

FY20-24 Capital Investment Plan

Overview of Final FY20-24 CIP

6/10/2019

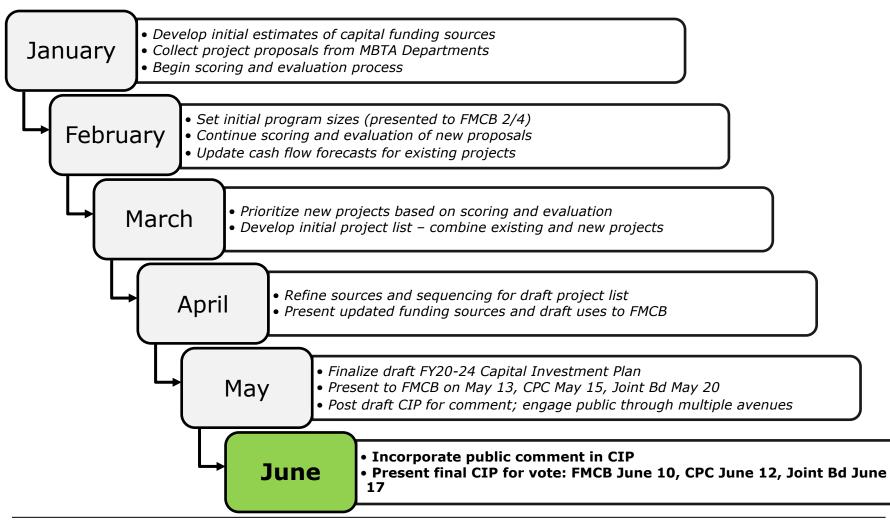


Agenda

- 1. Recap of the FY20-24 CIP process and where we are today
- 2. Summary and analysis of public input process and comments received
- 3. Review overall FY20-24 CIP by funding source, priority, program and mode
- 4. Discuss CIP programming as compared to MBTA spend targets
- 5. FY20 Capital Program Key Performance Indicators
- 6. Next Steps



FY20-24 CIP Process Recap





Public Input Process and CIP Public Meeting Schedule

CIP Public Meeting Schedule (MBTA Service Area)

- BOSTON Tuesday, May 21st 6:30pm
 * This meeting was streamed live and recorded for future viewing
- DANVERS Tuesday, May 21st 6:00pm
- 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
- CHELSEA Thursday, May 30 6:30pm
- LEOMINSTER Monday, June 3rd 6:30pm
- ROXBURY Tuesday, June 4th 6:30pm
- WORCESTER Wednesday, June 5th 6:30pm



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 (DP) 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 MassDorf 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 finded, family and business associates. Make your vice heard, Your participation is critical to meeting your transportation needs.

CIP PUBLIC MEETING SCHEDULE

- 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 796 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

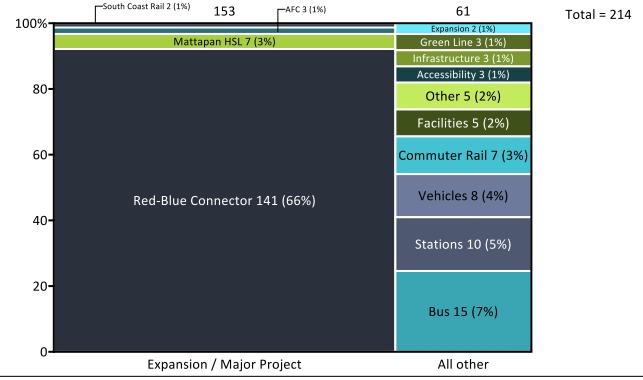
- NATICK Wednesday, May 29th 6:30pm Natick Town Hall (Selectmen Room) 13 East Central St.
- LOWELL Thursday, May 30th 6:30pm Pollard Library (Community Meeting Room) 401 Merrimack St.
- LEOMINSTER Monday, June 3rd 6:30pm Leominster City Hall (Auditorium) 25 West St.
- ROXBURY Tuesday, June 4th 6:30pm Bolling 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.

