



Massachusetts Bay Transportation Authority

Introduction to the FY24-28 Capital Investment Plan and FY22 Federal Grant Recap

Audit and Finance Subcommittee Meeting

December 1, 2022

Introduction to the FY24-28 Capital Investment Plan



5-Year MBTA Capital Investment Plan

What is the Capital Investment Plan (CIP)?

- It is a short-term, financially constrained investment program that includes all our capital expenses over the next five years. It is a rolling plan, updated annually
- It funds the planning, design, construction, maintenance, and acquisition of capital assets across the transit network
- It includes unique, asset-based capital projects to modernize, expand, and increase the reliability of the transit network to support the Authority's priorities and goals

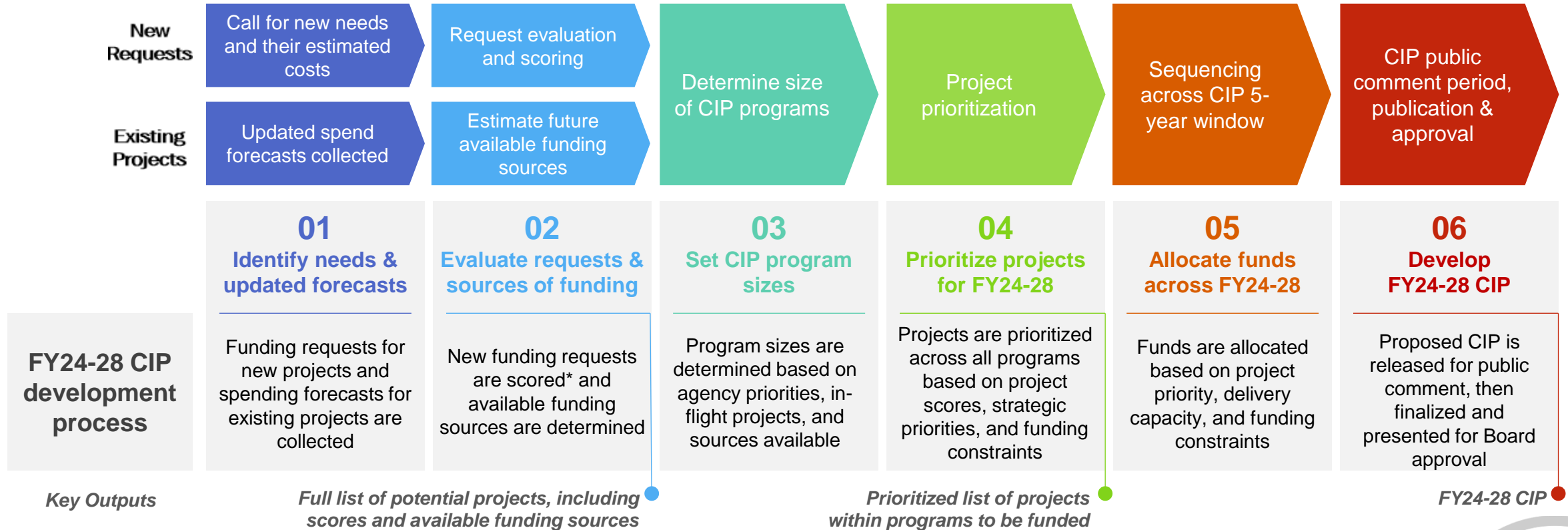
What is a Capital Project?

- Capital projects are investments or activities related to acquiring, renewing, constructing, improving, or maintaining a capital asset, including project planning and design
- Capital assets are vehicles, facilities, units of equipment, or infrastructure elements with a useful life of more than one year and acquisition cost equal or greater than \$5,000



CIP Development | 6 Key Steps

The key steps for developing the FY24-28 CIP



*Requests will be evaluated with an increased emphasis on system safety and security (asset conditions and inputs from Safety and Security departments), in addition to mobility, cost effectiveness, sustainability and resiliency, policy support, social equity and economic impact.



CIP Investment Programs

Asset class strategies are used to inform program sizing and investment priorities

Reliability and Modernization Programs (7)

Improve the reliability of the system and modernize existing assets

Focused on State of Good Repair and continued safety of riders and employees



Bridge and Tunnel

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, transit, and bus systems



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 the customer experience



Vehicles

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



Business and Operational Support

Investments in asset management, safety and security, communications, and other systems supporting operations



Technology and Innovation

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

Expansion Programs (3)

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



Expansion Projects

Planning and design of targeted expansion projects identified as next priorities



FY24-28 CIP | Goals

Continue to develop and publish a standalone MBTA CIP with asset-based Programs

- Use asset class strategies to inform program sizing and investment priorities
- Publish a FY24-28 MBTA CIP Book that clearly communicates the agency's capital investment goals and its modal and asset investment strategies
- Implement a standalone public engagement process for the MBTA CIP that exists separately from, but in coordination with, the MassDOT process

