
FY2018-2022 CIP update: Program Sizes CPC presentation

April 4, 2017



Overview

- **Since last CPC meeting:**
 - Closed initial round of engagement with online comment tool – over 1,100 comments received
 - Reviewed and refined program size requests
 - CIP / STIP alignment will further influence program sizes with FHWA/FTA funded projects
 - Reviewed and refined source assumptions
 - Bond Cap request made to A&F on March 23rd
 - Bond Cap figures not yet final
 - Reviewed status of asset management systems associated with each program as requested – see appendix
- **Today:**
 - Need feedback on program size requests



Overview of public comment

- **Reliability investments**

- Paving and road maintenance
- Route 57 in New Marlborough
- Route 111 in Boxborough

- **Modernizations investments**

- Middleborough Rotary
- I-93 Sound Barriers
- Anderson Underpass

- **Expansion investments**

- Community Path extension
- Boston-area bicycle projects
- South Coast Rail
- Commuter and passenger rail in Western Massachusetts



Approach to considering program size requests

Staff recommends accepting program size request

- Program size same or very similar to FY2017-2021 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

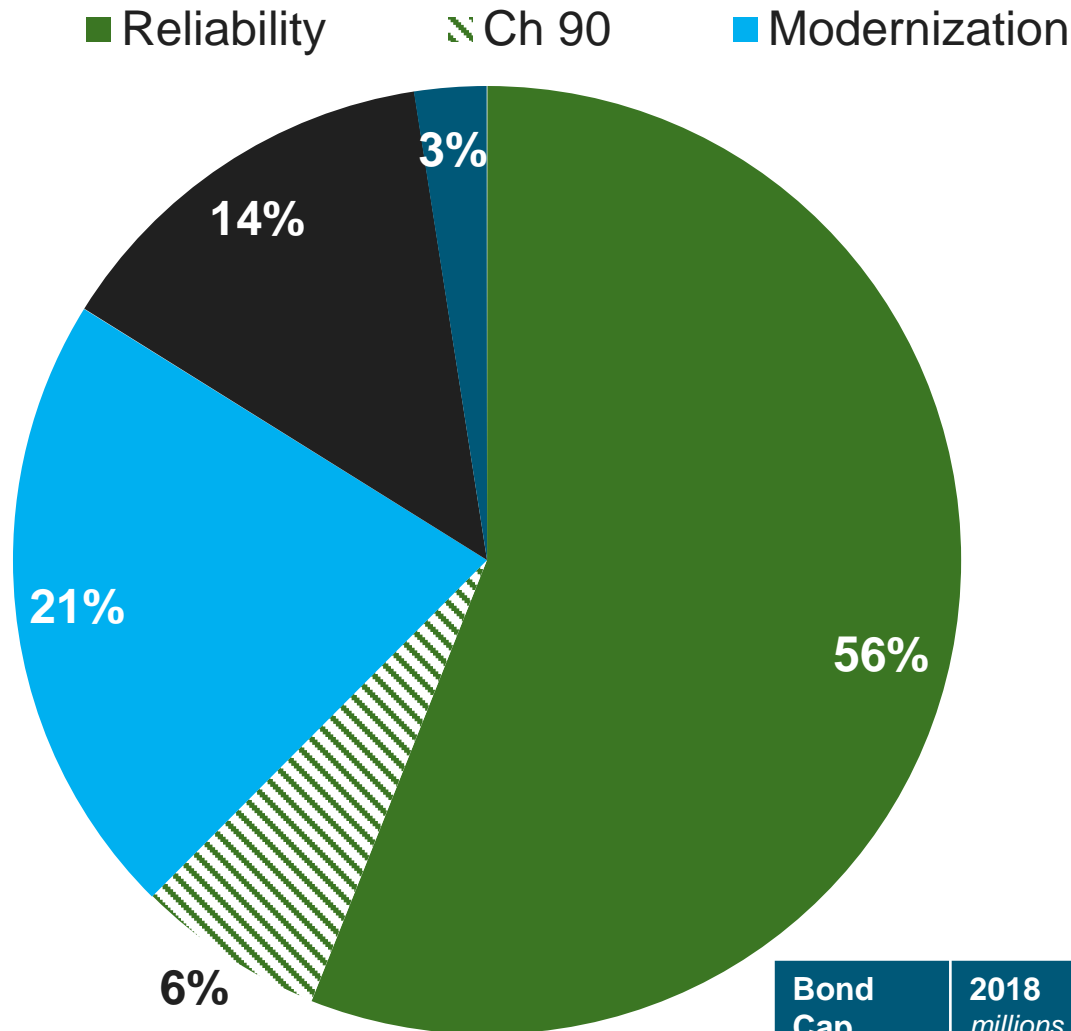
Brand new programs to be considered

- 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 FY2017-2021 plan's program significantly

Summary of program size requests *(as requested)*



<i>millions</i>	FY17-21	FY18-22
Reliability	\$8,798.0	\$8,703.1
Modernization	\$2,638.0	\$3,339.6
Expansion	\$2,147.0	\$2,125.5
Chapter 90	\$1,000.0	\$1,000.0
Other	\$203.0	\$381.9
<i>Five-year total</i>	\$14,786.0	\$15,550.1

