
FY 2020-2024 CIP Update: Sources, Uses and Program Sizes

CPC presentation

April 17, 2019



Agenda

- **CIP Process Recap**
 - Status update on CIP development activities
- **MassDOT/MBTA Initiatives for 2020-2024 CIP**
 - New programs and/or significant changes
- **Preliminary sources and uses for MassDOT and MBTA**
 - New sources and/or changes to existing sources
 - Proposed uses
- **Program Sizes**
 - Summary and highlighted changes
- **Appendix**
 - FY 2019 Accomplishments
 - CIP Programs by priority/Division and projected spending by funding source



CIP Process Recap

- **Since last CPC meeting:**

- Reviewed and refined program size requests
 - CIP / STIP alignment will further influence final program sizes with FHWA/FTA funded projects with TIPs due mid-April
 - For 2020-2024 program sizing and prioritization has focused on aligning with strategic priorities and performance targets and incorporates:
 - TAM and TAMP targets
 - Asset inventory and condition data to inform/establish capital needs
 - “Next priorities” as identified in Focus40 plan
- Reviewed and refined source assumptions
 - Bond Cap targets provided by ANF January 31 and further revised February 1
 - MBTA FTA carryover updated to reflect latest FY 19 spending assumptions
 - MassDOT pay-go capital projections may be updated, as necessary, to align with FY20 operating budget assumptions
 - Incorporated additional Federal Highway Administration discretionary funding and other new funding sources
- Community Relations team is conducting outreach to prioritized list of targeted stakeholders
 - Initiated social media campaign
 - Identified locations and confirmed dates for CIP public meetings
- Both MassDOT’s and the MBTA’s CIP development and the capital delivery teams are focused on execution and optimization of the capital program

- **Today:**

- Need feedback on preliminary sources and uses
- Feedback and discussion of significant changes to program sizes and/or new programs



MassDOT/MBTA CIP Initiatives

- South Coast Rail (phase 1) will be identified as funded in FY 2020-2024 CIP
 - Independent cost and schedule evaluation completed
 - Finance plan will be included in the Commonwealth Capital Investment Plan
- Allston Multi-Modal Program
 - 2020-2024 CIP currently only includes environmental review and early action design costs
 - A revised schedule and cost estimate is under development given the recent decision on the “Throat” section and key elements of the program
 - Draft program size will be determined once the cost estimate is completed
 - A finance plan will be developed during the coming year that incorporates the program elements, eligible funding sources, and the potential for public-private partnerships
- MassDOT/MBTA continue to pursue opportunities to introduce additional zero emission vehicles into their fleets
 - Rail and Transit Division is working with EEA to determine availability of additional funding from VW settlement award for electric buses and supporting infrastructure for the RTA’s vehicle replacement program
 - MBTA’s CIP includes several projects to support a transition to zero emission vehicles including Lo-No pilot (5 buses delivered this spring), battery electric buses to replace the trackless trolley, and investment in new or expanded bus facilities to accommodate new fleet

MassDOT/MBTA CIP 2020-2024 changes

- MassDOT is working closely with ANF to identify potential funding to improve the non-interstate pavement condition throughout the Commonwealth
- New competitive grant program (Workforce Transportation Options) to be administered by Rail and Transit Division will utilize federal CMAQ funds to leverage private and other non-state funds to improve options for workforce transportation
 - Program replaces MassRides program which ends in FY 2019 (June 30)
- 2020-2024 CIP will fully reflect the state share of the project construction payroll funded by federal aid that was approved under the FY 2018 operating budget



MassDOT/MBTA CIP 2020-2024 changes

- The MBTA has proposed a new modernization program to more closely align with priorities and initiatives for the Green Line
 - Green Line Transformation program will improve quality of service (enhanced reliability, accessibility and capacity), through fleet modernization, infrastructure and facilities upgrades utilizing state-of-the-art technology
 - Adjustments were made to other MBTA CIP programs to shift investments originally intended for the Green Line into this new program
- The MBTA has proposed a new expansion program to support initial project planning for “next priorities” identified in Focus40



MassDOT/MBTA CIP Initiatives

- Spending on other major projects reflected in this CIP update
 - Green Line Extension (construction commenced FY 18)
 - Red Line/Orange Line Improvements and Vehicles (commenced FY 2015)
 - Commuter Rail Positive Train Control (commenced FY 2016)
 - Chelsea Viaduct (construction commenced FY 2019)
 - North Washington Street Bridge Replacement (construction commenced FY 2019)
 - Lynn-Saugus Bridge Replacement (construction commences FY 2020)
 - I-90 / I – 495 Interchange Reconstruction (construction commences FY 2023)
 - Prudential Tunnel Ventilation Improvements (construction commences in FY 2023)
 - Sumner Tunnel Rehabilitation (construction commences in FY 2021)
- Additional federal funds available for infrastructure programs



FY2020-2024 CIP update: Sources

April 17, 2019



Potential revenue to support the 2020-2024 CIP

- New Federal Sources
 - Additional federal formula funds
 - Federal Railroad Administration grants
 - Federal Transit Administration grants
- Potential 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 \$588.6 million greater
 - MBTA sources are approximately \$373 million greater



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
 - STIP/CIP assumes an additional \$9.3 million/year (\$46.4 million total) in NHPP – Exempt funds will be apportioned to MassDOT over 2020-2024
 - Highway Infrastructure Program (HIP) funds (\$72.5 million) can be used on any federal-aid eligible project
 - A portion (\$33.8 million) is available for use anywhere in the Commonwealth and the remainder (\$39.1 million) to be distributed among defined areas
 - 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 are currently identifying how and when the funds will be programmed and incorporated in the STIP
 - Additional Federal programmed funds will be reflected as FHWA reimbursements in the Highway Division's anticipated spending for 2020-2024 CIP



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 to address 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
 - MassDOT recently submitted an application for FRA grant funds under a **Notice of Funding Opportunity (NOFO) for Federal-State Partnership for State of Good Program** to support a complete redesign and reconstruction of the Tower 1 Interlocking system at South Station
 - Total anticipated cost of the project (federal plus state match) is approximately \$83 million
 - If FRA grant funds are awarded, project will be included in 2020-2024 CIP
- **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



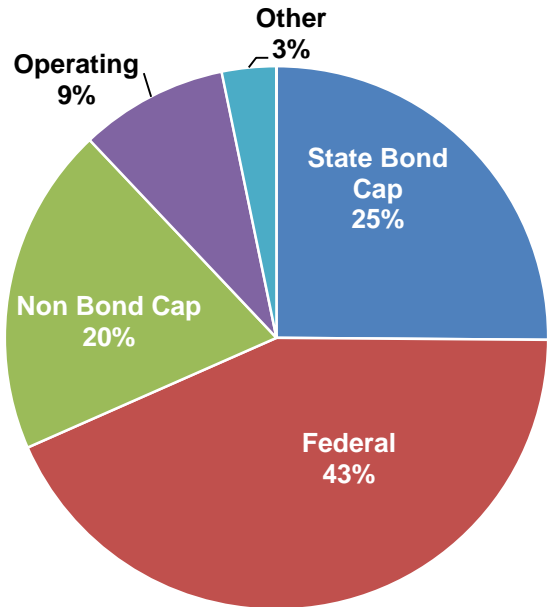
MassDOT/MBTA CIP New State Sources

- 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 available to support capital projects
 - The increase, primarily on the MHS, reflects stabilization of AET program and incorporates actual revenue and operating experience in development of projected pay go capital funds

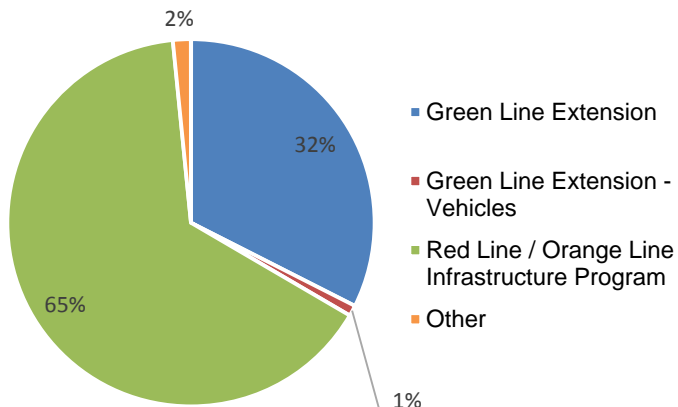


Funding Sources for MassDOT and MBTA

FY20-FY24 All Funding Sources



FY20-FY24 REP Funds



- **Bond Cap:**
 - **\$915.2 M** in FY20; (*\$4.6B total over 5-yaer*), including:
 - **\$60M** in FY20 (*\$300 M over 5-year*) for MBTA
 - **\$40M** in **FY 20** (*\$112.5 M over-5 year*) for Massport
 - **\$200M** in FY 20 (*\$1 B over 5-year*) for Chapter 90
 - **\$615.2M** in FY 20 (*\$3.2 B over 5-year*) for MassDOT
- **Non Bond Cap: REP, Revenue Bonds, ABP Funds**
 - **\$459.3 M** in FY20 (*\$3.2B M over 5-year*), including:
 - **\$15.4M** for Accelerated Bridge Program (ABP)
 - **\$199.7M** in FY 20 (*\$1.2B over 5 years*) for REP
 - **\$ 302.5M** in FY 20 (*\$2.1 B over 5-year*) for MBTA revenue bonds and PTC loans
- **Federal: \$1.7 B** in FY 20; (*\$8.0 B over 5-year*)
 - Highway/Planning (FHWA): \$4.0B total
 - Transit (FTA): \$30.2M total
 - Rail/Planning (FRA): \$13.1M total
 - Aviation (FAA): \$133.3M total
 - MBTA (FTA): \$3.8B total
- **Operating:**
 - Toll Revenues: **\$1.1B** over 5-year
 - Operating Assistance (MBTA): **\$559M** over 5-year (includes unspent carryover)
- **Other:**
 - Local Funds, Reimbursements & CARM:
 - **\$595.7M** over 5-year



Bond Cap Targets for MassDOT and MBTA

(\$ millions)	FY20	FY 21	FY22	FY 23	FY24
MassDOT	\$585.0	\$605.4	\$634.8	\$617.1	\$726.1
Chapter 90	200.0	200.0	200.0	200.0	200.0
MBTA	60.0	60.0	60.0	60.0	60.0
Atlas	30.2	4.9			
Port Projects	40.0	35.0	37.5		
Subtotal	\$915.2	\$905.3	\$932.3	\$877.1	\$986.1
SCR ¹	TBD	TBD	TBD	TBD	TBD
Total MassDOT	\$915.2	\$905.3	\$932.3	\$877.1	\$986.1

¹Bond cap target will be updated further pending finalization of finance plan for program.



Pay-go comparisons 2020-2024 vs 2019-2023

Facility / Actuals & Projections		2019-2023	2020-2024
Metropolitan Highway System*	Revenues	\$1,162.4	\$1,249.6
	Expenses	772.9	782.7
	Net Debt Service	149.3	169.6
	Available for Capital	\$240.2	\$297.3
	Reserves	\$40.0	\$70.0
Western Turnpike	Revenues	\$904.4	\$913.5
	Expenses	515.2	\$496.4
	Available for Capital	\$389.3	\$417.2
	Reserves	\$70.0	\$80.5
Tobin Bridge	Revenues	\$204.0	\$213.5
	Expenses	62.2	70.3
	Available for Capital	\$141.8	\$143.2
	Reserves	\$30.0	\$57.5
Total Tolls	Total Available for Capital	\$771.3	\$857.7
	Total Reserves	\$140.0	\$199.0

Transactions volumes / revenues increased over previous forecasts for tunnels and Boston Extension

Transaction volume in line with previous forecasts; revenues increased 0.9% over previous forecasts

Transaction volume increased 4% over previous forecasts; revenues increased 5% over previous forecasts

*New sources for MHS include \$17.5 million in third party contributions to support the ventilation project for the Prudential Tunnel

MassDOT sources (draft as of 4/12/19)

Projected sources (in millions)	FY20	FY21	FY22	FY23	FY24	Total
Federal sources of funds						
Federal Highway (FHWA) reimbursements	\$755.8	\$863.6	\$847.1	\$791.2	\$744.8	\$4,002.5
Federal Transit (FTA) reimbursements**	\$6.0	\$6.0	\$6.0	\$6.0	\$6.0	\$30.2
Federal Aviation (FAA) reimbursements and grant draws	\$26.5	\$27.1	\$25.1	\$27.5	\$27.5	\$133.7
Federal Rail (FRA) reimbursements and grant draws	\$5.9	\$7.2	\$0.0	\$0.0	\$0.0	\$13.1
Subtotal federal sources*	\$794.2	\$904.0	\$878.3	\$824.7	\$778.3	\$4,179.5
Bond cap	\$854.8	\$844.8	\$872.3	\$817.1	\$926.1	\$4,315.0
Accelerated Bridge bonds	\$5.5	\$10.0	\$0.0	\$0.0	\$0.0	\$15.4
Rail enhancement	\$14.5	\$14.9	\$0.0	\$0.0	\$0.0	\$29.4
CARM***						\$328.0
Metropolitan Highway system (MHS) pay-go	\$129.4	\$59.5	\$57.9	\$56.4	\$57.3	\$360.5
Tobin Bridge (Tobin) pay-go	\$84.3	\$28.6	\$28.9	\$29.2	\$29.6	\$200.7
Western Turnpike (WT) pay-go	\$164.5	\$85.2	\$84.0	\$82.5	\$81.4	\$497.7
Municipal and local funds	\$6.3	\$2.4	\$3.1	\$3.1	\$3.5	\$18.4
Reimbursable and 3 rd parties	\$0.0	\$6.5	\$0.2	\$0.2	\$0.2	\$7.0
Public private partnerships/Other State Funds****	\$7.5					\$7.5
Subtotal of non-federal sources*	\$1,266.8	\$1,051.9	\$1,046.4	\$988.5	\$1,098.0	\$5,779.6
Total sources*	\$2,061.0	\$1,955.9	\$1,924.7	\$1,813.2	\$1,876.3	\$9,959.1

* Totals may not add due to rounding | ** FTA reimbursements for MassDOT projects only; RTA federal funds are not included | ***Available balance as of 1/1/2019. | ****Includes funding from HED for transportation improvements in the Seaport District (does not include any VW funds)



About MassDOT funding sources

Source	Description
Federal Highway (FHWA) reimbursements	MassDOT obligates available Federal Highway Administration funds every federal fiscal year. This funding category involves MassDOT drawing down obligated amounts to reimburse the Commonwealth for Highway and Rail Division project spending.
Federal Transit (FTA) reimbursements	MassDOT obligates available Federal Transit Administration funds every federal fiscal year. This funding category involves MassDOT drawing down obligated amounts to reimburse the Commonwealth for Rail & Transit Division project spending. The spending by source tables do not include FTA funds available to Regional Transit Authority partners.
Federal Aviation (FAA) reimbursements and grant draws	MassDOT applies for Federal Aviation Administration funds every federal fiscal year. This funding category involves MassDOT drawing down those approved grant amounts to pay for Aeronautics Division project spending.
Federal Rail (FRA) reimbursements and grant draws	MassDOT from time to time applies for Federal Railroad Administration funds. This funding category has MassDOT draw down approved grant amounts to pay for Rail & Transit Division and Office of Transportation Planning project spending.
State bond cap	Commonwealth general obligation bond proceeds allocated to specific projects; primarily for project design, management, operations and other construction support provided to the Aeronautics, Highway and Rail and Transit Divisions and the MBTA (see MBTA sources)
Accelerated Bridge bonds	Commonwealth special obligation bond proceeds allocated to specific bridge projects; primarily for bridge projects construction
Rail enhancement bonds	The Commonwealth Rail Enhancement Program; a dedicated program for reliability, modernization and expansion initiatives at the MBTA and MassDOT, including the State's share of the Green Line Extension program and South Coast Rail program.
CARM	Central Artery Remediation Monies (CARM) for eligible MHS projects; subject to FHWA approval
Metropolitan Highway System (MHS) pay-go	Projected annual revenues available for capital for the toll facilities east of I-95 plus any existing projected reserve balances
Western Turnpike (WT) pay-go	Projected annual revenues available for capital for the toll facilities west of I-95 plus any existing projected reserve balances
Tobin Bridge (Tobin) pay-go	Projected annual revenues available for capital for this toll facility plus existing projected reserve balances
Municipal and local funds	Funds provided by municipalities to match federal-aid sources or to pay for construction bid items
Reimbursable and 3rd parties	Third party funding for specific initiatives
Public private partnerships	Project financing mechanism that includes private sector resources. MassDOT is exploring the use of this financing mechanism.
Other State Funds	Additional funds for MassDOT to be used for clean transit vehicles and transportation improvements in the Seaport District

