

# Draft CIP Update SFY 2019-2023 CPC presentation

May 9, 2017

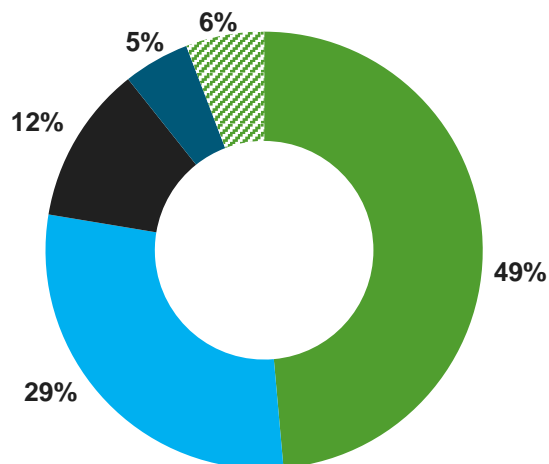
# Overview

- **Since last CPC meeting:**
  - Finalized program budgeting
    - CIP now includes all STIP expenditures, including GANs debt service and pass through funding to municipalities and MPOs
    - CIP and STIP aligned with the draft TIPs from the individual MPOs; additional adjustments may occur which will further influence program budgets as individual MPOs finalize regional FHWA and FTA funded plans
    - CIP and FAA planning alignment may also influence changes
  - Updated and finalized some source assumptions
    - Bond Cap figures final as of April 12<sup>th</sup>
    - Pay-go (i.e. MHS, WT) are work in progress; tied to final operating budget
    - Federal aid sources are final, available balances to be determined
  - Draft plan for presentation to CPC and Joint Boards on May 14th
- **Today:**
  - Need feedback on proposed draft projects

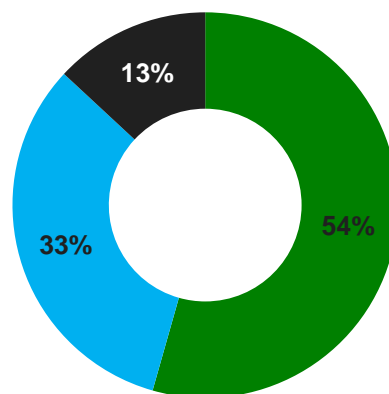


# Plan update: investments overview

Overall spending by priority



Overall spending by priority



## Overall:

- ▶ The draft SFY 2019-2023 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 modest investments in expansion of the system.

## Increase highlights:

- ▶ Additional funding (\$47.5 million) for Commonwealth (Port) project
- ▶ \$80 million increase for South Coast Rail (design and early action)
- ▶ \$723.6 million in program budget increases at MBTA such as:
  - ▶ \$40.8 million increase for PATI investments
  - ▶ \$242.4 million for Facilities
  - ▶ \$443.2 million for RL/OL investments, Commuter Rail Safety (PTC), AFC 2.0

## Is it affordable?

- ▶ More in revenue bond assumptions for MBTA
- ▶ Anticipates obligating available federal-aid in all Divisions
  - ▶ Assumes significant spend down of FTA carry over balances for MBTA

<i>millions</i>	SFY 2018- 22	SFY 2019- 23	Differences
Reliability*	\$9,647.0	\$8,374.7	-\$1,272.3
Modernization	\$3,247.1	\$5,004.3	\$1,757/3
Expansion	\$2,148.1	\$2,014.9	-\$133.2
Chapter 90	\$1,000.0	\$1,000.0	-
Planning, Enterprises Services, & Other	\$902.1	\$842.5	-\$59.6
<i>Five-year total</i>	\$16,944.2	\$17,236.4	\$292.2

\*MBTA investments in R/O Line shifted from Reliability to Modernization

# Plan update: Central Artery/Tunnel Project Repair and Maintenance (CARM) eligible projects

## Capital Investment Plan assumptions:

Balance: \$385.8M  
Available for investment: \$241.7M

- Established by Chapter 10 Section 63A of the Massachusetts General Laws, the fund is for the repair and maintenance of Central Artery / Tunnel (CA/T) facilities not caused by ordinary or routine wear and tear
- CARM is funded through a series of settlement agreements between the Commonwealth of Massachusetts' Attorney General and United States Attorney General for Massachusetts
- CARM eligible maintenance and repair work has been ongoing in the CA/T.
- Highway Division is actively working with FHWA to complete reimbursements for work completed in the tunnels over the past 15 years.
- CARM is not intended to fund the full cost of needed investments in the CA/T tunnel system:
  - Projects are partially funded from the CARM at a percentage between 60 – 80%
  - Remaining funds for individual projects are drawn from the Metropolitan Highway System (MHS) pay-go capital
- SFY2019 to SFY2022 projections were developed by the Highway Engineering section through a rigorous risk and project selection analysis

# Review of 2019-2023 projects and changes

- The following tables highlight changes for projects worth \$15 million or greater in total cost:
  - Changes in cost (>10%) to total costs as compared to 2018-2022
  - Changes to scheduled start of construction (one year or more)
  - Deleted or unfunded projects as compared to 2018-2022
- 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 projects
  - Scope changes to MPO projects or regional target projects not under MassDOT control
  - Cost changes for materials, e.g. changes to cost of steel, liquid asphalt