CAN'T MAKE A MEETING? POST YOUR IDEAS AT WWW.MASS.GOV/CIP OR EMAIL COMMENTS TO MASSCIP@STATE.MA.US Meeting bactering are accessible to people with disabilities and those with initiated English professions. Accessibility accommodations and reingues services will be provided fine of hoses your project, and as walked in Regards should be under within the disp of the metry and which nervox with the noreautive theorem, and the all provided induice Accuments in alternative formats, translated documents, assistive listering devices, and interpreter findularity. American Sign Language, for more information or to request reasonable accommodation and/or language services. Build be Malliem # (SST) 389.0507 or inteledine Linatelendidot table aux as.

Recap of Public Comments

As of June 5, 2019, we received the following feedback:

- Email and mail: 11 comments
- Public meetings: 8 comments
- Online comment tool: 195 comments



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Recap of Public Comments

Comment Highlights

- Positive feedback on the **Red/Blue Connector** to support connectivity, reduce crowding, reduce congestion, and promote economic growth.
- Support for **Bus improvements**, including electric bus procurements, bus shelters, dedicated bus lanes, and route improvements

- Mattapan High Speed Line:

- Support for historical nature of PCCs
- Support for upgrading it to a rapid transit line and/or extension of Ashmont Branch

- Station Improvements and Accessibility:

- Wakefield Station
- Broadway Station
- Forest Hills Station
- Auburndale, West Newton and Newtonville Stations
- First/Last Mile options for the elderly and riders with disabilities
- General support for redesigning and/or building stations to be fully accessible (Elevator Program, Plan for Accessible Transit Infrastructure [PATI])
- Haverhill City Council unanimously endorsed relocation of **Bradford MBTA Layover Station**
- Comments on different **Automated Fare Collection 2.0** fare policy approaches
- Support for Green Line Extension and Capacity Study
- Support for electrification of **Commuter Rail**



Final FY20-24 CIP: Changes since Draft CIP presentation

Changes since draft:

- Added projects approved via Pay-Go or Capital Maintenance processes (net zero impact):
 - Bus Maintenance Wireless Installation
 - Orange Line Rail Vehicle Component Upgrades
 - Green Line Fleet Flooring Upgrades
 - Blue Line PLC Upgrade
 - Systemwide Power Study
 - Maverick/Long Wharf Emergency Vent Fan Replacement
 - Wayside Bearing Acoustic Monitoring/Defect Detection (RailBAM)
 - Countdown Signs Installation
 - Commuter Rail Snow Removal Equipment
- South Coast Rail: Added SCR bridge projects executed by Highway Division but funded within overall program
- **Technical adjustments:** Net changes of <0.1% due to revised cash flow forecasts and other technical adjustments



Final FY20-24 CIP: Projects funded for planning/design only

CIP Priority/ Program	Project	2020-2024 CIP Total Project Cost (M)	Comments
Reliability/Bridges and Tunnels	Dorchester Ave Bridge	\$4.2	Design phase only for replacement of three contiguous bridges carrying Dorchester Ave. over Cabot Yard Lead tracks, Red Line main tracks, and Old Colony CR track.
Reliability/Facilities	South-Side Commuter Rail Maintenance Facility	\$15.4	Planning, preliminary design, and potential land acquisition costs for new south-side facility for Commuter Rail equipment repairs.
Reliability/Facilities	Haverhill Layover Facility Relocation	\$5.0	Planning and land acquisition for relocation of current Commuter Rail layover facility to new location for additional train layover space in Haverhill vicinity.
Reliability/Facilities	Systemwide Facility Needs and Programming Study	\$1.0	Development of a master plan for all MBTA employee facilities. Includes forty locations from small bus garages to large car houses and office complexes.
Reliability/Stations	Ruggles Station Improvements – Phase 2	\$3.2	Design for additional station improvements to address deficiencies, including platform egress and path of travel code issues, non ADA-compliant restrooms, MEP upgrades, wayfinding improvements and roof system repairs
Reliability/Stations	Worcester Union Station Design	\$4.4	Design phase for new full-length center island platform, including elevators and pedestrian overpass, and track realignment to accommodate platform reconfiguration.