MBTA funding sources (draft as of 4/8/19)

Projected sources (in millions)	Funds on Hand (as of 7/1/19)	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Total
Federal sources of funds							
Federal Highway (FHWA) reimbursements	\$45.1	\$16.0	\$23.4	\$0.0	\$0.0	\$0.0	\$84.5
Federal Transit (FTA) reimbursements (prospective)	\$673.1	\$316.7	\$322.2	\$327.7	\$333.3	\$338.9	\$2,311.9
Existing FTA reimbursements and grant draws	\$605.9	\$6.1	\$0.0	\$0.0	\$0.0	\$0.0	\$612.0
FTA Full funding grant agreement (GLX FFGA)	\$87.1	\$525.0	\$100.0	\$46.1	\$0.0	\$0.0	\$758.3
Other federal funds	\$7.4	\$27.6	\$0.0	\$0.0	\$0.0	\$0.0	\$34.9
Subtotal federal sources	\$1,418.7	\$891.4	\$445.5	\$373.8	\$333.3	\$339.0	\$3,801.6
Bond cap	\$0.0	\$0.4	\$0.4	\$0.0	\$0.0	\$0.0	\$0.8
Accelerated Bridge bonds	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1
Rail enhancement bonds	\$0.0	\$185.3	\$399.4	\$244.3	\$228.4	\$162.7	\$1,220.0
Revenue bonds	\$203.3	\$254.0	\$337.0	\$432.0	\$440.0	\$500.0	\$2,166.3
Positive Train Control (PTC) bonds	\$53.5	\$48.5	\$61.8	\$0.0	\$0.0	\$0.0	\$163.8
Municipal and local funds (GLX)	\$0.0	\$15.0	\$22.6	\$37.4	\$0.0	\$0.0	\$75.0
Reimbursable and 3 rd parties	\$0.0	\$8.9	\$7.3	\$12.6	\$13.5	\$46.2	\$88.5
Pay-Go/Lockbox (Bond Cap)	\$0.0	\$60.0	\$60.0	\$60.0	\$60.0	\$60.0	\$300.0
Pay-Go/Lockbox (MBTA)	\$104.9	\$90.0	\$90.0	\$90.0	\$90.0	\$90.0	\$554.9
Capital maintenance fund	\$2.5	\$1.5	\$0.0	\$0.0	\$0.0	\$0.0	\$4.0
Subtotal of non-federal sources	\$364.3	\$663.7	\$978.5	\$876.2	\$831.9	\$858.9	\$4,573.5
Total Sources	\$1,782.9	\$1,555.1	\$1,424.0	\$1,250.0	\$1,165.2	\$1,197.9	\$8,375.0

Note: The use of Revenue Bonds in each year of the CIP includes both cash on hand and new issuances. It does not represent the amount of new issuances anticipated each year. *Includes \$60M in State bond cap each year. | ** Totals may not sum due to rounding



About MBTA Funding sources

Source	Assumptions/Source of Information
Federal Highway (FHWA) reimbursements	<ul style="list-style-type: none"> Reflects CMAQ Flex Funds available for GLX.
Federal Transit (FTA) reimbursements (prospective)	<ul style="list-style-type: none"> Reflects Sec. 5307 Urbanized Area Formula funds, Sec. 5337 State of Good Repair/Fixed Guideway funds, and Sec. 5339 Bus and Bus Facilities Funds. Assumes reauthorization beyond FAST Act, with 1.71% annual growth. Federal share only – does not include 20% match from MBTA revenue bonds.
Existing FTA reimbursements and grant draws	<ul style="list-style-type: none"> The estimated balance of funds available in existing non-GLX FTA grants as of 7/1/19. Only includes federal share.
FTA Full funding grant agreement (GLX FFGA)	<ul style="list-style-type: none"> On-Hand includes available FFGA funds less anticipated expenditures through 7/1/19. Future amounts reflect year in which additional CIG funds will be appropriated, per GLX FFGA.
Other federal funds	<ul style="list-style-type: none"> Comprised mostly of Transit Security Grant Program funding which is a discretionary appropriation and not assumed in future years.
Bond cap	<ul style="list-style-type: none"> Reflects current cash flow forecasts for projects funded by Bond Cap outside the \$60M/year transfer reflected as Pay-Go below
Accelerated Bridge bonds	<ul style="list-style-type: none"> Reflects current cash flow forecasts for projects funded by Accelerated Bridge Program.
Rail enhancement bonds	<ul style="list-style-type: none"> Reflects projected spending for MBTA projects reimbursed by Rail Enhancement Program bonds, including GLX and Red/Orange Line Improvements Program.
Revenue bonds	<ul style="list-style-type: none"> Preliminary levels based on estimated need and MBTA revenue bond capacity within CIP window. Does not necessarily reflect the planned amount of new issuances each year.
Positive Train Control (PTC) bonds	<ul style="list-style-type: none"> On-Hand reflects current balance of proceeds from revenue bonds raised for PTC project. Future years based on project costs. Will be updated. TIFIA and RRIF financing is available upon completion of project.
Municipal and local funds (GLX)	<ul style="list-style-type: none"> Reflects GLX contributions from Cities of Cambridge and Somerville.
Reimbursable and 3rd parties	<ul style="list-style-type: none"> Reflects funds received via reimbursable agreements with RIDOT, Amtrak, and other parties. On-Hand balance is RIDOT only. For Amtrak, annual funding reflects FFY20 PRIIA/BCC payments to MBTA; will be updated.
Pay-Go Lockbox (Bond Cap)	<ul style="list-style-type: none"> Assumes continuation of \$60M annual state assistance as bond cap
Pay-Go Lockbox (MBTA)	<ul style="list-style-type: none"> Assumes continuation of \$90M deposit resulting from operating budget savings
Capital maintenance fund	<ul style="list-style-type: none"> On-Hand based on project budgets less projected spending through 6/30/19. Future amounts reflect project cash flows.

FY2020-2024 CIP update: Uses

April 17, 2019

MassDOT/MBTA 2020-2024 Uses

- Focus for additional funds (both federal and state) is on three asset classes in need of additional investment
 - For MassDOT
 - Non-interstate pavement
 - Bridge condition
 - Metropolitan Highway System
 - For the MBTA:
 - State of Good Repair
 - Green Line Transformation
 - Expansion Project Development



Requested program sizes and sources vs. uses

- Initial cash flow runs forecast that program sizes are affordable
- Dependent upon bond cap request materializing and discretionary federal sources being awarded

MassDOT ▼

Source millions	Total
Federal available	\$4,180
spending estimate	\$4,180
Tolls available	\$1,059
spending estimate	\$718
ABP available	\$15.4
spending estimate	\$15.4
Bond requested	\$4,315*
spending estimate	\$4,315*
REP available	\$29.4
spending estimate	\$29.4
CARM available	\$328.0
spending estimate	\$133.0
Other available	\$33
spending estimate	\$33

MBTA ▼

Source millions	Total
Federal available	\$3,802
spending estimate	\$3,676
T Bond available	\$2,330
spending estimate	\$2,354
T Pay-Go available	\$554
spending estimate	\$555
State available	\$1,220
spending estimate	\$1,220
State available	\$300
spending estimate	\$300
Other available	\$164
spending estimate	\$175

Leveraging all federal sources
(subject to discretionary awards) ►

Tied to annual pay-go available ►

Final program spending ►

Subject to A&F approval of request ►

Tied to capacity of CTF ►

Uses subject to FHWA approval ►

Estimated downward from last plan;
no gaming revenues ►

◀ Leveraging federal resources
(includes carryover; uses to be identified)

◀ Tied to capacity of bonding

◀ Tied to operations discipline

◀ Includes REP

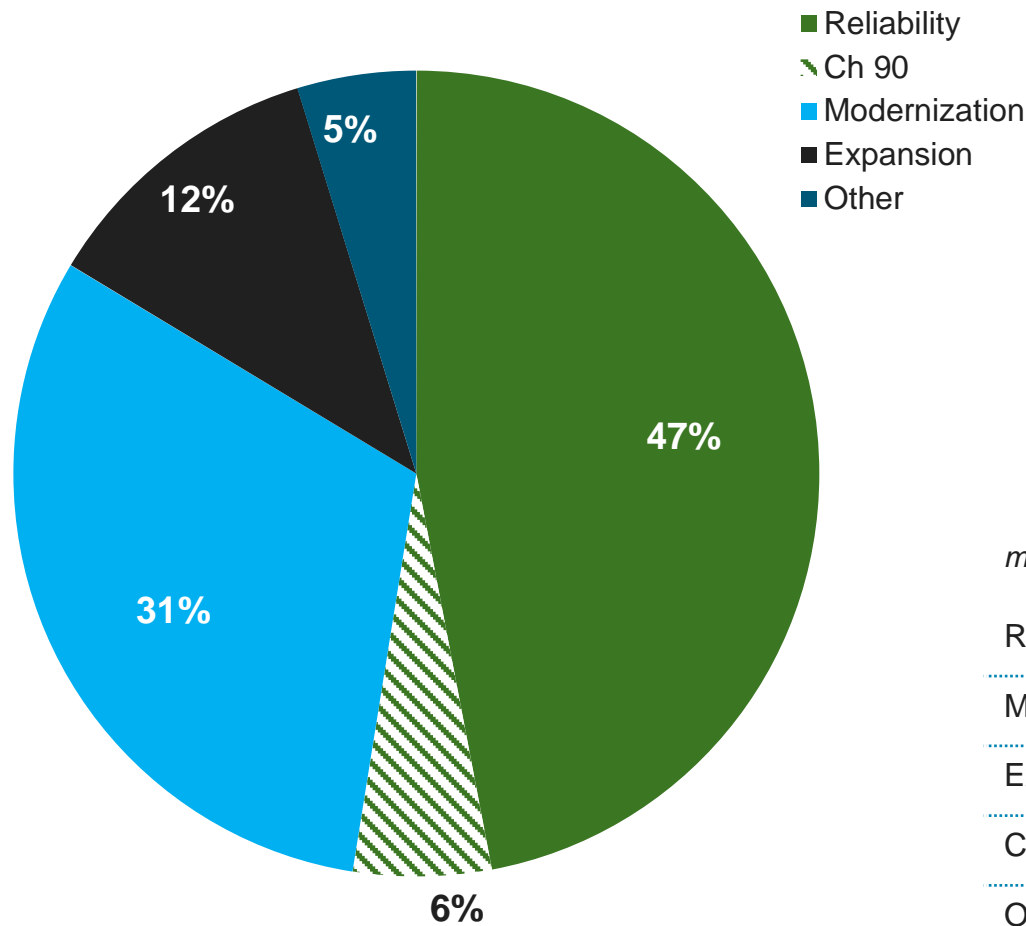
◀ Includes State bond cap

◀ Reimbursables, PTC financing,
and local contributions

*Available bond cap does not include and estimate
for SCR; spending estimate anticipated to tie to
available cap (a work in progress)

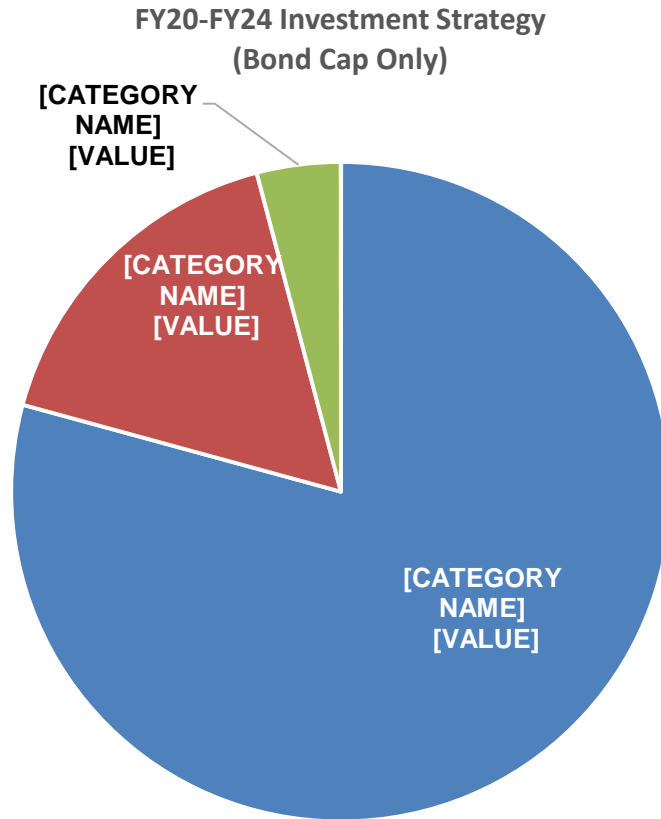


Summary of program spending *(as requested)*



<i>millions</i>	FY19-23	FY20-24
Reliability	\$8,862.8	\$8,510.5
Modernization	\$4,955.8	\$5,633.8
Expansion	\$1,976.7	\$2,101.3
Chapter 90	\$1,000.0	\$1,000.0
Other	\$817.4	\$862.0
<i>Five-year total</i>	\$17,612.7	\$18,107.6

MassDOT and MBTA Investment Strategy (Bond Cap only)



- Recommendation continues to emphasize investments in state of good repair and a strong focus on improving the current system.
- **Reliability**
 - **\$756 M in FY20** (\$3.7 B over 5-year)
 - State of good repair projects
 - Improving asset condition to an acceptable standard
 - Chapter 90
 - MBTA capital support
- **Modernization**
 - **\$127 M in FY20** (\$757 M over 5-year)
 - Improvements beyond state of good repair
 - Compliance with federal mandates
 - Safety and accessibility
 - IT projects
- **Targeted Growth**
 - **\$32 M in FY20** (\$183 M over 5-year)
 - Expanding existing highway, transit, and rail system
 - Bicycle and pedestrian improvements
- **Targeted Growth – South Coast Rail**
 - TBD

Bond Cap Highlights for MassDOT and MBTA

Roads/Bridges

- **\$ 447 M** in FY20 (*\$2.2 B over 5-year plan*) for Highway
- **\$200 M** per year for Ch. 90

Rail/Transit

- **\$61 M** in FY20 (*\$308 M over 5-year*) for other rail projects
- **\$60 M** per year for MBTA capital support
- **\$18.1 M** in FY20 (*\$167.2 M over 5-year*) for RTA cap support
- **\$6.4 M** in FY 20 (*\$32 M over 5-year*) for Transit Mobility Assistance Program (MAP) and Technical Assistance grants

Aeronautics

- **\$13.2 M** in FY20 (*\$62 M over 5-year plan*) for Aeronautics

Registry

- **\$32 M** in FY20 (*\$43 M over 5-year*) for RMV, including:
 - \$35 M for Atlas system
 - \$8 M for capital maintenance, customer service improvements and alternate service channels

Massport

- **\$5 M** in FY20 (*\$5 M over 5-year*) for harbor dredging
- **\$107.5 M** over 5-year (starting FY20) for landside improvements

*MassDOT acts as pass-through for Commonwealth bond cap for Massport



MassDOT / MBTA Capital Planning – Pay-go capital funds (MHS)