Alignment of the CIP with the FTA Safety Management Inspection Report Findings

- Continue to advance key safety investments that are underway or planned and that are instrumental to reducing safety risks, increasing system reliability, lowering maintenance costs and improving system performance
- Increase focus on system safety and State of Good Repair in CIP project scoring criteria
- Evaluate existing, planned and new capital projects to ensure project prioritization is aligned with the resource levels available to perform mission-critical activities

Drive key efforts to support future capital plans that are data-driven, asset-informed and committed to the agency's strategic priorities

- Continue development of a database to streamline business processes, support capital planning, and enable more detailed analysis of the capital program
- Continue coordination with internal partners to strengthen decision-making processes and align them with the agency's strategic goals

FY24-28 CIP | Focus on Safety

The MBTA's FY23-27 CIP invests heavily to mitigate safety risks and improve asset conditions:

- Safety and state of good repair investments account for \$8.7B or 90% of the programmed investments

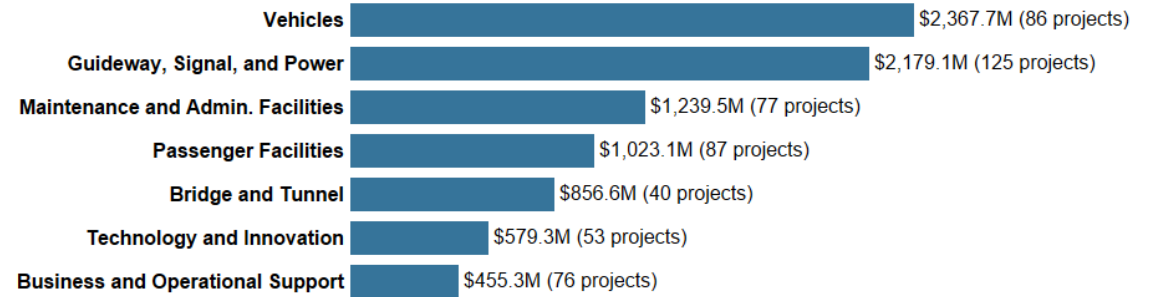
In the FY24-28 CIP, the MBTA will continue to advance key safety investments that are underway and planned:

- These investments are instrumental to reduce safety risks, increase system reliability, lower maintenance costs, and improve system performance

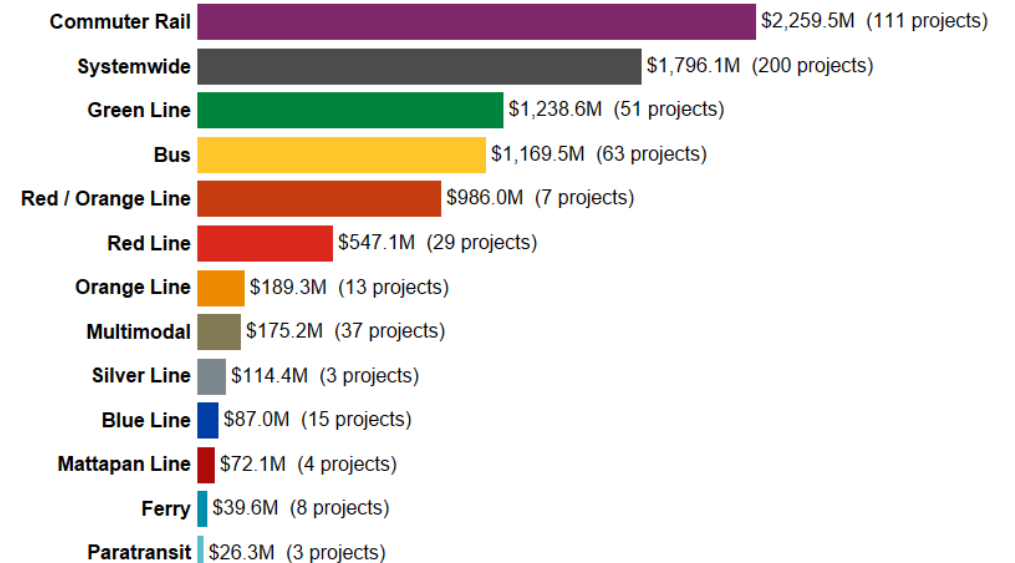
The FY24-28 CIP will be aligned to the Authority's response to the FTA's Safety Management Inspection:

- The T remains focused on the strategic and thoughtful implementation of improvements across the agency to address the documented findings
- As Corrective Action Plans (CAPs) are implemented, the FY24-28 CIP development process will ensure the identification and prioritization of these safety-critical activities