Final FY20-24 CIP: Projects funded for planning/design only

CIP Priority/ Program	Project	2020-2024 CIP Total Project Cost (M)	Comments
Reliability/Stations	Ruggles Station Improvements – Phase 2	\$3.2	Design for additional station improvements to address deficiencies, including platform egress and path of travel code issues, non ADA-compliant restrooms, MEP upgrades, wayfinding improvements and roof system repairs
Reliability/Stations	Stations Needs Assessments	\$3.0	Assessment of station conditions, deficiencies, and determination of recommended improvements across MBTA network.
Reliability/Track, Signals, and Power	Worcester Line Track Improvements Incl. 3 rd Track Feasibility Study	\$12.4M	Planning and initial design for installation of third track on MBTA Commuter Rail Framingham/Worcester line from MP 11.0 to 21.2 to improve operational flexibility.
Reliability/Track, Signals, and Power	System-wide Power Study	\$0.8M	Development of long-term action plan to modernize existing power systems, improve system resiliency & provide future expansion options
Modernization/Accessibility	Elevator Program Multiple Location Design	\$45.0	Design phase for replacement of multiple elevators across transit and Commuter Rail stations.
Modernization/Accessibility	Newton Commuter Rail Stations Design	\$20.6	Planning and design for accessibility improvements at Auburndale, West Newton, and Newtonville Stations



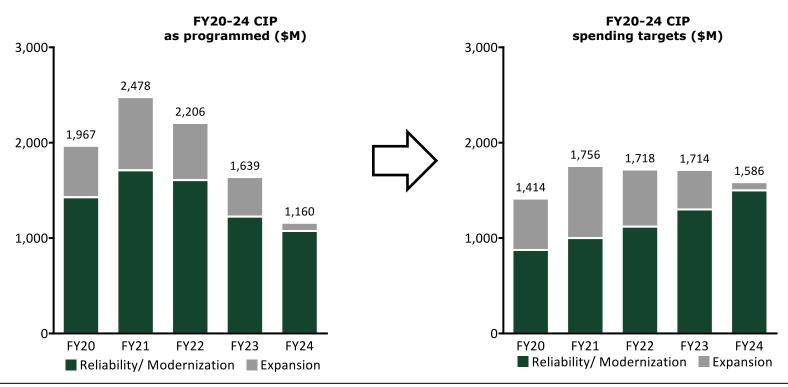
Final FY20-24 CIP: Projects funded for planning/design only

CIP Priority/ Program	Project	2020-2024 CIP Total Project Cost (M)	Comments
Expansion/Expansion Project Development	Red-Blue Connector	\$15M	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.
Expansion/Expansion Project Development	Green Line Extension to Mystic Valley Parkway (Route 16)	\$9M	Initial project development (environmental review) costs for extension of Green Line from College Avenue Station to new Mystic Valley Parkway Station
Expansion/Expansion Project Development	Silver Line to Everett	\$1M	Initial project development (feasibility study) costs for extension of Silver Line from Chelsea Station to Everett



Alignment between FY20-24 CIP and Rebaselined spending targets

- For the FY20-24 plan, the MBTA investment programs reflect \$9.4 billion of funding sources but the spending targets total \$8.2 billion over five years
- Full funding is available to execute the \$9.4 billion investment programs, but more realistic spend targets have been set as the MBTA builds capacity to execute this ambitious capital program





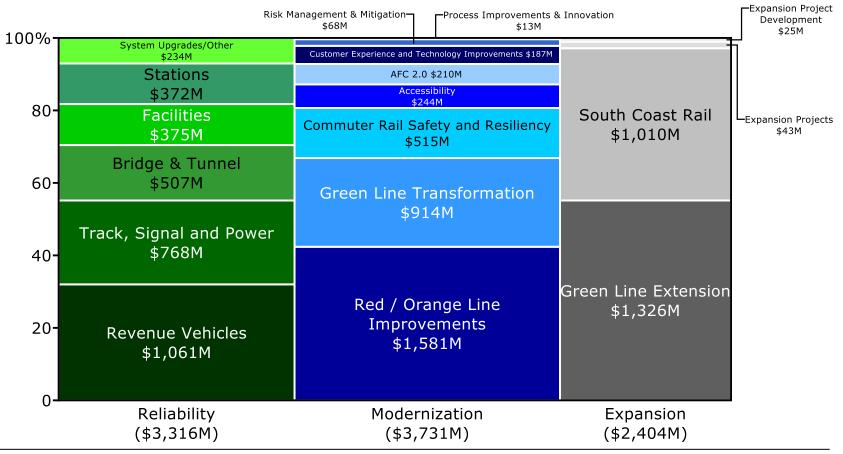
Of \$9.4B in available and programmed funding, MBTA CIP forecasts \$8.2B in spending during the five-year window

