
Draft CIP Update SFY 2020-2024 Joint Boards presentation

May 20, 2019



Overview

- **CIP updates:**

- CIP update process
- Focus for 2020-2024 CIP
- Investment overview
- CIP Status
- CIP Sources and Uses
- Draft spending by source
- Updated program changes & project selection
- New CIP on-line format

- **Appendix:**

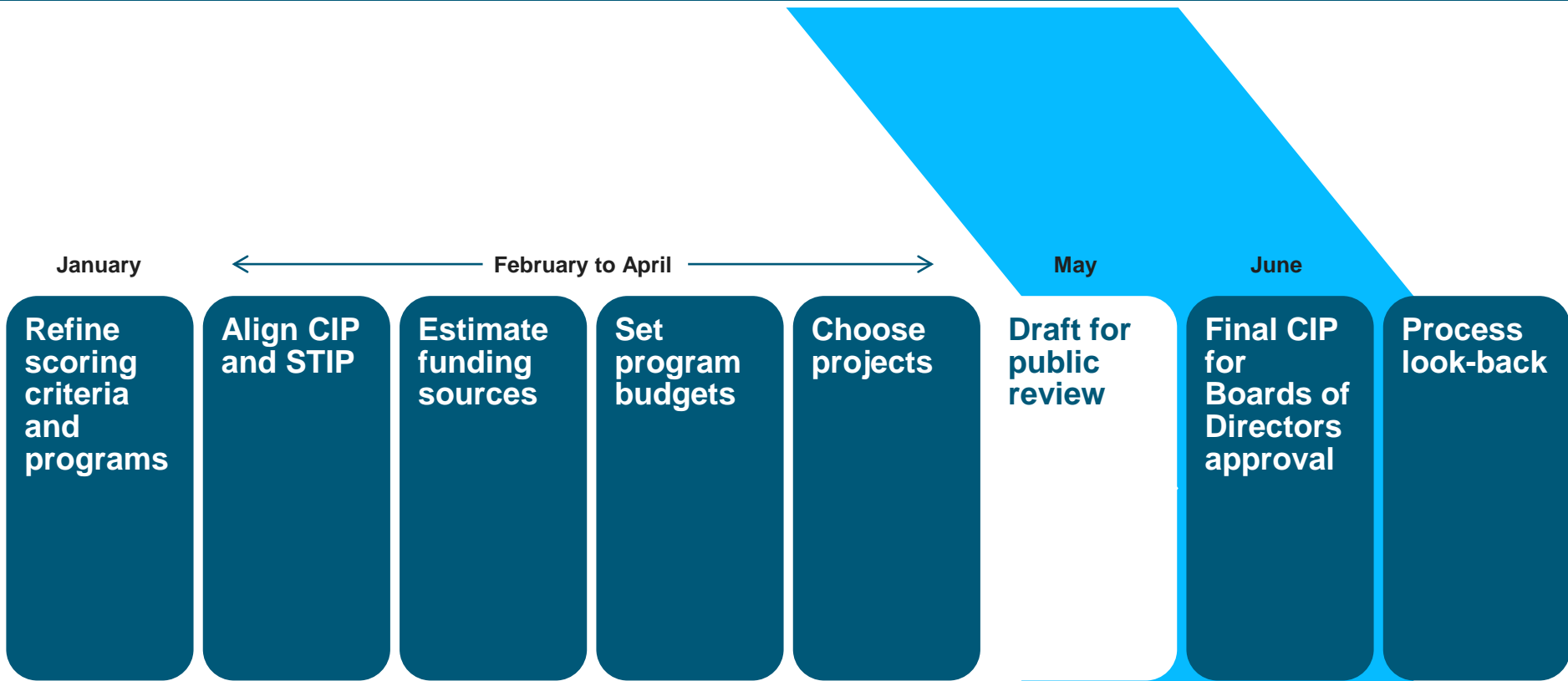
- Updated program budget changes
- Highlighted projects

- **Today:**

- Need feedback on draft plan
- Approval to release for public comment and review



2020-2024 Capital Investment Plan update process



Where we are:

- **Finalize draft FY20-24 Capital Investment Plan**
- **Present to CPC May 15, Joint Boards May 20**
- **Post draft CIP for comment; engage public through multiple avenues**



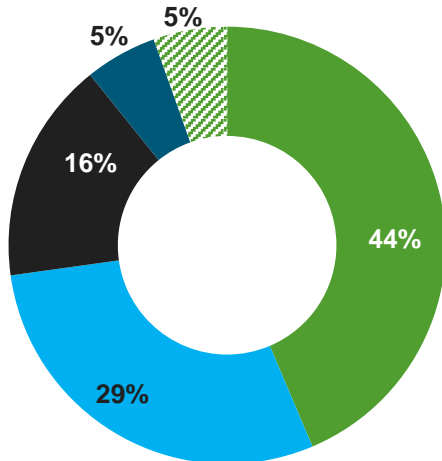
Overview – CIP Focus for 2020-2024

- As with last year, this process is not a top-to-bottom creation of a 5-year Capital Investment Plan (CIP), but an annual update to our 5 year plan
 - The 2020-2024 CIP is the fourth iteration of a “rolling” 5 year capital plan for MassDOT and the MBTA
 - A five year transportation bond bill will be filed in June 2019
 - Funding and authorizations included in the new TBB are anticipated to be available in 2022
 - A bottoms up review and in-depth revisions will take place for the 2022-2025 CIP
- Investments for the 2020-2024 CIP total \$18.3 billion over five years
 - This represents more than \$900 million (5.8% more than over the 2019-2023 CIP programmed investments)
 - Since the 2017-2021 CIP, programmed investments have continued to increase with each subsequent update to the CIP
 - A total of 2,152 projects are included in the 2020-2024 CIP
 - 497 MBTA projects
 - 1655 MassDOT projects (Aeronautics, Highway, Rail & Transit, RMV, IT, Planning, etc.)
 - Includes Chapter 90, Complete Streets & Municipal bridge

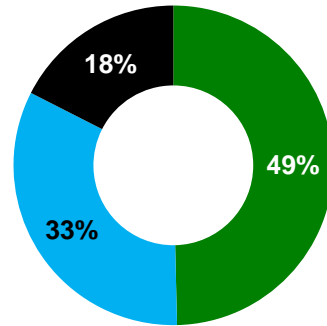


Plan update: investments overview

Overall spending by priority



Overall spending by priority



Reliability/Modernization account for 73% of the CIP investments

Overall:

- ▶ The draft SFY 2020-2024 CIP update continues the investment strategy of the prior CIPs. A majority of funds go toward the reliability and modernization of our transportation system, with targeted investments in expansion of the system.

Increase highlights:

- ▶ Full funding (\$1,009.6 million) for South Coast Rail Program (Phase 1)
- ▶ \$448 million in additional MassDOT pay-capital projects and \$263 in federally funded projects
- ▶ \$215 million in net program spending increases (excluding SCR) at MBTA such as:
 - ▶ \$925 million for new Green Line Transformation Program (offset by reallocations from other programs)
 - ▶ \$25 million for new Expansion Projects Development Program
 - ▶ \$68.4 million for customer facing facilities improvements (Customer Experience and Technology Program)
 - ▶ \$99.4 million for GLX (reflects current project cash flows with spending in out years moving into 2020-2024 timeframe)

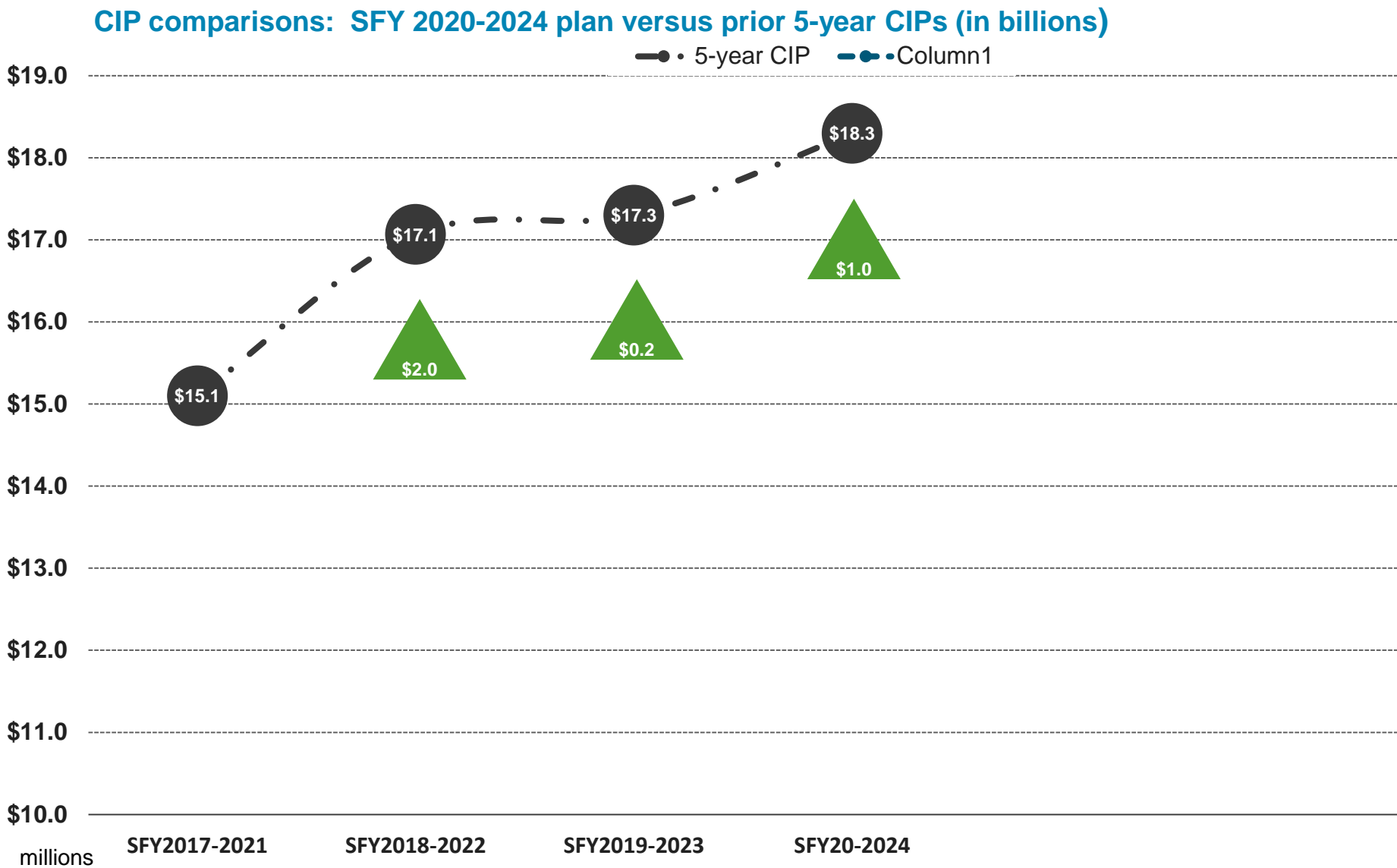
Is it affordable?