FY23-27 Programmed Spend in Reliability / Modernization by CIP Program



FY23-27 Programmed Spend in Reliability / Modernization by Mode



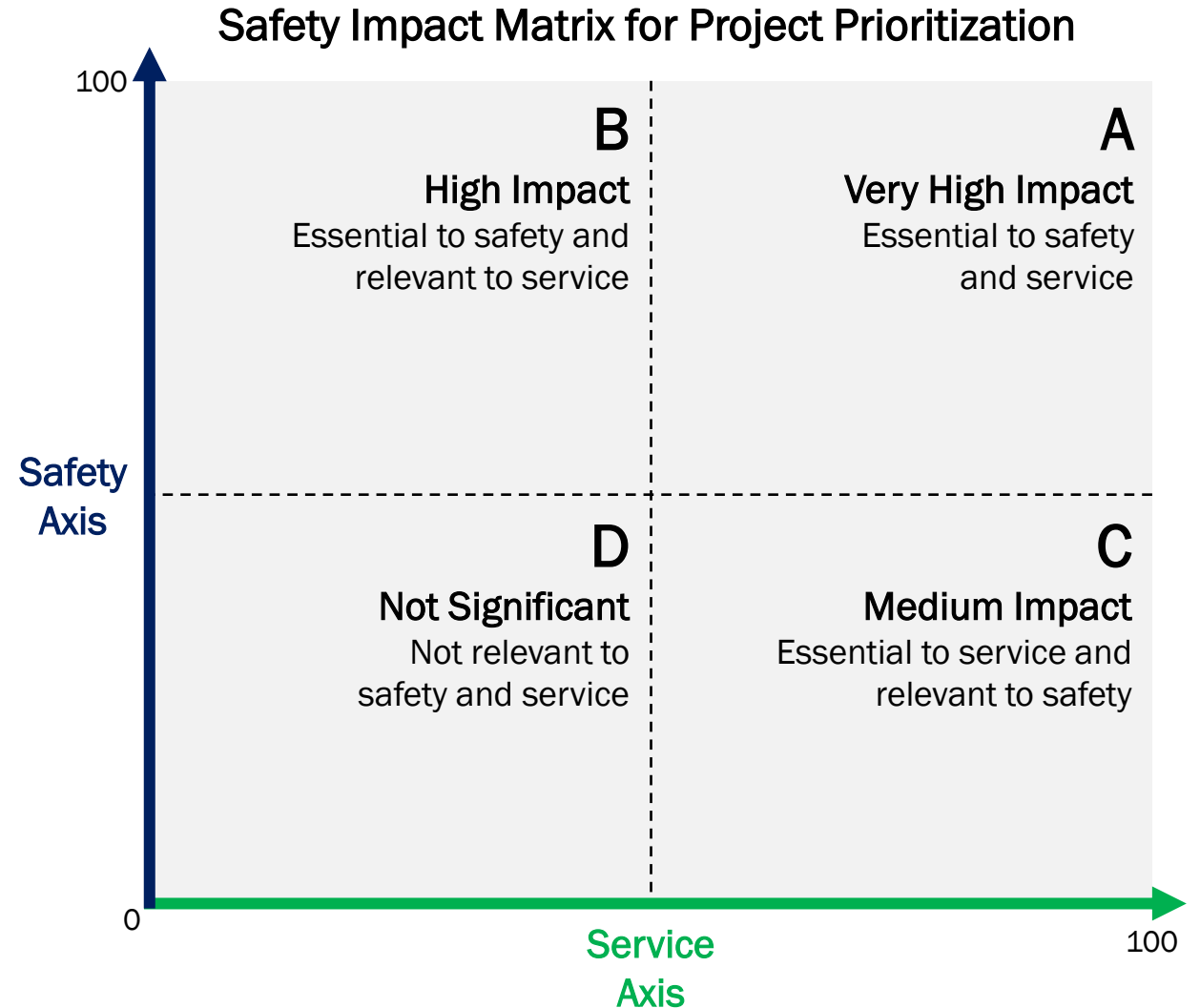
Updated Scoring Criteria and Weights

Scoring has been modified to place an increased emphasis on State of Good Repair, safety, and security, with these topics making up 50% of a project's total weighted score. Aspects related to climate mitigation and adaptation have been consolidated in an updated Sustainability and Resiliency criterion.