- Funds available for pay-go capital projects for the Metropolitan Highway System (MHS) are projected to average approximately \$60 million per year (~\$300M over 5 years) plus available reserves for the 2020-2024 CIP
 - Represents an increase of approximately 24% over base pay-go MHS capital (\$240.2 million total) in 2019-2023
 - Projected reserves were \$40 million for 2019-2023

Projected (\$ millions)	FY20	FY21	FY 22	FY 23	FY 24	Total
Pay-Go	\$68.4	\$59.5	\$57.3	\$56.4	\$57.3	\$299.5
Reserves						\$61.0
Total	\$68.4	\$59.5	\$57.3	\$56.4	\$57.3	\$360.5

- Preliminary draft 2020-2024 CIP currently has \$289 million (over 5 years) programmed to address existing (\$94 million) and new capital projects (\$195 million) including the Pru Tunnel Ventilation Improvements
- 2020-2024 CIP includes some key projects identified in the most recent Triennial Report
 - Prudential Tunnel Ventilation Work (\$70 - \$80 million) (includes work to facilitate air rights dev.)
 - Allston Multi-modal Program (including the viaduct) – continued design and permitting costs



MassDOT / MBTA Capital Planning – Pay-go capital funds (WT and Tobin)

- Funds available for pay-go capital projects for the Western Turnpike (WT) are projected to average approximately \$83 million per year (~\$417 M over 5 years) and \$38 million per year for Tobin (~\$143 million over 5 years) plus available reserves
 - Represents an increase of approximately 7% over base pay-go WT capital (\$388.3 million total) in 2019-2023 and 1% increase over base pay-go for Tobin capital (\$141.8 million)
 - Projected reserves were \$70 million and \$30 million for WT and Tobin, respectively in 2019-2023 CIP

Projected (\$ millions)	FY20	FY21	FY 22	FY 23	FY 24	Reserv es	Total
WT	\$84.0	\$85.2	\$84.0	\$82.5	\$81.4	\$80.5	\$497.7
Tobin	\$26.8	\$28.6	\$28.9	\$29.2	\$29.6	\$57.5	\$200.7

- Preliminary draft 2020-2024 CIP for WT funded projects currently has \$328 million (over 5 years) programmed to address existing (\$123 million) and new capital projects (\$205 million)
 - 2020-2024 CIP includes the toll funded portion of the I-90/I-495 Westborough/Hopkinton Interchange Reconstruction project
- For the Tobin, preliminary CIP has \$101 million in projected spending (over 5 years) to address existing (\$61 million) and new capital projects (\$40 million)
 - Preliminary CIP for the Tobin includes the Chelsea Deck Rehabilitation Project



Complete Streets and Municipal Bridge

Municipal Partnerships	Complete Streets	Municipal Bridge	Total
Program Awards/Commitments			
Program Limit	\$50,000,000	\$50,000,000	\$100 million
Awarded as of March 31, 2019	39,000,000	42,500,000	\$81.5 million
Balance Available for New Awards	\$11,000,000	\$7,500,000	\$18.5 million
Pending New Commitments FY 2019	300,000	500,000	\$800,000
Projected New Commitments FY 2020	10,700,000	7,000,000	\$17.7 million
Projected New Commitments FY 2021	N/A	N/A	
Total Projected Awards through FY 2020	\$50,000,000	\$50,000,000	\$100 million
Spending			
FY 2016	\$160,561	\$ -	\$160,561
FY 2017	5,636,220	\$ -	5,636,220
FY 2018	7,069,085	970,081	8,039,166
FY 2019 Projected	10,500,000	6,500,000	17,000,000
Total Expenditures Projected through FY 2019	\$23,365,865	\$7,470,081	\$30,835,946
FY 2020	11,500,000	12,500,000	24,000,000
FY 2021	11,500,000	23,000,000	34,500,000
FY 2022	3,634,135	7,029,919	10,664,054
Total Anticipated Expenditures	\$50,000,000	\$50,000,000	\$100,000,000
Remaining Program Spending for 2020-2024 CIP	\$26,634,135	\$42,529,919	\$69,164,054



Funding Challenges

- Current surface transportation authorization (“FAST Act”) expires on September 30, 2020
 - Recent Congressional Budget Office report estimates that the transit account within the Highway Trust Fund (HTF) will be exhausted by 2021
 - CIP sources assume FAST Act funding levels continue and that Congress will reauthorize funding for FHWA and FTA and replenish the HTF
- MBTA Revenue Bonds
 - CIP assumes substantial revenue bond issuance to support the capital program
 - Contingent on operating budget ability to support debt service
 - Market variables (interest rates, credit spreads, etc.) will impact the cost of new debt
- Pay-Go/Lockbox - MBTA
 - Assumes continued operating budget discipline to reinvest savings in capital
- Pay-Go Capital Funds - MassDOT
 - Preliminary estimates on funds available after operating expenses and may be adjusted during the development of the final operating budget for FY 2020
 - Toll revenues based on projections provided by traffic revenue consultant with projected adjustment for accounts receivable collections
 - Availability and amount of pay-go capital funds to address the long term needs identified in the recent Triennial Report for the MHS tied to operating budget assumptions and projections
- State Bond Cap
 - Bond cap sources based on estimates provided by the Executive Office of Administration and Finance and are subject to change pending finalization of the Commonwealth’s capital plan for 2020-2024



Public engagement strategy update

Phase 1: Focus on stakeholder education

- Focus on stakeholders – both established and newly identified, across all divisions and modes
- Direct outreach and meetings - in person and electronically – **effort has been ongoing and will continue with updates on public meeting locations and schedule**
- Outreach has focused on explaining the process and why participating in the CIP is relevant to the given group
- CIP engagement team has been in contact with stakeholder groups identified by the Divisions and other identified stakeholder groups

Phase 2: Focus on input from general public

- Outreach will comply with MassDOT and MBTA Public Participation Plans
- Online commenting tool, consistent with past years – **will be available during the public comment period anticipated to start May 21**
- 10 public meetings across the Commonwealth, consistent with past years
- Social media strategy focuses on highlighting previous projects constructed through the CIP to show successes and request future ideas – **Initial social media posts commenced the week of April 16 and will advertise public meeting locations and schedule**

Final Analysis: How we use what we hear

- Comments analyzed using qualitative data analysis software
- Relevant comments distributed to divisions and identified contact persons
- Major themes will be documented and published as part of final draft
- Letters and comments will be responded to directly, as appropriate



FY2020-2024 CIP update: Program Sizes

April 17, 2019

Comparison of Program Sizes 2019-2023 vs 2020-2024 (\$millions)

Division	2019-2023*	2020-2024*	Increase / (Decrease)*
Aeronautics	\$294.3M	\$294.3M	\$ -
Highway**	\$6,602.5M	\$6,801.5M	\$199.0M
Information Technology	\$103.2M	\$102.0M	(\$1.2M)
MBTA	\$8,003.4M	\$8,306.0M	\$302.7M
Rail***	\$450.7M	\$472.2M	\$21.9M
Registry of Motor Vehicles	\$68.6M	\$43.2M	(\$25.4M)
Transit	\$212.6M	\$166.0M	(\$46.6M)
Chapter 90	\$1,000.0M	\$1,000.0M	\$ -
Commonwealth Projects	\$147.5M	\$112.5M	(\$35.0M)
Planning	\$729.9M	\$809.5M	\$79.6M
TOTAL	\$17,614.7M	\$18,107.6M	\$492.9M

* Totals may not add due to rounding

** Highway program sizes include an allocation for program development/program management costs related to delivery of the capital program. Includes \$100 million for two regranting programs (Municipal Bridge and Complete Streets); includes Allston early action design only since finance plan is under development

*** Only includes FY 19 early action funding; does not include SCR costs or funding; finance plan is under development.



Approach to considering program size requests

Staff recommends accepting program size request

- Program size same or very similar to FY2019-2023 plan's program size
- Same strategy to addressing assets

Program size is driven by mandated projects

- Project costs drive program size due to mandates

Need discussion / guidance from CPC

Brand new programs to be considered

- New programs to consider for inclusion in plan update
- Size of request associated with new program also under consideration

Program sizes for greater discussion

- Program size deviates from FY2019-2023 plan's program significantly

Program size requests recommended by staff to accept

Reliability	FY 2019-2023 program size (five-year total)	FY 2020-2024 program size (five-year request)	Notes
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 sized to address identified needs
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 / Desktop Experience	\$9.1 million	\$10.5 million	Program increased to allow for institution of best practices, state of good repair policies for end user hardware and software replacement and integration.
IT / Digital Infrastructure	\$19.9 million	\$18.2 million	Decrease in program to shift focus to Cyber/Information security investments.
Rail Reliability / Bridge	\$56.2 million	\$55.4 million	Program sized to address identified needs.



Program size requests recommended by staff to accept

Reliability	FY 2019-2023 program size (five-year total)	FY 2020-2024 program size (five-year request)	Notes
Rail Reliability / Facility	\$16.7 million	\$15.7 million	Program sized to address identified needs.
Rail Reliability / Grade Crossings	\$36.5 million	\$34.4 million	Program sized to consider available federal funding.
Rail Reliability / Track and ROW	\$138.3 million	\$137.2 million	Program sized to address number of right of way projects that require maintenance or significant investment to maintain class of service.
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.
Transit / Mobility Assistance Program	\$50.1 million	\$50.2 million	Program sized to meet demand for services and reflects updated federal funding assumptions.
Transit / RTA Facility and Vehicle Maintenance*	\$17.5 million	\$8.3 million	Program sized to address other needs identified by the RTAs.
Transit / Technical Assistance	\$10.0 million	\$10.0 million	Program includes a small increase in funding to address additional demand.

* Slight Program name change. Program was titled RTA Facility and System Modernization in 2019-2023 CIP.



Program size requests recommended by staff to accept

Reliability	FY 2019-2023 program size (five-year total)	FY 2020-2024 program size (five-year request)	Notes
Transit / RTA Vehicle Replacement**	\$92.3 million	\$53.7 million	Program includes funds purchase of additional electric vehicles for RTAs fleet as well as identified needs.*
MBTA / Bridge and Tunnels	\$544.7 million	\$506.0 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / Facilities	\$343.0 million	\$369.6 million	Program size reflects carryover from FY19 and reallocation to Green Line Transformation program (GLT)
MBTA / Revenue Vehicles	\$1,267.0 million	\$1,045.0 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / Stations	\$428.0 million	\$377.0 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / System Upgrades	\$245.0 million	\$222.0 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / Track, Signals, and Power	\$938.0 million	\$764.8 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)

**Program size should be informed by Electric Fleet Vehicle Study which is expected to be complete by Summer 2019; pursuing the availability of other state funds to support this request which may result in changes to program sizes.

Program size requests recommended by staff to accept

Modernization	FY 2019-2023 program size (five-year total)	FY 2020-2024 program size (five-year request)	Notes
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.
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.
Rail Modernization / Bridge	\$0.0 million	\$9.6 million	Program sized to address bridge improvements to accommodate 286,000 lb freight service.
Rail Modernization / Facility	\$13.3 million	\$8.2 million	Program size reflects completion of one time MassDOT commitments for Springfield Union Station.
Transit / RTA System and Vehicle Modernization	\$26.3 million	\$97 million	Program adjusted to accommodate electrification, AFC 2.0 and RTA facility needs.



Program size requests recommended by staff to accept

Modernization	FY 2019-2023 program size (five-year total)	FY 2020-2024 program size (five-year request)	Notes
Transit / RTA Replacement Facilities	\$16.4 million	\$8.1 million	With completion of the PVRTA and FRTA facilities, program sized to address routine modernization efforts for RTA replacement facilities and facility upgrades and charging infrastructure to accommodate fleet electrification.*
Registry / ATLAS	\$61.5 million	\$35.1 million	Program reflects completion of project and includes implementation of International Registration program.
Registry / Customer Service Modernization	\$3.8 million	\$4.8 million	Program sized to include additional service needs for Cape Cod region
MBTA / Accessibility	\$265.0 million	\$246.0 million	Program size reflects costs reallocated to Green Line Transformation program (GLT)
MBTA / AFC 2.0	\$169.0 million	\$203.7 million	Program size reflects updated AFC 2.0 cash flows
MBTA / Commuter Rail Safety and Resiliency	\$630.0 million	\$498.9 million	Program size reflects completion of PTC
MBTA / Customer Experience and Technology	\$116.0 million	\$155.4 million	Program size reflects costs reallocated to GLT program
MBTA / Process Improvement and Innovation	\$25.0 million	\$13.0 million	Program size reflects cost reallocated to GLT program
MBTA / Red Line/Orange Line Improvements	\$1,565.7 million	\$1,535.0 million	Program size reflects updated RL/OL cash flows
MBTA / Risk Management and Mitigation	\$178.0 million	\$63.3 million	Program size reflects costs reallocated to GLT program



Program size requests recommended by staff to accept

Expansion	FY 2019-2023 program size (five-year total)	FY 2020-2024 program size (five-year request)	Notes
Highway / Bicycle and Pedestrian	\$180.6 million	\$203.2 million	Size based on current portfolio of projects within the SFY2019 CIP and FFY2019 STIP and includes allocation for program management/development costs. Program is consistent with Bicycle and Pedestrian Plans.
MBTA / Expansion Projects – non-GLX	\$59.0 million	\$49.0 million	Reflects current projects cash flows
MBTA / Green Line Extension	\$1,227.0 million	\$1,317.4 million	Reflects updated program cash flows



Program size requests for new programs

Reliability	FY 2019-2023 program size (five-year total)	FY 2020-2024 program size (five-year request)	Notes
Transit / Workforce Transportation Options	\$0.0 million	\$9.875 million	New competitive grant program that funds for workforce transportation options and leverages private sector resources; replaces MassRides program.
Modernization	FY 2019-2023 program size (five-year total)	FY 2020-2024 program size (five-year request)	Notes
MBTA / Green Line Transformation (New)	\$0.0 million	\$954.0 million	Program will improve the Green Line quality of service, including enhanced reliability, capacity and accessibility, through fleet modernization, infrastructure / facilities updates and state-of-the art technology.
Expansion	FY 2019-2023 program size (five-year total)	FY 2020-2024 program size (five-year request)	Notes
MBTA / Expansion Project Development	\$0.0	\$25 million	Program will advance initial planning for projects identified as “next priorities” in Focus40

* Combined as System Improvements for 2018-2022 plan

Discussion of Project Changes in 2020-2024 to 2019-2023

- Analysis underway of proposed projects for 2020-2024 to determine any significant changes to cost and/or schedule
- Analysis will be presented as part of discussion of proposed projects in May
- Consistent with the presentation by the Highway Division on Major Projects we will identify the following:
 - For any projects \$15 million or greater in total cost, costs that have increased by 10% or more
 - Any changes in ad date by more than one year



Appendix

FY2020-2024 CIP update:

SFY 2019 Accomplishments

April 17, 2019

SFY 2019 Accomplishments (MassDOT and MBTA)

MBTA

- **Green Line Extension**
 - Introduced new Green Line Type 9 vehicles into revenue service
 - Bridge replacements at Broadway, Washington Street and Medford Street are underway
 - Completed Design Packages for all early release construction work
- **Other Expansion Projects**
 - Completed Blue Hill Avenue Station on the Fairmount Line
 - Advanced construction contract for new Chelsea Commuter Rail Station
- **Revenue Vehicles**
 - Exercised option contract for additional 194 hybrid buses
 - Initiated advance planning for Green Line Type 10 vehicles
 - Received LoNo pilot buses for testing to inform future fleet options
- **Track Signals and Power**
 - Commenced Green Line D Branch Track and signals project
 - Continue with Orange Line Direct fixation (track) repairs
- **Stations**
 - Initiated comprehensive station needs assessments
 - Advanced design for Winchester Center Station improvements
 - Awarded Alewife Garage repairs contract
 - Continued work on Wollaston Station (expected opening August 2019)
- **Facilities**
 - Awarded construction contract for Commuter Rail Iron Horse Park Operations Control Center
 - Began Facility Roof Replacement project to replace roofs at multiple facilities
- **System Upgrades**
 - Began implementation of MBTA enterprise asset management program
 - Began implementation of MBTA cybersecurity programs
 - Began procurement for system wide radio upgrade project