- ▶ More in revenue bond assumptions for MBTA
- ▶ Anticipates obligating available federal-aid in all Divisions including new federal-aid sources
 - ▶ Assumes significant spend down of FTA carry over balances for MBTA
- ▶ New state bond funds (bond cap and REP)

<i>millions</i>	SFY 19- 23	SFY 20- 24	Differences
Reliability	\$8,376.6	\$7,987.1	-\$389.5
Modernization	\$5,122.9	\$5,343.2	+\$220.3
Expansion	\$1,926.5	\$2,993.9	+\$1,067.4
Chapter 90	\$1,000.0	\$1,000.0	-
Planning, Enterprises Services, & Other	\$848.1	\$973.5	+\$125.4
<i>Five-year total</i>	\$17,274.1	\$18,297.7	+\$1,023.6

Net change
\$-\$169.2M

Plan update: 5-year CIP spending comparisons



Capital Investment Plan priorities

1 *Reliability*

Maintain and improve the overall condition and reliability of the transportation system

- ▶ Necessary routine and capital maintenance
- ▶ State of Good Repair projects designed primarily to bring asset condition up to an acceptable level
- ▶ Asset management and system preservation projects

2 *Modernization*

Modernize the transportation system to make it safer and more accessible and to accommodate growth

- ▶ Compliance with federal mandates or other statutory requirements for safety and/or accessibility improvements
- ▶ Projects that go beyond State of Good Repair and substantially modernize existing assets
- ▶ Projects that provide expanded capacity to accommodate current or anticipated demand on existing transportation systems

3 *Expansion*

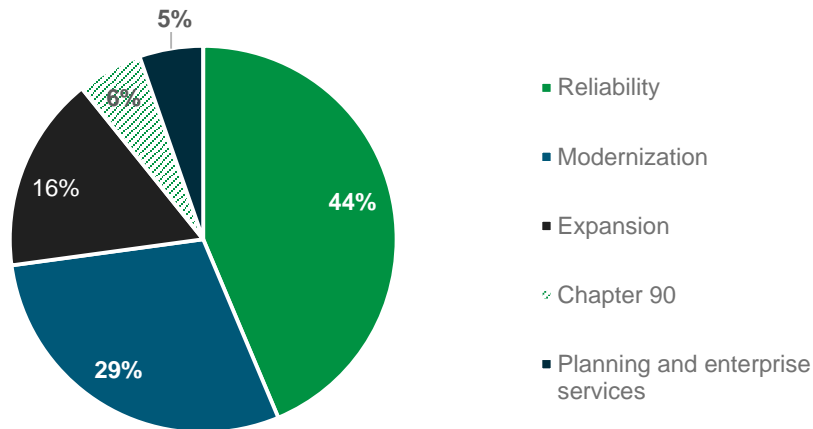
Expand diverse transportation options for communities throughout the Commonwealth

- ▶ Projects that expand highway, transit and rail networks and/or services
- ▶ Projects that expand bicycle and pedestrian networks to provide more transportation options and address health and sustainability objectives

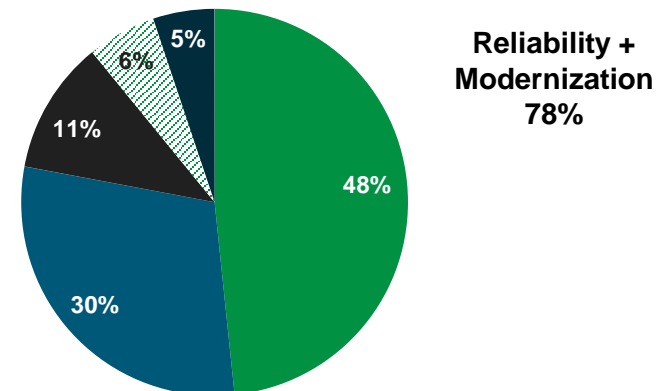
2020-2024 CIP as compared to prior plans

- The FY2020-2024 Capital Plan continues to strongly emphasize investments in reliability and modernization
 - ~73% of our FY 2020-2024 plan is focused on funding reliability and modernization programs (consistent with prior CIPs)

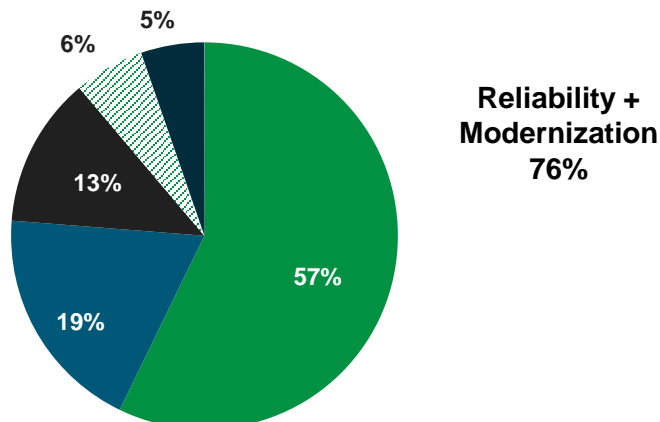
2020-2024



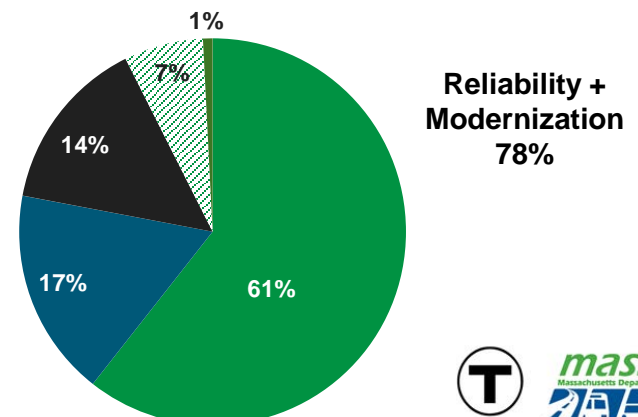
2019-2023



2018-2022



2017-2021



Overview – Where we are

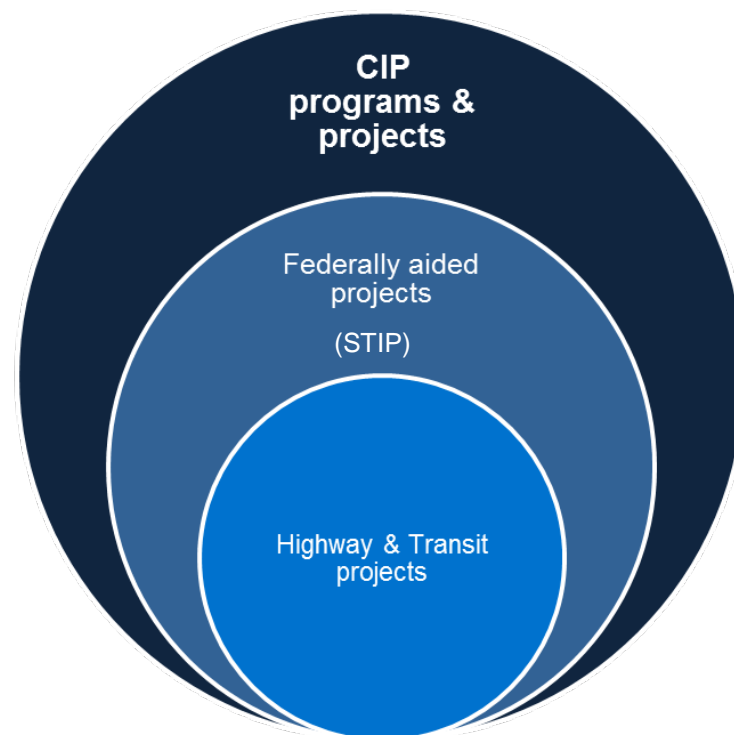
- **Since last Joint Boards meeting:**

- Finalized program budgeting and aligned CIP with State Transportation Improvement Program (STIP)
 - CIP aligned with the draft Transportation Improvement Programs (TIPs) from the individual Metropolitan Planning Organizations (MPOs)
 - Additional adjustments may occur which will further influence program budgets as individual MPOs finalize their plans
 - CIP now includes all STIP expenditures, including Grant Anticipation Notes (GANs) debt service and pass through funding to municipalities and MPOs
 - Ensures all federal-aid funded projects captured in 5-year CIP
- Updated and finalized source assumptions
 - 2020-2024 CIP includes additional revenues for capital investment (federal, state, private contributions)
- Developed proposed list of projects for investment



