



**Massachusetts Bay
Transportation Authority**

FY20-24 Capital Investment Plan

Overview of Draft FY20-24 CIP

5/8/2019

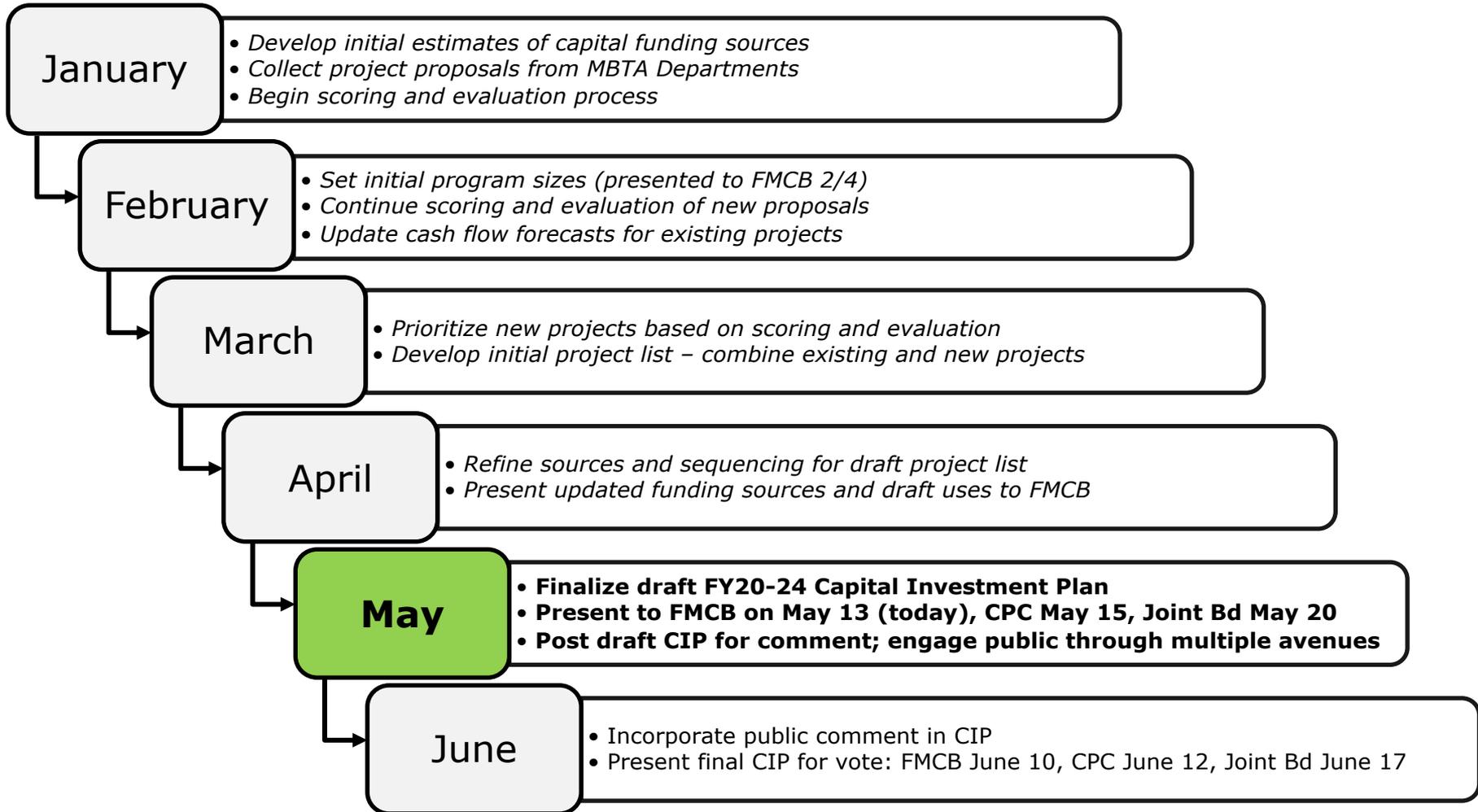


Agenda

1. Recap of the FY20-24 CIP process and where we are today
2. Update CIP funding sources and uses since April
3. Review new projects, budget increases, and notable changes
4. Review programmed investments for Lockbox/Pay-Go funds
5. Review overall FY20-24 CIP spending by priority, program and mode
6. Discuss CIP programming as compared to MBTA spend targets
7. Review the upcoming FY20-24 CIP public input process, public meeting schedule and next steps

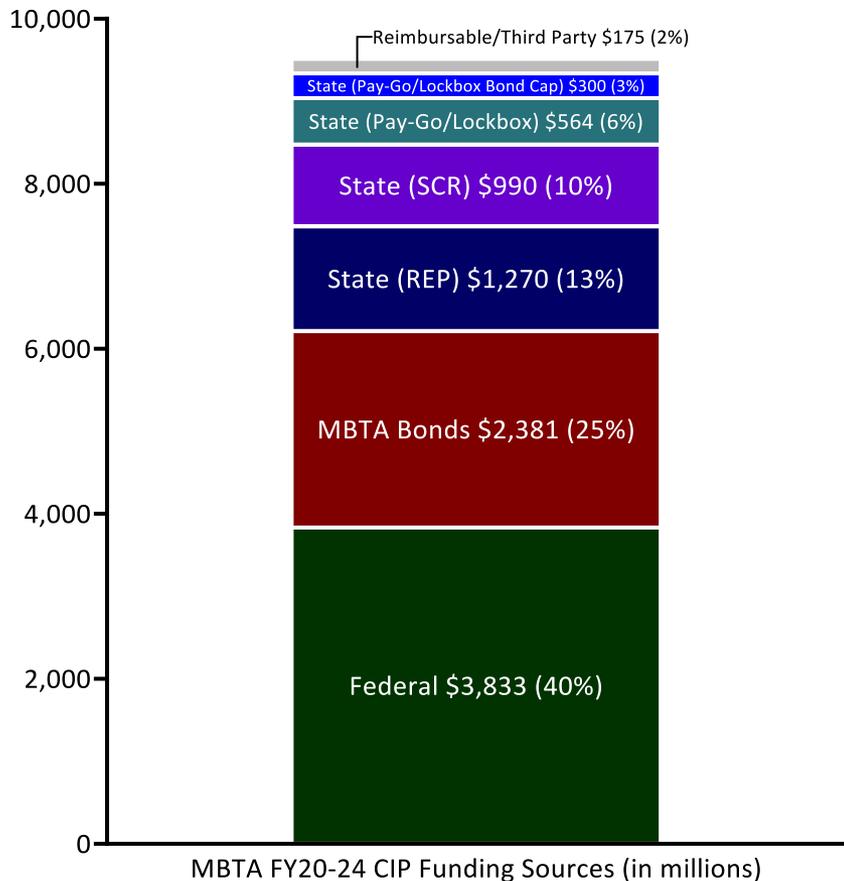


FY20-24 CIP Process Recap





FY20-24 CIP Funding Sources: Estimated ~\$9.5B available in capital funding



Sources changes since April:

- **South Coast Rail:** Additional \$990M in State funds (Bond Cap and REP) to fully fund South Coast Rail design and construction
- **MBTA Revenue Bonds:** Increase in assumptions to accommodate new Expansion Project Development program, per FMCB direction
- **Reimbursable sources:** Increase to reflect Amtrak Northeast Corridor commitments
- **All sources:** Technical adjustments based on latest project forecasts



FY20-24 CIP Funding Sources: South Coast Rail

- An independent cost/schedule validation by three firms (similar to GLX process) was completed in March:
 - Existing project manager (VHB/HNTB)
 - Existing Owner's Representative (WSP)
 - Independent outside firm hired by the MBTA (PMA consultants)
- Consensus cost estimate for Phase 1, plus work to advance full build (related to MEPA permit) for 2019-2024 is \$1,047.1 million
- MassDOT/MBTA worked closely with the Executive Office of Administration and Finance to develop the finance plan that incorporated the results of the independent review
- 2020-2024 CIP includes all the necessary funding for the program, fully funded by the Commonwealth
 - \$460.7 million (48%) in General Obligation Bonds (GO Bonds)
 - \$548.9 million (52%) in Special Obligation Bonds backed by the Commonwealth Transportation Fund (CTF Bonds)
- MBTA will not be required to provide any funding or issue any revenue bonds that might otherwise impact their future operating budgets



FY20-24 CIP Funding Sources: Changes from April estimates

- Net increase of \$1.1B in funding sources primarily attributed to addition of South Coast Rail
- Also reflects an additional \$25M in bond issuance per FMCB guidance on expansion project development
- Other technical adjustments mostly attributed to updated cash flow forecasts for existing projects

Funding Source	April re-estimate (in millions)	May re-estimate (in millions)	Delta (in millions)
Federal	\$3,802	\$3,832	\$30
MBTA	\$2,355	\$2,381	\$26
State	\$1,221	\$1,270	\$49
State – South Coast Rail	N/A	\$990	\$990
Pay-Go	\$859	\$865	\$6
Reimbursable/Third Party	\$164	\$175	\$11
Grand Total*	\$8,401	\$9,513	\$1,112

*Note: not all funds are programmed in the same year they become available because of anticipated timing of expenditures, contingency, and other factors (e.g. grant funds awarded in CIP window but spent in outyears)



FY20-24 CIP Funding Uses: New Projects for FY20-24 CIP (1 of 3)

CIP Priority/ Program	Project	2019-2023 CIP Total Project Cost (M)	2020-2024 CIP Total Project Cost (M)	Comments
Reliability/Bridges and Tunnels	Robert Street Bridge Rehabilitation	\$0	\$16.20	Design and construction of a new bridge superstructure and substructure for the bridge carrying the Needham Line over Robert Street in Roslindale.
Reliability/Bridges and Tunnels	East Cottage Street Bridge Rehabilitation	\$0	\$15.90	Design and construction of a new bridge superstructure and substructure for the bridge carrying the Fairmount Line over East Cottage Street in Boston.
Reliability/Bridges and Tunnels	Norfolk Avenue Bridge Rehabilitation	\$0	\$14.10	Design and construction of a new bridge superstructure and substructure for the bridge carrying Fairmount Line over Norfolk Avenue in Boston.
Reliability/Facilities	South-Side Commuter Rail Maintenance Facility	\$0	\$15.40	Construction of new south-side facility for Commuter Rail equipment repairs. Budget includes planning, preliminary design, and potential land acquisition costs.
Reliability/Facilities	Haverhill Layover Facility Relocation	\$0	\$5.00	Relocation of current Commuter Rail layover facility to new location for additional train layover space in Haverhill vicinity.



FY20-24 CIP Funding Uses: New Projects for FY20-24 CIP (2 of 3)

CIP Priority/ Program	Project	2019-2023 CIP Total Project Cost (M)	2020-2024 CIP Total Project Cost (M)	Comments
Reliability/Revenue Vehicles	60 New Flyer Bus Overhauls	\$0	\$28.70	Midlife overhauls of 60 New Flyer 40-ft. hybrid buses originally delivered in 2014 - 2015 in order to meet their 14 year useful life.
Reliability/Stations	Courthouse Station Northeast Headhouse	\$0	\$12.50	Construction of a new Northeast Headhouse at Courthouse Station, including new elevator, escalator, and stairs.
Reliability/Track, Signals, and Power	Mattapan High Speed Line Transformation	\$0	\$118.00	Provides state of good repair and accessibility improvements to infrastructure, stations and vehicles along the entire Mattapan High-Speed Line. Budget includes planning, design, and construction costs.
Reliability/Track, Signals, and Power	Commuter Rail Signal SGR and Resiliency	\$0	\$14.80	Replace obsolete signal components with modern microprocessor-based signal equipment, interlocking improvements, and related equipment upgrades.
Reliability/Track, Signals, and Power	Commuter Rail Track SGR and Resiliency	\$0	\$13.80	Improve track in areas of significant operational risk, including retaining walls, rehabilitation of Everett Junction, and several areas of track rebuild.



FY20-24 CIP Funding Uses: New Projects for FY20-24 CIP (3 of 3)

CIP Priority/ Program	Project	2019-2023 CIP Total Project Cost (M)	2020-2024 CIP Total Project Cost (M)	Comments
Modernization/ Customer Experience and Technology Improvements	Better Bus Project – Priority Corridors	\$0	\$8.70	Support construction of bus transit priority infrastructure in the top 40 routes/corridors as part of Better Bus project.
Modernization/Green Line Transformation	Lechmere Viaduct Rehabilitation	\$0	\$54.80	Rehabilitation and strengthening of the historic Green Line Lechmere Viaduct bridge structure to eliminate current speed and train operational constraints. Budget includes design and construction costs.
Expansion/Expansion Project Development	Red-Blue Connector	\$0	\$15.00	Initial project development (high level planning and preliminary engineering) costs for the extension of the Blue Line from Bowdoin Station to the Red Line at Charles/MGH Station.



