategy. In addition to the CIP Book, there are other resources at your disposal to learn more about projects included in the proposed plan as well as key milestones in the CIP development process.

MBTA's Capital Investment Plan website

To learn more about the CIP, review the currently approved CIP, or access prior CIPs, please visit [mbta.com/cip](https://www.mbta.com/cip).

MBTA's Capital Needs Assessment website

To learn more about the 2023 Capital Needs Assessment and Inventory, please visit [mbta.com/cnai](https://www.mbta.com/cnai).

Proposed FY25-29 CIP's project list

The project list provides a detailed listing of all capital projects included in the Proposed FY25-29 CIP. The list, which includes description, phase, primary mode, planned five-year spend, and total authorized budget by project, is available at [mbta.com/cip](https://www.mbta.com/cip).

MBTA's Projects website

If you are seeking information on specific projects, please refer to [mbta.com/projects](https://www.mbta.com/projects). This website provides project details, updates, and a filtering option by mode. Not all projects included in the CIP's project list may be available for review on this website.

MBTA's Board of Directors materials and presentations

A key aspect of the CIP development process is our engagement with the MBTA's Board of Directors and the Audit and Finance Subcommittee. All board materials and meeting recordings are available at [mbta.com/events](https://www.mbta.com/events).

Below are the engagements we have had with the MBTA's Board of Directors and the Audit and Finance Subcommittee as part of the FY25-29 CIP roadmap:

- **[FY25-29 CIP Intro](#)**: overview of the CIP development process and funding sources. Presented to the MBTA's Board of Directors in [January 2024](#).
- **[FY25-29 CIP Scoring Preview](#)**: project scoring and prioritization approach for the FY25-29 CIP. Presented to the Audit and Finance Subcommittee in [October 2023](#).
- **[Final FY24-28 CIP](#)**: overview of the FY24-28 CIP as approved by the MBTA's Board of Directors. Presented in [July 2023](#).





**Massachusetts Bay Transportation Authority
FY25-29 Capital Investment Plan (CIP)
Proposed - April 2024**