CIP and State Transportation Program (STIP) alignment

- CIP identifies all of the sources and uses of transportation funding available to Massachusetts
- CIP also includes state capital funding for projects advanced by the Rail and Transit Division, the Aeronautics Division, and the Registry of Motor Vehicles
 - These divisions do not generally receive funding through the STIP
- STIP is dedicated to federal funding and federally funded transportation projects and is subject to federal approval
 - Comprised almost exclusively of roadway and public transit projects
 - Includes projects programmed by the 13 MPOs
- The STIP makes use of the priorities/programs/projects framework similar to the 2020–2024 CIP framework
 - Effort was initiated with the 2018–2022 CIP



FFY 20 FHWA programmed funds (\$773.8 million total including state match:

- MPO projects - \$238.5M
- Highway Division – \$413.5M
- Planning & adjustments/pass-throughs – \$81.7M

Additional revenues available for the 2020-2024 CIP

- New Federal Sources
 - Additional federal formula funds
 - Federal Railroad Administration grants
 - Federal Transit Administration grants
- New State sources
 - Bond cap to increase funding for non-interstate pavement
 - Pay-Go increase for Metropolitan Highway System
 - Private contributions
- Both MassDOT and MBTA sources have increased over FY19-23 CIP
 - MassDOT sources are approximately \$475 million greater
 - MBTA sources are approximately \$373 million greater plus an additional \$1,009.6 million for South Coast Rail

MassDOT/MBTA CIP New Federal Sources

Additional **federal highway funds** are available for infrastructure programs

- Additional funds are not subject to obligation authority limitation associated with the federal program
- **Federal Highway Administration Funds – additional funding (\$179.5 million)**
 - NHPP – Exempt funds (\$26 million) are to be used for projects on the National Highway system and must be obligated prior to the end of federal fiscal year 2019
 - Highway Infrastructure Program (HIP) funds (\$72.5 million) can be used on any federal-aid eligible project
 - Highway Infrastructure Bridge funds (\$34.1 million) can be used on any federal-aid eligible bridge project
 - Office of Transportation Planning and the Highway Division have programmed the new federal funds in the STIP
 - Additional Federal programmed funds are reflected as FHWA reimbursements in the Highway Division's projected spending for 2020-2024



MassDOT/MBTA CIP New Federal Sources continued

- **Federal Railroad Administration (FRA)**
 - **Build (Better Utilizing Investment to Leverage Development)** grant was awarded to the Rail Group to be used to upgrade the New England Central Railroad corridor in Massachusetts
 - Addresses state of good repair and improve load carrying capacity which will provide long term local, regional, and national benefits
 - A total of \$30 million is associated with this grant:
 - \$10.8 million BUILD FRA grant
 - \$9.6 million state match
 - \$9.6 million NECR contribution
- **Federal Transit Administration/Federal Railroad Administration**
 - The MBTA received two **Positive Train Control (PTC)** grants to assist with the deployment of PTC systems. The funds are awarded by FRA but can be flexed to FTA.
 - A total of \$27.5 million is associated with this grant program:
 - August 2018 – Awarded up to \$20 million in federal funds
 - December 2018 – Awarded up to \$7.5 million in federal funds



MassDOT/MBTA CIP New State Sources

- The Commonwealth has increased **state bond funds** for the FY20-24 CIP to improve the condition of transportation assets across the Commonwealth
- For 2020-2024, projected available Pay-go assumes an increase in funds (approximately \$290 million more) available to support capital projects
 - The increase reflects stabilization of all electronic tolling (AET) and incorporates actual revenue and operating experience with AET in place
- The 2020-2024 CIP includes full funding for Phase 1 of the South Coast Rail program (\$1,009.6 million)
 - Funding will be a combination of new state bond cap and Commonwealth Transportation Fund special obligation bonds (under the Rail Enhancement program)
 - Funding does not affect any previously provided funds to MassDOT or MBTA



2020-2024 CIP Uses

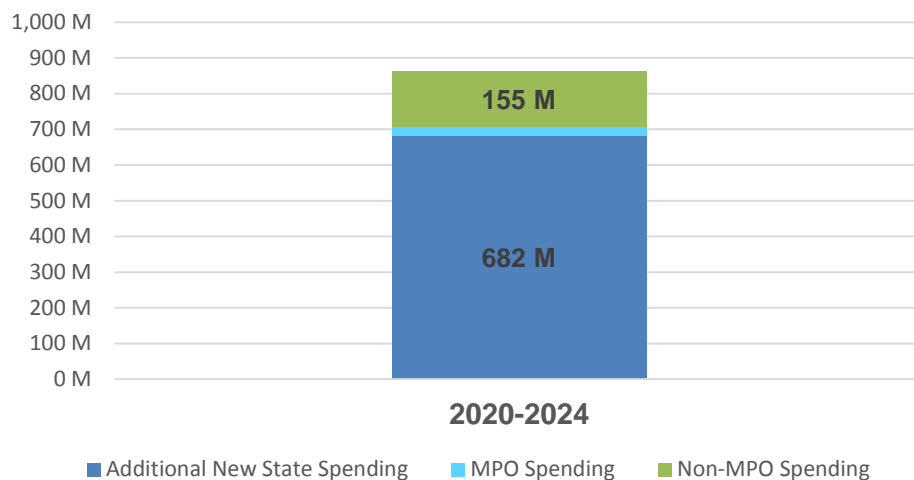
- Focus for additional funds is on three asset classes in need of additional investment for MassDOT
 - Non-interstate pavement
 - Bridge condition
 - Metropolitan Highway System
- For the MBTA focus additional funds is on:
 - Capital Needs (reliability/modernization)
 - Green Line Transformation
 - South Coast Rail
 - Expansion Project Development (“next priorities” from Focus40)



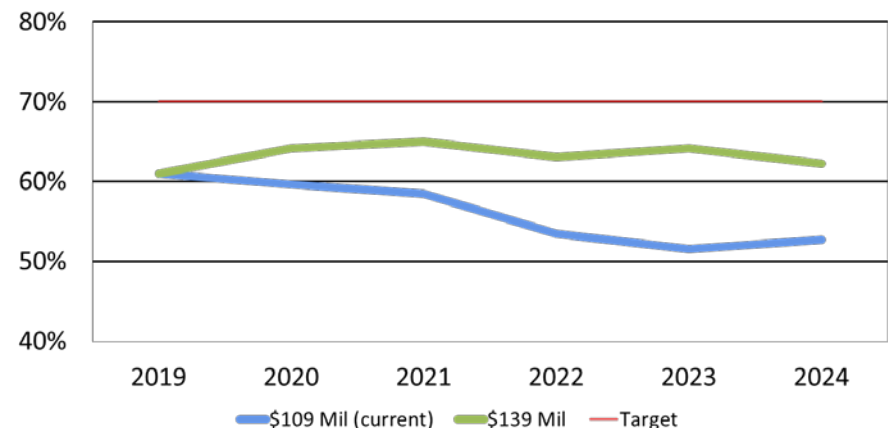
2020-2024 CIP Funding for Non-Interstate Pavement

- 2019-2023 programmed \$611.9 million for non-interstate pavement
- 2020-2024 adds \$155 million for a total program budget of \$776.9 million over 5 years
- Additional investment helps drive the asset condition closer to the 70% target (good or excellent condition) for roadway condition and maintains the condition of the existing non-interstate pavement
- Program changes for 2020-2024:
 - Prescribed preservation levels for Highway District offices
 - Increased Non-Interstate NHS program size
- Asset Management Inputs
 - Annual collection of condition data and periodic forecasts of conditions
 - Increased preservation project types
 - Focus on scope control or supplemental funding for non-pavement work

