



**Massachusetts Bay
Transportation Authority**

**FY21-25 Capital Investment Plan
*Overview, Sources and Programs***

March 5, 2020

The System | MBTA by the Numbers



Red Line
» 218 Vehicles » 22 Stations/Stops



Green Line
» 206 Vehicles » 66 Stations/Stops



Orange Line
» 120 Vehicles » 20 Stations/Stops



Blue Line
» 112 Vehicles » 12 Stations/Stops



Mattapan Line
» 10 Vehicles » 8 Stations/Stops



Bus
» 1,055 Vehicles » 7,690 Bus Stops
» 9 Garages » 175 Bus Routes
» 3,244 Bus Route Miles



Commuter Rail
» 90 Locomotives » 420 Coaches
» 137 Stations » 394 Track Miles
» 5 North Side Lines » 7 South Side Lines
» Operated by Keolis



Ferry
» 12 Boats (3 owned by the MBTA)
» 7 Terminals
» 3 Routes
» Operated by Boston Harbor Cruises

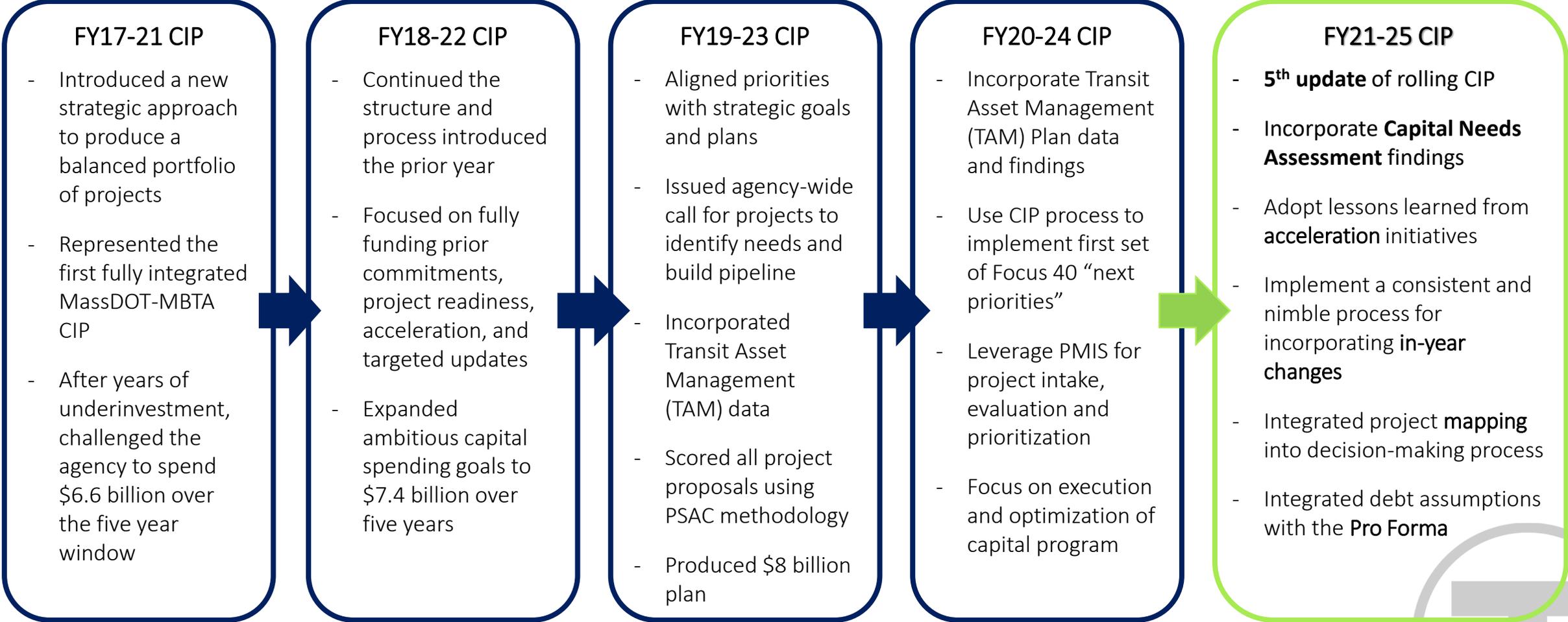


Key milestones for the CIP development process

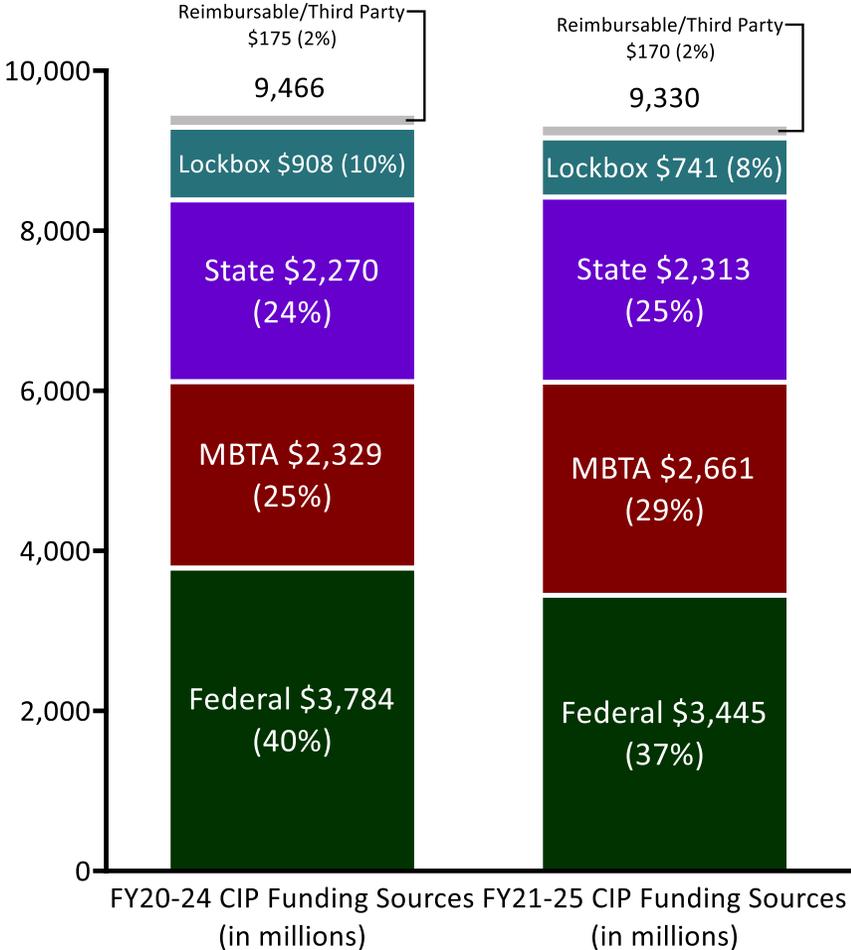
December	<ul style="list-style-type: none">• Call for projects announced and CIP Information Sessions held to detail the process and requirements
January	<ul style="list-style-type: none">• Develop initial estimates of capital funding sources• Collect project proposals from MBTA Departments and begin evaluation process
February	<ul style="list-style-type: none">• Continue scoring and evaluation process• Update cash flow forecasts for existing projects• Set initial program sizes based on capital and asset needs
March	<ul style="list-style-type: none">• Prioritize new projects based on scoring and evaluation• Develop initial project list – combine existing and new projects
April	<ul style="list-style-type: none">• Refine sources and sequencing for draft project list• Present updated funding sources and revised program sizes to FMCB
May	<ul style="list-style-type: none">• Finalize draft CIP and present to the FMCB, CPC and Joint Board• Post draft CIP for comment; engage public through multiple avenues
June	<ul style="list-style-type: none">• Public meetings and comment period; incorporate public comment into CIP• Joint Board vote to approve final CIP