FY20-24 CIP Funding Uses: Increased Projects for FY20-24 CIP (1 of 5)

CIP Priority/ Program	Project	2019-2023 CIP Total Project Cost (M)	2020-2024 CIP Total Project Cost (M)	Change (M)	Comments
Modernization/ Green Line Transformation	Green Line Type 10 Vehicle Fleet Replacement	\$7.60	\$1,339.30	\$1,331.70	Replacement of up to 170 light rail vehicles to replace the existing Green Line Type 7 and Type 8 fleets.
Expansion/South Coast Rail	South Coast Rail Expansion	\$42.00	\$1,193.40	\$1,151.40	Revised budget reflects additional funding for Phase 1, including reconstructed/ upgraded track, two new layover facilities and six new stations.
Modernization/ Green Line Transformation	Green Line Central Tunnel Track and Signal Replacement	\$8.20	\$120.00	\$111.80	Combined three interrelated track and signal replacement projects in the same vicinity into one project. Reflects updated design and construction costs.
Reliability/Bridges and Tunnels	Longfellow Approach Rehabilitation	\$5.30	\$114.40	\$109.10	Increased budget to fully fund construction.
Reliability/Bridges and Tunnels	North Station Draw 1 Bridge Rehabilitation	\$156.00	\$236.00	\$80.00	Increased budget to fully fund design and construction.



FY20-24 CIP Funding Uses: Increased Projects for FY20-24 CIP (2 of 5)

CIP Priority/ Program	Project	2019-2023 CIP Total Project Cost (M)	2020-2024 CIP Total Project Cost (M)	Change (M)	Comments
Reliability/ Revenue Vehicles	Commuter Rail F40 Locomotive Overhaul	\$30.00	\$84.10	\$54.10	Increased budget for option order to overhaul portion of remaining F40 locomotives that have not yet been overhauled.
Reliability/Track, Signals, and Power	Blue Line Harbor Tunnel Infrastructure	\$32.00	\$82.00	\$50.00	Increased budget to fully fund construction.
Modernization/ Accessibility	Natick Center Station Accessibility Improvements	\$3.50	\$42.30	\$38.80	Increased budget to fund design and construction.
Reliability/ Track, Signals, and Power	Power Systems Capital Maintenance	\$6.50	\$35.00	\$28.50	Replacement of AC & DC distribution cables and associated infrastructure. Increased budget to fund procurement and installation.
Reliability/Track, Signals, and Power	Power Systems Resiliency Program	\$13.20	\$35.20	\$22.00	Revised budget reflects updated scope for installation of new duct bank systems with new manholes and internal wiring. Budget includes design and construction costs.
Reliability/ Stations	Back Bay Station Ventilation	\$27.00	\$43.10	\$16.10	Revised budget reflects updated design and construction costs for substation, mechanical, and other systems improvements.



FY20-24 CIP Funding Uses: Increased Projects for FY20-24 CIP (3 of 5)

CIP Priority/ Program	Project	2019-2023 CIP Total Project Cost (M)	2020-2024 CIP Total Project Cost (M)	Change (M)	Comments
Modernization/ Accessibility	Elevator Program Design (Multiple Locations)	\$29.40	\$45.40	\$16.00	Revised budget reflects additional design costs for new elevator projects throughout MBTA network.
Reliability/ Stations	Winchester Center Station	\$34.60	\$49.20	\$14.60	Increased budget to fully fund construction.
Modernization/ AFC 2.0	AFC 2.0	\$455.40	\$469.40	\$14.00	Revised budget reflects updated administrative costs due to schedule changes.
Modernization/ CR Safety and Resiliency	Commuter Rail Fiber Optic Cable Network Resiliency	\$25.00	\$38.70	\$13.70	Increased budget to install redundant fiber optic cable, buried within the Commuter Rail right-of-way, in additional locations.
Reliability/ Stations	Courthouse Station Water Infiltration	\$4.80	\$18.50	\$13.70	Increased budget to fund construction.
Reliability/Track, Signal and Power	Systemwide Transformer Replacement, Phase 2	\$12.60	\$26.10	\$13.50	Revised budget reflects updated construction costs for additional transformer and duct replacement work.



FY20-24 CIP Funding Uses: Increased Projects for FY20-24 CIP (4 of 5)

CIP Priority/ Program	Project	2019-2023 CIP Total Project Cost (M)	2020-2024 CIP Total Project Cost (M)	Change (M)	Comments
Reliability/Track, Signals, and Power	North Station Terminal Signal	\$32.20	\$45.20	\$13.00	Increased budget to fully fund construction.
Reliability/ Stations	Wollaston Station / Quincy Center Garage Demolition	\$92.90	\$105.70	\$12.80	Revised budget reflects updated construction/demolition and bus diversion costs.
Modernization/ Green Line Transformation	Commonwealth Ave. Station Access	\$17.20	\$29.30	\$12.10	Revised budget reflects updated construction costs for grade crossing, pedestrian crossing, and track infrastructure upgrades.
Modernization/ Green Line Transformation	Green Line Transformation (GLT) Program Management	\$7.40	\$19.40	\$12.00	Program management/construction management support services for GLT. Also includes type studies, estimates, design and constructability reviews.
Reliability/ Stations	Forest Hills Station Improvements	\$22.60	\$32.60	\$10.00	Additional funding to construct SGR improvements, such as roof repairs, lighting upgrades, brightening, and wayfinding.
Expansion/ Expansion Projects	Silver Line Gateway - Phase 2	\$28.00	\$37.70	\$9.70	Revised budget reflects updated construction estimate and awarded contract amount.



FY20-24 CIP Funding Uses: Increased Projects for FY20-24 CIP (5 of 5)

CIP Priority/ Program	Project	2019-2023 CIP Total Project Cost (M)	2020-2024 CIP Total Project Cost (M)	Change (M)	Comments
Modernization/ Green Line Transformation	Newton Highlands Green Line Station Accessibility	\$13.40	\$23.10	\$9.70	Revised budget reflects updated construction costs for new inbound ramp/platform connection and canopy.
Reliability/ Stations	Braintree and Quincy Adams Station Garage Rehabilitation	\$100.90	\$109.40	\$8.50	Additional funding to complete construction, bus diversions, force account support and other remaining expenses.
Modernization/ Customer Experience and Technology Improvements	Park Street Station Wayfinding Improvements	\$11.30	\$18.60	\$7.30	Revised budget reflects additional scope, including station brightening (cleaning, painting, lighting), and stair repairs throughout station.
Reliability/ Revenue Vehicles	Commuter Rail Legacy Fleet Investment	\$5.10	\$12.20	\$7.10	Additional funding to support ongoing refurbishment of legacy locomotive and coach fleets.
Modernization/ Customer Experience and Technology Improvements	Systemwide Wayfinding Improvements	\$63.00	\$70.00	\$7.00	Incorporated the North Station Flooring Replacement project. Work will be conducted under same project, which increased overall design and construction costs.