Bond Cap request and estimated committed amounts

Bond Cap	2018 <i>millions</i>	2019	2020	2021	2022
Requested	\$900.0	\$840.0	\$840.0	\$840.0	\$840.0
Committed	\$712.5	\$224.3	\$100.5	\$53.6	\$33.6

Program size requests recommended by staff to accept

Reliability	FY 2017-2021 program size <i>(five-year total)</i>	FY 2018-2022 program size <i>(five-year request)</i>	Notes
Aeronautics / Airport Capital Improvement	\$149.7 million	\$155.0 million	
Highway / All-electronic tolling	\$207.3 million	\$66.6 million	Accelerated project in FY2017
Highway / Bridge	\$1,998.6 million	\$2,028.2 million	
Highway / Design, Environmental, & ROW	\$520.1 million	\$520.1 million	
Highway / Facilities	\$160.8 million	\$161.5 million	
Highway / Interstate pavement	\$339.2 million	\$281.7 million	Change in program size reflects continued strategy to shift investment between assets
Highway / Non-Interstate pavement	\$475.9 million	\$543.9 million	
Highway / Municipal Bridge	\$50.0 million	\$50.0 million	
Highway / Pre-apprenticeship	\$4.6 million	\$4.6 million	
Highway / Retainage and Utility Pavements	\$10.8 million	\$50.0 million	Incorrectly sized in FY17-21 CIP
Highway / Roadway improvements	\$158.2 million	\$150.0 million	



Program size requests recommended by staff to accept

Reliability	FY 2017-2021 program size (five-year total)	FY 2018-2022 program size (five-year request)	Notes
IT / Desktop experience	\$3.8 million	\$10.0 million	
IT / Digital infrastructure	\$19.0 million	\$20.0 million	
IT / Cyber/Information security	\$1.3 million	\$5.0 million	
IT / Asset management	\$11.4 million	\$15.0 million	
MBTA / Bridges and tunnels	\$514.4 million	\$526.0 million	
MBTA / Revenue vehicles	\$1,699.2 million	\$1,314.5 million	Awaiting fleet plan
MBTA / Track, signals, and power	\$1,107.2 million	\$1,202.5 million	
Rail / Bridges	\$53.2 million	\$53.2 million	
Rail / Facility reliability	-	\$15.0 million	Programs did not exist in same format so it is difficult to compare to prior plan
Rail / Vehicle reliability	-	\$5.3 million	
Rail / Track and right-of-way reliability	-	\$138.3 million	
Transit / Mobility Assistance Program	\$49.9 million	\$50.1 million	
Transit / RTA facility and vehicle maintenance	\$14.0 million	\$10.0 million	
Transit / Transit and technical assistance	\$11.6 million	\$11.6 million	
Transit / RTA vehicle replacement	\$58.3 million	\$75.0 million	Leveraging federal-aid



Program size requests recommended by staff to accept

Modernization	FY 2017-2021 program size (five-year total)	FY 2018-2022 program size (five-year request)	Notes
Highway / ADA retrofits	\$19.4 million	\$19.4 million	
Highway / Complete Streets	\$50.0 million	\$50.0 million	
Highway / Intelligent Transportation Systems	\$77.9 million	\$72.5 million	
Highway / Intersection improvements	\$130.1 million	\$160.7 million	
IT / Customer digital experience	\$8.4 million	\$15.0 million	
IT / Enterprise / BRP / automation	\$18.8 million	\$20.0 million	
IT / Workforce Productivity	\$6.5 million	\$15.0 million	
MBTA / System improvements	\$562.6 million	\$619.9 million	
Rail / Facility modernization	-	\$18.0 million	Programs did not exist in same format so it is difficult to compare to prior plan
Rail / Track and right-of-way modernization	-	\$32. 7 million	
Rail / Industrial Rail Access Program	\$15.0 million	\$15.0 million	
Registry / Customer service modernization	\$5.0 million	\$4.8 million	
Registry / ATLAS	\$105.0 million	\$131.5 million	
Registry / Kiosks	\$5.0 million	\$2.5 million	
Transit / RTA facility and system modernization	\$24.1 million	\$20.8 million	
Transit / RTA fleet upgrades	\$7.2 million	\$6.2 million	
Transit / RTA replacement facilities	\$65.2 million	\$81.3 million	



Program size requests recommended by staff to accept

Expansion	FY 2017-2021 program size <i>(five-year total)</i>	FY 2018-2022 program size <i>(five-year request)</i>	Notes
Highway / Bicycle and pedestrian	\$220.5 million	\$217.8 million	
Highway / Capacity	\$335.4 million	\$273.9 million	Legacy projects spending down
MBTA / Expansion	\$1,508.8 million	\$1,490.1 million	Shift of South Coast Rail between programs
Rail / Track and right-of-way expansion	-	\$100.0 million	
Rail / Vehicles expansion	-	\$32.0 million	Did not exist in same format