Next evolution of the MBTA CIP: Continuous improvement



Initial estimate: FY21-25 CIP Funding Sources

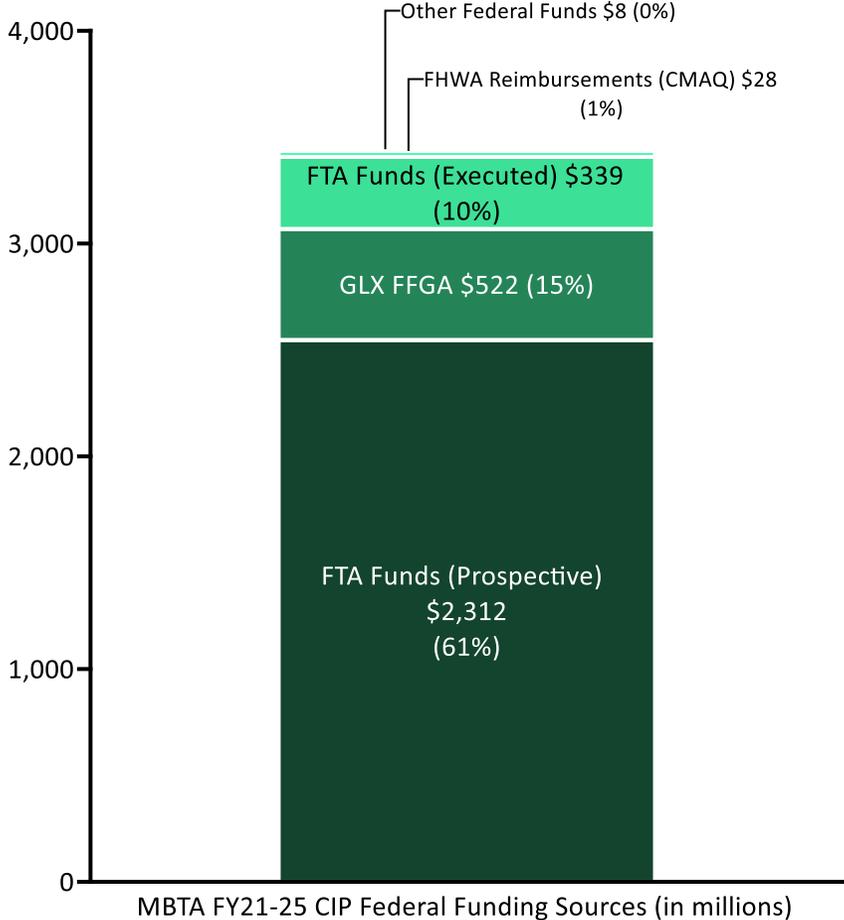


Sources highlights:

- **Federal funds** continue to be the single largest source of capital for the MBTA
 - Reduction from \$3.8B in FY20-24 to \$3.5B in FY21-25 driven by progress on Green Line Extension and drawdown of substantial balance of carry over funds
- **MBTA Bonds** support the 20% match for Federal projects, as well as MBTA-only funded projects
- **State funds** include Bond Cap and Rail Enhancement Program special obligation bonds for GLX, Red Line/Orange Line improvements, South Coast Rail, and other projects
- **Pay-Go/Lockbox** reflects an assumption of \$150M/year, plus prior year carryover. Includes state assistance via bond cap and operating funds
- **Other funding sources** include municipal contributions and other reimbursements



Initial estimate: FY21-25 CIP Federal Funding



Federal Sources:

- The Federal program is a subset of the larger MBTA capital program and is determined after projects are prioritized
- Of \$3.5B in total federal funds, appx \$2.3B is available for programming in the TIP:
 - \$1.1B in Sec. 5307 urbanized area formula funds
 - \$1.2B in Sec. 5337 fixed guideway state of good repair funds
 - ~\$30M in Sec. 5339 bus and bus facilities funds



FY21-25 CIP Priorities and Programs

1. **Reliability:** Maintain and improve the overall condition and reliability of the transportation system
2. **Modernization:** Modernize the transportation system to make it safer and more accessible and to accommodate growth
3. **Expansion:** Expand diverse transportation options for communities throughout the Commonwealth