Pay-Go/Lockbox Funded Projects

- Similar to the FY19-23 CIP, future Pay-Go/Lockbox deposits were considered a funding source for the CIP and programmed to specific projects with near-term performance and reliability improvements
- 8 new or increased Pay-Go/Lockbox funded projects have been included in the draft FY20-24 CIP *(listed below)*
- In FY19, 18 new projects were approved by the Pay-Go Committee *(listed on next slide)*

New or Increased Pay-Go/Lockbox Funded Projects	FY20-24 Approved Amount
Power Systems Capital Maintenance	\$28,789,451
Court House Station Leaks	\$12,761,000
Better Bus Project - Priority Corridors	\$8,732,500
New Paratransit Software Solution	\$6,159,000
AFC 2.0	\$6,158,096
Alewife Garage Rehabilitation	\$3,800,000
Connectivity & Customer Convenience Program	\$2,000,000
Worcester Union Station Design	\$1,370,052
Total	\$69,770,099



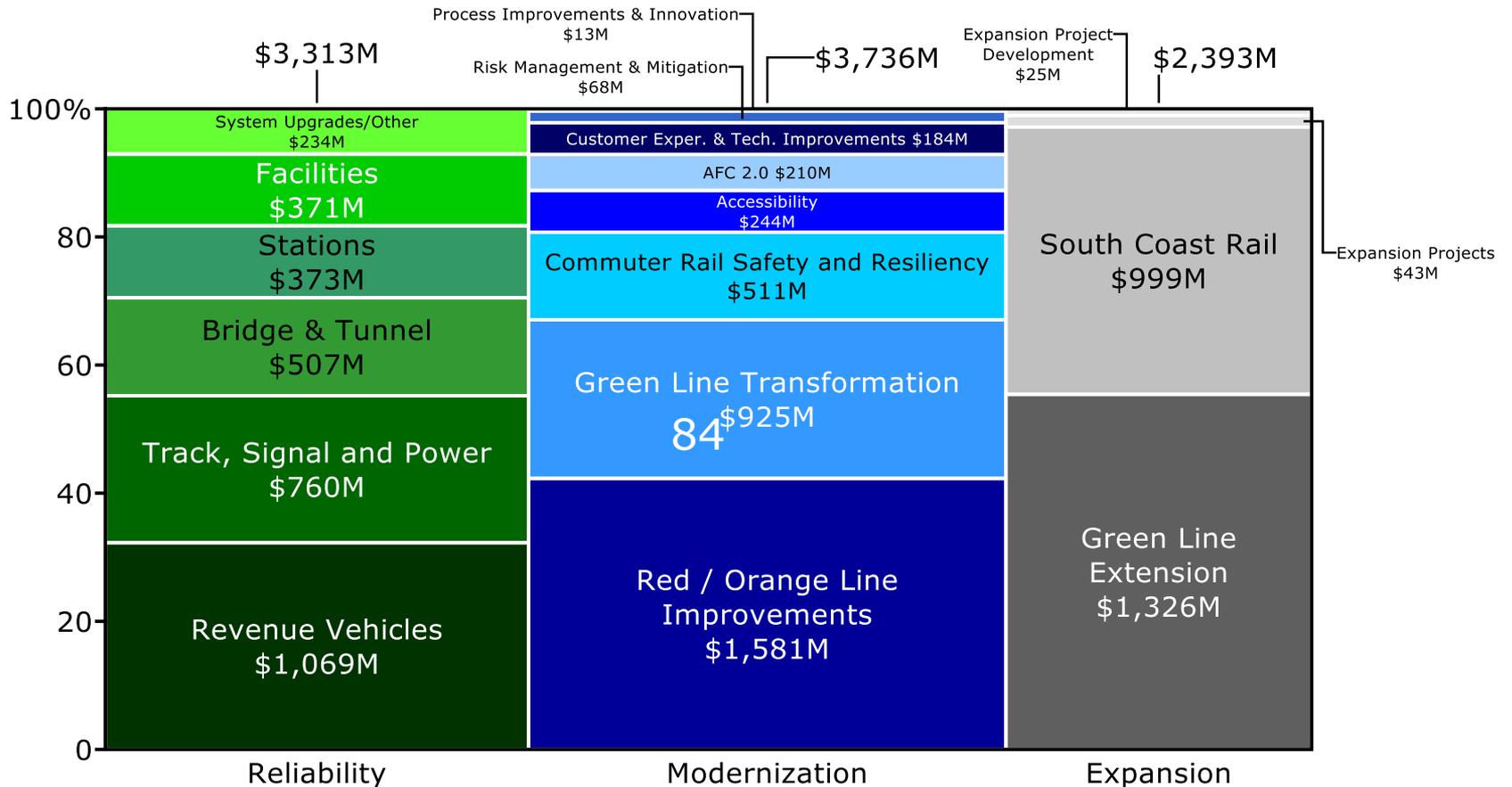
Pay-Go Committee Approved Projects in FY19

FY19 Pay-Go Committee Approved Projects	Approved Amount
Station Transformation and Revitalization – CR	\$20,048,000
Power Systems Resiliency Program	\$13,239,600
2019 – 2021 Expedited Wayfinding Delivery Strategy	\$9,000,000
North Station (GL/OL) Flooring Replacement	\$5,126,000
Sixty Five Additional Gas Switch Heaters	\$4,970,737
2019 Station Brightening Blitz	\$4,400,000
Snow Removal Equipment	\$3,968,312
Onboard Passenger Train Information Systems (PTIS) Modernization	\$2,595,991
MBTA Map Update	\$1,060,192
45 High Street Transformer Replacement	\$1,000,000
Countdown Signs Installation	\$859,500
Ruggles Station Roof Repair/Replacement	\$800,000
Digital Screens User Interface	\$411,107
RL/OL Reliability Centered Maintenance	\$253,000
Connectivity and Customer Convenience PPP Project Development	\$250,000
Green Line Real Time Crowding	\$245,000
Newton Centre Canopy Roof Replacement	\$210,000
Intranet Modernization	\$208,000
Total	\$68,597,439



Draft FY20-24 CIP programs reflect \$9.4 billion organized by *Priority and Program*

FY20-24 CIP Spending by Priority and Program (\$M)