Program size requests for mandated spending

Modernization	FY 2017-2021 program size <i>(five-year total)</i>	FY 2018-2022 program size <i>(five-year request)</i>	Notes
MBTA / Accessibility	\$98.6 million	\$189.5 million	
MBTA / Federal programs and mandates	\$456.1 million	\$565.8 million	

Program size requests for new programs

Reliability	FY 2017-2021 program size <i>(five-year total)</i>	FY 2018-2022 program size <i>(five-year request)</i>	Notes
Highway / Equipment	-	\$75.0 million	Assets not considered in FY17-21

Program size requests for discussion

Reliability	FY 2017-2021 program size (five-year total)	FY 2018-2022 program size (five-year request)	Justification (see appendix for detail)
Aeronautics / Airport Pavement Management System	\$114.3 million	\$147.5 million	Asset conditions require more investment
Highway / Safety improvements	\$162.8 million	\$235.8 million	Increase to achieve target and initiate recommendations from Work Zone Safety plan
Highway / Tunnels	-	\$350.0 million	Size based on updated estimates for capital investment necessary in the tunnels
MBTA / Stations and facilities	\$408.0 million	\$467.3 million	Increased costs on current projects
MBTA System upgrades	\$211.6 million	\$278.5 million	New design program to increase pipeline of deliverable projects
Rail / Grade crossings	\$14.7 million	\$36.5 million	Shift in the way that spending appears between programs
Modernization	FY 2017-2021 program size (five-year total)	FY 2018-2022 program size (five-year request)	Justification (see appendix for detail)
Aeronautics / Airport Administration Buildings	\$13.8 million	\$25.0 million	Poor state of legacy buildings
Highway / Roadway reconstruction	\$824.5 million	\$1,261.0 million	17-21 CIP chosen major projects showing spending

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	\$3,051
spending estimate	\$3,051
Tolls available	\$814.4
spending estimate	\$776.8
ABP available	\$181.6
spending estimate	\$181.6
Bond requested	\$4,540
spending estimate	\$4,540
REP available	\$115.3
spending estimate	\$115.3
CARM available	\$391.9
spending estimate	\$66.6
Gaming available	\$104.8
spending estimate	\$0

MBTA ▼

Source millions	Total
Federal available	\$3,894
spending estimate	\$3,315
T Bond available	\$822
spending estimate	\$819
T Pay-Go available	\$782
spending estimate	\$704
State available	\$1,468
spending estimate	\$1,437
Other available	\$391
spending estimate	\$388

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
and timing uncertain ►

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

◀ Tied to capacity of bonding

◀ Tied to operations discipline

◀ Includes REP, ABP & Gaming

◀ Reimbursables, PTC financing,
and local contributions



MassDOT sources (draft 3/31/17)

Projected Sources	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Total FY18 – FY22
Known Sources							
FHWA Reimbursements	\$525,616,837	\$530,826,868	\$493,249,906	\$494,256,786	\$608,533,760	\$670,361,727	\$2,797,229,046
Federal Transit Funding	\$24,016,676	\$9,148,088	\$9,277,042	\$9,408,066	\$9,408,066	\$9,408,066	\$46,649,328
Federal Rail Grants	\$23,383,281	\$720,786	\$0	\$0	\$0	\$0	\$720,786
Bond Cap¹	\$850,438,671	\$940,111,210	\$900,071,416	\$900,000,000	\$900,000,000	\$900,000,000	\$4,540,182,626
Pass-Through Bond Cap	\$25,000,000	\$55,000,000	\$35,000,000	\$5,000,000	\$0		\$95,000,000
ABP	\$244,197,423	\$133,330,460	\$45,799,898	\$2,485,748	0	0	\$181,616,106
REP	\$44,134,345	\$35,301,587	\$20,000,000	\$20,000,000	\$20,000,000	\$20,000,000	\$115,301,587
Toll Revenues²	\$126,427,612	\$134,264,818	\$124,195,110	\$123,170,330	\$113,910,192	\$113,259,659	\$608,800,110
Subtotal Known Sources³	\$1,835,000,167	\$1,783,703,816	\$1,592,593,373	\$1,549,320,930	\$1,651,852,018	\$1,713,029,452	\$8,290,499,589
Estimated Sources							
FAA Discretionary Grants⁴	\$30,000,000	\$42,316,000	\$32,332,250	\$47,853,131	\$37,707,500	\$63,036,800	\$223,245,681
CA/T Trust and Reserves⁵	\$391,863,992						\$391,863,992
Toll Reserves	\$193,255,326	\$76,000,000					\$76,000,000
P3/Third Party Funds⁶							
Gaming Revenues⁷	\$12,725,421		\$8,779,574	\$31,539,834	\$32,012,932	\$32,493,125	\$104,825,465
Subtotal Estimated Sources	\$627,844,740	\$118,316,000	\$41,111,824	\$79,392,965	\$69,720,432	\$95,529,925	\$795,935,138
Total MassDOT Sources²	\$2,462,844,907	\$1,902,019,816	\$1,633,705,197	\$1,628,713,895	\$1,721,572,450	\$1,808,559,377	\$9,086,434,728