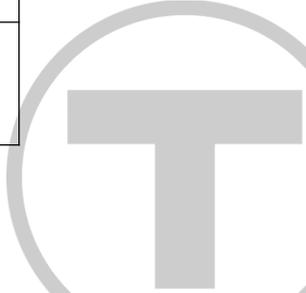


Reliability Programs	
<ul style="list-style-type: none"> • Bridge and Tunnel • Facilities • Revenue Vehicles 	<ul style="list-style-type: none"> • Stations • System Upgrades • Track, Signals, and Power
Modernization Programs	
<ul style="list-style-type: none"> • Accessibility • Bus Transformation • Bus Transit Infrastructure Partnership • Commuter Rail Safety and Resiliency • Customer Experience and Technology Improvements • Fare Transformation 	<ul style="list-style-type: none"> • Green Line Transformation • Process Improvements and Innovation • Rail Transformation • Red / Orange Line Improvements • Risk Management and Mitigation
Expansion Programs	
<ul style="list-style-type: none"> • Green Line Extension • Expansion Projects 	<ul style="list-style-type: none"> • Expansion Project Development • South Coast Rail



FY21-25 CIP Programs: Reliability

Priority 1/Reliability		
FY21-25 CIP Programs	Purpose and Need Statement	Measure
Bridge and Tunnel	This program repairs, reconstructs and replaces MBTA commuter rail and transit bridges and tunnels system-wide	Asset condition: structural deficiency and load rating
Facilities	This program rehabilitates and upgrades maintenance and administrative facilities that support MBTA operations.	Asset condition: FTA TERM Scale (1-5)
Revenue Vehicles	This program rehabilitates and replaces the MBTA revenue fleet, which includes commuter rail, heavy rail, light rail, bus and ferry units.	Asset age: Useful life benchmark
Stations	This program rehabilitates and upgrades MBTA stations and parking facilities (e.g., commuter rail, commuter boat, subway and bus stations)	Asset condition: FTA TERM Scale (1-5)
System Upgrades	This program upgrades a wide range of MBTA systems including communications, security, computer technology, fare collection, asset management and environmental remediation systems. It also rehabilitates non-revenue vehicles and equipment.	Asset age: Useful life benchmark (for non-revenue vehicles)
Track, Signal and Power	This program rehabilitates, replaces and upgrades track, signal and power assets across the commuter rail and transit system.	Asset condition, age, and performance restrictions



FY21-25 CIP Programs: Modernization

Priority 2/Modernization		
FY21-25 CIP Programs	Purpose and Need Statement	Measure
Accessibility	This program improves accessibility at MBTA commuter rail, subway and bus stations. This program is necessary to meet the goals of the Authority’s Plan for Accessible Transit Infrastructure (“PATI”).	PATI Implementation; increased number of accessible stations
Bus Transformation	This program aims to support a range of investments that strive to achieve better, faster, lower-emission but service that is more aligned with where riders live, work and travel.	TBD
Bus Transit Infrastructure Partnership	Through partnerships and grants to municipalities, implement transit-supportive infrastructure to improve and facilitate more efficient delivery of transit operations, improve the passenger experience, and enhance transit rider and pedestrian service and safety. <i>[Pending Transportation Bond Bill]</i>	Completion of bus lanes; installation of TSP
Commuter Rail Safety and Resiliency	This program includes projects that improve the safety and resiliency of the Commuter Rail network, including the implementation of Positive Train Control.	PTC/ATC Project Milestones
Customer Experience and Technology Improvements	This program includes improvement projects that modernize the system and enhance customers’ experience.	Improved customer experience; survey results
Fare Transformation	The Fare Transformation program will implement a new reliable and convenient fare payment and collection system, integrated across all modes, to replace CharlieCards/Tickets and their supporting hardware and software.	Fare Transformation Project Milestones



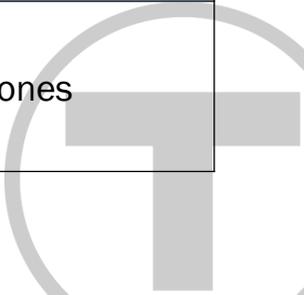
FY21-25 CIP Programs: Modernization continued