	Criteria	Description	Sub-criteria	Scoring Weights by Priority	
				Rel. / Mod.	Expansion
Safety-Related Criteria (50%)	State of Good Repair	The extent to which the project contributes a state of good repair on the transportation system and aligns with asset management goals	<ul style="list-style-type: none"> Asset Condition (6 points) Impact to Other Assets (2 point) Operations Criticality (2 points) 	30%	N/A
	Safety and Security	The extent to which the project addresses documented or identified safety issues and hazards, and security vulnerabilities and risks	<ul style="list-style-type: none"> Impact on System Safety (7 points) Impact on System Security (3 points) 	20%	N/A
	Mobility	The extent to which the project is intended to provide modal options efficiently and effectively for all users through benefits to reliability, accessibility, and other measures of service quality.	<ul style="list-style-type: none"> Impact on Reliability (2 points) Impact on Accessibility (2 points) Impact on Customer Experience (2 points) Impact on Riders (4 points) 	10%	25%
	Cost Effectiveness	The extent to which the project impacts operating costs and revenues and maximizes the return on the public's investment.	<ul style="list-style-type: none"> Impact on Operating Costs (5 points) Impact on Operating Revenues (5 points) 	10%	25%
Climate / Environment Criterion (10%)	Sustainability and Resiliency	The extent to which the project supports climate sustainability and resiliency, meets state goals of improving air quality and reducing greenhouse gases, and results in a reduction of pollution.	<ul style="list-style-type: none"> Flood Risk (3 points) Severe Weather Resiliency (3 points) Air Quality and GHG Reduction (2 points) Reduce Pollution and/or Natural Resource Consumption (2 points) 	10%	10%
	Policy Support	The extent to which the project is aligned with MBTA policy priorities, including Focus 40.	<ul style="list-style-type: none"> Alignment with Focus40 (5 points) Alignment with MBTA Strategic Planning Report (5 points) 	5%	10%
	Social Equity	The extent to which the project equitably distributes social, economic, and health benefits to residents and local businesses.	<ul style="list-style-type: none"> Benefits to EJ and Title VI Communities (7 points) Additional Equity Benefits to Vulnerable Populations (3 points) 	10%	15%
	Economic Impact	The extent to which the project supports economic growth in the Commonwealth.	<ul style="list-style-type: none"> Impact on Connectivity to Employment Centers (3 points) Impact on Corridors At or Near Capacity (3 points) Impact on Communities with Transit-Supportive Land Use (3 points) Impact on Housing Choice Communities (1 point) 	5%	15%

Prioritizing Key Safety Projects | Safety Impact Matrix

- To support the agency in prioritizing and elevating key safety projects, a new safety impact matrix has been developed
- Safety impact is conceptualized as the relationship between Safety and Service and builds upon data from the MBTA's SMS, TAM, and CIP scoring process
- The goal is to further elevate and identify key projects, during CIP project prioritization to distinguish different levels of safety impact and their relationship to the FTA's directives



Looking Ahead | Future Goals

Further align the CIP prioritization framework with the MBTA's strategic goals of safety, service, equity, and sustainability

- Continued refinement of CIP project scoring criteria and weighting system
- Ongoing development of the Safety Impact Matrix to track the safety and service impacts of capital projects

Formalize coordination between capital planning and asset management processes to support the prioritization of capital needs and bring assets into a State of Good Repair

- Updated and expanded the assessment of the agency's capital needs
- Establish new processes and integrate data sources to track asset management goals and performance

Implement a database tool that streamlines business processes, supports capital planning, and enables more detailed analysis of the capital program

- Streamlining of project intake and ongoing management of capital project information
- Improved connections with financial management systems to track operating budget impacts and incorporate inflation assumptions

Key Milestones for CIP Development

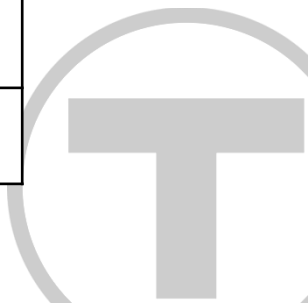
***As details are refined, the following key milestones will be updated to incorporate scheduled MBTA Subcommittee and Board Meetings*

September	<ul style="list-style-type: none">• CIP kick-off and call for projects, CIP information sessions held with MBTA departments
October	<ul style="list-style-type: none">• Project proposals due via CIP intake process
November	<ul style="list-style-type: none">• Review of CIP requests and scoring of all CIP requests by multidisciplinary evaluation teams
December	<ul style="list-style-type: none">• Develop initial estimate of capital funding sources using the outcome of the Q2 cashflow exercise• Program sizing with leadership, asset condition incorporated to help set agency investment priorities
January	<ul style="list-style-type: none">• Prioritization of project proposals, based on scoring and evaluation• Refine and finalize CIP public engagement approach with MBTA Community Outreach
February	<ul style="list-style-type: none">• Development of initial project list, including new projects for funding• Refine sources and sequencing of draft project list
March	<ul style="list-style-type: none">• Present the proposed FY24-28 CIP to the MBTA Board and release for public comment• Hold 30-day public engagement process, including public meetings and the collection of public feedback
April	<ul style="list-style-type: none">• Incorporate any CIP changes in response to public comments; transmit draft plan to MassDOT• Release 5-year TIP to the Boston Metropolitan Planning Organization (MPO)
May	<ul style="list-style-type: none">• Present final FY24-28 CIP to MBTA Board of Directors for approval• MassDOT-wide CIP presented to MassDOT Board and vote to release for public comment
June	<ul style="list-style-type: none">• Conduct equity analysis on the MassDOT-wide CIP• MassDOT Board vote to approve final MassDOT-wide CIP