# Plan update: project status

## Project status – changes to project cost

Project (in design)	2018-2022 project cost (in millions)	2019-2023 project cost	Comments
Highway / Weymouth-reconstruction – Route18	\$85.8 million	\$62.3 million	Revised costs reflects updated estimate at completion due to schedule changes and other allowance items
Highway / Haverhill bridge replacement	\$58.5 million	\$117.5 million	Chosen alternate assumes full bridge replacement; 2018-2022 plan assumed reconstruction of substructure
Highway / Lynn-Saugus bridge replacement	\$57 million	\$90.7 million	As design for structural, mechanical and electrical components advanced from 25% to 90%, the project cost increased. Design improvements were also added to an adjacent intersection after 25% design.
Highway / Rutherford Avenue	\$133.4 million	\$152 million	2019-2023 cost reflects Boston programmed value in TIP; project is under design by the City of Boston
Highway / North Washington Street bridge replacement	\$150.9 million	\$185.6 million	Additional mitigation costs for off peak construction; construction start delayed one year adding additional inflation costs
Highway / Needham-Wellesley 6 bridge reconstructions	\$154.6 million	\$176.2 million	Revised costs reflects updated estimate at completion due to schedule changes and other allowance items
Highway / Roadway improvements Route138 - Canton	\$13.2 million	\$30.6 million	Initial conceptual estimate in SFY2018 CIP, project is under design and cost reflects inflation based on revised schedule



# Plan update: project status

## Project status – changes to project costs

Project (in design)	2018-2022 project cost (in millions)	2019-2023 project cost	Comments
Highway / Fall River Route 79 Davol Street	\$78.9 million	\$93.9 million	Project is in a conceptual stage (Pre-25% design) with alternatives being evaluated based on FHWA and local concerns.
<b>Highway</b> / I-95 north interstate maintenance	\$15.4 million	\$20.4 million	Project delayed; cost increase reflects additional inflation based on anticipated start date
<b>Highway</b> / Charlemont Bridge rehabilitation	\$26.8 million	\$26.8 million	Highway is working with the local community to scope the appropriate level of investment to address regional traffic and mobility needs
<b>Highway</b> / Mount Auburn Street rehabilitation	\$16.4 million	\$19.4 million	Initial conceptual estimate, project cost increase reflects additional inflation based on anticipated start date
<b>Highway</b> / Fitchburg (Twin Cities Rail Trail)	\$16.3 million	\$20.8 million	Project delayed; inflation increase based on a new start date of FFY 2020 and additional scope changes based on railroad issues.



# Plan update: project status

## Project status – changes to project costs

Project (active projects)	2018-2022 project cost (in millions)	2019-2023 project cost	Comments
<b>Highway</b> / Casey Overpass	\$68.2	\$86.5 million	Increased in cost related to additional scope (station canopy) requested by the MBTA
<b>Highway</b> / Commonwealth Ave. bridge replacement	\$68.3 million	\$85.1 million	Increased in cost related to additional MBTA scope
<b>Highway</b> AET implementation & toll plaza demolition	\$199.6 million	\$164.6 million	Prior CIP values included costs for both the implementation, demolition and ongoing systems maintenance costs. System maintenance costs were transferred to the operating budget in September 2017
<b>Highway</b> / Longfellow Bridge	\$270.2 million	\$306.7 million	Revised costs reflects updated estimate at completion due to settlements and other allowance items
<b>Rail</b> / South Coast Rail	\$144 million	\$176.8 million	Additional funds budgeted in FY 19 to cover design, permitting and early action items; finance plan for Phase 1 construction is under development



# Project status – changes to project costs

Project	2018-2022 project cost (in millions)	2019-2023 project cost 2019-2023	Comments
<b>MBTA / Red Line/Orange Line Infrastructure Improvements</b>	N/A	\$2,003.0	Reflects integration of all RL/OL improvements projects into one program (infrastructure improvements, vehicles, track, signals and power, etc.) that were previously captured in other programs and projects
<b>MBTA / North Station Draw 1</b>	\$121.1	\$156.0	Revised budget reflects updated cost estimate
<b>MBTA / Lynn Station and parking phase II</b>	\$81.8	\$33.6	Revised budget reflects updated scope focusing on urgent repairs only, primarily to the station

# Plan update: project status

## Project status – new projects

Project	2018-2022 project cost (in millions)	2019-2023 project cost 2019-2023	Comments
<b>Highway</b> / Chelsea viaduct	\$0	\$221.8 million	Project was added to the SFY2019 CIP to meet FHWA and Tracker targets for structurally deficient bridges.
<b>Highway</b> / Natick Route 27 bridge replacement	\$0	\$32.3	New project advanced to address improvements along Route 9 identified in the regional Long range Transportation Plan for Boston
<b>Highway</b> / Taunton interchange improvements at Routes 24 & 140	\$0	\$70.7 million	Project deferred during local casino development and has been programmed due to the need for improvements at this location associated with the South Coast Rail project
<b>Highway</b> / Interstate pavement resurfacing I-495 from Hopkinton to Southborough	\$0	\$27.3 million	Recent inspection reports indicated significant pavement deterioration along the corridor. Project was advance to address these deficiencies.)
<b>Highway</b> / I-90 & I-93 micro silica overlay replacement - ramps	\$0	\$20 million	This is the first of several contracts to replace micro silica pavement placed as part of the Central Artery Project with a new, non-porous pavement
<b>Highway</b> / Lighting repairs Ted Williams Tunnel (TWT)	\$0	\$33.6 million	One of several projects that replaced the larger lighting project originally included in the 2018-2022 plan