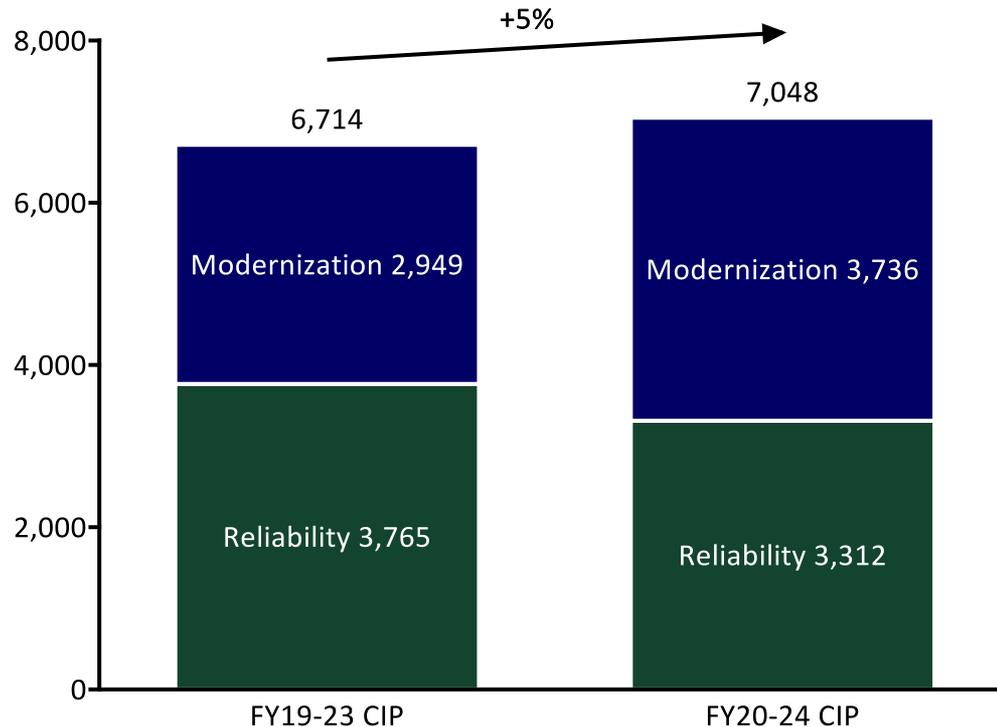




Draft FY20-24 CIP reflects \$7.0 billion in Reliability/Modernization investments

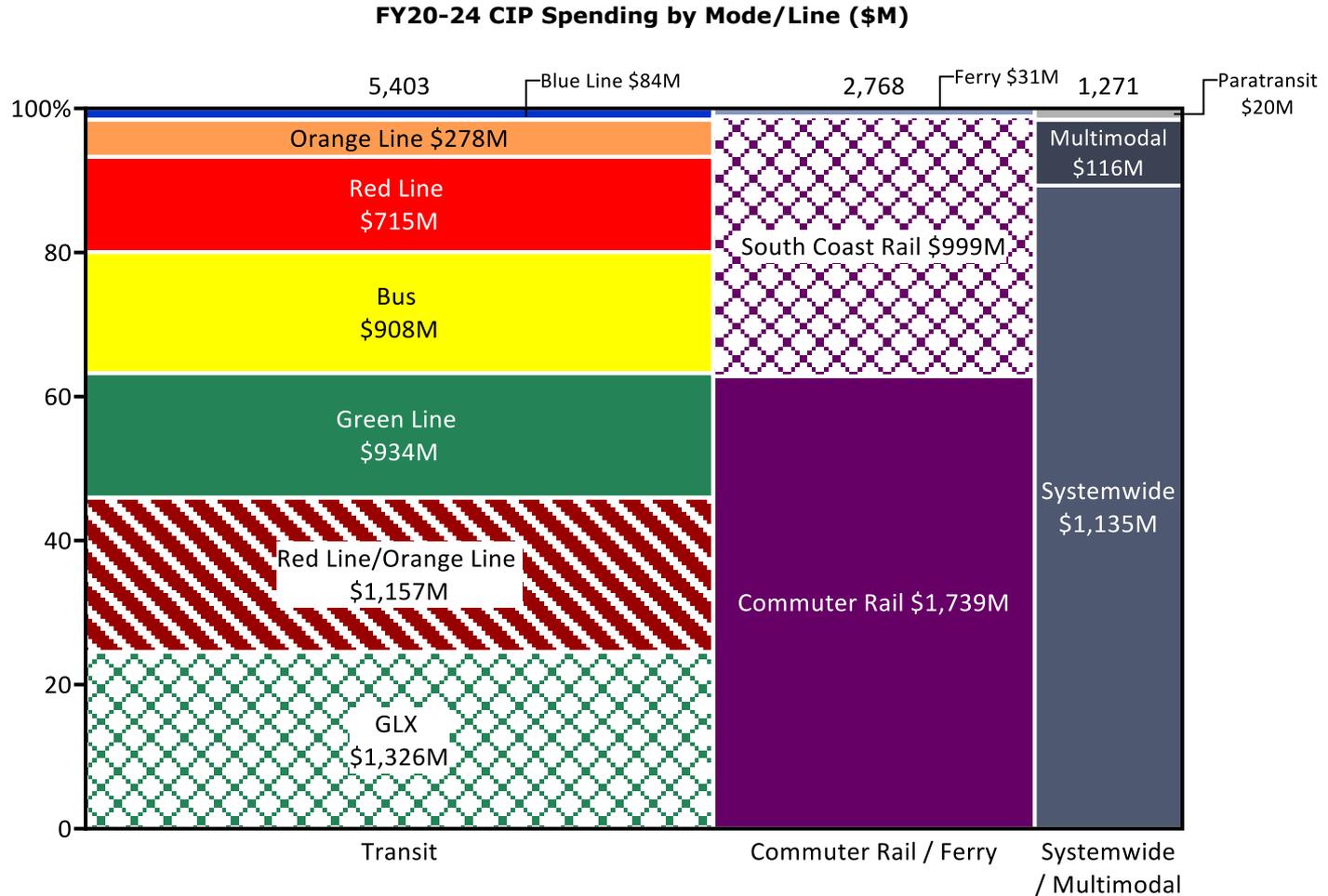
- Overall, Reliability and Modernization investment increased by 5% since the prior CIP.
- Shifts between Reliability and Modernization primarily due to reallocation of projects into Green Line Transformation program.