Capital Investment Plan | Board Touchpoints

	Proposed MBTA Board Touch Points and Topics
OCTOBER	Finance and Audit Subcommittee Meeting: Introduction to the Safety Lens
NOVEMBER	Finance and Audit Subcommittee Meeting: N/A MBTA Full Board: N/A
DECEMBER	Finance and Audit Subcommittee Meeting: Introduction to the FY24-28 CIP: Update on scoring and a Federal grant update. Do we want to review asset management performance measures? MBTA Full Board: N/A
JANUARY	Finance and Audit Subcommittee Meeting: N/A MBTA Full Board (27 th): N/A
FEBRUARY	Finance and Audit Subcommittee Meeting: CIP Update: Initial FY24-28 requests received, sources, program sizes and public engagement process preview MBTA Full Board: N/A
MARCH	Finance and Audit Subcommittee Meeting: Present draft FY24-28 CIP and release for public comment MBTA Full Board: Present the draft FY23-27 CIP and release for public comment
APRIL	Finance and Audit Subcommittee Meeting: N/A MBTA Full Board: N/A
MAY	Finance and Audit Subcommittee Meeting: Present the final FY24-28 CIP and vote for approval MBTA Full Board: Present the final FY24-28 CIP and vote for approval
JUNE	Finance and Audit Subcommittee Meeting: N/A MBTA Full Board: N/A



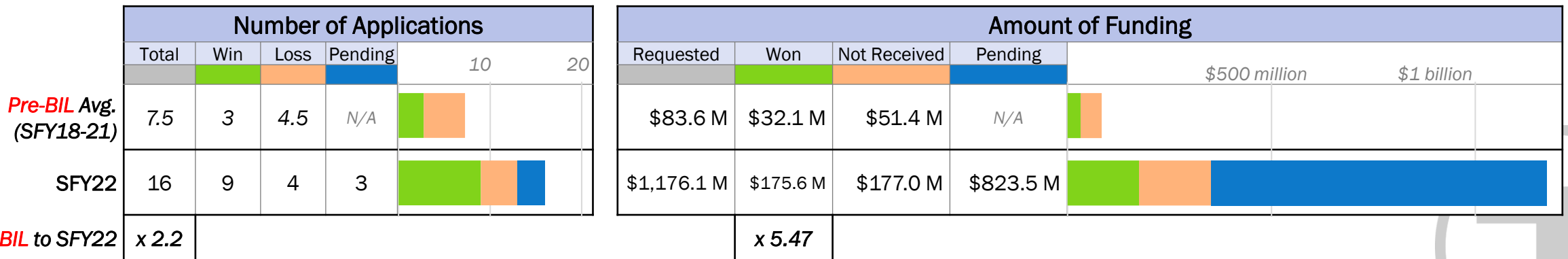
FY22 Federal Discretionary Grant Annual Summary



MBTA Federal Discretionary Grant Pursuits

- The MBTA has aggressively pursued all applicable discretionary grant opportunities available through the Bipartisan Infrastructure Law (BIL) by creating a dedicated team
- For SFY22* discretionary grant programs we have:
 - Submitted requests for \$1.3 billion in funding
 - Been awarded over \$175 million from these applications, including \$116 million for battery-electric buses (tied for largest award in nation)
- The USDOT’s Mega program is still pending review
 - We submitted three applications in this program for a combined total of over \$800 million

In SFY22, we submitted over twice the number of applications and have won over five times the amount of funding compared to the pre-BIL average



* Note that a grant’s State Fiscal Year (SFY) classification is determined based on the application deadline.

MBTA Federal Grants | Annual Summary | SFY2022

Federal Discretionary Grant Wins			
Grant Program	Project	Requested	Awarded
USDOT RAISE (Rebuilding American Infrastructure w/Sustainability and Equity) FFY21	Blue Hill Ave. Transit Priority Corridor (City of Boston application)	\$25.0 M	\$15.0 M
FTA Passenger Ferry Program FFY21	Catamaran Overhauls (P0633)	\$3.9 M	\$3.9 M
FTA Bus & Bus Facilities Program FFY21	Quincy Bus Maintenance Facility (P0671a)	\$22.0 M	\$5.0 M
FTA Route Planning Restoration Program	Chelsea/Everett Cross-Town Routes Study	\$1.0 M	\$0.78 M
FRA Consolidated Rail Infrastructure and Safety Improvements (CRISI) FFY21	MBTA Suicide Trespass Prevention Project	\$0.1 M	\$0.1 M
USDOT RAISE (Rebuilding American Infrastructure w/Sustainability and Equity) FFY22	Lynnway Multimodal Corridor Project	\$20.25 M	\$20.25 M
FTA Low or No Emissions Program (“Low-No”) FFY22	Procurement of 40ft Battery Electric Buses and Related Infrastructure (P0653)	<i>In procurement</i>	\$116 M
DHS/ FEMA Transit Security Grant Program (TSGP) FFY22	Camera upgrades; cyber network; high-vis. anti-terror station & K9 patrols; training	\$10.6 M	\$6.9 M
FRA Federal-State Partnership for State of Good Repair (FRA SGR) FFY21	South Elm Street Bridge Replacement (P1115) (NNEPRA and MassDOT are joint applicants)	\$7.6 M	\$7.6M