# Project status – new projects

Project	2018-2022 project cost (in millions)	Updated project budget/schedule 2019-2023	Comments
<b>Highway</b> / Lighting repairs I-90/I-93 tunnels	\$0	\$56 million	One of several projects that replaced the larger lighting project originally included in the 2018-2022 plan
<b>Highway</b> / Boston vent stack exterior replacement (Dewey Square)	\$0	\$15.5 million	Facility requires an upgrade and improvements to address structural issues. Project was advanced to address these deficiencies.
<b>MBTA</b> / Automatic Train Control (ATC) implementation	\$0	\$279.0	Funds implementation of Automatic Train Control on the north side commuter rail lines, in coordination with Positive Train Control (PTC) project
<b>MBTA</b> / Green Line track upgrade	\$0	\$130.4	Supports full depth reconstruction of Green Line track to improve safety and reliability
<b>MBTA</b> / Bus maintenance facility	\$0	\$125.0	Initial funding for new or expanded bus maintenance facilities, consistent with Integrated Fleet and Facilities Plan (IFFP)
<b>MBTA</b> / System-wide wayfinding improvements	\$0	\$63.0	System-wide program to upgrade wayfinding and station signage to improve customer experience
<b>MBTA</b> / Hynes Station	\$0	\$45.8	Reflects all costs for the Hynes Station project tied to the Parcel 13 air rights project, including developer payments

# Project status – new projects

Project	2018-2022 project cost (in millions)	Updated project budget/schedule 2019-2023	Comments
<b>MBTA</b> / Procurement of bi-level commuter rail coaches	\$679.8	\$658.5	In the FY18-22 CIP, a total of \$679.8 million was displayed as generic “revenue vehicle investments”, pending the completion of the fleet plan.
<b>MBTA</b> / Option order procurement of New Flyer Hybrid 40 ft. buses		\$172.6	
<b>MBTA</b> / Procurement of 40 ft. buses – FY 2021-2025*		\$514.7	
<b>MBTA</b> / DMA replacement		\$103.4	The FY19-23 CIP includes eight near-term vehicle overhaul and procurement projects identified in the Integrated Fleet and Facilities Plan (IFFP), reflecting \$819.9 million over the five-year CIP window and \$1.6 billion in total.
<b>MBTA</b> / Overhaul of Kawasaki 900 Series bi-level coaches		\$66.9	
<b>MBTA</b> / Procurement of battery electric 40 ft. Buses and related infrastructure*		\$52.9	*note: mix of hybrid and electric technologies for future bus fleet will be determined by outcome of battery electric bus feasibility study and pilot
<b>MBTA</b> / Replacement of RIDE revenue vehicles		\$23.5	
<b>MBTA</b> / Midlife overhaul of new Flyer Allison Hybrid 60 ft. articulated buses		\$15.9	

# Project status – new projects

Project	2018-2022 project cost (in millions)	Updated project budget/schedule 2019-2023	Comments
<b>MBTA /</b> Occupational Health and Safety (OHS) implementation	\$0	\$41.5	Funds initial program development, implementation, personal protection equipment (PPE), and infrastructure improvements in support of OHS requirements
<b>MBTA /</b> Aquarium and Maverick emergency life safety egress and infrastructure	\$0	\$32.0	Supports a complete analysis of power, signals, track, and facilities for the Aquarium to Maverick corridor as well as immediate repairs to emergency egress and vent shafts at Aquarium and Maverick

# Plan update: project status

## Project status – design only

Project	2018-2022 project cost (in millions)	2019-2023 project cost 2019-2023	Comments
<b>Highway</b> / Allston viaduct	\$0 million	\$16 million	MassDOT working with stakeholders on the design and permitting of this project; MassDOT has programmed \$16 million to fund project design through to procurement phase
<b>Highway</b> / Middleboro Rotary			25% design anticipated Winter of 2018; permitting activities ongoing with FHWA and other relevant agencies.
<b>MBTA</b> / Worcester Union Station conceptual design study	\$3.0	\$3.0	Design only
<b>MBTA</b> / Natick Center station accessibility	\$2.2	\$2.2	Design only
<b>MBTA</b> / Elevator program multiple locations design	\$10.0	\$29.5	Design only for redundant and replacement elevators at priority transit and commuter rail stations
<b>MBTA</b> / Bridges - design	\$17.4	\$17.4	Design for MBTA bridge program
<b>MBTA</b> / Longfellow approach	\$5.3	\$5.3	Design only
<b>MBTA</b> / Allston commuter rail layover facility	\$0	\$8.5	New Project - design only