SFY 2019 Accomplishments continued

Highway

- Will “Go Live” in Spring with an electronic permitting system for State Highway Access Permits (SHAPS)
- A new map based service request portal created to electronically capture and track maintenance service requests
- Final Highway TAMP will be filed in June with FHWA
- Advertised \$987.2 million in new highway projects in FY 18 (5.1% increase over FY17)
- Awarded over \$1 billion in new construction starts (NTPs) in 2018
- 100% of the construction program spending on statewide reliability/maintenance and modernization investments was delivered in FY18

Rail

- IRAP program invested in \$3 million freight rail infrastructure improvements
- Completed a condition assessment report of all rail assets owned by the Commonwealth which will be used to prioritize future projects and establish performance targets
- **Knowledge Corridor:** repaired 3 bridges, continued SGR bridge, culvert and track improvements; received FRA conditional approval for PTC on the main line track for existing Amtrak Vermonter Service
- **Greenfield Pilot:** installed 30,000 ties, undertook additional track, bridge and signal system work in advance of commencement of pilot service in Summer 2019
- **Berkshire Line:** emergency bridge repairs (2 bridges); procured 30,000 ties and 70 miles of continuous welded rail for installation in FY20 and FY 21
- **Adams Branch:** installed ties and continued Track & ROW repairs
- 39 Grade Crossings reconstructed along the rail network (16 using FHWA Section 130 funding)
- Bridge repairs (11 projects) for Mansfield Yard, Middleboro, Cape Main and Southeastern Lines
- Replaced ~18,000 tons of ballast for Framingham Secondary, Mansfield Yard, Cape Main, Ware River Secondary
- Installed ~ 200,000 LF of continuous welded rail on Framingham Secondary and Middleboro Lines
- Repaired/replaced 3 culverts along Ware River Secondary
- New Northampton and Greenfield stations platform and canopy extensions to be complete in June 2019
- Track Reconstruction for Mansfield (1800 Track Footage (TF)) and Hyannis (1,600 TF)
- Continued Patriot Corridor inspection work funded under FRA grant with expected completion in September 2019



SFY 2019 Accomplishments continued

RMV

• ATLAS

- Completed stabilization of the core system replacement to transform all driver and identity services and restore key service center performance levels
- Initiated configuration of Phase 2 of ALARS replacement to transform vehicle services such as Title and Registration and related business processes
- Opened 2 new Service Centers in Haverhill and Danvers to provide enhanced customer experience
- Supported Call Center Optimization project to leverage transition of new IVR technology

Transit

- Funded procurement of a total of 443 replacement vehicles for the RTAs
 - 242 >30 ft buses replaced
 - 201 <30 ft buses replaced
- Funded procurement of 9 electric replacement vehicles and charging infrastructure for Pioneer Valley Transit Authority (PVTA) and Martha's Vineyard Transit Authority with funds from the VW settlement fund
- Facilitated delivery of 144 vehicles through the Mobility Assistance Program to enable greater mobility and connectivity for seniors and disabled persons across the Commonwealth
- Provided \$5M in capital funding over FY18 and FY19 to Merrimack Valley Regional Transit Authority for the Newburyport Intermodal Transit and Parking Facility
- Provided construction funding (\$9.8M) for final year of PVTA Cottage Street operations & maintenance facility

Aeronautics

- New 5500 sf administration building at Plymouth Municipal Airport anticipated to be substantially complete in FY19
- Completed a statewide airport economic impact study to identify and quantify the employment, payroll and economic output of the Commonwealth's 39 public-use airports
- Began the reconstruction of Taxiway "A" and stub taxiways to Runway 6-24 at Chatham Municipal Airport to extend the useful life of the pavement



SFY 2019 Accomplishments continued

- **Chapter 90**

- \$861M in reimbursements provided for municipal transportation improvements from FY15 through FY18
 - \$231 M projected reimbursements for FY 19; \$240 million allotted in FY 19
- Program provides funding to all 351 cities and towns in the Commonwealth based on the formula established by the Legislature (Road miles – 58.33%, Population – 20.83%, Employment – 20.83%)

- **Municipal Bridge Program***

- A total of \$42.5 M has been awarded for 91 municipal projects since inception (FY17)
 - 41 awards and 3 emergency awards totally \$20.2 M in FY 19
- \$4.9 M spent since inception of program

- **Complete Streets Program* – since inception (February 2016)**

- 149 technical assistance grants have been awarded
- 135 Prioritization Plans approved
- 195 Complete Streets policies approve
- \$39 M obligated since inception of program
 - \$11 M obligated in FY 19
- \$18.3 M spent (total) since inception of program

*Data as of Q3 2019

SFY 2019 Accomplishments continued

Information Technology

• Cybersecurity

- Advanced application security upgrades for privileged user access, migration to upgraded infrastructures and improved supporting technology upgrades
- Improved Data Management capabilities for the classification, discovery and governance processes to secure sensitive information
- Enterprise-wide alignment and compliance with the EOTSS Security directives to enable consistent security policies and practices
- Updated and completed the second cybersecurity awareness and training program at the DOT, with greater than 70% participation.
- Advanced remediation for PCI compliance and other MA GL regulatory compliances
- Initial application migration to the EOTSS AWS cloud to leverage cloud security and resiliency benefits

Workforce Productivity

- Advanced remediation for PCI compliance and other MA GL regulatory compliances
- Initial application migration to the EOTSS AWS cloud to leverage cloud security and resiliency benefits
- Implemented Bluebeam software for expedited project design reviews between MassDOT and Consultant firms. Industry driven tool adoption has led to higher quality design phase reviews, commenting, and project feedback.
- Deployed 200+ tablets to construction field personnel which enables mobile access to Highway Division systems and leads to better quality field data to get to data driven decisions.

Enterprise, BPR and Automation

- Transformed a paper intensive process for the State Highway Access Permits System (SHAPS) into an automated electronic system by enabling permit applications, approval, and payment processing to happen via a web-based, centralized system.

SFY 2019 Accomplishments continued

RMV

ATLAS

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- Initiated configuration of Phase 2 of ALARS replacement to transform vehicle services such as Title and Registration and related business processes
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Appendix: FY2020-2024 CIP update: Programs and projected spending

April 17, 2019

Reliability programs



Reliability / Aeronautics / Airport Pavement Management System

Program purpose and need statement:

This program maintains the quality of pavement “inside the airport fence” at an adequate level. This program is necessary to continue safety and maintenance programs at public airports.

Status of asset management system:

Pavement Management System Inspections, PCI Index: The FAA requires that every 3 to 5 years, the PCI is updated. In the interim, MassDOT personnel will be able to track the PCI in the following ways: each year, the engineering staff will evaluate pavements at airports during their annual inspection; and when a pavement has been reconstructed, the PCI will be adjusted.

Program performance:

Tracker target*

2020 – 75 PCI
2022 – 75 PCI
Long Term – 75 average
PCI*

PfP tool forecast

2020 - 75 PCI**
Long Term – 75
average PCI

Other indicators

FY2019-2023 size: \$123.3 million over five years

FY2020-2024 size request: \$186.6 million over five years

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$4.9	\$3.4	\$2.9	\$4.2	\$8.6	\$24.0
FAA	\$18.3	\$16.9	\$18.3	\$18.3	\$16.8	\$99.4
Local	\$1.6	\$1.2	\$1.4	\$1.2	\$1.3	\$6.8
Total	\$24.8	\$21.5	\$22.8	\$23.7	\$26.8	\$119.7

Justification for FY2020-2024 program size:

- Independent pavement analysis (2017) shows a decrease in the pavement condition index (PCI) at our public use airports (PCI 70 in FY13, PCI 68 FY17). Actual investment of \$17 million/year (\$23 million ask) not adequate to improve PCI and additional investment is warranted. The PfP tool estimates pavement costs but not the ancillary costs associated with the projects. To estimate total project costs beyond pavement, the project estimates must also include design, lighting, signage, construction monitoring, marking and contingency.
- An additional \$12M per year of state funding is needed to increase the current PCI of 68 toward a PCI goal of 70 over the next 15 years.

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

* Tracker targets published in MassDOT’s Annual Performance Report, December 2018

** This PfP forecast is based on data collected from 2017



Reliability / Aeronautics / Airport Capital Improvement

Program purpose and need statement: This program includes a full range of airport state of good repair projects. This program is necessary to continue safe and efficient airport operations and services.

Status of asset management system: MassDOT does not own or operate any airports. FAA and MassDOT work together to prioritize FAA-eligible projects for public use airports in Massachusetts through the FAA's Airport Improvement Program (AIP). The Aeronautics Division awards grants for non-eligible or very low priority AIP projects to the 36 public use airports in Massachusetts that the division oversees under the Airport Safety & Maintenance Program (ASMP).

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP tool
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FY2019-2023 size: \$146.0 million over five years **Estimated spending over five-years:**

FY2020-2024 size request: \$151.4 million over five years

Justification for FY2020-2024 program size:

- Planned investments such as vegetation management (obstruction removal), and airport security cameras and fencing are necessary to ensure safe aircraft arrivals and departures.
- An additional \$800K over 5 years is requested for an Airport Inspection Compliance & Emergency Fund ("Fund") to support airport critical assets that were deemed to be safety concerns during airport inspections, and to respond to immediate needs due to unforeseen emergency events at our public use airports. The Fund would resolve open items found during annual airport inspections or damage found after a major storm or weather event that needs to be corrected promptly to prevent the degradation of services or operations.

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$3.5	\$2.3	\$7.7	\$2.6	\$2.7	\$18.9
FAA	\$18.0	\$16.8	\$15.9	\$18.5	\$18.4	\$87.6
Local	\$1.01	\$1.0	\$1.5	\$1.8	\$1.8	\$7.1
Total	\$22.6	\$20.1	\$25.1	\$22.8	\$22.9	\$113.6

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Highway / Bridge

Program purpose and need statement:

This program maintains, reconstructs and replaces state and municipally owned bridges across the Commonwealth.

Status of asset management system:

Program is included in PONTIS and general Highway Asset Management Plan

Program performance

Tracker target

2020* - <13%
2022* - <12%
Long Term <10% NHS
deck area rated poor

PfP tool forecast

Long Term <10% NHS
deck area rated poor

TAMP Target

2020* - <13%
2022* - <12%

*TAMP & Tracker Target

FY2019-2023 size: \$2,281.7 million over five years

FY2019-2023 size request: \$2,281.7 million over five years

Justification for FY2020-2024 program size:

- Estimated program size is based on updated FFY 2020-2024 STIP targets and the new fifth year of the program. Estimated spending is based on advertisement program and includes allocation of design/project management costs.
- Additional \$200M/year to start to address the bridge deck area performance metrics in the TAMP and other asset management reports plus funding to address more of the deck condition and other bridge elements over the next 5-7 years.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$168.2	\$178.7	\$201.7	\$190.7	\$137.4	\$876.7
ABP	\$5.4					\$5.4
REP	\$0.4					\$0.4
FHWA	\$239.6	\$203.1	\$165.7	\$142.4	119.2	\$867.0
CARM	\$0.5					\$0.4
Tolls	\$40.2	\$61.5	\$55.3	\$35.0	\$25.4	\$217.3
Total	\$451.3	\$443.2	\$422.6	\$368.0	\$282.1	\$1,967.4

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Program purpose and need statement: This program makes routine purchases of, and replaces, vehicles, equipment and other capital assets. This program is necessary for the daily operation of the department.

Status of asset management system: Vehicle and other similar assets are included in the agency’s fleet management programs.

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP
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FY2019-2023 size: \$75.0 million over five years

FY2020-2024 size request: \$96.4 million over five years

Justification for FY2020-2024 program size:

- Funding for heaving equipment, vehicles, snow-fighters, sidewalk snow removal equipment, etc.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$26.7	\$17.4	\$17.4	\$17.4	\$17.4	\$96.4
Tolls						\$
Total	\$26.7	\$17.4	\$17.4	\$17.4	\$17.4	\$96.4

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Highway / Facilities

Program purpose and need statement:

This program maintains, repairs and replaces buildings, salt sheds, garages, vent buildings, and telecommunications and other systems owned by the Highway Division.

Status of asset management system:

System is under development

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

FY2019-2023 size: \$181.7 million over five years

FY20-2024 size request: \$181.7 million over five years

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024), assumptions of carryforward spending from FY2019 and allocation of design/project management costs.
- Program size increased in the FY2020-2024 plan based on needs within districts, Funding for facility improvements (e.g. roofs, windows, boilers,) necessary to ensure buildings come into and remain in a state of good repair.

Estimated spending over five-years:

Funding source ⁴⁵	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$17.2	\$31.2	\$29.9	\$9.8	\$9.0	\$97.1
FHWA						
Tolls	\$7.5	\$4.0	\$1.9	\$2.1	\$0.0	\$14.5
Third Party						\$
Total	\$24.8	\$36.2	\$31.8	\$10.9	\$9.0	\$111.6

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / Highway / Interstate pavement

Program purpose and need statement:

This program resurfaces and performs related work on the interstate system. This program is necessary to improve pavement conditions.

Status of asset management system:

There is an extensive management system developed to reflect operational and asset condition of interstate and non-interstate network.

Program performance:

Tracker target

2020/22 – 88%
Long term - 90% of
pavement in good or
excellent condition

PfP tool forecast

Long Tem - 90% in good
or excellent condition

TAMP Target

2020 – 88%
2022 – 88%

FY2019-2023 size: \$316.9 million over five years

FY2020-2024 size request: \$316.9 million over five years

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024) and assumptions of carryforward spending from FY2019 and allocation design/project management costs
- Additional funding to the TAMP targets/other asset management targets.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$15.7	\$7.3	\$3.1	\$3.3	\$4.5	\$33.8
FHWA	\$63.8	\$38.8	\$23.0	\$23.2	\$29.5	\$178.3
Tolls	\$23.6	\$17.9	\$8.5	\$7.0	\$2.5	\$59.6
Total	\$103.1	\$64.0	\$34.6	\$33.5	\$36.5	\$271.7

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Highway / Municipal Bridge

Program purpose and need statement: This program assists municipalities in repairing and replacing town owned bridges with a span length of less than 20 feet.

Status of asset management system: These assets are not under the jurisdiction of MassDOT, but Highway works cooperatively to inspect and rate the condition of small bridges located across the Commonwealth. These inspections are recorded and maintained by the department.

Program performance:	Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP
			Other indicators	

FY2019-2023 size: \$50.0 million over five years

FY2020-2024 size request: \$50.0 million over five years

Justification for FY2020-2024 program size:

- Current recommendation is to increase the funding for this grant program for award of technical assistance grants to assist municipalities with completing design and permitting in a timely manner.
- Forecasted spending will be based on grant awards and future awards could result in spending post-CIP.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0	\$25.0
Total	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0	\$25.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Highway / Non-Interstate pavement

Program purpose and need statement:

This program resurfaces and performs related work on non-interstate roads owned by MassDOT. This program is necessary to fund system-wide and site-specific projects to improve pavement condition.

Status of asset management system:

Program is included in existing pavement management system.

Program performance:

Tracker target

2020 – 60%
2022 – 62%
Long term - 70% in
good/excellent condition

PfP tool forecast

Long Term - 70% in
good or excellent
condition
2020 – 60%
2022 – 62%

TAMP Target

FY2019-2023 size: \$611.9 million over five years

FY2020-2024 size request: \$766.9 million over five years

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024), assumptions of carryforward spending from FY2019 and allocation of design/project management costs.
- Program is sized to address established TAMP targets.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$82.8	\$85.2	\$68.7	\$65.5	\$65.4	\$211.0
FHWA	\$77.1	\$97.6	\$79.2	\$60.8	\$60.4	\$375.1
Tolls	\$12.9	\$10.3	\$3.3	\$3.9	\$6.3	\$36.7
Total	\$172.9	\$193.1	\$151.2	\$130.2	\$132.0	\$779.4

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Highway / Roadway Improvements

Program purpose and need statement:

This program performs pot hole, fencing, guardrail, and sidewalk maintenance, repairs and other related improvements on non-interstate state owned roadways. This program also includes federally funded storm water retrofit projects. This program is preventative in nature, and is necessary to maximize the useful life and condition of roadways.