Priority 2/Modernization		
FY21-25 CIP Programs	Purpose and Need Statement	Measure
Green Line Transformation	Green Line Transformation (GLT) improves the quality of service on the Green Line through fleet modernization and infrastructure/facilities upgrades, as well as improved capacity, accessibility and state-of-the-art technology.	Safety and Resiliency; Addressing Demand; Service Delivery; Accessibility; Cust. Experience
Process Improvements & Innovation	This program includes investments in innovations that enhance productivity or quality of MBTA services and capital programs.	Project milestones
Rail Transformation	This program reflects investments to modernize the Commuter Rail network, including foundational investments in vehicles, facilities, and infrastructure to implement the Commuter Rail Vision	TBD
Red / Orange Line Improvements	The Red Line and Orange Line Improvements program includes the set of vehicle and infrastructure investments needed to fully modernize the fleet and achieve the service goal of three minute headways on the Red Line and three and a half minute headways on the Orange Line.	Project milestones; Three min headways on the RL and four min headways on the OL
Risk Management	Implements risk management initiatives as well as proactive efforts to improve workplace safety and system security.	OHSA implementation and SMS implementation



FY21-25 CIP Programs: Expansion

Priority 3/Expansion		
FY21-25 CIP Programs	Purpose and Need Statement	Measure
Green Line Extension	The Green Line Extension program includes the vehicles, stations and infrastructure to extend the Green Line from a relocated Lechmere Station in East Cambridge to Union Square in Somerville and College Avenue in Medford.	GLX Project Milestones
Expansion Projects	This program makes targeted expansions in order to improve access to transit, including the Silver Line to Chelsea, Blue Hill Avenue Station on the Fairmount Line and MBTA support for early action South Coast Rail items.	Project Milestones
Expansion Project Development	Support planning and design for expansion projects identified as “Next Priorities” within Focus40, including Red-Blue Connector, Silver Line to Everett, and Green Line Extension to Route 16, <i>as well as planning studies for expanded Commuter Rail service associated with Rail Vision</i>	Project Milestones
South Coast Rail	The South Coast Rail project will restore commuter rail service between Boston and southeastern Massachusetts.	SCR Project Milestones



Projects Scored Using PSAC Criteria

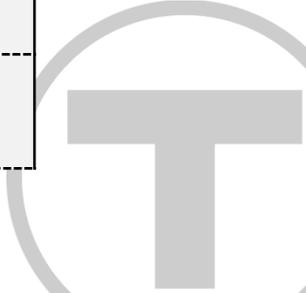
- The legislatively-mandated Project Selection Advisory Council (PSAC) established uniform project selection criteria to be used across MassDOT divisions in preparing the CIP

System Preservation	<ul style="list-style-type: none">• Projects should contribute to a state of good repair on the transportation system.
Mobility	<ul style="list-style-type: none">• Projects should provide modal options efficiently and effectively.
Cost Effectiveness	<ul style="list-style-type: none">• Projects should result in benefits commensurate with costs and should be aimed at maximizing the return on the public's investment.
Economic Impact	<ul style="list-style-type: none">• Projects should support strategic economic growth in the Commonwealth.
Safety	<ul style="list-style-type: none">• Projects should contribute to the safety and security of people and goods in transit.
Social Equity & Fairness	<ul style="list-style-type: none">• Projects should equitably distribute both benefits and burdens of investments among all communities.
Environmental & Health Effects	<ul style="list-style-type: none">• Projects should maximize the potential positive health and environmental aspects of the transportation system.
Policy Support	<ul style="list-style-type: none">• Projects should get credit if they support local or regional policies or plans; or state policies not addressed through the other criteria.