# Plan update: project status

## Project status – design only

Project	2018-2022 project cost (in millions)	2019-2023 project cost 2019-2023	Comments
<b>Highway</b> / I-93 / I-95 North Interchange			Alternatives analysis and permitting activities ongoing with FHWA and other relevant agencies; requires a finance plan.
<b>Highway</b> / I-93 / I-95 South Interchange			Alternatives analysis and permitting activities ongoing with FHWA and other relevant agencies; requires a finance plan.
<b>Highway</b> / Bowker overpass			Alternatives analysis and conceptual design activities ongoing with relevant agencies; requires a finance plan.
<b>Highway</b> / McGrath Highway			Alternatives analysis and conceptual design activities ongoing; requires a finance plan.

# Plan update: project status

## Project status – design and partial construction

Project	2018-2022 project cost (in millions)	2019-2023 project cost 2019-2023	Comments
<b>MBTA</b> / Winchester commuter rail station	\$34.8	\$34.8	Partially funds total project budget of \$53.8 million
<b>MBTA</b> / Newton commuter rail stations	\$21.5	\$21.5	Partially funds total project budget of \$46 million





# Plan update: project status

## Project status – schedule

Project	2018-2022 project cost (in millions)	2019-2023 project cost 2019-2023	Comments
<b>Highway</b> / Reconstruction of I-90/I-495 interchange	\$275.7 million	\$310.3 million	Construction start delayed two years to 2023 for refinement of design alternatives, selection and environmental permitting; cost increase due to inflation and changes to scope related to wetland mitigation
<b>Highway</b> / Charlton-Oxford reconstruction on Route 20	\$54.1 million	\$71.7 million	Construction delayed one year to 2021; additional costs reflect inflation based on new start year
<b>Rail</b> / Springfield Union Station	\$10.5 million	\$10.5 million	Platform “C” will be completed in FY 19 (delay of one year); programmed spending reflects remaining spending on project (\$6.5 million); Total cost of \$10.5 million unchanged



# Plan update: project status

## Project status – other status changes

Project	2018-2022 project cost (in millions)	Status change	Comments
<b>Highway</b> / Lowell Lord Overpass reconstruction	\$15.9 million		MassDOT is funding a portion of the project in collaboration with the City of Lowell. Lowell is responsible for financing and design of the project. Funding is pending the completion of the City's design and finance plan.
<b>Highway</b> / MHS tunnels lighting Project	\$322 million	Replaced by two separate projects	Scope and constructability revised into a series of smaller investments. The first two of these investments are included in the CIP.
<b>Highway</b> / Cape Cod Gateway project	\$0	\$10 million	MassDOT is completing a study related to transportation mobility and is transitioning project from Planning to Highway; funds are to continue design efforts in coordination with the Army Corps of Engineers.
<b>MBTA</b> / Revenue vehicle investment	\$679.8	Reallocated	Funding for revenue vehicles displayed in the FY18-22 CIP as "pending fleet plan" has been allocated to near-term priority projects
<b>MBTA</b> / Pay-Go funds	\$382.0	Reallocated	Pay-Go funds are treated as a funding source for the FY19-23 CIP and assigned to specific projects



# 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

**2019-2023 DRAFT Capital Investment Plan Update**

massDOT Massachusetts Department of Transportation

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CIP Overview What's new? Funding Reliability Investments Modernization Investments Expansion Investments Investment Details Equity Participate

Participate

MassDOT and the MBTA want to hear from you about this draft CIP update!

We have provided you with three ways to share your comments:

- Attend a CIP public meeting - see map to the right for details
- Use the investment map below to find a project to comment on
- Comment on the draft CIP update using our comment tool

For this CIP update, there was three pronged approach to public and stakeholder engagement. Phase 1 focused on stakeholder engagement with established stakeholders and groups as well as the identification of new, stakeholders across all MassDOT and MBTA divisions. In addition, social media was utilized to highlight transportations investments completed under prior CIPs as well as ongoing efforts under the 2019-2023 CIP.

Phase 2 will focus on input from the general public through the online commenting tool and public meetings across the Commonwealth (consistent with past years). Finally, all comments are analyzed using qualitative data analysis software and relevant comments are provided to divisions for further input and response. Major themes are documented and incorporated as part of the final CIP.

**Public Meeting Locations**

Locations are accessible to people with disabilities. MassDOT provides reasonable accommodations and/or language assistance free of charge upon request (including but not limited to interpreters in American Sign Language and languages other than English, open or closed captioning for videos, assistive listening devices and alternate material formats, such as audio tapes, Braille and large print), as available. For accommodation or language assistance, please contact Katy Zazzera by phone (857) 368-8986 or by email ([Kathryn.Zazzera@dot.state.ma.us](mailto:Kathryn.Zazzera@dot.state.ma.us)). Requests should be made as soon as possible prior to the meeting, and for more difficult to arrange services including sign-language, CART or language translation or interpretation, requests should be made at least ten (10) business days before the meeting.