Status of asset management system:

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

FY2019-2023 size: \$168.8 million over five years

FY2020-2024 size request: \$168.8 million over five years

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024), assumptions of carryforward spending from FY2019 and allocation of design/project management costs.
- Program sized to address conditions detailed in various asset management reports and critical contracted services throughout the Commonwealth.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$31.9	\$27.4	\$35.0	\$36.6	\$36.0	\$166.8
FHWA	\$2.5	\$5.2	\$2.6	\$1.8	\$0.0	\$12.1
Toll	\$10.5	\$5.6	\$0.7	\$0.0	\$0.02	\$16.8
Total	\$44.9	\$38.0	\$38.3	\$38.4	\$36.0	\$195.7

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Highway / Safety Improvements

Program purpose and need statement:

This program, which is both state and federally funded, repairs traffic signals, highway lighting systems, impact attenuators, traffic signs and pavement markings. This program is necessary to provide a safe roadway network for Commonwealth residents and visitors.

Status of asset management system:

Not applicable

Program performance:

Tracker target

2020 - 0.56 fatalities; 4.12 injuries*
2022 - .51 fatalities; 3.5 injuries
Long term – move to zero

PfP tool forecast

Not forecasted in PfP

Other indicators

Crash cluster; crash data

FY2019-2023 size: \$265.3 million over five years

FY2020-2024 size request: \$265.3 million over five years

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024), assumptions of carryforward spending from FY2019 and allocation of design/project management costs.
- Program includes Work Zone Safety Program

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$14.2	\$11.3	\$7.7	\$3.7	\$4.2	\$41.1
FHWA	\$28.8	\$30.3	\$33.2	\$15.7	\$13.7	\$121.7
Toll	\$9.3	\$26.9	\$4.7	\$0.0	\$0.0	\$40.9
Total	\$52.3	\$68.5	\$45.6	\$19.4	\$17.9	\$203.6

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

*Tracker target per 100 million vehicle miles traveled (VMT)

Reliability / Highway / Tunnels

Program purpose and need statement: This program improves lighting, life safety systems and tunnel infrastructure.

Status of asset management system: Under development. The district uses several database and systems to track ongoing work within the network.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

FY2019-2023 size: \$393.8 million over five years

FY2020-2024 size request: \$393.8 million over five years

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024), assumptions of carryforward spending from FY2019 and allocation of design/project management costs.
- Updated needs assessment for the MHS Tunnel system is underway, including focus on critical safety improvements.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.05	\$9.0	\$12.0	\$4.0	\$0.0	\$25.1
FHWA	\$0.0	\$34.4	\$45.9	\$15.3	\$0.0	\$95.6
CARM	\$22.9	\$56.5	\$39.4	\$0.0	\$3.7	\$127.7
Tolls	\$41.5	\$52.0	\$40.9	\$53.3	\$56.5	\$244.2
Total	\$64.5	\$152.0	\$138.2	\$72.6	\$60.2	\$487.6

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / IT / Asset Management

Program purpose and need statement:

This program delivers tools and processes to document, report on and manage MassDOT assets. These tools provide data on the asset life cycle. This program is necessary to maintain the reliability of Commonwealth assets by supporting a consistent approach to asset review and remediation.

Status of asset management system:

IT has completed implementation of enterprise self-service, project delivery, change management and associated tracking tools on the ServiceNow platform. The next step will build out the Contract and Configuration Management modules. This will populate known IT asset information and identify additional assets. EOTSS is on the same platform, and it is possible to share information back and forth. The last step will link to financial reporting systems to track cost of ownership and lifecycle management for these technical assets.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

Other indicators

All DOT assets recorded and monitored for state of good repair. Minimize incident reports.

FY2019-2023 size: \$15.5 million over five years

FY2020-2024 size request: \$3.75 million over five years

Justification for FY2020-2024 program size:

- Previously this program contained Division specific Asset Management projects that were driven by business units. These projects and their funding have been moved into a more appropriate CIP category – Modernization – Enterprise, BPR, and Automation.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$3.75M
Total	\$0.75	\$0.75	\$0.75	\$0.75	\$0.75	\$3.75M

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / IT / Cyber/Information security

Program purpose and need statement:

This program keeps IT infrastructure and software compliant with best practices and digital security standards to protect both agency and customer data. This program is necessary to maintain customer confidence when making secure transactions.

Status of asset management system:

IT has completed implementation of enterprise self-service, project delivery, change management and associated tracking tools on the ServiceNow platform. The next step will build out the Contract and Configuration Management modules. This will populate known IT asset information and identify additional assets. EOTSS is on the same platform, and it is possible to share information back and forth. The last step will link to financial reporting systems to track cost of ownership and lifecycle management for these technical assets

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

Other indicators

Security Awareness Training taken by all employees annually. Comprehensive policies and controls in place. 100% PCI compliance.

FY2019-2023 size: \$15.0 million over five years

FY2020-2024 size request: \$20.5 million over five years

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$4.0	\$4.0	\$4.0	\$4.0	\$4.5	\$20.5
Total	\$4.0	\$4.0	\$4.0	\$4.0	\$4.5	\$20.5

Justification for FY2020-2024 program size:

- Increase due to EOTSS mandates. This program directly correlates to improvement in security oriented foundational infrastructure, firewalls, web gateways, and other cloud investments.

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / IT / Desktop Experience

Program purpose and need statement:

This program delivers best in class, highly resilient technologies and services related to desktop and personal computing, conformance and mobile solutions/devices, and network and internet connectivity. This program is necessary to maintain best practices and state of good repair in desktop IT at MassDOT.

Status of asset management system:

IT has completed implementation of enterprise self-service, project delivery, change management and associated tracking tools on the ServiceNow platform. The next step will build out the Contract and Configuration Management modules. This will populate known IT asset information and identify additional assets. EOTSS is on the same platform, and it is possible to share information back and forth. The last step will link to financial reporting systems to track cost of ownership and lifecycle management for these technical assets

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

Other indicators

Monitor level of state of good repair – age of equipment, engineering performance, latest software releases, help desk support requests.

FY2019-2023 size:

\$9.1 million over five years

FY2020-2024 size request:

\$10.5 million over five years

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$2.0	\$2.0	\$2.0	\$2.0	\$2.5	\$10.5
Total	\$2.0	\$2.0	\$2.0	\$2.0	\$2.5	\$10.5

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Justification for FY2020-2024 program size:

- Program size increase will allow for the institution of best practice state of good repair policies for end user hardware and software replacement and integration, as well as software distribution for production, network access, and security.



Reliability / IT / Digital Infrastructure

Program purpose and need statement:

This program does a range of digital infrastructure work, including state of good repair hardware upgrades and support of operations in the Cloud. This program provides a modern, application-independent information architecture. This program is necessary to meet MassDOT's technology goals by sustaining the core computer, storage, telecommunications and network infrastructure.

Status of asset management system:

IT has completed implementation of enterprise self-service, project delivery, change management and associated tracking tools on the ServiceNow platform. The next step will build out the Contract and Configuration Management modules. This will populate known IT asset information and identify additional assets. EOTSS is on the same platform, and it is possible to share information back and forth. The last step will link to financial reporting systems to track cost of ownership and lifecycle management for these technical assets

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

Other indicators

Monitor level of state of good repair – age of equipment, engineering performance, latest software releases, equipment uptime statistics

FY2019-2023 size: \$19.9 million over five years

FY2020-2024 size request: \$18.175 million over five years

Justification for FY2020-2024 program size:

- Program size reduced slightly due to increased investments in Cyber/Information Security program. This program drives institution of best practice state of good repair policies for back end hardware and software replacement and integration. This program includes migration to cloud hosting with integration, testing, and security certification.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$3.5	\$3.25	\$3.675	\$3.75	\$4.0	\$18.175
Total	\$3.5	\$3.25	\$3.675	\$3.75	\$4.0	\$18.175

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / MBTA / Bridges and tunnels

Program purpose and need statement:

This program repairs, reconstructs and replaces MBTA commuter rail and transit bridges and tunnels system-wide.

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements. Prioritization of bridge projects based on condition ratings that use age, inspection and load ratings. Inspection and ratings are ongoing.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2019-2023 size: \$544.7 million over five years

FY2020-2024 size request: \$506.2 million over five years

Justification for FY2020-2024 program size:

- FY19-23 program size was \$544M. Variance due to reallocation to Green Line Transformation (GLT).
- Goal of program is to ensure safe, reliable, and resilient operation of bridge and tunnel infrastructure through inspection, repair, and replacement projects.
- This program includes continuation of a rigorous inspection and rating process for bridge inventory and implementation of a tunnel inspection program.
- These inspection and rating programs will allow prioritization of repairs and replacement based on need.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$46.0	\$86.2	\$109.5	\$83.9	\$57.5	\$383.1
MBTA Bond	\$5.9	\$17.6	\$34.0	\$27.5	\$32.9	\$117.9
MBTA Pay-Go	\$3.0	\$2.1	\$0.0	\$0.0	\$0.0	\$5.1
Other	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1
Total	\$55.1	\$105.8	\$143.5	\$111.4	\$90.4	\$506.2

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / MBTA / Facilities

Program purpose and need statement:

This program rehabilitates and upgrades maintenance and administrative facilities that support MBTA operations.

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements. Review of vehicle maintenance facilities completed for Integrated Fleet and Facilities Plan. Enterprise Asset Management System for transit infrastructure in phased implementation. Condition assessments ongoing.

Program performance:

Tracker target

% of facilities with condition rating
<3.0 in TERM* scale

PfP tool forecast

Not forecasted in
PfP tool

FY2019-2023 size: \$343.0 million over five years

FY2020-2024 size request: \$370.0 million over five years

Justification for FY2020-2024 program size:

- FY19-23 size was \$343M. Variance due to unspent carryover from FY19.
- Complete critical climate resiliency projects, including Charlestown Bus Facility Seawall and Fenway Portal Flood Protection projects.
- Advance operational resiliency master plans, including 45 High Street, and Charlestown Campus, Master Plans.
- Invest in bus, light and heavy rail, and commuter rail maintenance facilities to improve safety and reliability.

*FTA's Transit Economic Requirements Model (TERM); scale of 1 to 5 with 5 being the highest rating

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$10.6	\$14.9	\$4.3	\$2.5	\$2.0	\$34.3
MBTA Bond	\$36.0	\$44.3	\$30.0	\$16.7	\$6.0	\$133.0
MBTA Pay-Go	\$32.3	\$46.4	\$95.0	\$23.0	\$2.7	\$199.4
State	\$0.1	\$1.0	\$2.2	\$0.0	\$0.0	\$3.3
Total	\$79.1	\$106.6	\$131.4	\$42.1	\$10.7	\$370.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / MBTA / Revenue vehicles

Program purpose and need statement:

This program rehabilitates and replaces the MBTA revenue fleet, which includes commuter rail, heavy rail, light rail, bus and ferry units.

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements. Full review of vehicle assets completed for Integrated Fleet and Facilities Plan. Revenue and Non-Revenue Vehicle data is contained in "MCRS2" asset management system, planned for full upgrade in FY20-21.

Program performance:

Tracker target

% of units beyond Useful Life
Benchmark

PfP tool forecast

Not forecasted in PfP

FY2019-2023 size:

\$1,267.0 million over five years

FY2020-2024 size request:

\$1,045.2 million over five years

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$250.0	\$118.0	\$167.0	\$84.4	\$360.5	\$979.8
MBTA Bond	\$7.5	\$5.7	\$5.0	\$3.0	\$3.0	\$24.3
MBTA Pay-Go	\$21.0	\$13.4	\$3.5	\$0.3	\$0.3	\$38.5
Other	\$0.8	\$1.8	\$0.0	\$0.0	\$0.0	\$2.6
Total	\$279.3	\$138.9	\$175.6	\$87.6	\$363.7	\$1,045.2

Justification for FY2020-2024 program size:

- FY19-23 program size was \$1,267M. Variance due to reallocation to GLT.
- Execute on-time replacement and overhaul programs for bus fleets, including the Silver Line.
- Begin transition to a zero-emission fleet, starting with a pilot of five battery electric buses arriving in spring 2019.
- Improve service reliability through targeted investments in Red Line, Green Line, Blue Line, and Commuter Rail fleets.

Staff recommends CPC accept program size as requested

Reliability / MBTA / Stations

Program purpose and need statement:

This program rehabilitates and upgrades MBTA stations and parking facilities (e.g., commuter rail, commuter boat, subway and bus stations)

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements Enterprise Asset Management System for transit infrastructure in phased implementation. Condition assessments ongoing.

Program performance:

Tracker target

% of stations with condition rating
<3.0 in TERM* scale

PfP tool forecast

• Not forecasted in PfP

FY2019-2023 size: \$428.0 million over five years

FY2020-2024 size request: \$376.9 million over five years

Justification for FY2020-2024 program size:

- FY19-23 size was \$428M. Variance due to reallocation to GLT.
- Continue work on Back Bay Ventilation Improvements, including stair-pressurization, installation of jet fans, and new power and mechanical equipment.
- Complete severe weather and climate resiliency projects, including Courthouse and Aquarium Station remediation.
- Advance accessibility improvements, and begin design of state-of-good repair improvements for Ruggles Station.
- Initiate comprehensive transit station needs assessment.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$49.0	\$55.6	\$74.4	\$27.3	\$28.9	\$235.3
MBTA Bond	\$21.2	\$28.4	\$10.3	\$0.0	\$1.5	\$61.3
MBTA Pay-Go	\$18.7	\$23.7	\$13.3	\$10.4	\$0.0	\$66.2
Other	\$8.0	\$4.5	\$0.0	\$0.0	\$1.6	\$14.1
Total	\$96.9	\$112.3	\$97.9	\$37.8	\$32.0	\$376.9

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / MBTA / System upgrades

Program purpose and need statement:

This program upgrades a wide range of MBTA systems including communications, security, computer technology, fare collection, asset management and environmental remediation systems. It also rehabilitates non-revenue vehicles and equipment.

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements. Full review of vehicle assets completed for Integrated Fleet and Facilities Plan. Revenue and Non-Revenue Vehicle data is contained in "MCRS2" asset management system, planned for full upgrade in FY20-21.

Program performance:

Tracker target

Non-revenue vehicles: % of vehicles beyond useful life benchmark

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$245.0 million over five years

FY2020-2024 size request: \$222.3 million over five years

Justification for FY2020-2024 program size:

- FY19-23 size was \$245M. Variance due to reallocation to GLT. This program has decreased since FY19-23 due to right-sizing and reallocation to other programs
- The goal of this program is to ensure safe, reliable, and resilient operation of non-revenue vehicles, IT systems, and other equipment through replacement and renewal projects
- This program includes implementation of an MBTA enterprise asset management program, systemwide radio upgrades, and improvements to specialized maintenance vehicles.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$27.5	\$44.5	\$24.6	\$3.9	\$0.8	\$101.3
MBTA Bond	\$8.8	\$5.9	\$4.7	\$2.9	\$2.0	\$24.3
MBTA Pay-Go	\$38.4	\$22.8	\$12.2	\$7.8	\$15.4	\$96.6
Total	\$74.7	\$73.2	\$41.4	\$14.7	\$18.2	\$222.3

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / MBTA / Track, signals, and power

Program purpose and need statement:

This program rehabilitates, replaces and upgrades track, signal and power assets across the commuter rail and transit system.

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements Enterprise Asset Management System for transit infrastructure in phased implementation. Condition assessments ongoing.