Draft FY20-24 CIP by Priority (\$M)





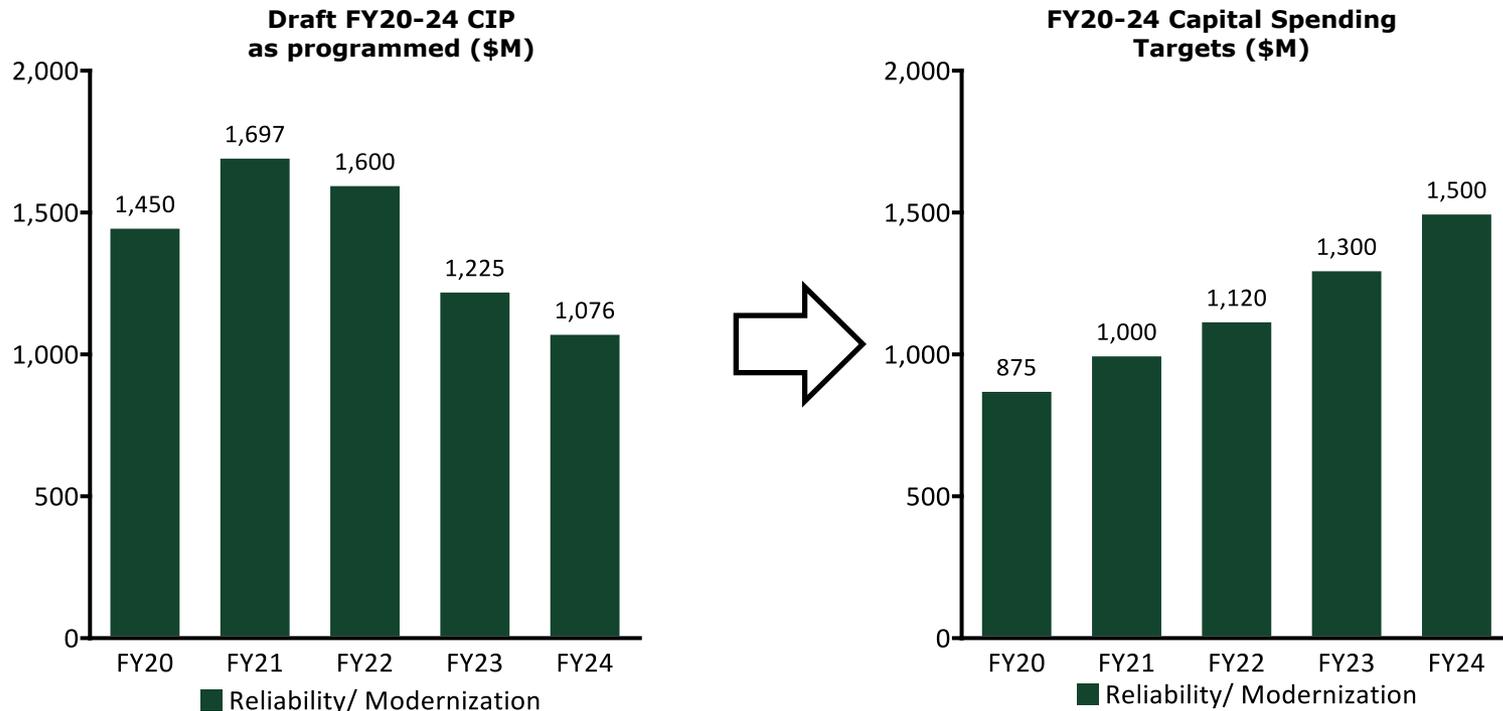
Draft FY20-24 CIP investments by Mode/Line





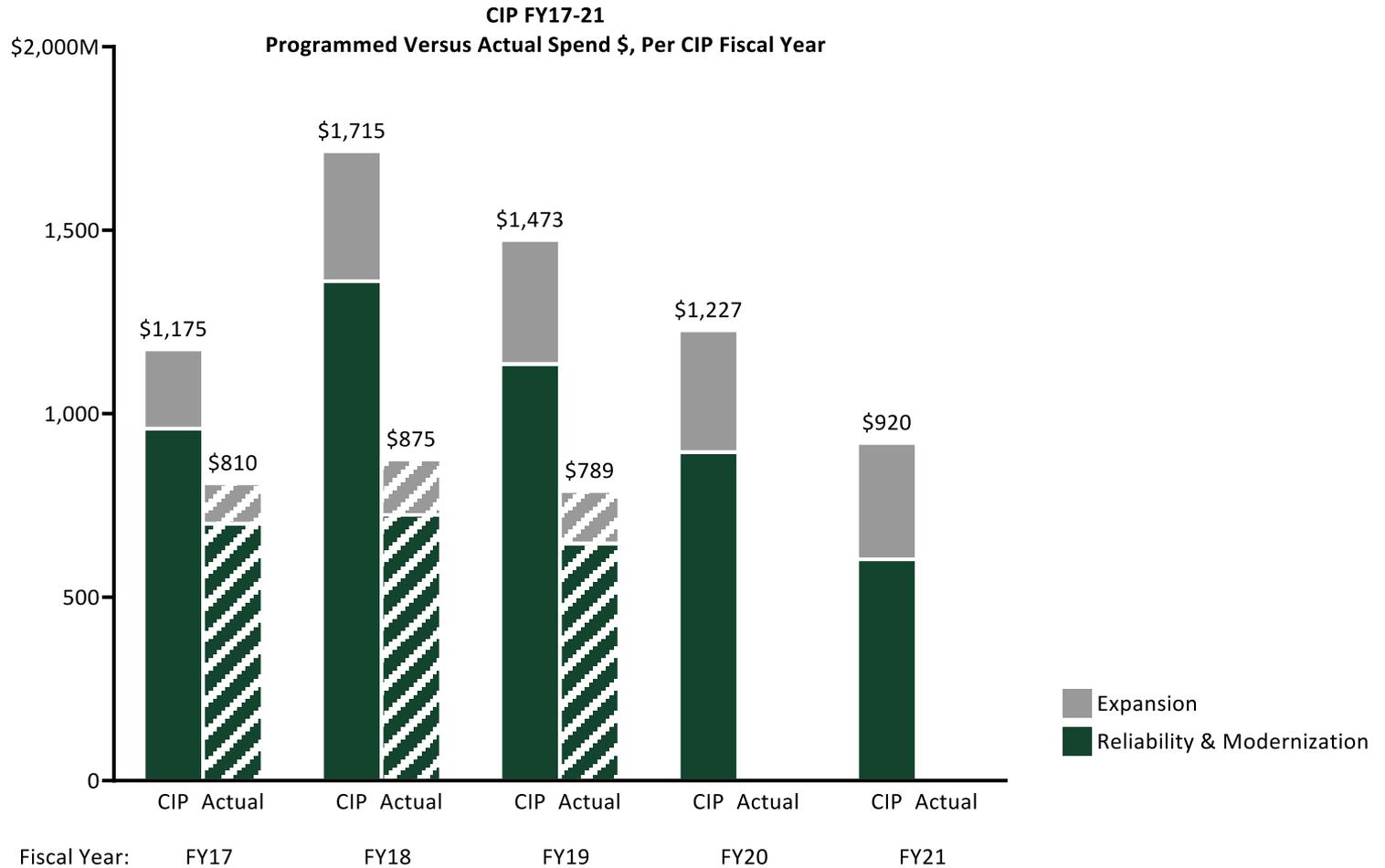
Alignment between Draft FY20-24 CIP and Rebaselined spending targets