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# Plan update: engagement for draft CIP update

- 10 public meetings across the Commonwealth
  - Tuesday May 15<sup>th</sup> – Boston (Mattapan)
  - Wednesday May 16<sup>th</sup> – Worcester (with Central Massachusetts MPO)
  - Thursday May 17<sup>th</sup> – Barnstable & Springfield
  - Monday May 21<sup>nd</sup> – Framingham & Quincy
  - Tuesday May 22<sup>nd</sup> – Pittsfield (with Berkshire MPO)
  - Wednesday May 23<sup>rd</sup> – Peabody
  - Wednesday May 30<sup>th</sup> – New Bedford
  - Thursday May 31<sup>st</sup> – Fitchburg
- Online comment tools
  - Comments accepted directly on proposed projects
  - Emails & letters



# 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 today's meeting and Joint Board meeting next Monday
- **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

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- Continue with mapping of investments and an equity analysis before the Joint Board votes to release for public comment
- Finalize content in on-line format for review during public comment period



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# FY2019-2023 CIP update: Appendix

## Sources, program sizes and spending

May 9, 2018

# Plan update: approach

## Capital Planning Approach

- ▶ This is a one-year update
- ▶ The majority of the CIP was set in motion in SFY 2018-2022
- ▶ Adding SFY 2023
- ▶ Nearly one third of the CIP is dedicated to projects with our municipal partners

**Priorities:** this CIP update maintains the strategy to invest first in the reliability of the transportation system, followed by modernization and, as final priority, expansion. For the 2019-2023 CIP emphasis has shifted to modernization of our assets with our programmed investments. Reliability and Modernization combine to account for over 78% of our investments.

**Programs:** this CIP update has changed some programs to better reflect the needs of modal divisions or asset management. There are 67 investment programs. See details on the program changes. With this CIP, major multi-faceted projects such as Green Line Extension, South Coast Rail, among others, have now been shifted into their own programs.

**Project selection:** this CIP update reflects the changes made in 2018 to the weights used in the evaluation of modernization and expansion investments.

**Planning for Performance Tool:** the tool was revamped to more clearly reflect the CIP programs contained in this CIP update. The tool also provided updated data and analysis for some programs. The tool will continue to be updated in the future to forecast the performance of as many programs as possible.

**Project intake:** a new tool was launched in 2017 to help our municipal partners initiate Highway Division projects to be considered for investment by MassDOT or their respective MPO. This tool streamlines and improves what used to be a paper-driven process, which required substantial manual entry of data. The tool will continue to be improved and will be expanded to other Divisions including the MBTA.

**CIP and STIP alignment:** the development timelines of the CIP and STIP were aligned so that all applicable investments are identified in each document. This is important for the CIP to more accurately reflect regional priority projects identified by our MPO partners.





# MassDOT spending by source

Projected sources (in millions)	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>	<u>FY23</u>	<u>Total</u>
<b>Federal sources of funds</b>						
Federal Highway (FHWA) reimbursements	\$611.8	\$730.9	\$847.1	\$796.3	\$806.0	<b>\$3,792.1</b>
Federal Transit (FTA) reimbursements	\$4.6	\$4.7	\$4.8	\$4.9	\$5.1	<b>\$24.1</b>
Federal Aviation (FAA) reimbursements and grant draws	\$37.0	\$42.1	\$29.0	\$52.2	\$49.2	<b>\$209.6</b>
Federal Rail (FRA) reimbursements and grant draws	\$3.5	\$1.0	\$0.0	\$0.0	\$0.0	<b>\$4.6</b>
<b>Subtotal federal sources</b>	<b>\$657.0</b>	<b>\$778.7</b>	<b>\$880.9</b>	<b>\$853.5</b>	<b>\$860.2</b>	<b>\$4,030.3</b>
Bond cap	\$898.2	\$835.4	\$830.5	\$852.5	\$797.5	<b>\$4,214.0</b>
Accelerated Bridge bonds	\$76.5	\$15.6	\$0.0	\$0.0	\$0.0	<b>\$92.1</b>
Rail enhancement bonds	\$59.8	\$34.5	\$34.9	\$20.0	\$0.0	<b>\$149.2</b>
CARM	\$24.2	\$75.4	\$82.5	\$6.9	\$1.0	<b>\$190.1</b>
Metropolitan Highway system (MHS) pay-go	\$77.7	\$34.4	\$12.5	\$22.6	\$26.4	<b>\$175.3</b>
Gaming	\$0	\$0	\$0	\$0	\$0	<b>\$0.0</b>
Western Turnpike (WT) pay-go	\$30.2	\$40.3	\$12.5	\$11.2	\$10.9	<b>\$105.0</b>
Tobin Bridge (Tobin) pay-go	\$40.9	\$32.8	\$47.6	\$26.4	\$84.4	<b>\$232.1</b>
Reimbursable and 3 <sup>rd</sup> parties	\$3.6	\$3.0	\$2.3	\$11.8	\$13.5	<b>\$34.2</b>
Municipal and local funds	\$3.3	\$2.8	\$2.2	\$3.0	\$3.0	<b>\$14.3</b>
Public private partnerships	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	<b>\$0.0</b>
<b>Subtotal non-federal sources</b>	<b>\$1,213.2</b>	<b>\$1,073.8</b>	<b>\$1,026.4</b>	<b>\$954.0</b>	<b>\$936.2</b>	<b>\$5,203.5</b>
<b>Total sources</b>	<b>\$1,870.2</b>	<b>\$1,852.5</b>	<b>\$1,907.3</b>	<b>\$1,807.5</b>	<b>\$1,796.4</b>	<b>\$9,233.8</b>