Non-Interstate Pavement Condition Spending

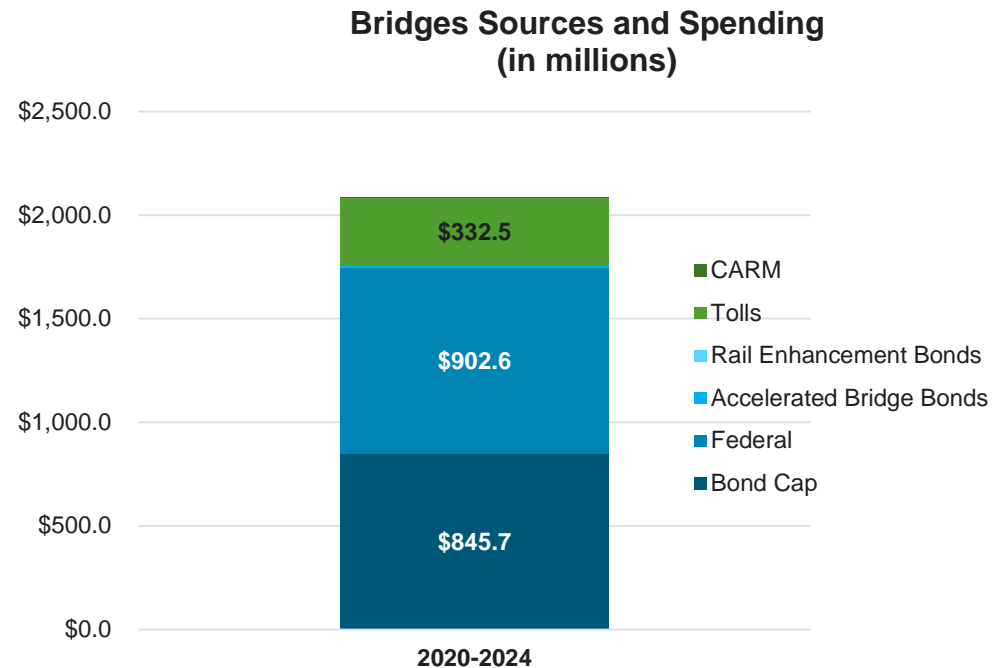


Non-Interstate Roadway Condition - % Good or Excellent



2020-2024 CIP Funding for Bridges

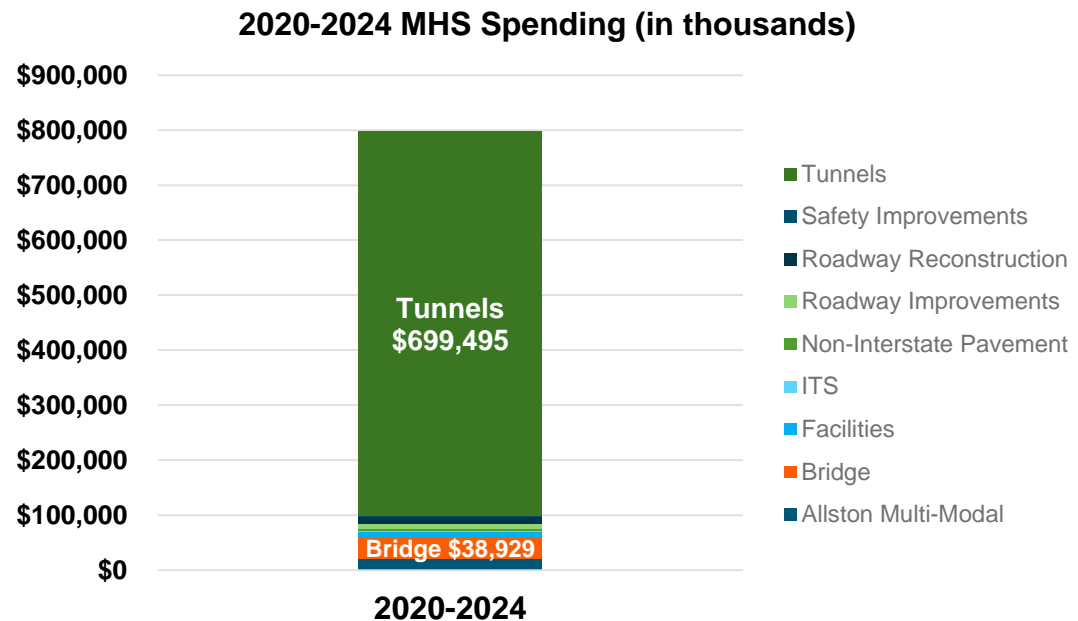
- The Accelerated Bridge Program funded \$3 billion of work on bridges over 8 years (average of \$375 M/year or \$1.9 billion over 5 years)
- The currently programmed FY2020-2024 CIP includes \$2.1 billion for Highway's Bridge Program, including \$332.5 million of pay-go (tolls) bridge spending
- Bridge Program budget informed by asset management inputs
 - Biannual bridge inspection program
 - Network condition models
 - Defined approach to life cycle manage
- Notable projects in 2020-2024 CIP include
 - Tobin Bridge
 - North Washington Street Bridge
 - Chelsea Viaduct
 - Belden Bly Bridge
 - Northampton I-91 over Route 5
 - New Bedford I-195



2020-2024 CIP Funding for Metropolitan Highway System (MHS)

- MHS Triennial Report (Report) identified \$1.2 billion in state of good repair needs
- 2020-2024 CIP includes \$798 million in programmed investments to address the asset condition needs identified in the Report
 - Funding includes \$348.3 million of MHS pay-go (tolls), \$227.4 million of CARM* funds and state and federal funds
 - These programmed investments will significantly address the asset conditions identified in the MHS Report over the next five years
- New tunnel projects in 2020-2024 CIP include

- Sumner Tunnel Rehabilitation
- CANA Tunnel Rehabilitation
- Prudential Tunnel Rehabilitation
- Ted Williams Tunnel Roadway Lighting Replacement
- I-93 Tunnels & Ramps Roadway Lighting Replacement
- I-90 Connector & Ramps Roadway Lighting Replacement
- I-90 Westbound and Ramps Roadway Lighting Replacement



*CARM – Central Artery Repair and Maintenance Trust Fund



2020-2024 CIP Funding for South Coast Rail Program

- 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 (\$1,009.6 million for 2020-2024 CIP)
- 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



Changes in sources since April CPC and Joint Board

MassDOT – total increase of \$224.9 million

- Pay-go capital (MassDOT) increased by \$79.5 million as compared to amounts estimated in April
 - Tied to final draft operating budget
- FHWA reimbursements increased by \$134.5 million
 - Tied to projects programmed in the FFY 2020-2024 STIP and incorporated into CIP
 - Incorporates new projects throughout SFY 2020-2023 and new projects added for new fifth year (2024) of CIP
- New state sources \$10.9 million in VW funds
 - Will be programmed for RTAs to purchase new electric vehicles

MBTA – total increase of \$122 million

- FTA spending increased by \$30 million
- MBTA Revenue Bonds and PTC Loans increased by \$26 million
- State (REP funds) increased by \$49 million
- Reimbursable / Third Party Funds increase by \$11 million
- Funding increases all tied to project cash flows



MassDOT spending by source (as of 5/15/19)

Projected sources (in millions)	FY 2020	Total *
Federal sources of funds		
Federal Highway (FHWA) reimbursements	\$775.3	\$4,137.0
Federal Transit (FTA) reimbursements	\$6.0	\$30.2
Federal Aviation (FAA) reimbursements and grant draws**	\$36.2	\$176.1
Federal Rail (FRA) reimbursements and grant draws	\$5.9	\$13.1
Subtotal federal sources*	\$823.4	\$4,356.4
Bond cap	\$854.8	\$4,315.0
Accelerated Bridge bonds	\$5.1	\$5.1
Rail enhancement bonds	\$34.4	\$65.3
CARM	\$29.4	\$227.4
Metropolitan Highway system (MHS) pay-go	\$74.7	\$437.4
Tobin Bridge (Tobin) pay-go	\$27.4	\$102.7
Western Turnpike (WT) pay-go	\$104.0	\$559.2
Reimbursable and 3 rd parties	\$6.3	\$25.4
Municipal and local funds	\$0.0	\$17.5
Public private partnerships/Other State Funds***	\$10.9	\$7.5
Subtotal non-federal sources*	\$1,146.9	\$5,765.9
Total spending by sources*	\$1,970.4	\$10,122.3

* Totals may not add due to rounding . | ** FTA reimbursements for MassDOT projects only; RTA federal funds are not included; | *** Includes additional VW funds provided by EEA.



MBTA spending by source (as of 5/15/19)