1 Provided by ANF | 2 Gross Toll Revenues available for Capital Reinvestment which includes payroll and other soft cost allocations. [3 Totals may not add due to rounding | 4 Subject to FHWA approval | rounding | 5 Subject to FAA approval | 6 To be updated for specific projects. | 7 Per legislation, 50% will be spent on municipal projects including Complete Streets and Municipal Bridge; estimates provided by ANF and Mass Gaming Commission 2/3/17



MBTA sources (draft 3/31/17)

Projected Source	<u>FY17</u>	<u>FY18</u>	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>	<u>Total FY18 – FY22</u>
FTA Funding							
Section 5307/5340	\$322,609,078	\$143,445,210	\$145,840,976	\$145,840,976	\$145,840,976	\$918,602,739	\$143,445,210
Section 5337	\$394,652,098	\$144,853,672	\$147,347,989	\$147,347,989	\$147,347,989	\$1,033,459,147	\$144,853,672
Section 5339	\$23,154,989	\$5,434,322	\$5,552,214	\$5,552,214	\$5,552,214	\$37,717,801	\$5,434,322
Existing FTA Grants	\$433,624,489	\$745,847,958	\$0	\$0	\$0	\$0	\$745,847,958
FFGA (GLX)	\$55,000,000	\$550,000,000	\$150,000,000	\$150,000,000	\$100,000,000	\$46,122,000	\$996,122,000
Other FTA	\$0	\$72,313,023	\$32,000,000	\$32,000,000	\$25,680,000	\$0	\$161,993,023
Subtotal FTA Funding	\$1,239,040,654	\$2,167,983,926	\$475,733,204	\$480,741,179	\$424,421,179	\$344,863,179	\$3,893,742,667
Bond Cap (State)	\$26,093,626	\$13,145,445	\$0	\$0	\$0	\$0	\$13,145,445
ABP (State)	\$6,798,817	\$12,200,242	\$0	\$0	\$0	\$0	\$12,200,242
Transit Special Obligation Bonds (State)	\$249,319,448	\$210,914,420	\$366,340,026	\$437,258,942	\$239,967,775	\$183,899,253	\$1,438,380,416
Revenue Bonds – Cash on Hand	\$29,182,675	\$0	\$0	\$0	\$0	\$0	\$0
Revenue Bonds	\$150,000,000	\$200,000,000	\$200,000,000	\$0	\$200,000,000	\$222,000,000	\$822,000,000
Pay-Go	\$100,000,000	\$232,371,010	\$150,000,000	\$150,000,000	\$150,000,000	\$100,000,000	\$782,371,010
Reimbursable	\$4,600,083	\$11,351,432	\$0	\$0	\$0	\$0	\$11,351,432
PTC Loans	\$0	\$305,000,000	\$0	\$0	\$0	\$0	\$305,000,000
3 rd Party / P3	\$0	\$15,000,000	\$15,000,000	\$15,000,000	\$15,000,000	\$15,000,000	\$15,000,000
Total Sources	\$1,865,035,303	\$3,172,398,688	\$1,207,444,659	\$1,083,000,121	\$1,029,388,954	\$865,762,432	\$7,357,994,854

FY2018-2022 CIP update: Program Sizes appendix

April 4, 2017



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

75 average PCI for airport pavement*

PfP tool forecast

83 average PCI for airport pavement by 2022*

FY2017-2021 size: \$114.3 million over five years

FY2018-2022 size request: \$147.5 million over five years

Justification for FY2018-2022 program size:

Independent pavement analysis shows a decrease in the pavement condition index (PCI) at our public use airports (PCI 70 in FY13, PCI 68 FY16). Actual investment of \$17 million per year (\$23 million ask) not adequate to improve PCI and additional investment is warranted. A minimum of \$3 million per year extra, model suggests that a \$20 million per year actual investment should result in improvement in PCI.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$3.2	\$8.4	\$3.3	\$9.4	\$8.5	\$32.8
FAA	\$17.4	\$15.1	\$25.5	\$20.9	\$28.2	\$107.2
Local	\$1.0	\$1.2	\$1.1	\$2.1	\$38.7	\$7.5
Total	\$21.6	\$24.8	\$30.0	\$32.4	\$38.7	\$147.5

Program size for discussion. Dependent on federal-aid materializing.