\*\* Totals may not add due to rounding



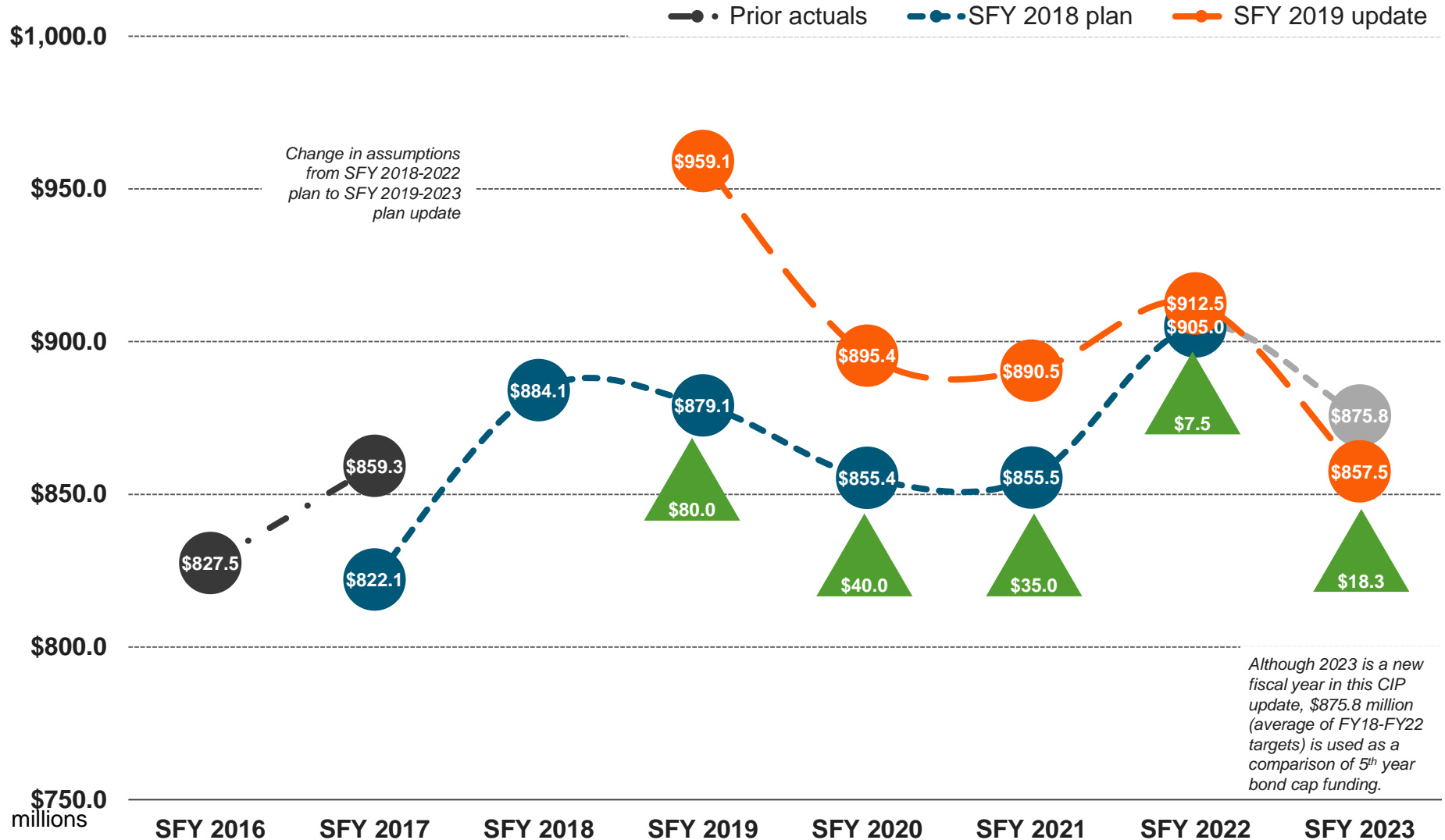
# MBTA spending by source

Projected Source	FY19	FY20	FY21	FY22	FY23	Total
<b>Federal sources of funds</b>						
Federal Highway (FHWA) reimbursements	\$49.0	\$29.3	\$19.7	\$0.0	\$0.0	<b>\$109.9</b>
Federal Transit (FTA) reimbursements and grant draws	\$402.9	\$680.2	\$796.9	\$529.2	\$311.8	<b>\$2,721.0</b>
FTA Full funding grant agreement (GLX FFGA)	\$92.6	\$289.6	\$339.2	\$88.7	\$17.7	<b>\$827.7</b>
Other federal funds	\$4.3	\$1.4	\$0.0	\$0.0	\$0.1	<b>\$5.9</b>
<b>Subtotal federal sources</b>	<b>\$548.8</b>	<b>\$1,000.5</b>	<b>\$1,156.0</b>	<b>\$629.8</b>	<b>\$329.6</b>	<b>\$3,664.6</b>
Bond cap	\$0.9	\$0.0	\$0.0	\$0.0	\$0.0	<b>\$1.0</b>
Accelerated Bridge bonds	\$0.4	\$0.0	\$0.0	\$0.0	\$0.0	<b>\$0.4</b>
Rail enhancement bonds	\$185.3	\$292.8	\$296.4	\$250.5	\$71.9	<b>\$1,097.0</b>
MBTA Revenue bonds	\$207.0	\$428.2	\$500.7	\$394.1	\$324.6	<b>\$1,854.5</b>
Metropolitan Highway system (MHS) pay-go	\$0.7	\$0.4	\$0.2	\$0.1	\$0.0	<b>\$1.3</b>
Gaming funds	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	<b>\$0.0</b>
Municipal and local funds (GLX)	\$0.0	\$37.4	\$22.7	\$15.0	\$0.0	<b>\$75.0</b>
Reimbursable and 3 <sup>rd</sup> parties	\$14.4	\$12.3	\$16.0	\$25.7	\$15.6	<b>\$84.0</b>
Positive Train Control (PTC) financing	\$97.9	\$94.8	\$92.1	\$51.8	\$0	<b>\$336.7</b>
Pay-Go lockbox (Bond Cap)	\$60.0	\$60.0	\$60.0	\$60.0	\$60.0	<b>\$300.0</b>
Pay-Go lockbox (MBTA)	\$159.6	\$169.7	\$113.6	\$60.7	\$47.8	<b>\$551.2</b>
Capital maintenance fund	\$4.6	\$0.7	\$0.1	\$0.0	\$0.0	<b>\$5.4</b>
<b>Subtotal non-federal sources</b>	<b>\$730.8</b>	<b>\$1,096.3</b>	<b>\$1,101.7</b>	<b>\$858.0</b>	<b>\$519.9</b>	<b>\$4,302.7</b>
<b>Total Sources</b>	<b>\$1,279.6</b>	<b>\$2,096.8</b>	<b>\$2,257.7</b>	<b>\$1,487.8</b>	<b>\$849.5</b>	<b>\$7,971.0</b>

\*\* Totals may not add due to rounding

# Plan update: bond cap comparisons

## Bond cap: SFY 2018-2022 plan versus SFY 2019-2023 plan update



# Plan update: program changes

## Program changes

**Highway Division / Design, Row, Environmental:** program costs were allocated to individual CIP programs that these efforts support. Previously these investments were not represented within the individual program structure.

**Highway Division / Retainage and Utility Payments:** program costs were allocated to individual CIP programs that these efforts support. Previously these investments were not represented within the individual program structure.