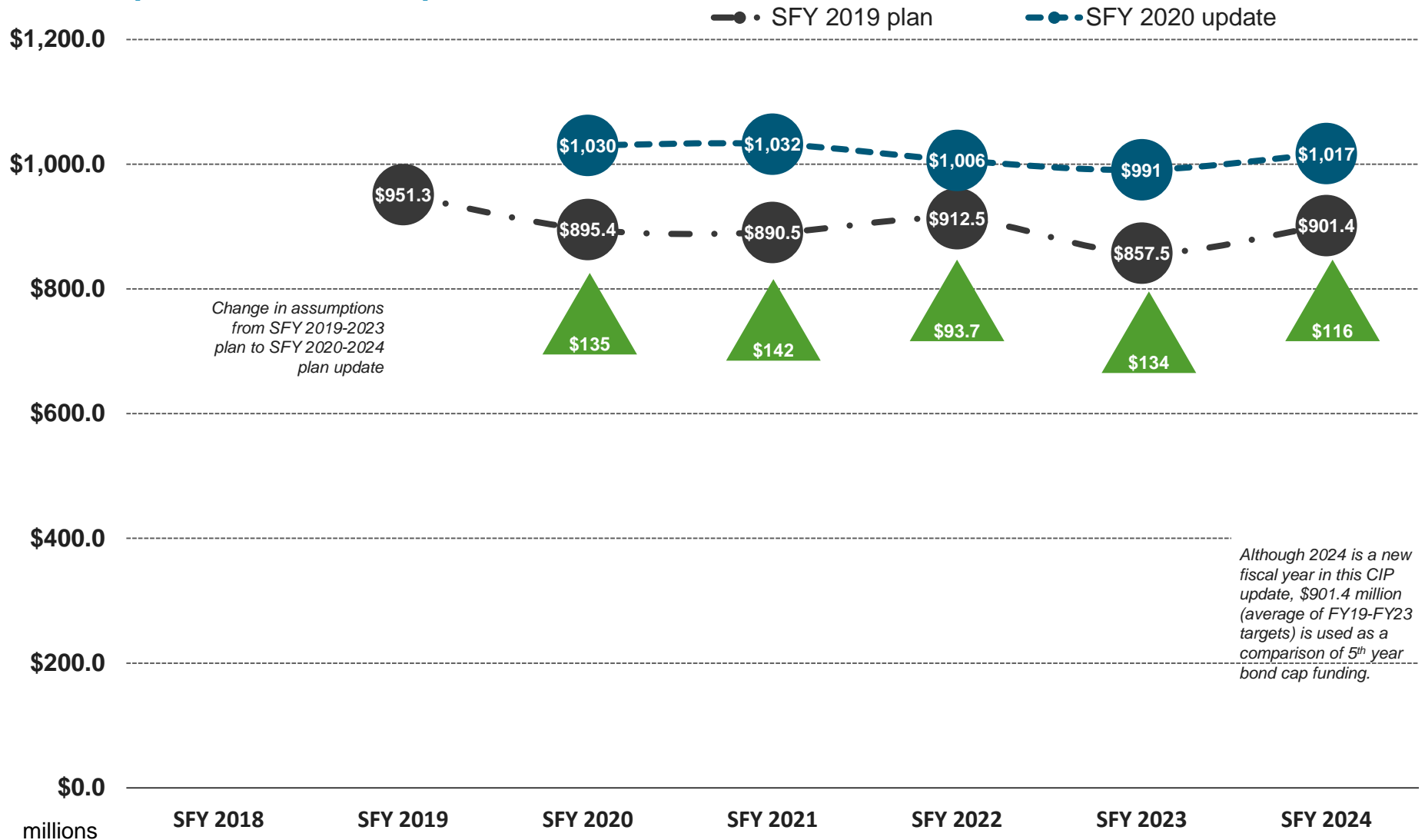
Projected Sources (in millions)	FY 2020	<u>Total</u> *
Federal sources of funds		
Federal Highway (FHWA) reimbursements	\$61.1	\$84.5
Federal Transit (FTA) reimbursements and grant draws	\$265.6	\$2,878.5
FTA Full funding grant agreement (GLX FFGA)	\$320.5	\$761.6
Other federal funds	\$10.6	\$14.1
Subtotal federal sources*	\$657.8	\$3,739.9
Bond cap (SCR)	\$115.2	\$461.5
Accelerated Bridge bonds	\$0.1	\$0.1
Rail enhancement bonds	\$232.8	\$1,798.3
MBTA Revenue bonds	\$200.0	\$1,171.6
Metropolitan Highway system (MHS) pay-go	\$0.0	\$0.0
Municipal and local funds (GLX)	\$15.0	\$75.0
Reimbursable and 3 rd parties	\$13.8	\$100.5
Positive Train Control (PTC) financing	\$24.3	\$170.7
Pay-Go Lockbox (Bond Cap)	\$60.0	\$300.0
Pay-Go lockbox (MBTA)	\$90.0	\$394.2
Capital maintenance fund	\$4.4	\$6.2
Subtotal non-federal sources*	\$755.6	\$4,489.0
Total spending by sources*	\$1,413.4	\$8,228.9

* Totals may not add due to rounding; table reflects spending targets by source rather than total programmed investments.



Plan update: bond cap comparisons

Bond cap: SFY 2019-2023 plan versus SFY 2020-2024 plan update

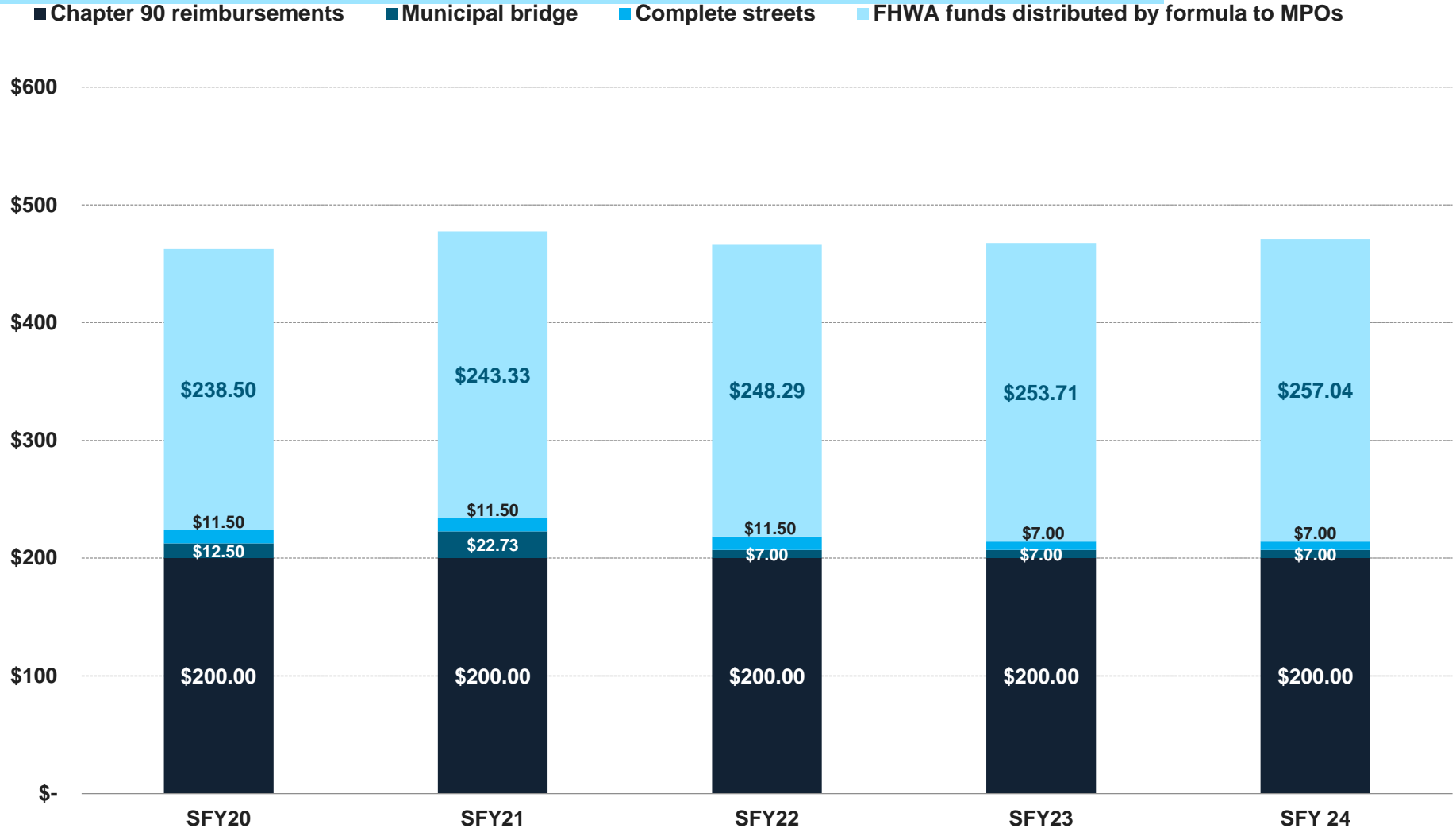


Funding for municipalities

- The CIP includes state and federal funding for municipal assets that goes well beyond Chapter 90

Annual funding available for municipal roadway and bridge investments

(in millions)



CIP Investment Programs and Project Selection

- 2020-2024 CIP program budgets are informed by performance targets, federally required plans, and asset condition reports
 - Annual Tracker (Office of Performance Management and Innovation report, November 2019)
 - Federal targets for National Highway System (NHS) (Bridges and Pavements)
 - Transportation Asset Management Plan (final draft due to FHWA in June 2019);
 - Transportation Asset Management (TAM) (submitted to FTA in 2018)
 - Planning for Performance tool (PfP)
 - Focus40 recommendations
- 2020-2024 incorporates four new CIP investment programs:
 - **MBTA / Green Line Transformation:** new program to improve quality of service (enhanced capacity and accessibility), through fleet modernization, infrastructure and facilities upgrades utilizing state-of-the-art technology
 - **MBTA / Expansion Project Development:** new program to support planning and design for expansion projects identified as “next priorities” within Focus40
 - **MBTA / South Coast Rail Program:** new program (for 2020-2024 for MBTA) for South Coast Rail. Phase 1 includes construction of 28 miles of new track, upgrading 7 miles of existing track, construction of two new layover facilities and six new stations
 - **Transit / Workforce Transportation Options:** new competitive grant program that provides funds for workforce transportation options and leverages private sector resources; replaces MassRides program.
- 2020-2024 CIP includes a total of 69 investment programs



Project Selection & MBTA Current Expansion Program Projects

- Projects are selected using asset management data, performance targets and the evaluation criteria recommended by the Project Selection Advisory Council for modernization and expansion programs
- Projects programmed in 2020-2024 CIP for new Expansion Project Development program and Expansion Projects program for the MBTA

Project	Project Budget	FY20-24 Spend
<i>Expansion Project Development</i>		
GL Ext to Mystic Valley Pkwy	N/A	\$9M
Red-Blue Connector	N/A	\$15M
SL through Everett	N/A	\$1M
<i>Expansion Projects</i>		
Fairmount Line Improvements	\$26.5M	\$2.4M
SL Gateway – Phase 2	\$37.7M	\$37.3M
Wachusett Ext	\$34.2M	\$3.4M
<i>GL Extension</i>		
GLX	\$2,118M	\$1,240M
GLX – Vehicles	\$170M	\$77.7M
<i>South Coast Rail</i>		
SCR Early Action Items	\$1.151M	\$8.8M
SCR Phase 1	\$42M	\$989.8M



Plan update: interactive format

- Similar to last year the CIP document will be presented as a “story map,” providing users the opportunity to interact with CIP content
- Landing page for the CIP shown; click on e.g. “Funding” takes a person to that section

2020–2024 Capital Investment Plan DRAFT



Table of Contents

1. Introduction

- Glossary of Terms
- Planning & the CIP
- What's New
- Funding

2. Municipal Partnerships / Re-granting Programs

3. Investment Programs

- Major Investments
- Reliability
- Modernization
- Expansion

4. Equity Analysis

5. Investment Details

6. Public Comment

This new format for the Capital Investment Plan (CIP) is more interactive and accessible than in previous years. The links in the Table of Contents above can take you directly to the primary sections of the document, or you can read the document linearly using either keyboard navigation, by scrolling, or by swiping if using a touch-enabled screen.