Program performance:

Tracker target

Not established - % of revenue service miles with performance restrictions

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$938.0 million over five years

FY2020-2024 size request: \$764.8 million over five years

Justification for FY2020-2024 program size:

- FY19-23 program size was \$938M, variance is due to reallocation to Green Line Transformation.
- The goal of this program is to prevent and mitigate speed restrictions and other disruptive delays, modernize signal technology, and improve resiliency of the power system.
- This program also supports installation of multiple tracks to deliver Focus40 priorities for Commuter Rail.

Estimated spending over five-years:

Funding source	2020 Millions	2021	2022	2023	2024	2020-2024
FTA	\$40.1	\$46.3	\$45.8	\$37.6	\$28.8	\$198.5
MBTA Bond	\$61.9	\$82.8	\$62.9	\$67.6	\$56.6	\$331.9
MBTA Pay-Go	\$50.1	\$45.7	\$43.1	\$24.4	\$12.7	\$176.1
State	\$3.3	\$2.8	\$1.2	\$0.6	\$0.5	\$8.4
Other	\$10.4	\$9.3	\$9.7	\$10.1	\$10.5	\$49.9
Total	\$165.7	\$186.8	\$162.8	\$140.3	\$109.1	\$764.8

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Rail / Bridges

Program purpose and need statement:

This program repairs or replaces bridges to avoid deterioration, keep or restore class of line, or maintain utility. Prioritization of projects within this program reflect most recent inspections, type of usage (ex: hazardous cargo), and any contractual or regulatory requirements for action.

Status of asset management system:

Draft Rail Asset Management Plan under review.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$56.2 million over five years

FY2020-2024 size request: \$55.4 million over five years

Justification for FY2020-2024 program size:

- Program sized to address number of identified bridge projects that require significant repair and/or replacement

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$6.5	\$6.1	\$9.8	\$8.2	\$19.5	\$52.1
REP	\$	\$	\$	\$	\$	\$
Total	\$6.5	\$6.1	\$9.8	\$8.2	\$19.5	\$52.1

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Rail / Facility reliability

Program purpose and need statement:

This program repairs or replaces rail facilities, specifically rail yards and stations, to avoid deterioration or maintain the facility's utility. Prioritization of program projects will reflect condition reports, type of risk/usage, and any contractual or regulatory requirements for action. This program is necessary to maintain a safe and reliable rail system.

Status of asset management system:

Draft Rail Asset Management Plan under review.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$16.7 million over five years

FY2020-2024 size request: \$15.7 million over five years

Justification for FY2020-2024 program size:

- Program sized to address number of identified bridge projects that require significant repair and/or replacement.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$1.6	\$0.6	\$0.6	\$0.008	\$0.008	\$2.9
Total	\$1.6	\$0.6	\$0.6	\$0.008	\$0.008	\$2.9

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / Rail / Grade crossings

Program purpose and need statement: This program repairs or replaces grade crossings to avoid deterioration, keep or restore class of line, or maintain the crossing’s utility. Prioritization of projects in this program will reflect federal guidelines, most recent inspections, type of usage (ex: hazardous cargo), and any contractual or regulatory requirements for action. This program is necessary to maintain a safe and reliable rail system.

Status of asset management system: Draft Rail Asset Management Plan under review.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

42% of grade crossings in desired state

Other indicators

Approximately 20 grade crossings per year can be improved at this funding

FY2019-2023 size: \$36.5 million over five years

FY2020-2024 size request: \$34.4 million over five years

Justification for FY2020-2024 program size:

- Program size accounts for new federal OA spending available (plus state match) and other projects funded with solely with state funds
- Program sized to address number of identified grade crossings.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$6.7	\$4.6	\$1.8	\$3.8	\$9.4	\$26.4
FHWA	\$2.0	\$2.0	\$2.0	\$2.0	\$2.5	\$10.5
Private	\$0.2	\$0.01	\$0.2	\$0.2	\$0.2	\$0.7
Total	\$8.9	\$6.7	\$4.0	\$6.0	\$12.1	\$37.7

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Rail / Vehicle reliability

Program purpose and need statement:

This program repairs, replaces, or acquires rail equipment (locomotives, coaches, ballast cars, light duty vehicles, etc.) to facilitate reliable service, avoid deterioration, or support activities to maintain or restore class of line. This program is necessary to maintain the rail system in good condition.

Status of asset management system:

Draft Rail Asset Management Plan under review.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$5.3 million over five years

FY2020-2024 size request: \$6.6 million over five years

Justification for FY2020-2024 program size:

- 2020-2024 program maintains the similar funding level as last plan to address SGR issues to maintain or restore usage of the facilities

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.5	\$0.5	\$1.2	\$1.2	\$1.3	\$4.7
Total	\$0.5	\$0.5	\$1.2	\$1.2	\$1.3	\$4.7

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Rail / Track and right-of-way reliability

Program purpose and need statement:

This program repairs or replaces assets within the rail right of way (typically ties, rail, ballast, culverts, switches, etc.) to avoid deterioration, keep or restore class of line, or maintain the line's utility. Prioritization will reflect most recent inspections, type of usage (ex: hazardous cargo), and any contractual or regulatory requirements for action. This program is necessary to maintain a safe and reliable rail system.

Status of asset management system:

Draft Rail Asset Management Plan under review.

Program performance:

Tracker target

6 derailments per
1,000 track miles

PfP tool forecast

25,000 ties repaired
per year

FY2019-2023 size: \$138.3 million over five years

FY2020-2024 size request: \$137.2 million over five years

Justification for FY2020-2024 program size:

- Program sized to address number of right of way projects that require maintenance or significant investment to maintain class of service

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$34.6	\$26.2	\$27.8	\$36.0	\$35.8	\$160.2
REP	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total	\$34.6	\$26.2	\$27.8	\$36.0	\$35.8	\$160.2

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Program purpose and need statement: This program maintains and improves existing operating systems that support service delivery, application platforms, and electronic records retention.

Status of asset management system: Not applicable

Program performance: **Tracker target** Not established in Tracker **PfP tool forecast** Not forecasted in PfP tool

FY2019-2023 size: \$1.1 million over five years

FY2020-2024 size request: \$1.1 million over five years

Justification for FY2020-2024 program size:

- Program adjusted for 2020-2024 to reflect activities programmed for 2020

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.3	\$0.2	\$0.2	\$0.2	\$0.3	\$1.2
Total	\$0.3	\$0.2	\$0.2	\$0.2	\$0.3	\$1.2

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Transit / Mobility Assistance Program

Program purpose and need statement:

This program purchases vans and related equipment used to provide transportation for elderly people and individuals with disabilities of all ages. This program uses funds from Councils on Aging, RTAs and non-profits.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

Other indicators

Number of organizations who attended a training to participate in MAP

FY2019-2023 size: \$50.1 million over five years

FY2020-2024 size request: \$50.2 million over five years

Justification for FY2020-2024 program size:

- Updated federal dollar estimates in the out years have resulted in a small increase in the program size. Bond cap amount has increased for FY2021-2024 to accommodate additional demand for the program.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$4.0	\$4.0	\$4.0	\$4.0	\$4.0	\$20.0
FTA	\$6.04	\$6.04	\$6.04	\$6.0	\$6.0	\$30.2
Total	\$10.04	\$10.04	\$10.04	\$10.04	\$10.04	\$50.2

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / Transit / RTA facility and vehicle maintenance

Program purpose and need statement: The program addresses the maintenance, rehabilitation and upkeep of existing RTA facilities or vehicles.

Status of asset management system: Not applicable

Program performance:

Tracker target	Not established in Tracker - facility condition (range)	PfP tool forecast	Not forecasted in PfP tool
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FY2019-2023 size: \$17.5 million over five years

FY2019-2024 size request: \$8.3 million over five years

Justification for FY2020-2024 program size:

- Updated project lists for all five years were submitted by the RTAs to address outstanding needs which accounts for changes in the overall amount of funding forecasted.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$3.1	\$1.05	\$1.1	\$1.0	\$2.03	\$8.3
Total	\$3.1	\$1.05	\$1.1	\$1.0	\$2.03	\$8.3

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Transit / Technical assistance

Program purpose and need statement: This program provides technical assistance to support the transit program (grants management systems, vehicle inspections, etc.).

Status of asset management system: Not applicable

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP tool
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FY2019-2023 size: \$10.0 million over five years

FY2020-2024 size request: \$10.0 million over five years

Justification for FY2020-2024 program size:

- This program includes a small increase in funding to address additional demand.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$2.0	\$2.0	\$2.0	\$2.0	\$2.0	\$10.0
Total	\$2.0	\$2.0	\$2.0	\$2.0	\$2.0	\$10.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Transit / RTA vehicle replacement

Program purpose and need statement:

This program replaces existing Regional Transit Authorities' (RTA) vehicles so that they meet state of good repair standards.

Status of asset management system:

The RTAs and MassDOT are working to implement the new FTA Transit Asset Management (TAM) plan. TAM was submitted to FTA in December 2018.

Program performance:

Tracker target

Fleet age & Revenue
Vehicle condition
(range) for fixed route
bus and paratransit

PfP tool forecast

6% of fleet/revenue
vehicles beyond
useful life benchmark

FY2019-2023 size: \$92.3 million over five years

FY2020-2024 size request: \$53.7 million over five years

Justification for FY2020-2024 program size:

- The updated program size reflects the total need as identified by the RTAs. Bond funds leverage RTAs' federal funds.
- Program includes additional funds purchase of additional electric vehicles for RTAs fleet

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$7.5	\$14.0	\$9.0	\$11.4	\$11.9	\$53.7
Other State Funds*	TBD	TBD	TBD	TBD	TBD	
Total	\$7.5	\$14.0	\$9.0	\$11.4	\$11.9	\$53.7

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

*Other state funds assumed to be from VW settlement fund, if available

Reliability / Transit / Workforce Transportation Transit Grants

Program purpose and need statement: New competitive grant program that uses existing federal CMAQ funds to leverage private and other non-state funds to improve options for workforce transportation..

Status of asset management system: Not applicable

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP tool
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FY2019-2023 size: \$0.0 million over five years

FY2020-2024 size request: \$9.875 million over five years

Justification for FY2020-2024 program size:

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.395	\$0.395	\$0.395	\$0.395	\$0.395	\$1.975
FHWA	\$1.58	\$1.58	\$1.58	\$1.58	\$1.58	\$7.900
Total	\$1.975	\$1.975	\$1.975	\$1.975	\$1.975	\$9.875

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / ODCR*/OTP / Pre-apprenticeship

Program purpose and need statement: This program, for which MassDOT is partnering with a number of stakeholders, facilitates the introduction of additional pre-apprentices to skilled trades within our construction program. This program is necessary to provide low-income and other disadvantaged communities with access to training and employment opportunities within the construction trades.

Status of asset management system: Not applicable

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP
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FY2019-2023 size: \$4.6 million over five years

FY2020-2024 size request: \$4.6 million over five years

Justification for FY2020-2024 program size:

- Recommend level funding budget for the next CIP cycle.
- Program was launched in FY 2018.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$1.1	\$1.4	\$0	\$0	\$0	\$2.6
Total	\$1.1	\$1.4	\$0	\$0	\$0	\$2.6

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

*ODCR is under Planning (OTP) & Enterprise Services

Modernization programs



Modernization / Aeronautics / Airport Administration Buildings

Program purpose and need statement:

This program builds or renovates airport administration buildings as recommended by the 2010 Statewide Airport System Plan, which identified 17 airports that did not have existing, or adequate administration buildings. This program is necessary to provide adequate administrative spaces in airports, which is integral to improving the safety, efficiency, and business growth of the airport asset.

Status of asset management system:

Program called for the building or renovating of 17 buildings over a period of 5 to 8 years.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

Other indicators

Goal is to address at least one building per year with this funding level

FY2019-2023 size: \$25.0 million over five years

FY2020-2024 size request: \$25.0 million over five years

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$4.9	\$4.5	\$2.9	\$3.7	\$3.7	\$19.7
Local	\$0.3	\$0.2	\$0.2	\$0.2	\$0.3	\$1.1
Total	\$5.2	\$4.7	\$3.1	\$3.9	\$4.0	\$20.8

Staff recommends CPC approve program size as requested

Totals may not add due to rounding

Justification for FY2020-2024 program size:

- The poor condition of legacy administration and terminal buildings is severely restricting the potential economic impact of successful airports, as well as impeding the positive momentum of marginal airports.
- The sustainable roof design of these assets favors solar over building orientation that takes advantage of ambient daylight to make the buildings more energy efficient.
- These assets were designed to be highly sustainable and durable enough to have a minimum life span of 30 years.



Modernization / Highway / ADA Retrofits

Program purpose and need statement:

This program improves the condition and accessibility of state owned sidewalks. This program is necessary to meet obligations identified under the MassDOT ADA Transition Plan.

Status of asset management system:

An extensive inventory of curb ramps exists. The inventory is updated by highway district staff as locations are reconstructed.

Program performance:

Tracker target

2018 – 40% reduction
from FY 12 in
missing/failed curb ramps
2020/22 – TBD
Long term TBD

PfP tool forecast

Long Term – 0 failed or
missing curb ramps

Other indicators

Number of failed or
missing curb ramps on
statewide inventory

FY2019-2023 size: \$21.8 million over five years

FY202-2024 size request: \$21.8 million over five years

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024), assumptions of carryforward spending from FY2019 and allocation of design/project management costs.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$1.6	\$7.1	\$6.0	\$4.8	\$4.7	\$24.2
FHWA	\$3.1	\$2.8	\$0.9	\$0.6	\$1.6	\$9.0
Total	\$4.6	\$9.8	\$6.9	\$5.4	\$6.4	\$33.1

Staff recommends CPC approve program size as requested

Totals may not add due to rounding

Modernization / Highway / Allston multi-modal

Program purpose and need statement: 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.

Status of asset management system: Not applicable

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP
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FY2019-2023 size: \$16.0 million over five years

FY2020-2024 size request: TBD million over five years

Estimated spending over five-years: **TBD**

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
MHS	\$8.0					\$8.0
Total	\$8.0	\$8.0		\$78.3	156.6	\$242.9

Justification for FY2020-2024 program size:

- Includes Allston viaduct, rail and layover facilities, new transit and bus station, pedestrian and open space, new connector roadways, among other components.

Program size for discussion

Totals may not add due to rounding

Modernization / Highway / Complete Streets

Program purpose and need statement: This program rewards communities that demonstrate a commitment to embedding Complete Streets in their policies and practices by providing them with technical assistance and funding. This program improves the condition and accessibility of state owned sidewalks.

Status of asset management system: Not applicable

Program performance:

Tracker target

2020 – 200
2022 – 250
Long Term – 275;
number of
municipalities with
approved Complete
Streets policies

PfP tool forecast

Not forecasted in
PfP

Other indicators

FY2019-2023 size: \$50.0 million over five years

FY2020-2024 size request: \$50.0 million over five years

Justification for FY2020-2024 program size:

- Allows for the increase in potential contract awards to municipalities that would facilitate the design and implementation of more expansive complete streets initiatives on local roadways

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0	\$25.0
Total	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0	\$25.0

Staff recommends CPC approve program size as requested

Totals may not add due to rounding

Modernization / Highway / Intelligent Transportation Systems

Program purpose and need statement: This program supports innovative and new communication equipment and information technology systems (signs, cameras, sensors, etc.) designed to provide real time traffic information to residents and visitors. This program is necessary to improve our network of communication tools, to allow drivers to make better informed decisions regarding travel options.

Status of asset management system: Not applicable

Program performance:	Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP
	Other indicators	Travel time from Real Time Traffic Management (RTTM)		

FY2019-2023 size: \$81.6 million over five years

FY2020-2024 size request: \$81.6 million over five years

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024), assumptions of carryforward spending from FY2019 and allocation of design/project management costs.
- Program staff are focusing on project development and implementation in this next CIP cycle.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$5.1	\$3.9	\$2.7	\$3.8	\$4.1	\$19.5
FHWA	\$14.2	\$12.3	\$8.8	\$12.1	\$12.0	\$59.4
Tolls	\$2.6	\$0.3	\$0.0	\$0.0	\$0.0	\$2.9
Total	\$21.9	\$16.5	\$11.5	\$15.9	\$16.0	\$81.9

Staff recommends CPC approve program size as requested

Totals may not add due to rounding

Modernization / Highway / Intersection Improvements

Program purpose and need statement:

This program upgrades and improves traffic signals and intersections. This program is necessary to meet safety improvement targets.