Summary of Federal Grant Applications Submitted SFY2022	
Amount Awarded	\$175.6 M
Awards Received	9
Unsuccessful Applications	4
Submitted Applications (pending results)	3
Total Applications Submitted: 16	

MBTA Federal Grants | Annual Summary | SFY2022

Status	Grant Program	Project	Requested	Notes
Unsuccessful Federal Discretionary Grant Applications				
Loss	FRA Consolidated Rail Infrastructure and Safety Improvements (CRISI) FFY21	Tower 1 Interlocking Early Action Project (P0889)	\$15.3 M	
Loss	FTA Areas of Persistent Poverty (APP) FFY21	Meridian St Bus Priority Corridor Study	\$0.9 M	
Loss	FHWA Advanced Transp. and Congestion Mgmt. Tech. Deployment (ATCMTD) FFY21	Bus Digital Platform Project (P0689m)	\$2.1 M	
Loss	USDOT RAISE (Rebuilding American Infrastructure w/Sustainability and Equity) FFY21	Arborway Bus Maintenance Facility Design (P0671b)	\$25.0 M	Project is a "Project of Merit," and we are encouraged to submit again
Submitted Federal Discretionary Grant Applications				
Submitted	USDOT Multimodal Project Discretionary Grant (MPDG) (Combined NOFO for MEGA, INFRA, and Rural Surface Grant Programs) FFY22	North Station Draw 1 Bridge Replacement Project (P0018)	\$338 M	Application submitted 5/23/2022
Submitted		South-Side Commuter Rail Maintenance Facility (P0863)	\$245 M	
Submitted		Southwest Corridor Infrastructure Improvements (P0675)	\$240 M	

Summary of Federal Grant Applications Submitted SFY2022	
Amount Awarded	\$175.6 M
Awards Received	9
Unsuccessful Applications	4
Submitted Applications (pending results)	3
Total Applications Submitted: 16	

Appendix



Final FY23-27 CIP | Summary

Total Projects

555

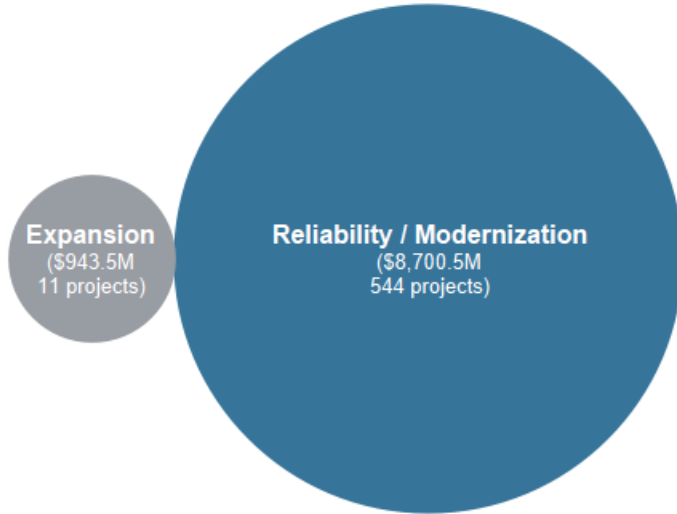
FY23-27 Programmed Spend

\$9,644.1M

Executing Departments

32

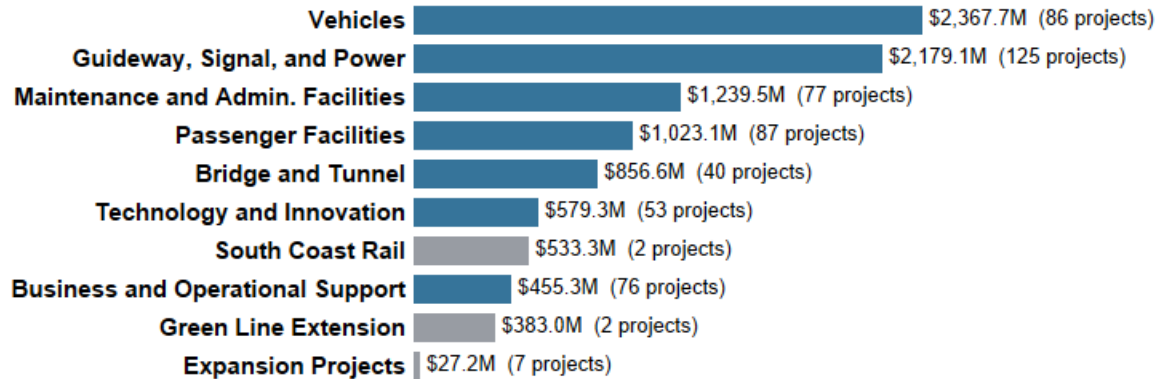
FY23-27 Programmed Spend by CIP Priority