DRAFT 2020-2024 Capital Investment Plan Update

Plan update: interactive format

- Public comment landing page on Mass.gov/MassDOT/CIP

Public Comment

Your feedback is important to the development and support of the Capital Investment Planning process. To provide feedback on the Capital Investment Plan as a whole, you may use the following contact information:

Capital Investment Plan
10 Park Plaza, Suite 4150
Boston, MA 02116
CIPComments@state.ma.us

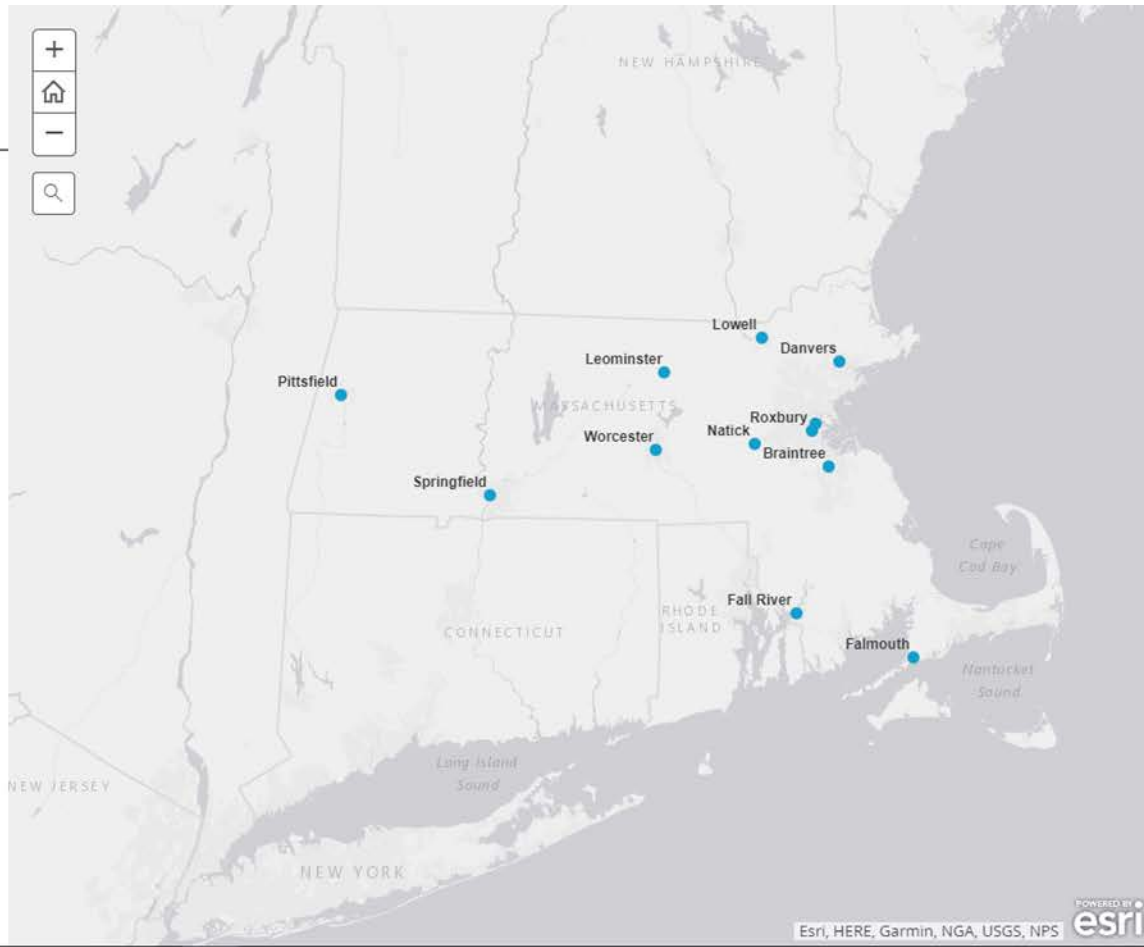
Check out the [new CIP Comment Tool](#) to comment on individual projects! This tool allows the public to review details, comment, and show support for individual projects in the Capital Investment Plan.

Public Meetings Schedule

You may also attend one of our Public Meetings. Select a location near your on the map to see more details, or find a location near you among the meetings listed below. The Boston meeting will also be streamed online, and will be recorded for future viewing.

Boston

Tuesday, May 21st at 6:30pm
Transportation Building
10 Park Plaza



Plan update: engagement for draft CIP update

- 13 public meetings across the Commonwealth
 - May 21 – Boston (State Transportation Building)
 - Livestreamed and recording available at [Mass.gov/MassDOT/CIP](https://www.mass.gov/MassDOT/CIP)
 - May 21 – Danvers
 - May 22 – Falmouth
 - May 23 – Braintree
 - May 23 – Fall River
 - May 28 – Pittsfield (with Berkshire MPO)
 - May 29 – Natick
 - May 30 – Chelsea (part of Task Force Meeting)
 - May 30 – Lowell
 - June 3 – Leominster
 - June 4 – Roxbury
 - June 5 – Worcester
 - June 6 – Springfield
- Online comment tools - [Mass.gov/MassDOT/CIP](https://www.mass.gov/MassDOT/CIP)
 - Comment directly on proposed projects
 - Emails - MassCIP@DOT.state.ma.us
 - Letters - MassDOT Community Relation
10 Park Plaza, Suite 4160
Boston, MA 02116



Plan update: additional iterations

- **Changes expected before update is released for comment**
 1. MPOs have released all of their TIPs for public comment; those project lists have been incorporated into the draft CIP update project lists; changes not expected until CIP released for public comment
 2. Changes requested from May 15 CPC meeting and today's Joint Board meeting
- **Changes expected after update is released for comment**
 1. MPOs have endorsed all of their TIPs; those project lists will be incorporated into the final draft CIP update
 2. Changes due to any responses to public comments
- **Changes expected after June CPC & Board meetings**
 1. Changes that may be requested from CPC and at the Board meeting before publishing the final plan

Next steps and discussion

- Finalize content in on-line format for review during public comment period
- Request approval from Joint MassDOT Board of Directors and FMCB to release draft CIP for public comment
 - Analysis of public comments will be presented to the Joint Boards of Directors and FMCB in June
- Continue with mapping of investments and an equity analysis before the Joint Board votes on final 2020-2024 CIP in June



FY2020-2024 CIP update: Appendix

Changes in Program Budgets and Projects 2020-2024 vs 2019-2023 CIP

May 20, 2019

Plan update: program budget changes

Program budget changes

Program	2019-2023 program budget (in millions)	2020-2024 program budget (in millions)	Discussion
Highway / Allston Multi-Modal	\$16.0 million	\$21.0 million	Program funds costs for permitting and design through to procurement
Highway / Bicycle and Pedestrian	\$180.6 million	\$203.2 million	Size based on current portfolio of projects within the CIP and STIP and includes allocation for program management costs. Program is consistent with Bicycle and Pedestrian Plans.
Highway / Equipment	\$75.0 million	\$96.4 million	Program size based on identified needs in the Districts
Highway / Non-Interstate pavement	\$611.9 million	\$766.9 million	Program increased to improve asset condition.
IT / Asset Management	\$15.5 million	\$3.8 million	Program previously contained Division-specific asset management projects driven by the business. The projects and funding have been moved into a more appropriate program – Enterprise, BPR, and Automation.
IT / Cyber/ Information Security	\$15.0 million	\$20.5 million	Increase due to EOTSS mandates and directly correlates to improvement in security oriented foundational infrastructure, firewalls, web gateways and other cloud investments.
IT / Customer Digital Experience	\$10.0 million	\$4.7 million	Program costs decreased due to lower costs than anticipated with move to the Mas.gov platform and increased investment needs in other IT modernization programs.
IT / Enterprise / BPR / Automation	\$19.5 million	\$25.1 million	Program reflects specific application and business process improvement needs as identified by MassDOT Divisions and needs for our critical enterprise systems.