Status of asset management system:

Not applicable

Program performance:

Tracker target

2020 - 0.56 fatalities; 4.12 injuries*
2022 - .51 fatalities; 3.5 injuries
Long term – move to zero

PfP tool forecast

Not forecasted in PfP

FY2019-2023 size: \$180.8 million over five years

FY2020-2024 size request: \$180.8 million over five years

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024), assumptions of carryforward spending from FY2019 and allocation of design/project management costs.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$9.8	\$8.5	\$7.1	\$12.5	\$9.8	\$47.7
FHWA	\$31.8	\$42.1	\$29.9	\$46.3	\$39.9	\$190.1
Tolls		\$8.3				\$8.3
Total	\$41.7	\$58.9	\$37.1	\$58.7	\$49.7	\$246.0

Staff recommends CPC approve program size as requested

Totals may not add due to rounding

*Tracker target per 100 million vehicle miles traveled (VMT)

Modernization / Highway / Roadway Reconstruction

Program purpose and need statement:

This program improves the overall condition of roads, by supporting both large and small state and municipal investments. Nearly all of the projects in this program include improvements to bicycle and pedestrian user spaces.

Status of asset management system:

Included within various pavement and other asset management systems maintained by the department.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

Other indicators

FY2019-2023 size: \$1,418.6 million over five years

FY2020-2024 size request: \$1,418.6 million over five years

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$40.3	\$61.6	\$80.4	\$90.6	\$93.5	\$366.4
FHWA	\$101.7	\$188.6	\$232.9	\$266.2	\$268.6	\$1,158.0
CARM	\$8.6	\$1.7	\$0.0	\$0.0	\$0.0	\$11.4
Tolls	\$0.2	\$0.003	\$0.0	\$32.6	\$33.4	\$66.3
Total	\$150.9	\$251.8	\$313.3	\$389.4	\$395.6	\$1,500.9

Justification for FY2020-2024 program size:

- Program size includes new fifth year (FY2024), assumptions of carryforward spending from FY2019 and allocation of design/project management costs.
- Recommend program size is due construction spending on Charlton/Oxford, Route 97 and I-495/I-90 interchange.
- Forecasted program size does not include construction spending on the I-90 Viaduct. Costs associated with I-90 Viaduct are included in new Allston Multi-Modal program for 2020-2024.

Staff recommends CPC approve program size as requested

Totals may not add due to rounding



Modernization / IT / Customer Digital Experience

Program purpose and need statement:

This program ensures that MassDOT and MBTA websites present clear, concise, and timely information to the public at all times. This program is necessary to ensure that transportation system users have successful interactions with MassDOT public facing websites.

Status of asset management system:

IT has completed implementation of enterprise self-service, project delivery, change management and associated tracking tools on the ServiceNow platform. The next step will build out the Contract and Configuration Management modules. This will populate known IT asset information and identify additional assets. EOTSS is on the same platform, and it is possible to share information back and forth. The last step will link to financial reporting systems to track cost of ownership and lifecycle management for these technical assets

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

Other indicators

Monitor budgets and scheduled deliverables. Help Desk and Incident Report activity 100% of websites updated and aligned with Commonwealth standards.

FY2019-2023 size: \$10.0 million over five years

FY2020-2024 size request: \$4.725 million over five years

Justification for FY2020-2024 program size:

- Program decrease due to lower costs than anticipated to move to the Mass.gov platform and due to increased investment needs in other areas of the Modernization programs.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.9	\$1.0	\$1.075	\$1.25	\$0.5	\$4.725
Total	\$0.9	\$1.0	\$1.075	\$1.25	\$0.5	\$4.725

Staff recommends CPC approve program size as requested

Totals may not add due to rounding

Modernization / IT / Enterprise/BRP/Automation

Program purpose and need statement:

This program improves the ways that MassDOT manages and optimizes core functionality (such as document management, file shares, workflows, etc.) through business needs analysis and the implementation of enterprise solutions that are scalable, resilient and have an extensive ecosystem.

Status of asset management system:

IT has completed implementation of enterprise self-service, project delivery, change management and associated tracking tools on the ServiceNow platform. The next step will build out the Contract and Configuration Management modules. This will populate known IT asset information and identify additional assets. EOTSS is on the same platform, and it is possible to share information back and forth. The last step will link to financial reporting systems to track cost of ownership and lifecycle management for these technical assets

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

Other indicators

Monitor budgets & scheduled deliverables. Full implementation of departmental business process and workflows. Full implementation of critical Finance, HR and Legal systems.

FY2019-2023 size: \$19.5 million over five years

FY2020-2024 size request: \$25.1 million over five years

Justification for FY2020-2024 program size:

- Increase in program size due to specific application and business process improvement needs as identified by MassDOT Divisions. There are a number critical Division systems in need of modernization, replacement, or strategic refresh.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$4.6	\$4.25	\$5.25	\$6.25	\$4.75	\$25.1
Total	\$4.6	\$4.25	\$5.25	\$6.25	\$4.75	\$25.1

Staff recommends CPC approve program size as requested

Totals may not add due to rounding

Modernization / IT / Workforce Productivity

Program purpose and need statement:

This program improves business processes through automated workflows and other electronic means at the department level. This program also may include investments that improve process timelines, reduce paperwork, and contribute to efficiency.

Status of asset management system:

IT has completed implementation of enterprise self-service, project delivery, change management and associated tracking tools on the ServiceNow platform. The next step will build out the Contract and Configuration Management modules. This will populate known IT asset information and identify additional assets. EOTSS is on the same platform, and it is possible to share information back and forth. The last step will link to financial reporting systems to track cost of ownership and lifecycle management for these technical assets

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

Other indicators

Monitor budgets & scheduled deliverables. Full implementation of departmental business process and workflows. Full implementation of critical Finance, HR and Legal systems.

FY2019-2023 size: \$14.2 million over five years

FY2020-2024 size request: \$19.25 million over five years

Justification for FY2020-2024 program size:

- Increase in program size due to specific needs related to providing better tools to shared service areas like HR, Finance, Legal, Planning, etc. These strategic investments have benefits that trickle down into each Division.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$5.25	\$4.75	\$3.25	\$3.0	\$3.0	\$19.25
Total	\$5.25	\$4.75	\$3.25	\$3.0	\$3.0	\$19.25

Staff recommends CPC approve program size as requested

Totals may not add due to rounding

Modernization / MBTA / Accessibility

Program purpose and need statement:

This program improves accessibility at MBTA commuter rail, subway and bus stations. This program is necessary to meet the goals of the Authority's Plan for Accessible Transit Infrastructure ("PATI").

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements.

Program performance:

Tracker target

Not established -
platform
accessibility

PfP tool forecast

87% of heavy rail
stations ADA
compliant by 2022

FY2019-2023 size: \$265.0 million over five years

FY2020-2024 size request: \$246.0 million over five years

Justification for FY2020-2024 program size:

- FY19-23 CIP program size was \$246M; variance is due to reallocation to Green Line Transformation
- Major projects include:
 - Advancing the elevator program to design and construct replacement and redundant vertical transportation at multiple locations systemwide,
 - Complete construction of Downtown Crossing Phase 1 elevators and begin planning for Phase 2,
 - Construction of new elevators at Oak Grove Orange Line Station, and
 - Design and construction for Natick Center Commuter Rail Station.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$24.0	\$78.6	\$58.0	\$45.7	\$27.4	\$233.7
MBTA Bond	\$3.0	\$2.0	\$1.3	\$0.0	\$0.0	\$6.3
MBTA Pay-Go	\$1.8	\$1.8	\$2.2	\$0.2	\$0.2	\$6.0
Total	\$28.8	\$82.4	\$61.4	\$45.9	\$27.6	\$246.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Modernization / MBTA / AFC 2.0

Program purpose and need statement:

The AFC 2.0 program will implement a new reliable and convenient fare payment and collection system, integrated across all modes, to replace CharlieCards/Tickets and their supporting hardware and software.

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2019-2023 size: \$169.0 million over five years

FY2020-2024 size request: \$204.0 million over five years

Justification for FY2020-2024 program size:

- Updated program size reflects latest program cash flows
- Major projects include:
 - Install new hardware, including subway gates, vehicle and platform readers, and station and streetscape fare vending machines
 - Setup a new back office system, including new payment processing systems and robust information security management
 - Introduce new fare media options to allow for more payment flexibility (e.g., a better fare card, mobile devices and contactless credit cards)

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
MBTA Bond	\$42.1	\$50.7	\$38.9	\$36.0	\$36.0	\$203.7
MBTA Pay-Go	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total	\$42.1	\$50.7	\$38.9	\$36.0	\$36.0	\$203.7

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / MBTA / Commuter rail safety and resiliency (PTC)

Program purpose and need statement:

This program includes projects that improve the safety and resiliency of the Commuter Rail network, including the implementation of Positive Train Control.

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2019-2023 size: \$630.0 million over five years

FY2020-2024 size request: \$498.9 million over five years

Justification for FY2020-2024 program size:

- Updated program size reflects completion of PTC.
- Includes PTC Implementation, ATC implementation on the North Side Commuter Rail lines, fiber installation and installation of additional gas fired hot air snow heaters at critical switch locations to help with winter resiliency.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$25.1	\$80.0	\$80.0	\$48.2	\$0.0	\$233.8
MBTA Bonds	\$2.0	\$3.0	\$15.0	\$6.7	\$7.0	\$33.7
PTC Bonds	\$44.9	\$38.6	\$42.9	\$65.0	\$0.0	\$191.3
MBTA Pay-Go	\$9.5	\$3.2	\$15.0	\$6.7	\$7.0	\$41.4
State	\$10.5	\$1.5	\$5.0	\$0.0	\$0.0	\$17.0
Total	\$82.8	\$136.3	\$152.9	\$119.9	\$7.0	\$498.9

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / MBTA / Customer experience and technology

Program purpose and need statement:

This program includes improvement projects that modernize the system and enhance customers' experience.

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2019-2023 size: \$116.0 million over five years

FY2020-2024 size request: \$155.0 million over five years

Justification for FY2020-2024 program size:

- Updated program size reflects increased focus on customer-facing projects.
- Major project include implementing the Systemwide Wayfinding Improvements program, starting with wayfinding, lighting, and station brightening, support for the Better Bus Project and implementing customer technology projects to improve real-time information, such as bus tracking, train arrival times, and trip planning.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$5.4	\$7.9	\$5.1	\$0.0	\$0.0	\$18.4
MBTA Bond	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
MBTA Pay-Go	\$20.7	\$35.7	\$31.3	\$13.3	\$0.0	\$100.9
State	\$8.7	\$10.8	\$6.5	\$10.0	\$0.0	\$36.1
Total	\$34.8	\$54.3	\$43.0	\$23.3	\$0.0	\$155.4

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Modernization / MBTA / Green Line Transformation

Program purpose and need statement:

This program will improve quality of service (enhanced capacity and accessibility), through fleet modernization, infrastructure and facilities upgrades utilizing state-of-the-art technology

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2019-2023 size:

N/A

FY2020-2024 size request: \$915.0 million over five years

Justification for FY2020-2024 program size:

- New program for investments in critical projects that offer holistic improvements to the Green Line or that are required for the delivery of the Type 10 vehicles.
- Projects aim to enhance regional mobility, improve operational efficiency and safety with more modern technology or that improve customer experience by reducing delays, wait time, speed restrictions and headway spacing.
- Major projects include the procurement of GL Type 10 vehicles, 100% low floor light rail vehicle to allow level boarding and increased capacity.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$126.2	\$208.3	\$186.3	\$148.9	\$118.9	\$582.3
MBTA Bonds	\$13.3	\$18.7	\$26.2	\$11.0	\$0.5	\$70.0
State	\$0.9	\$0.9	\$0.8	\$0.8	\$0.0	\$3.4
MBTA Pay-Go	\$4.1	\$4.9	\$4.8	\$4.1	\$4.6	\$22.5
Other	\$0.9	\$0.9	\$0.8	\$0.8	\$30.5	\$33.9
Total	\$144.5	\$232.9	\$218.0	\$164.8	\$154.5	\$914.6

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / MBTA / Process improvements and innovation

Program purpose and need statement: This program includes investments in innovations that enhance productivity or quality of MBTA services and capital programs.

Status of asset management system: Not applicable

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP tool
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FY2019-2023 size: \$25.0 million over five years

FY2020-2024 size request: \$13.0 million over five years

Justification for FY2020-2024 program size:

- Updated program size reflects revised program needs
- Program includes projects that introduce technology or other tools to improve or modernize MBTA business processes
- Major projects include implementing a Project Management Information System (PMIS) to more effectively manage the capital program and Lean strategy improvements at facilities and within the capital program.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
MBTA Bond	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
MBTA Pay-Go	\$10.1	\$2.2	\$0.9	\$0.02	\$0.0	\$13.2
Total	\$10.1	\$2.2	\$0.9	\$0.02	\$0.0	\$13.2

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Modernization / MBTA / Red Line / Orange Line improvements

Program purpose and need statement:

The Red Line and Orange Line Improvements program includes the set of vehicle and infrastructure investments needed to fully modernize the fleet and achieve the service goal of three minute headways on the Red Line and three and a half minute headways on the Orange Line.

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2019-2023 size:

\$1,565.7 million over five years

FY2020-2024 size request:

\$1,535.0 million over five years

Estimated spending over five-years:

Justification for FY2020-2024 program size:

- Updated program size reflects current program cash flow forecast.
- The Red Line/Orange Line vehicle procurements, signals work, and infrastructure investments are a complex and high profile project with interdependencies across asset classes.
- Includes Red Line/Orange Line vehicle procurements (404 new vehicles), Red and Orange Line signal system modernization and Cabot and Wellington Yard rebuilds.

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$26.1	\$77.9	\$99.7	\$93.2	\$0.0	\$296.9
MBTA Bond	\$45.7	\$121.1	\$75.4	\$170.5	\$35.0	\$447.7
MBTA Pay-Go	\$1.5	\$0.0	\$0.0	\$0.0	\$0.0	\$1.5
State	\$159.7	\$200.9	\$179.7	\$116.9	\$131.4	\$788.7
Total	\$233.0	\$400.0	\$354.8	\$380.6	\$166.4	\$1,534.9

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Modernization / MBTA / Risk management and mitigation

Program purpose and need statement:

This program implements risk management initiatives as well as proactive efforts to improve workplace safety and system security

Status of asset management system:

MBTA Transit Asset Management Plan and initial Asset Inventory and Condition data submitted in October 2018, consistent with FTA requirements

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2019-2023 size: \$178.0 million over five years

FY2020-2024 size request: \$63.0 million over five years

Justification for FY2020-2024 program size:

- Updated program size reflects reallocation to Green Line Transformation
- Program focuses on a proactive approach to safety, security, and risk management.
- Major projects include OSHA implementation, upgrade access control and security cameras systemwide and climate change resiliency vulnerability assessments including implementation of recommendation at highest-risk locations system-wide.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$5.7	\$1.7	\$0.0	\$0.0	\$0.0	\$7.4
MBTA Bond	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
MBTA Pay-Go	\$9.3	\$8.6	\$7.5	\$7.4	\$6.0	\$38.7
State	\$3.6	\$3.4	\$3.3	\$3.9	\$3.0	\$17.2
Total	\$18.6	\$13.7	\$10.8	\$11.2	\$9.0	\$63.3

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Rail / Facility modernization

Program purpose and need statement:

This program repairs or replaces rail facilities, specifically rail yards and stations, to upgrade them to current industry standards or maintain the facility's utility. Prioritization of projects in this program will reflect economic opportunities for the line served, condition reports, type of risk/usage, and any contractual or regulatory requirements for action and consistency with the Statewide Rail Plan. This program is necessary to maintain a safe, reliable, cost effective, and modern rail system.