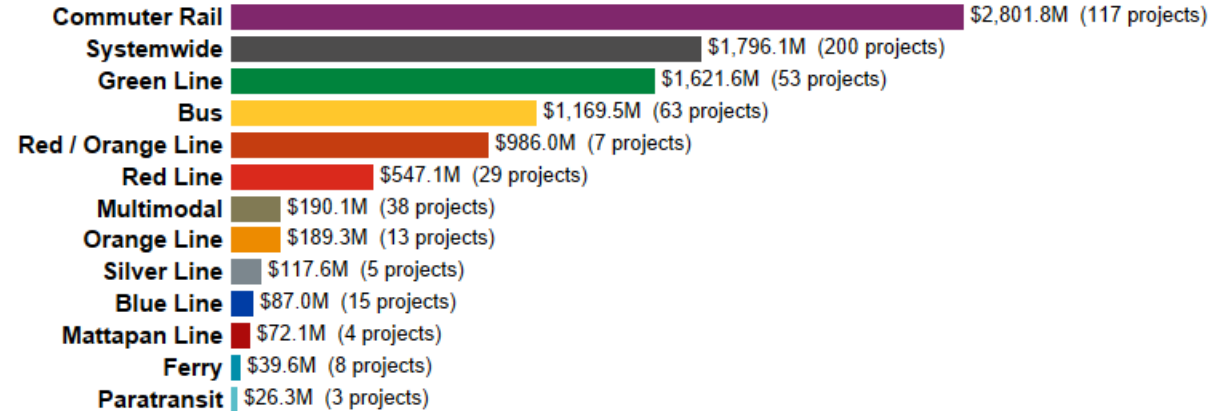
Top 10 Projects, by FY23-27 Programmed Spend

CIP ID	Project Name	CIP Program	FY23-27 Total	Authorized 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 Total			\$3,437.9M	\$7,568.1M

FY23-27 Programmed Spend by CIP Program



FY23-27 Programmed Spend by Mode



FY23 Capital Spend Target

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.

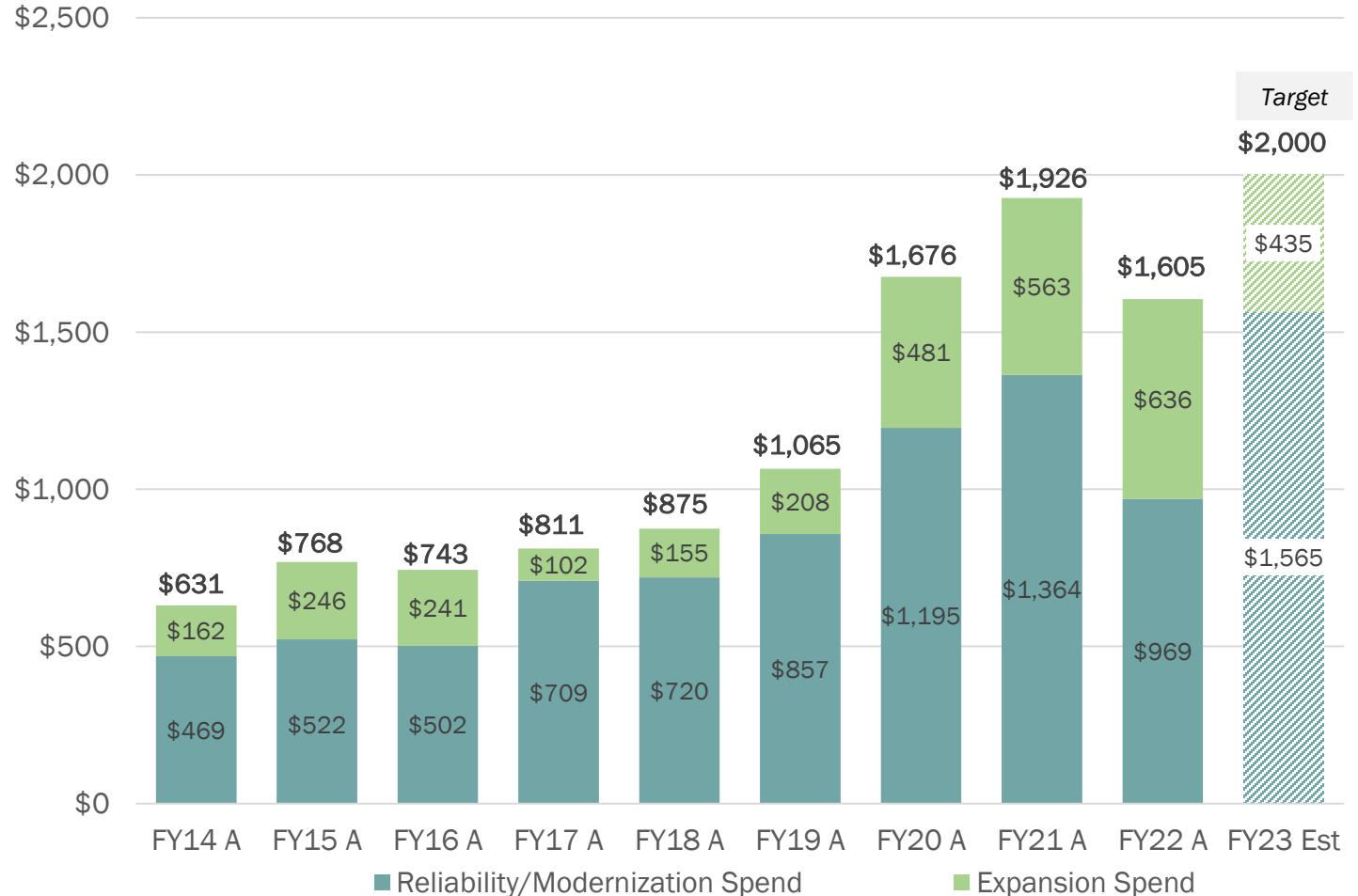
The MBTA has significantly increased capital investments and in FY22 invested over \$1.6B in the system.