The highlighted program budget updates do not reflect all budget updates, rather changes that are most noteworthy



Program budget updates continued

Program	2019-2023 program budget (in millions)	2020-2024 program budget (in millions)	Discussion
IT / Workforce Productivity	\$14.2 million	\$19.3 million	Program reflects specific needs related to providing better tools to shared services, e.g. HR, Finance, Legal, Planning, etc.
MBTA / Accessibility	\$265.0 million	\$243.9 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / AFC 2.0	\$169.0 million	\$209.8 million	Program size reflects updated administrative costs and current cash flows
MBTA / Bridge and Tunnels	\$544.7 million	\$506.9 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / Commuter Rail Safety and Resiliency	\$630.0 million	\$510.7 million	Program size reflects updated and current cash flows for PTC
MBTA / Customer Experience and Technology	\$116.0 million	\$184.4 million	Program size reflects emphasis on customer-facing projects, including net increase for wayfinding and bus lanes.
MBTA / Expansion Project Development	\$0.0 million	\$25.0 million	New program to support planning and design for expansion projects identified as “next priorities” within Focus40
MBTA / Expansion Projects – non-GLX	\$59.0 million	\$43.0 million	Program size reflects costs reallocated to South Coast Rail program
MBTA / Facilities	\$343.0 million	\$370.6 million	Program size reflects carryover from FY19 and reallocation to Green Line Transformation program (GLT)
MBTA / Green Line Extension	\$1,227.0 million	\$1,326.4 million	Program size reflects updated schedule to due delay in station projects

The highlighted program budget updates do not reflect all budget updates, rather changes that are most noteworthy



Program budget updates continued

Program	2019-2023 program budget (in millions)	2020-2024 program budget	Discussion
MBTA / Process Improvement and Innovation	\$25.0 million	\$13.2 million	Program size reflects updated program needs
MBTA / Red Line/Orange Line Improvements	\$1,565.7 million	\$1,580.7 million	Program size reflects updated schedule due to delays in acceptance of OL vehicles, which resulted in shifted milestone payments
MBTA / Revenue Vehicles	\$1,267.0 million	\$1,068.8 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / Risk Management and Mitigation	\$178.0 million	\$68.5 million	Program size reflects costs reallocated to GLT program for Green Line train protection
MBTA / South Coast Rail	\$42.0	\$1,009.6	New program (for MBTA) reflects funding for Phase 1 of the South Coast Rail program; for FY 2019 program was included under MassDOT Rail & Transit Division.
MBTA / Stations	\$428.0 million	\$372.7 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / System Upgrades	\$245.0 million	\$234.0 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / Track, Signals, and Power	\$938.0 million	\$759.8 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
Rail Reliability / Vehicle	\$4.7 million	\$6.6 million	Program size maintains the similar funding level as last plan to address SGR issues to maintain or restore usage of the facilities.

The highlighted program budget updates do not reflect all budget updates, rather changes that are most noteworthy

Program budget updates continued

Program	2019-2023 program budget (in millions)	2020-2024 program budget	Discussion
Rail Modernization / Facility	\$13.3 million	\$8.2 million	Program size reflects completion of one time MassDOT commitments for Springfield Union Station.
Rail Modernization / Track and ROW	\$31.1 million	\$61.1 million	Program sized to address current asset condition.
Rail / South Coast Rail	\$108.011 million	\$0.0	Program has transitioned to MBTA for 2020-2024 CIP
RMV / ATLAS	\$61.5 million	\$35.1 million	Program reflects current cash flows and progress achieved with the implementation.
Transit / RTA Facility and Vehicle Maintenance*	\$17.5 million	\$8.3 million	Program sized to address other needs identified by the RTAs.
Transit / RTA Replacement Facilities	\$16.4 million	\$8.1 million	Program sized to address needs identified by the RTAs.
Transit / RTA Vehicle Replacement	\$92.3 million	\$53.7 million	Program adjusted to accommodate current RTA vehicle needs to achieve good asset condition.
Transit / Workforce Transportation Options	\$0.0 million	\$9.875 million	New competitive grant program that provides funds for workforce transportation options and leverages private sector resources; replaces MassRides program.

The highlighted program budget updates do not reflect all budget updates, rather changes that are most noteworthy

Review of 2020-2024 projects and changes

- The following tables highlight changes for projects worth \$15 million or greater in total cost:
 - Changes to scheduled start of construction (one year or more)
 - Deleted or unfunded projects as compared to 2019-2023
 - Changes in cost (>10%) to total costs as compared to 2019-2023 Cost drivers include:
 - Additional inflation costs incurred when scheduled start of project shifts out
 - Highway project costs include escalation by 4% to mid-point of construction (per guidance from FHWA)
 - Conversely, if project construction is initiated sooner, inflation adjustment could reduce total project cost
 - Scope changes to MassDOT or MBTA projects
 - Scope changes to MPO projects or regional target projects not under MassDOT or MBTA control
 - Cost changes for materials, e.g. changes to cost of steel, liquid asphalt



Plan update: project status

Project status – new projects

Program / Project	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
Highway / Bridge Program			
Highway / Haverhill Bridge Replacement, H-12-040, I-495 (NB & SB) over Merrimack River	\$0	\$104.4	Replacement of twin interstate spans over the Merrimack River, Major NHS structures in poor condition
Highway / Haverhill Bridge Replacement, H-12-007 & H-12-025, Bridge Street (SR 125) over the Merrimack River and the abandoned B&M RR (proposed bikeway)	\$0	\$100.1	(Basiliere Bridge) Major DOT-owned NHS structure in poor condition, local importance as primary river crossing for Haverhill & surrounding Merrimack Valley
Highway / Andover- Bridge Rehabilitation, A-09-036, I-495 over state route 28 (SB), A-09-037, I-495 over B&M and MBTA, A-09-041, I-495 over state route 28 (NB)	\$0	\$152.3	Project to replace multiple poor interstate bridges on regionally important corridor Interstate
Highway / Capacity Program			
Highway / Taunton – Interchange Improvements at Routes 24 & 140, including replacing T-01-045 AND T-01-046	\$0	\$166.8	Project deferred during local casino development and is now programmed to sequence with the South Coast Rail project. More detailed project scope and cost estimate developed during 25% Design Phase.



Plan update: project status

Project status – new projects

Project	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
Highway / Modernization / Intersection Improvements Program			
Highway / Kelley Square in Worcester	\$0	\$14.0	Funds improved operations and safety within the Kelley Square area of Worcester. This project will address the safety and operational deficiencies faced by motorists, bicyclists and pedestrians.
Highway / Reliability / Tunnels Program			
Highway / Boston – Roadway, Ceiling & Wall Reconstruction, new jet fans, and other control systems in Sumner Tunnel	\$0	\$135.7	Rehabilitation of Sumner Tunnel, high priority MHS project, identified in 2018 MHS Triennial report
Highway / Prudential Tunnel Ventilation Improvements	\$0	\$70.0	Funds improvements to the ventilation system in the Prudential Tunnel. This project is necessitated due to the Parcel 15 Air Rights Development Project. The Developer is contributing \$17.5M towards the project cost.



Plan update: project status

Project status – new projects

Project	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
MBTA / Reliability / Bridge and Tunnel Program			
MBTA / Robert Street Bridge Rehabilitation	\$0	\$16.2	Design and construction of a new bridge superstructure and substructure for the bridge carrying Needham Line over Robert Street in Roslindale.
MBTA / East Cottage Street Bridge Rehabilitation	\$0	\$15.9	Design and construction of a new bridge superstructure and substructure for the bridge carrying the Fairmount Line over East Cottage Street in Boston.
MBTA / Norfolk Avenue Bridge Rehabilitation	\$0	\$14.1	Design and construction of a new bridge superstructure and substructure for the bridge carrying Fairmount Line over Norfolk Avenue in Boston.
MBTA / Modernization / Customer Experience and Technology			
MBTA / Better Bus Project – Priority Corridors	\$0	\$8.7	Support construction of bus transit priority infrastructure in the top 40 routes/corridors as part of Better Bus project.

Project status – new projects

Project	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
MBTA / Reliability /Facilities Program			
MBTA / South-Side Commuter Rail Maintenance Facility	\$0	\$15.4	Construction of new south-side facility for Commuter Rail equipment repairs. Budget includes planning, preliminary design, and potential land acquisition costs.
MBTA / Haverhill Layover Facility Relocation	\$0	\$5.0	Relocation of current Commuter Rail layover facility to new location for additional train layover space in Haverhill vicinity.
MBTA / Expansion / Expansion Project Development Program			
MBTA / Red-Blue Connector	\$0	\$15.0	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.
MBTA / Modernization / Green Line Transformation Program			
MBTA / Lechmere Viaduct	\$0	\$54.8	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.

Project status – new projects

Project	2019-2023 total project cost (in millions)	2020-2024 total project cost (in millions)	Comments
MBTA / Reliability / Revenue Vehicles Program			
MBTA / 60 New Flyer Bus Overhauls	\$0	\$28.7	Midlife overhauls of 60 New Flyer 40-ft. hybrid buses originally delivered in 2014 - 2015 in order to meet their 14 year useful life.
MBTA / Reliability / Stations Program			
MBTA / Courthouse Station Northeast Headhouse	\$0.0	\$12.5	Construction of a new Northeast Headhouse at Courthouse Station, including new elevator, escalator, and stairs.
MBTA / Reliability / Track Signals and Power Program			
MBTA / Mattapan High Speed Line Transformation	\$0	\$118.0	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.
MBTA / Commuter Rail Signal SGR and Resiliency	\$0	\$14.8	Replace obsolete signal components with modern microprocessor-based signal equipment, interlocking improvements, and related equipment upgrades.
MBTA / Commuter Rail Track SGR and Resiliency	\$0	\$13.8	Improve track in areas of significant operational risk, including retaining walls, rehabilitation of Everett Junction, and several areas of track rebuild.