**Highway Division / Bicycle/Pedestrian:** costs associated with implementation of the Bicycle and Pedestrian modal implementation plans have been separated into a new program. This program reflects Bicycle and Pedestrian/multi-use path programs substantially funded with FHWA funds.

**Highway / Allston Multi-Modal:** this program reconstructs and realigns the Allston interchange to improve safety for all transportation modes: walking, cycling, driving, transit and to create a vibrant Allston neighborhood reconnecting sections to each other and to the Charles River.

**MBTA / Risk Management and Mitigation:** this program's name was modified to include investments related to OSHA and proactive security improvements. Program was formerly called Federal Programs and Mandates.

**MBTA / Customer Experience and Technology:** program supports investments in projects that modernize the system and enhance customers' experience. Costs associated with this program were formerly included in System Improvements.



## Program changes continued

**MBTA / Process Improvements and Innovation:** program supports investments that develop and implement projects that increase the efficiency and quality of the system through technology and other innovations. Program costs were formerly associated with System Improvements.

**MBTA / AFC 2.0:** program is the MBTA's new integrated, reliable, and convenient fare payment and collection system to enable customers to pay fares by tapping contactless bank cards, mobile phones, and fare cards across the entire system. Costs associated with this program were formerly included in System Improvements.

**MBTA / Red Line/Orange Line Improvements:** program supports investments in vehicle and infrastructure needed to fully modernize the Red and Orange line fleets and achieve the service goal of three minute headways. Investments in Red Line/Orange Line improvements were included in 2018-2022 as part of other programs (Revenue Vehicles, Track Signals and Power among others)

**MBTA / Commuter Rail Safety and Resiliency:** program supports investments that improve the safety and resiliency of the commuter rail network, including the implementation of Positive Train Control (PTC).

**MBTA / Green Line Extension:** program includes the vehicles, stations and infrastructure to extend the Green Line from a relocated Lechmere Station in East Cambridge to Union Square in Somerville and College Avenue in Medford. Costs associated with this program were formerly included in the Expansion Projects program category

**MBTA / Expansion Projects:** this program makes targeted expansions in order to improve access to transit, including the Silver Line to Chelsea and Blue Hill Avenue Station on the Fairmount Line.