- The MBTA continues to deliver this significant level of capital investment despite challenging market forces and ongoing supply chain disruptions.

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

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

MBTA Capital Investment by Fiscal Year (\$M)



Published CIP Book

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



**Massachusetts Bay Transportation Authority
FY23-27 Capital Investment Plan (CIP)**

Final - May 2022

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

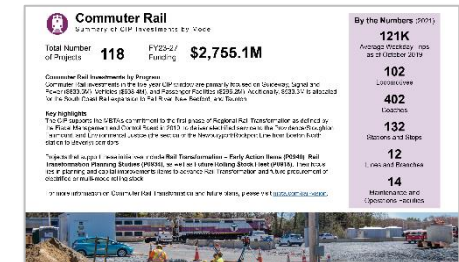
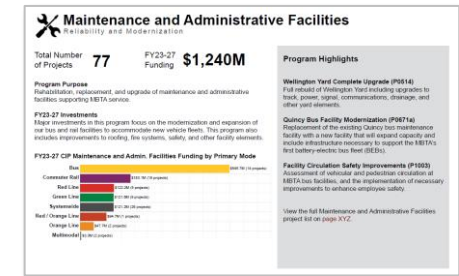
FY23-27 Investments by Mode

- 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



FY23-27 CIP | Scoring Criteria and Weights

Criteria	Description	Subcriteria	Scoring Weights	
			Rel. / Mod.	Expansion
System Preservation	The extent to which the project contributes to a state of good repair on the transportation system and aligns with asset management goals.	<ul style="list-style-type: none"> Asset Condition (5 points) Impact to Other Assets (1 point) Operations Criticality (2 points) Flood Risk (1 point) Severe Weather Resiliency (1 point) 	30%	N/A
Mobility	The extent to which the project is intended to provide modal options efficiently and effectively for all users through benefits to reliability, accessibility, and other measures of service quality.	<ul style="list-style-type: none"> Impact on Reliability (2 points) Impact on Accessibility (2 points) Impact on Customer Experience (2 points) Impact on Riders (4 points) 	15%	25%
Cost Effectiveness	The extent to which the project impacts operating costs and revenues and maximizes the return on the public's investment.	<ul style="list-style-type: none"> Impact on Operating Costs (5 points) Impact on Operating Revenues (5 points) 	10%	25%
Environmental and Health Effects	The extent to which the project meets State goals of improving air quality and reducing greenhouse gases, and results in a reduction of pollution.	<ul style="list-style-type: none"> Air Quality and GHG Reduction (5 points) Reduce Pollution and/or Natural Resource Consumption (5 points) 	10%	10%
Policy Support	The extent to which the project is aligned with MBTA policy priorities, including Focus 40.	<ul style="list-style-type: none"> Alignment with Focus40 (5 points) Alignment with MBTA Strategic Planning Report (5 points) 	5%	10%
Social Equity	The extent to which the project equitably distributes social, economic, and health benefits to residents and local businesses.	<ul style="list-style-type: none"> Benefits to EJ and Title VI Communities (7 points) Additional Equity Benefits to Vulnerable Populations (3 points) 	10%	15%
Economic Impact	The extent to which the project supports economic growth in the Commonwealth.	<ul style="list-style-type: none"> Impact on Connectivity to Employment Centers and Priority Places (3 points) Impact on Corridors At or Near Capacity (3 points) Impact on Communities with Transit-Supportive Land Use (3 points) Impact on Housing Choice Communities (1 point) 	5%	15%
Safety	The extent to which the project addresses documented or identified safety issues and hazards, and security vulnerabilities and risks. <i>(Note: scored by Safety and Security departments.)</i>	<ul style="list-style-type: none"> Impact on System Safety (7 points) Impact on System Security (3 points) 	15%	N/A