Project status – new projects

Project	2019-2023 total project cost (in millions)	2020-2024 total project cost (in millions)	Comments
Transit / Modernization / RTA Replacement Facilities Program			
Transit / Franklin Regional Transit Authority Maintenance Facility Construction	\$0	\$10.1	MassDOT is funding a portion of the project. Other project funds are being provided by the FTA



Plan update: project status

Project status – other status changes

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
Highway / Reliability / Bridge Program			
Highway / Fall River – Cleaning, Painting & Repairing 14 steel bridges on/over Route 79, Route 24 & I-195	\$19.8	\$0	Portions of scope incorporated within Fed-aid Systematic Preservation Projects
Highway / New Bedford – Cleaning, Painting & Repairing 6 steel bridges on/over I-195	\$16.7	\$0	Portions of scope incorporated within Fed-aid Systematic Preservation Projects
Highway / Kingston – Bridge Replacement, K-01-014, Smiths Lane over Route 3 (Pilgrim Highway)	\$14.7	\$0	Project deferred, re-prioritized
Highway / Brockton - West Bridgewater- Bridgewater – Raynham – Taunton – Freetown – Cleaning, Painting & Repairing 11 steel bridges on/over Route 24	\$10.5	\$ 0	Portions of scope incorporated within Fed-aid Systematic Preservation Projects
Highway / Reliability / Facilities Program			
Highway / Milton - MassDOT Central Maintenance Facility & Highway Operations Center	\$76.0	\$0	Project purpose and need under review
Highway / Reliability / Non-Interstate Pavement Program			
Highway / Barnstable – Resurfacing and related work on Route 6	\$11.8	\$0	Change in scope under consideration

Plan update: project status

Project status – changes to total project cost

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
Highway / Reliability / Bridge Program			
Highway / Agawam - West Springfield - Bridge Replacement, A-05-002 - W-21-014	\$33.7	\$23.7	Bids came in lower than expected
Highway / Montgomery - Russell- Bridge Preservation, M-30-008=R-13-018 (4GT), I-90 OVER US 20	\$35.3	\$45.2	Additional work/cost added due to results of recent inspection
Highway / Everett – Medford - Bridge Replacements, Revere Beach Parkway (Route 16)	\$81.3	\$69.5	Project completed ahead of schedule and under budget
Highway / Haverhill - Bridge Replacement, H-12-039, I-495 (NB & SB) over the Merrimack River	\$117.4	\$102.6	Further post-CIP design resulted in a slightly lower advertisement cost and best value DB cost proposal below estimate

Plan update: project status

Project status – changes to total project costs

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
Highway / Modernization / Roadway Reconstruction			
Highway / Hopkinton – Westborough Reconstruction of I-90/I-495 Interchange	\$310.3	\$324.3	Cost increase due to inflation and changes to scope related to alignment alternatives.
Highway / Holyoke - West Springfield – Rehabilitation of Route 5 (Riverdale Road)	\$14.8	\$4.8	New designer and scope of work. Original scope included removal of cement concrete pavement and resurfacing with HMA; new scope incorporates new cement concrete pavement and repairs to existing cement concrete pavement in cooperation with Concrete Pavement Association initiative.
Highway / Walpole – Reconstruction on Route 1A (Main Street), from the Norwood town line to Route 27, includes W-03-024 over the Neponset River	\$16.4	\$24.7	Project cost increased at Final Design with addition of Temp. Pedestrian Bridge and added Utility work



Plan update: project status

Project status – changes to total project costs

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
Highway / Expansion / Shared Use Paths Program			
Highway / Fitchburg – Leominster - Rail Trail Construction (Twin Cities Rail Trail)	\$20.8	\$7.5	Project split in two phases due to Right of Way and permitting requirements. This is Phase 1, Phase 2 is programmed in 2021
Highway / Reliability / Interstate Pavement Program			
Highway / Westfield – West Springfield Interstate Maintenance & related work on I-90 (mile marker 36.4 – 46.0) (9.6 miles)	\$3.4	\$11.1	Project limits changed to MM 46 – 9.6 Miles
Highway / Reliability / Non-Interstate Pavement Program			
Highway / Bridgewater – Brockton – Pavement preservation and related work on Route 24	\$9.9	\$18.2	Scope added to replace existing concrete median barrier



Plan update: project status

Project status – changes to total project costs

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
MBTA / Reliability / Bridges and Tunnels Program			
MBTA / North Station Draw 1 Bridge Replacement	\$156.0	\$236.0	Increased budget to fully fund design and construction. Replacement of two existing bridge spans over the Charles River.
MBTA / Longfellow Approach Rehabilitation	\$5.3	\$114.4	Increased budget to fully fund construction. Rehabilitation of the viaduct on the Red Line from the Beacon Hill Portal to Span 1 of the Longfellow Bridge, including the Charles MGH Station platforms/canopies.
MBTA / Reliability / Revenue Vehicles Program			
MBTA / Commuter Rail F40 Locomotive Overhaul	\$30.0	\$84.1	Increased budget for option order to overhaul portion of remaining F40 locomotives that have not yet been overhauled.
MBTA / Commuter Rail Legacy Fleet Investment	\$5.1	\$12.2	Additional funding to support ongoing refurbishment of legacy locomotive and coach fleets.



Plan update: project status

Project status – changes to total project costs

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
MBTA / Reliability / Stations Program			
MBTA / Wollaston Station / Quincy Center Garage Demolition	\$92.9	\$105.7	Revised budget reflects updated construction/demolition and bus diversion costs.
MBTA / Back Bay Station Ventilation	\$27.0	\$43.1	Revised budget reflects updated design and construction costs for substation, mechanical, and other systems improvements.
MBTA / Courthouse Station Water Infiltration	\$4.8	\$18.5	Increased budget to fund construction. Includes infrastructure repairs caused by water infiltration and full restoration of station functions to improve customer safety and services.
MBTA / Braintree and Quincy Adams Station Garage Rehabilitation	\$100.9	\$109.4	Additional funding to complete construction, bus diversions, force account support and other remaining expenses.
MBTA / Winchester Center Station Rehabilitation	\$34.6	\$49.4	Increased budget to fully fund construction. Includes two new high-level platforms, elevators, canopies, and other amenities.
MBTA / Forest Hills Station Improvements	\$22.6	\$32.6	Additional funding to construct SGR improvements, such as roof repairs, lighting upgrades, station brightening, and wayfinding.



Plan update: project status

Project status – changes to total project costs

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
MBTA / Reliability / Track, Signal, and Power Program			
MBTA / Blue Line Harbor Tunnel Infrastructure Improvements	\$32.0	\$82.0	Increased budget to fully fund construction. Includes infrastructure to tunnel, emergency egress shafts, and station brightening at Aquarium and Maverick Stations.
MBTA / North Station Terminal Signal	\$32.2	\$45.2	Increased budget to fully fund construction of modernized signal technology and equipment.
MBTA / Power Systems Resiliency Program	\$13.2	\$35.2	Revised budget reflects updated scope for installation of new duct bank systems with new manholes and internal wiring. Budget includes design and construction costs.
MBTA / Power Systems Capital Maintenance	\$6.5	\$35.0	Replacement of AC & DC distribution cables and associated infrastructure. Increased budget to fund procurement and installation.
MBTA / Systemwide Transformer Replacement, Phase 2	\$12.6	\$26.1	Revised budget reflects updated construction costs for additional transformer and duct replacement work.

Plan update: project status

Project status – changes to total project costs

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
MBTA / Modernization / Accessibility Program			
MBTA / Elevator Program Design (Multiple Locations)	\$29.4	\$45.4	Revised budget reflects additional design costs for new elevator projects throughout MBTA network.
MBTA / Natick Center Station Accessibility Improvements	\$3.5	\$42.3	Increased budget to fund design and construction.
MBTA / Modernization / AFC 2.0			
MBTA / AFC 2.0	\$455.4	\$469.4	Revised budget reflects updated administrative costs and current cash flows
MBTA / Modernization / Commuter Rail Safety and Resiliency Program			
MBTA / Commuter Rail Fiber Optic Cable Network Resiliency	\$25.0	\$38.7	Increased budget to install redundant fiber optic cable, buried within the Commuter Rail right-of-way, in additional locations.

Plan update: project status

Project status – changes to total project costs

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
MBTA / Modernization / Customer Experience and Technology Improvements			
MBTA / Systemwide Wayfinding Improvements	\$63.0	\$70.0	Incorporated the North Station Flooring Replacement project. Work will be conducted under same project, which increased overall design and construction costs.
MBTA / Park Street Station Wayfinding Improvements	\$11.3	\$18.6	Revised budget reflects additional scope, including station brightening (cleaning, painting, lighting), and stair repairs throughout station.
MBTA / Modernization / Green Line Transformation			
MBTA / Green Line Type 10 Vehicle Fleet Replacement	\$7.6	\$1,339.3	Increased budget to fund procurement. Replacement of up to 170 light rail vehicles to replace the existing Green Line Type 7 and Type 8 fleets.
MBTA / Green Line Central Tunnel Track and Signal Replacement	\$8.2	\$120.0	Combined three interrelated track and signal replacement projects in the same vicinity into one project. Reflects updated design and construction costs.
MBTA / Commonwealth Ave. Station Access	\$17.2	\$29.5	Revised budget reflects updated construction costs for grade crossing, pedestrian crossing, and track infrastructure upgrades.



Plan update: project status

Project status – changes to total project costs

Project (in design)	2019-2023 project cost (in millions)	2020-2024 project cost (in millions)	Comments
MBTA / Modernization / Green Line Transformation			
MBTA / Newton Highlands Green Line Station Accessibility	\$13.4	\$23.1	Revised budget reflects updated construction costs for new inbound ramp/platform connection and canopy.
MBTA / Green Line Transformation (GLT) Program Management	\$7.4	\$19.4	Revised budget reflects updated scope and schedule. Program management/construction management support services for GLT. Also includes type studies, estimates, design and constructability reviews.
MBTA / Expansion / South Coast Rail Program			
MBTA / South Coast Rail Program	\$42.0	\$1,009.6	Revised budget reflects additional funding for Phase 1, including reconstructed/upgraded track, two new layover facilities and six new stations. Program was under Rail for 2019-2023 CIP.