Totals may not add due to rounding

* This PfP forecast is based on data from 2013; the Aeronautics Division collected newer data recently that suggests a worse picture that PfP can currently forecast



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 any airports but prioritizes projects using the FAA's National Priority Rating System criteria. FAA develops the state's priorities for airports with commercial service while the Aeronautics Division determines the priority ratings for general aviation airports. The Aeronautics Division meets with FAA to combine the two capital project lists which is sent to FAA HQ for final approval.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$149.7 million over five years

FY2018-2022 size request: \$155.0 million over five years

Justification for FY2018-2022 program size:

Program dollars at public-use airports are not adequate to maintain the existing airport system. New state requirements (non-FAA eligible projects) are unfunded mandates, ie: DEP mandate to remove all underground fuel storage tanks. Many airports are falling short of goals. The decreased preventative maintenance investment will result in the need for major future capital investment in the long run. Planned investments across the board, including areas such as vegetation management and airport security cameras and fencing. The FAA limits funding to one time, and the ongoing investment by the Commonwealth is necessary to ensure safe arrivals and departures.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FAA	\$24.9	\$17.2	\$22.3	\$16.8	\$34.8	\$116.1
Local	\$1.3	\$0.9	\$1.1	\$1.1	\$1.9	\$6.3
Bond	\$3.9	\$9.9	\$5.0	\$4.2	\$9.6	\$32.6
Total	\$30.1	\$28.0	\$28.5	\$22.1	\$46.2	\$155.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / Highway / All-electronic tolling

Program purpose and need statement:

This program converts the I-90 corridor from the New York border to Boston from a cash, toll booth system to a cashless system. Included in the program is the demolition of the former toll booths and realignment of exits and interchanges on the I-90 corridor.

Status of asset management system:

Not applicable

Program performance:

Tracker target

95% E-Z Pass
payment rate (vs.
pay-by-plate)

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$207.3 million over five years

FY2018-2022 size request: \$66.6 million over five years

Justification for FY2018-2022 program size:

- Project spending was accelerated for public good
- Overall budget decreased due to improved cost estimating and controls
- FY2018 program is spend down on demolition of toll facilities and realignment of roadways

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Tolls	\$47.1	\$4.4	\$4.3	\$4.4	\$4.4	\$64.6
Total	\$47.1	\$4.4	\$4.3	\$4.4	\$4.4	\$64.6

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	<10% NHS deck area in SD 95 Health Index	PfP tool forecast	181 bridges rated in structural deficient
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FY2017-2021 size: \$1,998.6 million over five years

FY2018-2022 size request: \$2,028.2 million over five years

Justification for FY2018-2022 program size:

- Program size includes new fifth year (FY2022) and assumptions of carryforward spending from FY2017
- Program size targets \$400 million per year to meet current PfP metric of 164 structurally deficient bridges by FY2022
- Tracker deck target is under development for FY2019
- Estimated program size is based on updated FFY 2018-2022 STIP targets and the new fifth year of the program. Estimated spending is based on advertisement program; however, out year spending has not yet been updated to reflect federal year allotments.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$79.1	\$104.8	\$121.6	\$136.8	\$131.2	\$573.5
ABP	\$133.3	\$45.8	\$2.5	-	-	\$181.6
REP	\$5.6	-	-	-	-	\$5.6
FHWA	\$121.8	\$132.0	\$161.7	\$166.7	\$177.5	\$759.7
CARM	\$0.5	-	\$0.8	-	-	\$1.3
Tolls	\$79.6	\$60.0	\$53.7	\$32.9	\$17.5	\$243.8
Total	\$419.9	\$342.7	\$340.3	\$336.5	\$326.2	\$1,765.5

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / Highway / Design, Environmental and Right of Way

Program purpose and need statement:

This program procures consultant services for the project development program, including design, environmental permitting, and other necessary services. This program also procures all required external legal reviews, and pays for costs associated with temporary and permanent land takings.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$520.1 million over five years

FY2018-2022 size request: \$520.1 million over five years

Justification for FY2018-2022 program size:

- Recommend level funding budget for the next CIP cycle
- This program funds individual design, design phase and land taking contracts for approved projects
- March CIP forecast will provide additional details on the amounts underway and available
- Program is in FY2019 with these costs transferred to specific programs.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$62.4	\$62.4	\$62.4	\$62.4	\$62.4	\$312.1
Tolls	\$41.6	\$41.6	\$41.6	\$41.6	\$41.6	\$208.0
Total	\$104.0	\$104.0	\$104.0	\$104.0	\$104.0	\$520.1

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Highway / Equipment

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

FY2017-2021 size:

Program did not exist

FY2018-2022 size request:

\$75.0 million over five years

Justification for FY2018-2022 program size:

- Recommend level funding budget for the next CIP cycle
- This program supports small equipment, vehicles and other capital assets
- Current size is based on encumbrance values loaded into MMARS

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$9.0	\$9.0	\$9.0	\$9.0	\$9.0	\$45.0
Tolls	\$6.0	\$6.0	\$6.0	\$6.0	\$6.0	\$30.0
Total	\$15.0	\$15.0	\$15.0	\$15.0	\$15.0	\$75.0

Program size for discussion. New program for CIP update.