## Program changes continued

**OTP / Bicycle and Pedestrian Modal Implementation:** program supports investments to meet needs identified through the statewide bicycle and pedestrian planning efforts. The plans address critical needs around safety, accessibility, network connectivity and maintenance.

**RMV / ATLAS:** program improves RMV service delivery options by replacing the ALARS system. Program dedicated to one project and reduced program size reflects progress on the implementation of the new system. The anticipated completion is expected for 2021.

**Rail / South Coast Rail:** program reflects the Commonwealth's commitment to move forward with the South Coast Rail project to more fully meet the existing and future demand for public transportation between Fall River/New Bedford and Boston, and to enhance regional mobility while supporting smart growth planning and development strategies in the affected communities.



# Plan update: program budget changes

## Program budget changes

Program	2018-2022 program budget (in millions)	2019-2023 program budget	Comments
Highway / Design, ROW, Environmental	\$660.0	\$0.0	Program costs allocated to appropriate individual CIP programs support by efforts
Highway / Retainage and Utility Payments	\$50.0	\$0.0	Program costs allocated to appropriate individual CIP programs
Highway / Facilities	\$161.5	\$181.7	Program includes allocation of \$20.2 million in design/project management cost allocation
Highway / Intersection improvements	\$160.7	\$180.8	Program includes allocation of \$20.1 million in design/project management cost allocation
Highway / Interstate pavement	\$281.7	\$316.9	Program includes allocation of \$35.2 million in design/project management cost allocation
Highway / Non-interstate pavement	\$543.9	\$611.9	Program includes allocation of \$68.0 million in design/project management cost allocation
Highway / Roadway Improvements	\$150.0	\$168.8	Program includes allocation of \$18.8 million in design/project management cost allocation
Highway / Safety Improvements	\$235.8	\$265.3	Program includes allocation of \$29.5 million in design/project management cost allocation
Highway / Tunnels	\$350.0	\$393.8	Program includes allocation of \$43.8 million in design/project management cost allocation
Highway / Roadway Reconstruction	\$1,261.0	\$1,418.6	Program includes allocation of \$157.6 million in design/project management cost allocation
Highway / Capacity	\$273.9	\$308.1	Program includes allocation of \$34.2 million in design/project management cost allocation
Highway / Allston Multi-Modal Implementation	\$0	\$16.0	Program reflects investment in roadways, multi-modal bus and rail station, rail layover & yard, and pedestrian / open space

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

## Program budget updates continued

Program	2018-2022 program budget (in millions)	2019-2023 program budget	Comments
Highway / Bicycle and Pedestrian	\$220.5	\$180.6	Program includes allocation of \$20.0 million in design/project management costs and reflects transfer of \$60 million to new program
IT / Cyber and Information Security	\$9.6	\$15.0	Program increased to include compliance with Article 87 – Executive Office of Technology Services and Security (EOTSS) initiatives
MBTA / Accessibility	\$224.2	\$265.0	Program reflects increase in additional Plan for Accessible Transit Infrastructure Investments (PATI) investment
MBTA / Facilities	\$112.6	\$355.0	Program reflects increase in additional spending on bus maintenance facilities & Integrated Fleet and Facilities Plan (IFFP)
MBTA / Risk Management & Mitigation	\$538.8	\$117.1	Renamed program; program reflects investments in OSHA and security upgrades
MBTA/ Revenue Vehicles	\$1,702.7	\$1,289.9	Program reflects decrease since Red Line/Orange Line vehicles are now in their own program
MBTA / Track, Signals, and Power	\$1,285.6	\$950.0	Program reflects scope for RL/OL work now in separate program
MBTA / AFC 2.0	\$622.3	\$160.0	Initiatives combined in 2018-2022 under System Improvements program; split into three different programs for 2019-2023
MBTA / Process Improvements and Innovation		\$25.0	
MBTA / Customer Experience & Technology		\$104.0	

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



## Program budget updates continued

Program	2018-2022 program budget (in millions)	2019-2023 program budget	Comments
MBTA / Red Line/Orange Line Infrastructure	\$0	\$1,565.7	Program includes vehicle procurements, signal work and infrastructure investments
MBTA / Commuter Rail Safety and Resiliency	\$0	\$637.5	Program reflects various safety and resiliency efforts underway on commuter rail network, including PTC
MBTA / Expansion	\$1,587	\$59.0	Program reflects remaining spending on existing non-GLX expansion projects (no new investments); 2018-2022 program included GLX investment which is now in its own program
MBTA / Green Line Extension		\$1,364.5	Program reflects GLX project cash flows which were included under expansion projects program in 2018-2022 plan
Transit / RTA Vehicle Replacement	\$58.0	\$92.3	Program reflects additional investment to address fleet asset condition
Rail / South Coast Rail	\$0.0	\$165.8	Program reflects funding for South Coast Rail project early construction activities (SFY 2019); was included under Track and ROW expansion in 2018-2022 plan
Rail / Track and ROW expansion	\$100.0	\$0.0	Program previously included funding for South Coast Rail project; no funds programmed in 2019-2023 for other track and ROW expansion projects.
RMV / ATLAS	\$102.1	\$61.5	Reflects remaining spending on ATLAS implementation

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