- The Draft FY20-24 CIP reflects available funds as programmed to specific projects, with the anticipated cash flow forecasts identified by project teams.
- This results in a more aggressive and “front-loaded” plan, as compared to spending targets
- Chief of Capital Programs will conduct a thorough review of all capital projects and potentially resequence projects based on capacity to execute



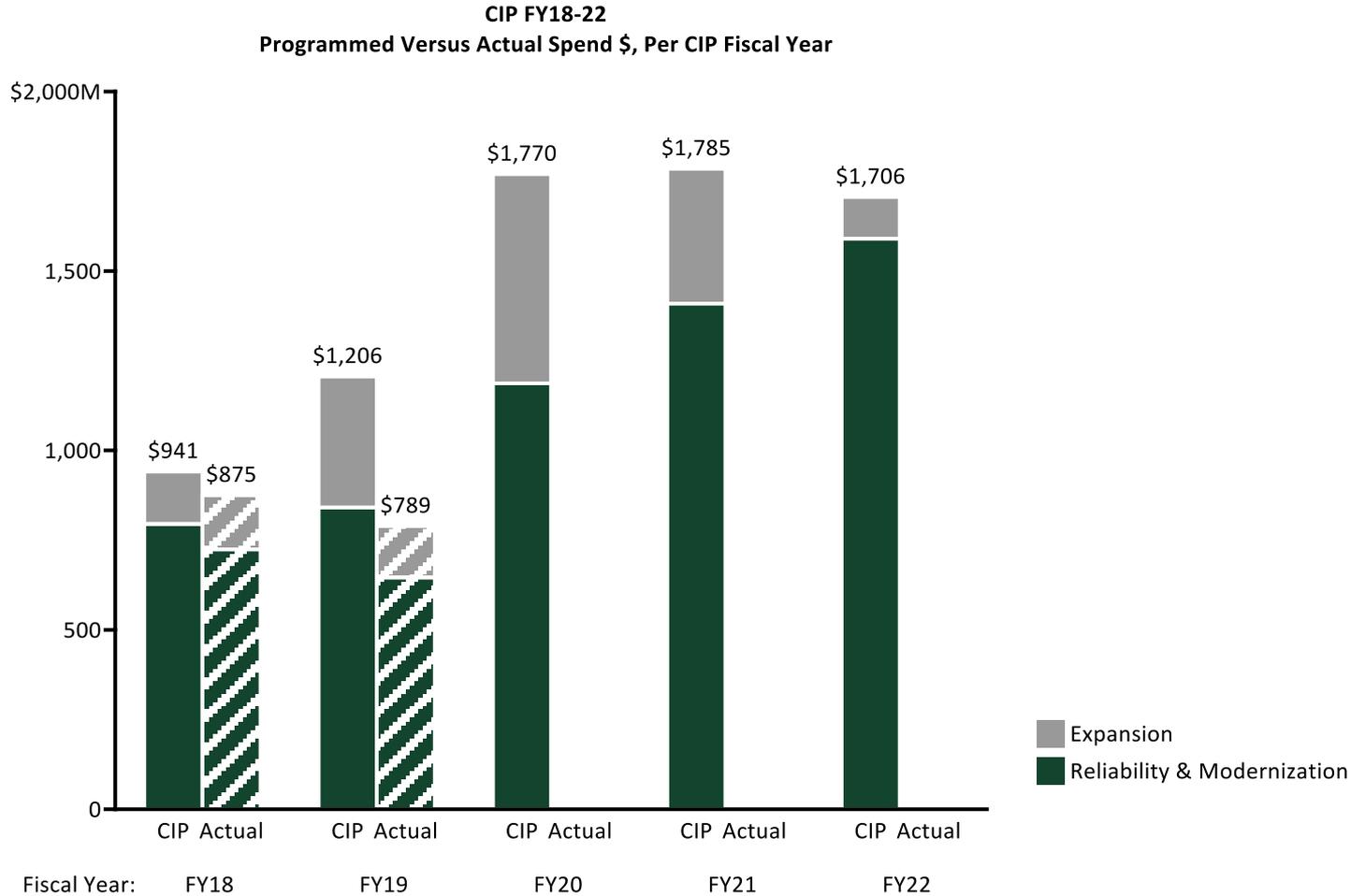


FY 17-21 CIP Programmed vs. Actuals (FY19 through April)