Projected Sources (in millions)	FY 2020	FY 2020-2024 Total					
Federal sources of funds							
Federal Highway (FHWA) reimbursements	\$61.1	\$84.5					
Federal Transit (FTA) reimbursements and grant draws	\$365,4	\$2,871.2					
FTA Full funding grant agreement (GLX FFGA)	\$320.5	\$761.6					
Other federal funds	\$10.6	\$14.0					
Subtotal federal sources*	\$757.64	\$3,731.3					
Bond cap (SCR)	\$115.2	\$461.5					
Accelerated Bridge bonds	\$0.1	\$0.1					
Rail enhancement bonds	\$233/2	\$1,809.7					
MBTA Revenue bonds	\$100.0	\$1,005.2					
Municipal and local funds (GLX)	\$15.0	\$75.0					
Reimbursable and 3 rd parties	\$14.5	\$101.0					
Positive Train Control (PTC) financing	\$24.3	\$170.7					
Pay-Go Lockbox (Bond Cap)	\$60.0	\$300.0					
Pay-Go lockbox (MBTA)	\$90.0	\$568.3					
Capital maintenance fund	\$4.1	\$6.2					
Subtotal non-federal sources	\$656.36	\$4,497.7					
Total spending by sources	\$1,414.0	\$8,229.0					



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

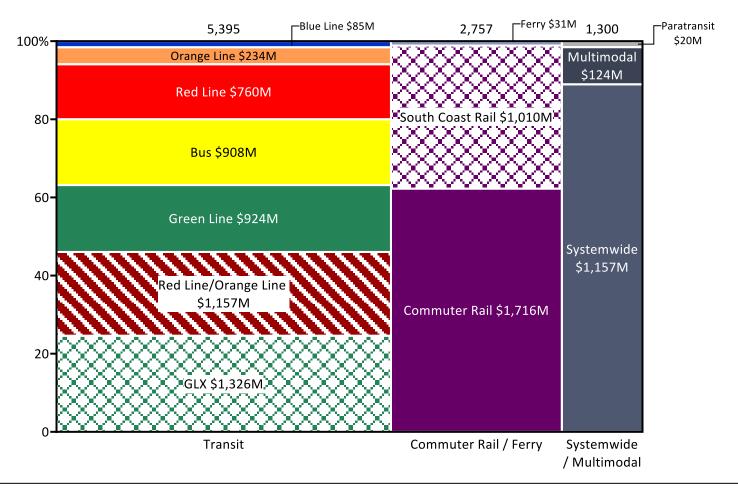
FY20-24 CIP by Priority and Program (\$M)



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Programmed FY20-24 CIP investments by Mode/Line



FY20-24 CIP by Mode/Line (\$M)

Draft for Discussion & Policy Purposes Only



FY20 Key Performance Indicators (KPIs) (FY19 actuals through 6/4/19)

Key Performance Indicator	FY16 Actual	FY17 Actual	FY18 Actual	FY19 YTD Actual	FY19 Target	FY20 Target
Total Capital Investment	\$748M	\$811M	\$875M	\$888M	\$1B → \$950M	\$1.4B
Reliability/Modernization Programs Capital Investment	\$502M	\$709M	\$720M	\$727M	\$850M → \$775M	\$875M
Expansion Programs Capital Investment	\$246M	\$102M	\$155M	\$162M	\$150M → \$175M	\$539M
Capital Construction Contracts Awarded	\$110M	\$345M	\$639M	\$515M	\$650M	\$850M
Vehicle Procurement Contracts Awarded	New for FY19	New for FY19	New for FY19	\$323M	>\$300M	\$250M
Professional Services Contracts Awarded	New for FY20	New for FY20	New for FY20	New for FY20	New for FY20	TBD
Percentage of FY20-24 CIP projects Underway/In-Progress	New for FY19	New for FY19	New for FY19	77.4%	>75%	>75%



Next Steps

- Incorporate any additional feedback from FMCB
- Respond to public comment and official correspondence
- Seek final approvals for MassDOT/MBTA CIP from CPC (6/12) and Joint Board (6/17)
- Publish final FY20-24 CIP on public website
- Advance new projects through e-Builder project initiation process
- Continue building capacity to execute capital program
- Report to FMCB quarterly on Capital Program KPIs



Appendix



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 entre 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.