Status of asset management system:

Draft initial Rail Asset Management Plan under review

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$13.25 million over five years

FY2020-2024 size request: \$8.2 million over five years

Justification for FY2020-2024 program size:

- FY 2020-2024 program sized to continue efforts to modernize rail facilities to address regulatory and contractual requirements
- Springfield Union Station and Northampton and Greenfield Stations on the Knowledge Corridor were completed in FY 2019

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.005	\$0.005	\$0.005	\$0.005	\$0.005	\$0.25
REP	\$0					\$0.0
Total	\$0.005	\$0.005	\$0.005	\$0.005	\$0.005	\$0.25

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Rail / Industrial Rail Access Program

Program purpose and need statement: This program makes investments in private sector rail lines to leverage private investment that will increase freight rail usage or will modernize an active line to increase the utility to customers.

Status of asset management system: Draft initial Rail Asset Management Plan under review.

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP tool
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FY2019-2023 size: \$15.0 million over five years

FY2020-2024 size request: \$15.0 million over five years

Justification for FY2020-2024 program size:

- FY2020-2024 maintains existing program size

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$3.0	\$3.0	\$3.0	\$3.0	\$3.0	\$15.0
Total	\$3.0	\$3.0	\$3.0	\$3.0	\$3.0	\$15.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Rail / Track and right-of-way modernization

Program purpose and need statement:

This program repairs or replaces assets within the rail right of way (typically ties, rail, ballast, switches, etc.) to upgrade their capacity to reflect current industry standards (ex: weight capacity to 286,000 lbs) for the line and maintain the line's utility. Prioritization of projects in this program will reflect economic opportunities for the line, most recent inspections, type of usage (ex: hazardous cargo), any contractual or regulatory requirements for action, and consistency with the Statewide Rail Plan. This program is necessary to maintain a safe, reliable, cost effective, and modern rail system.

Status of asset management system:

Draft initial Rail Asset Management Plan under review.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$31.1 million over five years

FY2020-2024 size request: \$61.1 million over five years

Justification for FY2020-2024 program size:

- FY 2020-2024 program sized to continue effort to modernize rail track and ROW
- FY2020-2024 program includes new funding from FRA under the Better Utilizing Investment to Leverage Development program along with the state match and private funding from the railroad
- May need an increase to address priorities outlined in the Statewide Rail Plan if certain lines need to accommodate 286,000 lb. capacity

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$7.5	\$6.4	\$3.0	\$8.0	\$2.9	\$27.8
FRA	\$3.9	\$7.2	\$0.0	\$0.0	\$0.0	\$11.1
Other	\$3.2	\$6.4				\$9.6
Total	\$14.6	\$20.0	\$3.0	\$8.0	\$2.9	\$48.5

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Registry / ATLAS

Program purpose and need statement:

This program improves RMV service delivery options by replacing the ALARS system. This program is necessary to increase business process efficiency through reduced wait times, increase the number of transactions done via alternative customer service channels, and increase the capacity of third parties dependent on RMV data.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$61.5 million over five years

FY2020-2024 size request: \$35.1 million over five years

Justification for FY2020-2024 program size:

- Program size reflects status of project and expected completion in 2021 and all costs associated with FAST Enterprises contract
- Includes Crash System implementation and International Registrations as part of ATLAS in FY2019-2024
- Separate funding for ATLAS implementation provided by MassIT
- Total program size for ATLAS including prior years is \$125 million

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$30.2	\$4.9	\$	\$	\$	\$35.1
Total	\$30.2	\$4.9	\$	\$	\$	\$35.1

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Registry / Customer service modernization

Program purpose and need statement:

This program includes updating and upgrading leased branch locations to accommodate the new dual line queuing model, signage, furniture and fixtures.

Status of asset management system:

Not applicable

Program performance:

Tracker target

80% of Service Center customers served in 30 minutes or less

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$3.775 million over five years

FY2020-2024 size request: \$4.775 million over five years

Justification for FY2020-2024 program size:

- Program size was adjusted to reflect expiring leases and necessary Service Center upgrades in FY 2020
- Program includes funding for additional service center accommodations in the Cape Cod region

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$1.1	\$1.1	\$1.0	\$0.5	\$0.6	\$4.3
Total	\$1.1	\$1.1	\$1.0	\$0.5	\$0.6	\$4.3

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Registry / Alternative service channels

Program purpose and need statement:

This program funds customer service improvements through installation of self-service kiosks and third party service channels including AAA locations. This program is necessary to improve customer experience.

Status of asset management system:

Not applicable

Program performance:

Tracker target

2020 – 65%
2022 – 70%
Long Term – 75% of
transactions conducted
outside Service Centers

PfP tool forecast

Not forecasted in PfP
tool

FY2019-2023 size: \$2.25 million over five years

FY2020-2024 size request: \$2.25 million over five years

Justification for FY2020-2024 program size:

- Kiosk initiative will not be launched until FY2020-2024 CIP
- Kiosk initiative linked to implementation of International Registration Program
- Online transaction options, 3rd parties, and kiosks help to increase the number of customers serviced in Service Centers in 30 minutes or less by decreasing the customer volume of in-person visits

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.13	\$0.5	\$0.5	\$0.5	\$0.5	\$2.13
Total	\$0.13	\$0.5	\$0.5	\$0.5	\$0.5	\$2.13

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Transit / RTA facility and system modernization

Program purpose and need statement: This program improves or modernizes existing RTA facilities, systems or equipment.

Status of asset management system: Not applicable

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP tool
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FY2019-2023 size: \$26.3 million over five years

FY2020-2024 size request: \$97.2 million over five years

Justification for FY2020-2024 program size:

- Updated project lists for all five years were submitted by the RTAs which accounts for changes in the overall amount of funding forecasted.
- Program includes additional funds for implementation of an Automated Fare Collection system for the RTAs, future RTA maintenance facility upgrades, gradual electrification of the RTA bus fleet, and system wide implementation of automatic passenger counters.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$4.6	\$10.01	\$25.8	\$23.5	\$33.1	\$97.15
Total	\$4.6	\$10.01	\$25.8	\$23.5	\$33.1	\$97.15

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Transit / RTA fleet upgrades

Program purpose and need statement: This program allows for RTA fleet growth. This program is necessary to meet services needs or expansion.

Status of asset management system: The RTAs and MassDOT are working to develop the new FTA Transit Asset Management plan. Draft TAM was submitted to FTA in December 2018.

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP tool
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FY2019-2023 size: \$0.0 million over five years

FY2020-2024 size request: \$1.0 million over five years

Justification for FY2020-2024 program size:

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.0	\$0.0	\$0.0	\$ 0.6	\$0.075	\$0.7
Total	\$0.0	\$0.0	\$0.0	\$0.6	\$0.075	\$0.7

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Transit / RTA replacement facilities

Program purpose and need statement:

This program constructs modernized RTA maintenance, administrative, operations or intermodal facilities.

Status of asset management system:

The RTAs and MassDOT are working to develop the new FTA Transit Asset Management plan. Draft TAM was submitted to FTA in December 2018.

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP tool

FY2019-2023 size: \$16.4 million over five years

FY2020-2024 size request: \$8.1 million over five years

Justification for FY2020-2024 program size:

- These funds in the past were primarily for PVRTA and FVRTA maintenance facilities which are complete.
- With completion of the PVRTA and FVRTA facilities, program sized to address more routine modernization efforts for RTA replacement facilities.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$3.0	\$1.4	\$0.04	\$1.7	\$1.1	\$8.1
Total	\$3.0	\$1.4	\$0.04	\$1.7	\$1.1	\$8.1

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Expansion programs

Expansion / Highway / Shared Use Paths

Program purpose and need statement:

This program constructs shared use paths (also known as multi-use paths and trails) that are independent from a roadway.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Number of trail extensions and critical gaps completed

PfP tool forecast

927 miles of off-road bicycle and pedestrian facilities

FY2019-2023 size: \$180.6 million over five years

FY2020-2024 size request: \$203.2 million over five years

Justification for FY2020-2024 program size:

- Existing program
- Program size is based on forecasted federal aid

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$9.1	\$11.7	\$11.8	\$11.8	\$14.6	\$59.0
FHWA	\$27.7	\$38.5	\$36.2	\$36.5	\$42.1	\$183.0
Total	\$36.8	\$50.3	\$50.0	\$48.3	\$56.7	\$242.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Expansion / Highway / Capacity

Program purpose and need statement:

This program adds new connections or expands the existing transportation network.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

FY2019-2023 size: \$308.1 million over five years

FY2020-2024 size request: \$308.1 million over five years

Justification for FY2020-2024 program size:

- Program size represents spend down on legacy projects that have ongoing commitments through FY2024; includes allocation of design/project management costs.
- Highway spending related on South Coast Rail (Rail and MBTA program) is captured under South Coast Rail program.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$16.9	\$14.9	\$11.7	\$9.7	\$4.4	\$57.4
FHWA	\$22.8	\$29.0	\$34.9	\$29.5	\$12.1	\$128.2
REP	\$1.4					\$1.4
Total	\$41.1	\$43.9	\$46.6	\$39.1	\$16.4	\$187.1

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Expansion / MBTA / Expansion projects (non-GLX)

Program purpose and need statement:

This program makes targeted capital investment projects to expand the existing transit or commuter rail system.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2019-2023 size: \$62.0 million over five years

FY2020-2024 size request: \$49.0 million over five years

Justification for FY2020-2024 program size:

- Updated program size reflects current program needs
- Program includes targeted expansion projects, such as Silver Line to Chelsea.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$2.5	\$15.0	\$12.5	\$4.4	\$0.4	\$34.8
MBTA Bond	\$0.	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
State	\$3.1	\$2.7	\$1.7	\$1.7	\$5.0	\$14.2
Total	\$5.6	\$17.7	\$14.2	\$6.1	\$5.4	\$48.9

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Expansion / MBTA / Expansion project development

Program purpose and need statement:

Support planning and design for expansion projects identified as “Next Priorities” within Focus40.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2019-2023 size:

N/A

FY2020-2024 size request: \$25.0 million over five years

Justification for FY2020-2024 program size:

- The advancement of project development efforts, which may include environmental permitting, project feasibility, conceptual design, alternatives analysis or project design for a potential range of MBTA expansion or Rail Vision projects.
- Potential projects include, the Red-Blue Connector, Green Line to 16, Silver Line to Everett along with any project recommendations that result from the Rail Vision study.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
MBTA Bond	\$5.0	\$5.0	\$5.0	\$10.0	\$0.0	\$25.0
State	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total	\$5.0	\$5.0	\$5.0	\$10.0	\$0.0	\$25.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Expansion / MBTA / Green Line Extension

Program purpose and need statement:

The Green Line Extension program includes the vehicles, stations and infrastructure to extend the Green Line from a relocated Lechmere Station in East Cambridge to Union Square in Somerville and College Avenue in Medford.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2019-2023 size: \$1,227.0 million over five years

FY2020-2024 size request: \$1,317.0 million over five years

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
FTA	\$372.6	\$232.2	\$98.2	\$108.3	\$25.8	\$837.1
State	\$18.4	\$192.1	\$60.8	\$108.3	\$25.8	\$405.3
Local	\$15.0	\$22.6	\$37.4	\$0.0	\$0.0	\$75.0
Total	\$406.0	\$447.0	\$196.3	\$216.6	\$51.5	\$1,317.4

Justification for FY2020-2024 program size:

- Green Line Extension is a complex and high-profile project with dedicated funding sources.
- Updated program size reflects latest program cash flow forecast
- Projects include upgraded vehicles (24 Green Line Type 9 vehicles), a new vehicle storage and maintenance facility, the relocation of the Lechmere Station in Cambridge to allow for the extension of the line and the addition of 7 new Green Line stations.

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Expansion / OTP* / Bicycle and pedestrian modal implementation

Program purpose and need statement:

This program will meet needs identified through the Statewide Bicycle Plan and Statewide Pedestrian Plan. The plans address critical needs around safety, accessibility, network connectivity, and maintenance.

Status of asset management system:

Not applicable

Program performance:

Tracker target

In development

PfP tool forecast

Not forecasted in
PfP tool

FY2019-2023 size: \$60.0 million over five years

FY2020-2024 size request: \$60.0 million over five years

Justification for FY2020-2024 program size:

- Existing program; no change in program size
- Projects and programs will be informed by the final bicycle and pedestrian modal plans
- Priority projects and programs will meet current needs of our customers and work to attract more people to walk and bike to access destinations and transit.
- Funding will support initiatives across multiple operating divisions and shared services, including Highway, MBTA, Planning, OPMI

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$5.0	\$10.0	\$12.0	\$15.0	\$18.0	\$60.0
Total	\$5.0	\$10.0	\$12.0	\$15.0	\$18.0	\$60.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

*Office of the Secretary Program will be carried under Planning & Shared Services (OTP)



Expansion / Rail* / South Coast Rail

Program purpose and need statement: This program funds the Commonwealth’s commitment to move forward with the South Coast Rail (SCR) 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.

Status of asset management system: Not applicable

Program performance:

Tracker target	Not established in Tracker	PfP tool forecast	Not forecasted in PfP
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FY2019-2023 size: \$108.0 over five years

FY2020-2024 size request: TBD over five years

Justification for FY2020-2024 program size:

- FY2020-2024 program continues permitting, design and early action construction activities related to SCR and includes construction costs of the project through FY2022
- The project utilizes a phased approach to deliver the service while still proceeding with design and permitting of the Stoughton Electric Full Build alternative; phasing will shorten the time by at least 10 years to implement service
- Preliminary funding for FY2020-2024 costs is still under discussion with ANF but preliminary funding will be reflected in the CIP.

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
REP*						
Bond						
Total						

Program size for discussion

Totals may not add due to rounding

*An additional \$2.2M per year (\$11M over 5 years) carried under MBTA non-GLX Expansion Program for MBTA related SCR costs; includes spending for Highway scope associated with program.

Expansion / Rail / Track and right-of-way expansion

Program purpose and need statement:

This program repairs or replaces assets within the rail right of way (typically ties, rail, ballast, switches, etc.) to expand existing rail services, including the addition of passenger rail or freight rail. Prioritization of projects in the program will reflect economic opportunities for the new service, consistency with the statewide Rail Plan, and any contractual or regulatory requirements for action.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

FY2019-2023 size: \$0.0 million over five years

FY2020-2024 size request: \$0.0 million over five years

Justification for FY2020-2024 program size:

- Original program was focused on South Coast Rail which is now a separate program
- No additional projects programmed for 2020-2024

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
REP	\$0	\$0	\$0	\$0	\$0	\$
Bond	\$	\$	\$	\$	\$	\$
Total	\$0	\$0	\$0	\$0	\$0	\$

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Expansion / Rail / Vehicles expansion

Program purpose and need statement:

This program repairs, replaces, or acquires rail equipment (locomotives, coaches, ballast cars, light duty vehicles, etc.) to expand existing rail services, including the addition of passenger rail or freight rail. Prioritization will reflect economic opportunities for the new service, consistency with the statewide Rail Plan, and any contractual or regulatory requirements for action.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established in Tracker

PfP tool forecast

Not forecasted in PfP

FY2019-2023 size: \$31.0 million over five years

FY2020-2024 size request: \$31.0 million over five years

Justification for FY2020-2024 program size:

- FY2020-2024 maintains existing program size as established in the FY2019-2023 plan

Estimated spending over five-years:

Funding source	2020 millions	2021	2022	2023	2024	2020-2024
Bond	\$0.5	\$0.5	\$1.5	\$1.5	\$3.5	\$7.5
Total	\$0.5	\$0.5	\$1.5	\$1.5	\$3.5	\$7.5

Staff recommends CPC accept program size as requested

Totals may not add due to rounding