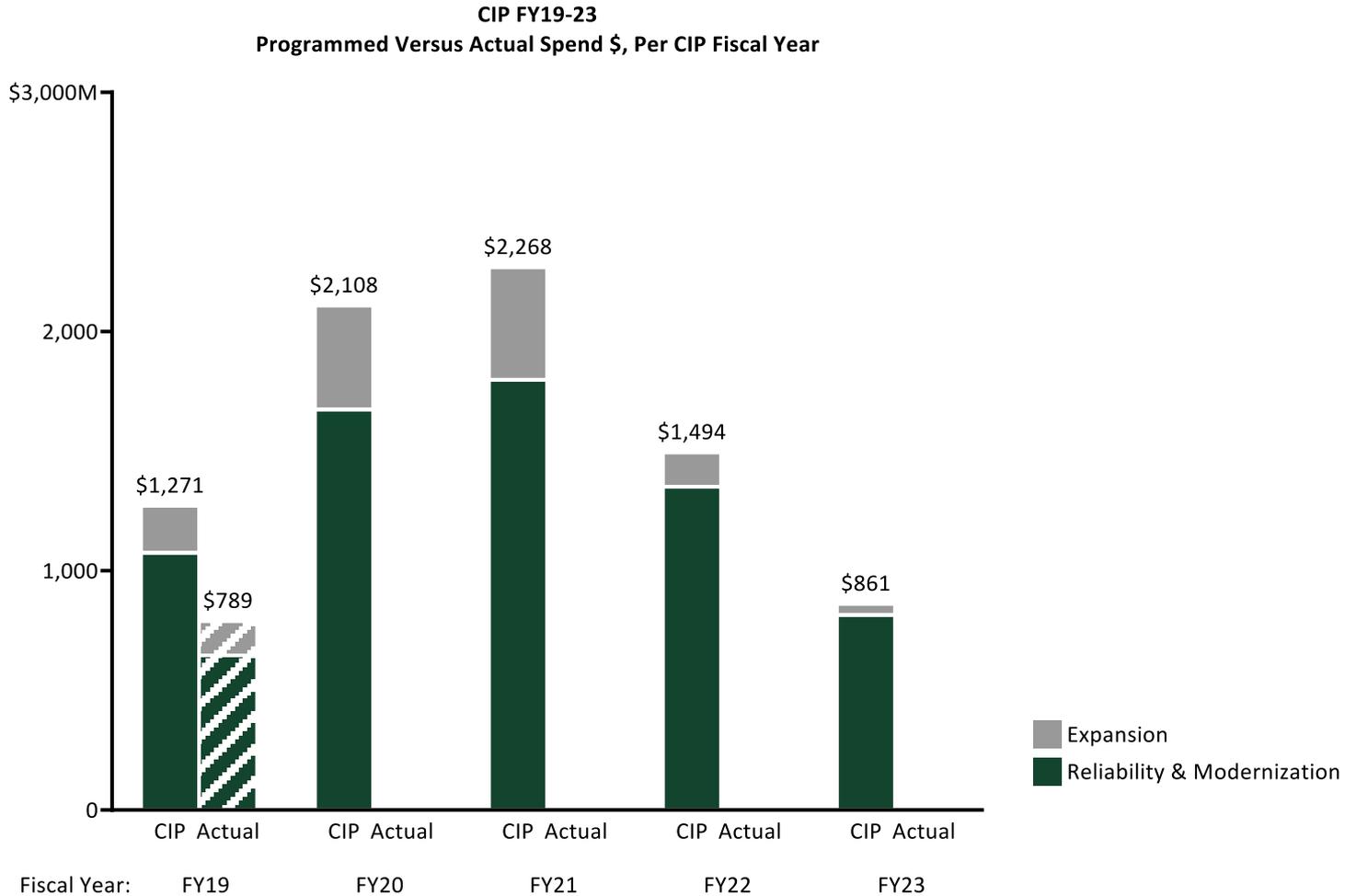


FY 18-22 CIP Programmed vs. Actuals (FY19 through April)





FY 19-23 CIP Programmed vs. Actuals (FY19 through April)





Public Input Process and CIP Public Meeting Schedule

CIP Public Meeting Schedule (MBTA Service Area)

- **BOSTON** - Tuesday, May 21st – 6:30pm
* *This meeting will be streamed live and recorded for future viewing*
- **DANVERS** - Tuesday, May 21st – 6:00pm
- **FALMOUTH** - Wednesday, May 22nd – 6:30pm
- **BRAINTREE** - Thursday, May 23rd – 6:30pm
- **FALL RIVER** - Thursday, May 23rd – 6:30pm
- **NATICK** - Wednesday, May 29th – 6:30pm
- **LOWELL** - Thursday, May 30th – 6:30pm
- **LEOMINSTER** - Monday, June 3rd – 6:30pm
- **ROXBURY** - Tuesday, June 4th – 6:30pm
- **WORCESTER** - Wednesday, June 5th – 6:30pm

**CAN'T MAKE A MEETING? POST YOUR
IDEAS AT WWW.MASS.GOV/CIP OR
EMAIL COMMENTS TO
MASSCIP@STATE.MA.US**

massDOT | CAPITAL INVESTMENT PLAN
Massachusetts Department of Transportation

FACT

MassDOT will spend approximately \$17 billion dollars in transportation investments over the next 5 years.

FACT

Most people in Massachusetts are unaware of the capital planning process and do not participate in the conversations about where transportation funding should be prioritized.

FACT

Your voice is important! MassDOT wants to hear from ALL citizens across the Commonwealth!

MassDOT is preparing the next five-year capital plan, a spending plan that will guide investments in our transportation system between 2020 and 2024. The Capital Investment Plan (CIP) determines how we prioritize and fund our investments, covering all transportation projects – everything from highway and municipal projects to regional airports, rail and transit, including the MBTA and Regional Transit Authorities as well as bicycle and pedestrian projects across the Commonwealth.

JOIN US AND BE HEARD

We want to hear from you about your priorities for transportation projects both local and statewide. Tell us how we can improve our transportation systems, enhance our transportation capacity where needed, and build new projects to help communities prosper and get residents where they need to go. Representatives from MassDOT will inform attendees on how to get involved at the local and state level, provide a draft overview of the 2020 – 2024 CIP and record your input about your transportation needs and capital priorities. Please help spread the word about these Capital Investment Plan meetings to friends, family and business associates. Make your voice heard. Your participation is critical to meeting your transportation needs.

CIP PUBLIC MEETING SCHEDULE

<ul style="list-style-type: none"> • BOSTON - Tuesday, May 21st – 6:30pm Transportation Building - 10 Park Plaza Board Room *This meeting will be streamed live and recorded for future viewing • DANVERS - Tuesday, May 21st – 6:00pm Danvers Senior Center 25 Stone St. • FALMOUTH - Wednesday, May 22nd – 6:30pm Falmouth Library (Hermann Foundation Room) 300 Main St. • BRAINTREE - Thursday, May 23rd – 6:30pm Thayer Public Library 798 Washington St. • FALL RIVER - Thursday, May 23rd – 6:30pm Fall River Library (Large meeting room) 104 North Main St. • PITTSFIELD - Tuesday, May 28th – 6:00pm Berkshire Regional Planning Commission 1 Fenn St, #201 	<ul style="list-style-type: none"> • NATICK - Wednesday, May 29th – 6:30pm Natick Town Hall (Selectmen Room) 13 East Central St. • LOWELL - Thursday, May 30th – 6:30pm Pollard Library (Community Meeting Room) 401 Merrimack St. • LEOMINSTER - Monday, June 3rd – 6:30pm Leominster City Hall (Auditorium) 25 West St. • ROXBURY - Tuesday, June 4th – 6:30pm Bolting Municipal Building 2300 Washington St. • WORCESTER - Wednesday, June 5th – 6:30pm Worcester City Hall (South Meeting Room) 455 Main St. • SPRINGFIELD - Thursday, June 6th – 6:00pm Springfield Library (Mason Square Branch) 765 State St.
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CAN'T MAKE A MEETING? POST YOUR IDEAS AT WWW.MASS.GOV/CIP OR EMAIL COMMENTS TO MASSCIP@STATE.MA.US

Meeting locations are accessible to people with disabilities and those with limited English proficiency. Accessibility accommodations and language services will be provided free of charge upon request, and as available. Requests should be submitted within ten days of the meeting at which services will be required, if at all possible. Such services include documents in alternative formats, translated documents, assistive listening devices, and interpreters (including American Sign Language). For more information or to request reasonable accommodation and/or language services, please contact Michelle Moulton at (508) 388-9027 or michelle.moulton@dot.state.ma.us.



Next Steps

- Release draft CIP for public comment
- Participate and collect feedback at upcoming CIP Public Meetings
- Incorporate FMCB and Joint Board feedback
- Incorporate public comment in CIP
- Set FY20 Capital Program Key Performance Indicators
- Present final CIP for vote: FMCB June 10, CPC June 12, Joint Bd June 17