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

FY2017-2021 size: \$160.8 million over five years

FY2018-2022 size request: \$161.5 million over five years

Justification for FY2018-2022 program size:

- Program size includes new fifth year (FY2022) and assumptions of carryforward spending from FY2017
- Program size should increase based on significant needs within districts, including District 6 relocation, Greenway facilities, ADA retrofits to district headquarters and depots or other projects in preliminary discussions

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$31.3	\$35.2	\$9.1	\$0	\$0	\$75.6
FHWA	\$8.6	\$0	\$0.1	\$0	\$0	\$8.7
Toll	\$1.9	\$27.1	\$29.2	\$0.5	\$1.0	\$59.6
Total	\$41.8	\$62.3	\$38.4	\$0.5	\$1.0	\$144.0

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

**90% of pavement
in good or
excellent
condition**

PfP tool forecast

**96% of pavement
in good or
excellent condition**

FY2017-2021 size: \$339.2 million over five years

FY2018-2022 size request: \$281.7 million over five years

Justification for FY2018-2022 program size:

- Program size includes new fifth year (FY2022) and assumptions of carryforward spending from FY2017
- \$49 million average annual spend produces 97% in good to excellent condition with 2% in poor condition per PfP
- \$68 million average annual spend in FY2017 CIP produced nearly same result per PfP

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$15.9	\$7.8	\$4.1	\$4.1	\$4.0	\$35.8
FHWA	\$91.9	\$27.1	\$41.0	\$30.5	\$34.2	\$224.7
Toll	\$8.9	\$5.6	\$16.3	\$19.9	\$6.1	\$56.8
Total	\$116.7	\$40.6	\$61.4	\$54.4	\$44.2	\$317.3

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

FY2017-2021 size: \$50.0 million over five years

FY2018-2022 size request: \$50.0 million over five years

Justification for FY2018-2022 program size:

- Initial recommendation is to level fund this grant program
- Highway would like to increase the size of the program, but that is subject to available funds and trade offs
- Spending is based on initial grant awards and future awards will result in spending post-CIP

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$1.8	\$7.4	\$10.8	\$10.0	\$9.8	\$39.7
Total	\$1.8	\$7.4	\$10.8	\$10.0	\$9.8	\$39.7

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 fulfill system wide maintenance contracts to improve pavement condition, and also includes site-specific projects.

Status of asset management system:

Program is included in existing pavement management system.

Program performance:

Tracker target

**62% of pavement
in good or
excellent
condition**

PfP tool forecast

**49% of pavement
in good or
excellent condition**

FY2017-2021 size: \$475.9 million over five years

FY2018-2022 size request: \$543.9 million over five years

Justification for FY2018-2022 program size:

- Program size includes new fifth year (FY2022) and assumptions of carryforward spending from FY2017
- Program is sized to address established PfP targets

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$36.2	\$26.8	\$21.6	\$23.0	\$18.5	\$126.1
FHWA	\$68.1	\$49.9	\$52.6	\$74.4	\$66.4	\$311.4
Tolls	\$0.6	\$1.3	\$0.3	\$0	\$0	\$2.2
Total	\$104.9	\$78.1	\$74.4	\$97.4	\$84.9	\$439.7

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Reliability / Highway / 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

FY2017-2021 size: \$4.6 million over five years

FY2018-2022 size request: \$4.6 million over five years

Justification for FY2018-2022 program size:

- Recommend level funding budget for the next CIP cycle.
- This program is still in development with stakeholders.
- Launch of the program, and resulting spending, is slipping from FY2017 to FY2018.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$1.0	\$1.1	\$1.1	\$1.4	\$0	\$4.6
Total	\$1.0	\$1.1	\$1.1	\$1.4	\$0	\$4.6

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / Highway / Retainage and Utility Payments

Program purpose and need statement:

This program is an administrative program that reserves funds for close-out costs associated with all types of projects. This program is necessary to ensure funding for costs that are typically hard to forecast and predict.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$10.8 million over five years

FY2018-2022 size request: \$50.0 million over five years

Justification for FY2018-2022 program size:

- This program funds the payments for retainage and utilities, typically at the end of a project
- These are routine and regular expenses from the capital budget that were incorrectly sized for the 2017-2021 CIP

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$2.0	\$2.0	\$2.0	\$2.0	\$2.0	\$10.0
Toll	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$5.0
FHWA	\$7.0	\$7.0	\$7.0	\$7.0	\$7.0	\$35.0
Total	\$10.0	\$10.0	\$10.0	\$10.0	\$10.0	\$50.0

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:

System is under development

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$158.2 million over five years

FY2018-2022 size request: \$150.0 million over five years

Justification for FY2018-2022 program size:

- Program size includes new fifth year (FY2022) and increased maintenance activities in FY2018 and FY2019
- Program supports necessary and critical contracted services throughout the Commonwealth
- Recommend program size at \$150 million

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$21.2	\$18.1	\$2.2	\$0.7	\$0.7	\$43.0
FHWA	\$8.1	\$0.7	\$4.2	\$2.6	\$2.7	\$18.4
Toll	\$6.6	\$4.2	\$4.3	\$2.0	\$0	\$17.0
Total	\$35.8	\$23.0	\$10.7	\$5.3	\$3.4	\$78.4

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

Move to 0
fatalities

Move to 0 injuries

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$162.8 million over five years

FY2018-2022 size request: \$235.8 million over five years

Justification for FY2018-2022 program size:

- Level of funding will allow the department to move forward with meeting the Tracker target and execute initiatives identified in the Work Zone Safety program

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$21.2	\$18.1	\$2.2	\$0.7	\$0.7	\$43.0
FHWA	\$8.1	\$0.7	\$4.2	\$2.6	\$2.7	\$18.4
Toll	\$6.6	\$4.2	\$4.3	\$2.0	\$0	\$17.0
Total	\$48.8	\$64.0	\$31.0	\$25.6	\$11.8	\$181.0

Program size for discussion.