FY21-25 MBTA Project Selection Criteria (1 of 2)

Criteria	Description	Factors
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 and strategies.	Asset Condition
		Impact to Other Assets
		Operations Criticality (Service Disruption)
		Climate Change and Severe Weather Resiliency
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.	Impact on Reliability
		Impact on Accessibility
		Impact on Customer Experience
		Impact on Riders
Cost Effectiveness	The extent to which the project impacts operating costs and revenues and maximizes the return on the public's investment	Impact on Operating Costs
		Impact on Operating Revenues
Safety	The extent to which the project addresses safety issues and hazards and security vulnerabilities and risks.	Impact on System Safety
		Impact on System Security
Environmental and Health Effects	The extent to which the project: 1) meets State goals of improving Air Quality and reducing Greenhouse Gases and 2) results in a reduction of pollution and/or consumption of natural resources	Air Quality and GHG Reduction
		Reduce Pollution and/or Consumption of Natural Resources



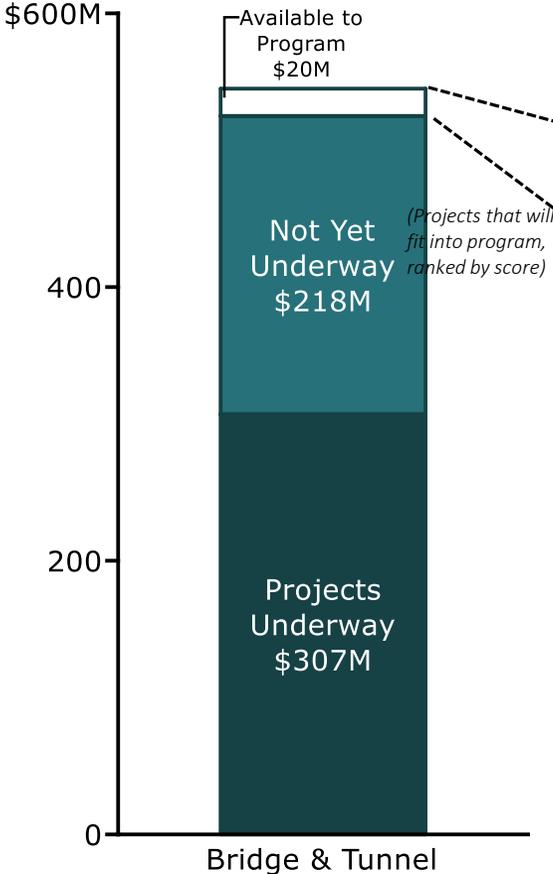
FY21-25 MBTA Project Selection Criteria (2 of 2)

Criteria	Description	Factors
Policy Support	The extent to which the project is aligned with the MBTA Strategic Playbook and utilizes an innovative strategy	Alignment with Focus40
		Utilizes an Innovative Strategy
Economic Impact <i>(Only required for expansion/new capacity projects)</i>	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.	Impact on Connectivity to Employment Centers, Destination Districts, Priority Places identified in Focus40
		Impact on Corridors at or Near Capacity
		Impact on Communities with Transit-Supportive Land Use
		Impact on Commuting Costs
Social Equity <i>(Only required for expansion/new capacity projects)</i>	The extent to which the project equitably distributes economic, social, and health benefits to residents and local businesses.	Benefits to Environmental Justice (EJ) and Title VI Communities
		Additional Equity Benefits to Protected Populations



FY21-25 MBTA Project Prioritization

Total Program Size: \$545M



Project Requests (by ranking)			
Rank (by Score)	Project Name	FY19-FY23 (\$M)	Project Score
1	New project 1	\$6.0M	75
2	Expansion of existing project B*	24.5	69
3	New project 2	17.5	69
4	Increase for existing project F*	28.0	61
5	New project 3	8.8	54
	TOTAL	\$84.8M	

* Denotes additional funding for existing project or program



Next Steps

MPO Engagement

- March 19: Update on continuing MBTA TIP projects
- Early April: New MBTA projects for FFY2021-2025 TIP

MassDOT/FMCB Board Engagement

- Capital Programs Committee (subcommittee of MassDOT Board) is the forum for monthly MassDOT CIP updates and decisions; FMCB will be updated concurrently and upon request
- Next Capital Programs Committee meeting scheduled for March 23
 - MassDOT and MBTA will present proposed sources and uses, readiness and engagement update

Public Engagement

- **Public meetings** will be held throughout the Commonwealth in May, organized by MassDOT
- **Online Comment Tool** will be made available after the Joint Board votes on the draft CIP