Totals may not add due to rounding

Reliability / Highway / Tunnels

Program purpose and need statement:

This program reconstructs and maintains the regional tunnel network with state and federal funds and private-public partnerships. 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

FY2017-2021 size: \$103.5 million over five years

FY2018-2022 size request: \$350.0 million over five years

Justification for FY2018-2022 program size:

- New program replacing FY2017 CA/T program.
- Updated needs assessment for the MHS Tunnel system is underway, including focus on critical safety improvements.
- Tunnel Lighting P3 and CARM projects will be included in this program once the procurements are finalized.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
CARM	\$31.8	\$2.8	\$30.4	\$0.2	\$0	\$65.3
Tunnels	\$21.8	\$18.1	\$4.9	\$3.4	\$0	\$48.3
Total	\$53.6	\$20.9	\$35.3	\$3.6	\$0	\$113.6

Program size for discussion.

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:

Currently installing the asset management component of enterprise service / self service tools SERVICEnow. Phase I will capture assets currently in use and will be complete by the end of 2017. Phase II will identify what is not in the system and add geo location to the assets. Phase III will link the asset management modules to our financial reporting systems.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$3.8 million over five years

FY2018-2022 size request: \$10.0 million over five years

Justification for FY2018-2022 program size:

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

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
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 / 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 MBTA's and MassDOT's technology goals by sustaining the core computer, storage, telecommunications and network infrastructure.

Status of asset management system:

Currently installing the asset management component of enterprise service / self service tools SERVICEnow. Phase I will capture assets currently in use and will be complete by the end of 2017. Phase II will identify what is not in the system and add geo location to the assets. Phase III will link the asset management modules to our financial reporting systems.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$19.0 million over five years

FY2018-2022 size request: \$20.0 million over five years

Justification for FY2018-2022 program size:

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

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$4.0	\$4.0	\$4.0	\$4.0	\$4.0	\$20.0
Total	\$4.0	\$4.0	\$4.0	\$4.0	\$4.0	\$20.0

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:

Currently installing the asset management component of enterprise service / self service tools SERVICEnow. Phase I will capture assets currently in use and will be complete by the end of 2017. Phase II will identify what is not in the system and add geo location to the assets. Phase III will link the asset management modules to our financial reporting systems.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$1.3 million over five years

FY2018-2022 size request: \$5.0 million over five years

Justification for FY2018-2022 program size:

Security oriented foundational infrastructure, firewalls, web gateways and other cloud investments

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$5.0
Total	\$1.0	\$1.0	\$1.0	\$1.0	\$1.0	\$5.0

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:

Currently installing the asset management component of enterprise service / self service tools SERVICEnow. Phase I will capture assets currently in use and will be complete by the end of 2017. Phase II will identify what is not in the system and add geo location to the assets. Phase III will link the asset management modules to our financial reporting systems.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$11.4 million over five years

FY2018-2022 size request: \$15.0 million over five years

Justification for FY2018-2022 program size:

All assets management investments including Highway, RMV and IT assets

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
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



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:

Prioritization of bridge projects based on condition ratings that use age, inspection and load ratings.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$514.4 million over five years

FY2018-2022 size request: \$ 526.0 million over five years

Justification for FY2018-2022 program size:

Includes several significant bridge projects including North Station Draw, Gloucester, and Merrimack. Modest increase due to tunnel project added to the 18-22 CIP as part of SGR acceleration effort to return assets to state of good repair.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FTA	\$70.6	\$96.1	\$102.9	\$92.8	\$65.2	\$427.6
MBTA Bond	\$13.8	\$26.6	\$23.9	\$12.6	\$8.5	\$85.5
State	\$12.2	\$0.6	\$0	\$0	\$0	\$12.8
Total	\$96.5	\$123.4	\$126.8	\$105.5	\$73.8	\$526.0

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 Asset Management Plan completed in 2014 and will be updated during CY2017. Enterprise Asset Management (EAM) System for physical infrastructure assets being rolled out at this time. State of Good Repair (SGR) Database upgrade completed. Professional Services to be used to establish/develop physical infrastructure asset condition assessment standards in alignment with FTA's TAM Ruling

Program performance:

Tracker target

Not established - average bus SGR score
Not established - average commuter rail SGR score
Not established - average rapid transit SGR score

PfP tool forecast

Model needs to be updated

FY2017-2021 size: \$1,699.2 million over five years

FY2018-2022 size request: \$1,314.5 million over five years

Justification for FY2018-2022 program size:

- Fleet plan tentatively scheduled to be completed this summer and will dictate which revenue vehicle projects will proceed.
- The large amount of available funding is due to the fact that procurements are on hold pending completion of the fleet plan.
- This program rehabilitates and replaces the MBTA revenue fleet, which includes commuter rail, heavy rail, light rail, bus and ferry units.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FTA	\$320.6	\$227.0	\$71.2	\$57.2	\$51.6	\$727.7
MBTA Bond	\$51.1	\$59.2	\$11.6	\$9.8	\$17.8	\$124.6
MBTA Pay-Go	\$6.1	\$1.7	\$0.3	\$0	\$0	\$8.2
State	\$71.5	\$58.2	\$86.0	\$113.1	\$125.1	\$453.9
Total	\$449.3	\$321.4	\$169.2	\$180.1	\$194.5	\$1,314.5

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Reliability / MBTA / Stations and facilities

Program purpose and need statement:

This program rehabilitates and upgrades MBTA stations (e.g., commuter rail, commuter boat, subway and bus stations), and other maintenance and administrative facilities that support transit operations. Projects include maintenance and rehabilitation of elevators, escalators, and parking garages, among other facilities.

Status of asset management system:

MBTA Asset Management Plan completed in 2014 and will be updated during CY2017. Enterprise Asset Management (EAM) System for physical infrastructure assets being rolled out at this time. State of Good Repair (SGR) Database upgrade completed. Professional Services to be used to establish/develop physical infrastructure asset condition assessment standards in alignment with FTA's TAM Ruling.

Program performance:

Tracker target

Not established - Average facility SGR score
Not established - average non-revenue vehicle SGR score

PfP tool forecast

Not forecasted in PfP tool

FY2017-2021 size: \$408.0 million over five years

FY2018-2022 size request: \$467.3 million over five years

Justification for FY2018-2022 program size:

- Continued spend on FY 2017-2021 projects and additional spending on South Shore garages, demolition of Quincy center garage, and Wollaston station

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FTA	\$78.1	\$152.3	\$77.0	\$37.5	\$13.3	\$358.1
MBTA Bond	\$20.5	\$29.4	\$17.4	\$8.1	\$1.7	\$77.0
MBTA Pay-Go	\$19.6	\$6.4	\$0	\$0	\$0	\$26.0
Total	\$123.9	\$188.5	\$94.4	\$45.5	\$15.0	\$467.3

Program size for discussion.

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 Asset Management Plan completed in 2014 and will be updated during CY2017. Enterprise Asset Management (EAM) System for physical infrastructure assets being rolled out at this time. State of Good Repair (SGR) Database upgrade completed. Professional Services to be used to establish/develop physical infrastructure asset condition assessment standards in alignment with FTA's TAM Ruling

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$211.6 million over five years

FY2018-2022 size request: \$288.3 million over five years

Justification for FY2018-2022 program size:

Increase due to \$85M in planning / design program funding for FY18-22

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FTA	\$67.8	\$56.6	\$38.9	\$8.0	\$7.7	\$179.1
MBTA Bond	\$26.8	\$20.9	\$17.1	\$11.3	\$10.3	\$86.5
MBTA Pay-GO	\$17.2	\$2.6	\$1.9	\$1.0	\$0	\$22.7
Total	\$118.8	\$80.2	\$57.9	\$20.3	\$18.0	\$288.3

Program size for discussion.

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 Asset Management Plan completed in 2014 and will be updated during CY2017. Enterprise Asset Management (EAM) System for physical infrastructure assets being rolled out at this time. State of Good Repair (SGR) Database upgrade completed. Professional Services to be used to establish/develop physical infrastructure asset condition assessment standards in alignment with FTA's TAM Ruling

Program performance:

Tracker target

Not established - average commuter rail track SGR score and average rapid transit track SGR score

PfP tool forecast

Not forecasted in PfP tool

FY2017-2021 size: \$1,107.2 million over five years

FY2018-2022 size request: \$1,202.5 million over five years

Justification for FY2018-2022 program size:

Focus is on delivering \$500 million signal program and \$200 million commuter rail track and signal improvement program

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FTA	\$64.1	\$72.8	\$61.7	\$73.3	\$62.3	\$334.2
MBTA Bond	\$27.2	\$25.8	\$32.9	\$72.6	\$72.5	\$231.0
MBTA Pay-Go	\$55.9	\$88.8	\$177.5	\$217.9	\$80.4	\$620.5
State	\$8.5	\$1.5	\$1.4	\$1.1	\$0	\$12.5
Other	\$4.3	\$0	\$0	\$0	\$0	\$4.3
Total	\$160.0	\$189.0	\$273.5	\$364.8	\$215.2	\$1,202.5

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:

Exploring consultant services to assist with asset management

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$53.2 million over five years

FY2018-2022 size request: \$53.2 million over five years

Justification for FY2018-2022 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	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$13.4	\$17.8	\$7.3	\$12.0	\$2.7	\$53.2
Total	\$13.4	\$17.8	\$7.3	\$12.0	\$2.7	\$53.2

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:

Exploring consultant services to assist with asset management

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: Program did not exist in same format

FY2018-2022 size request: \$15.0 million over five years

Justification for FY2018-2022 program size:

- FY 17-FY 21 program included facilities as an asset category split between modernization and reliability.
- FY 18-FY22 program reflects amount needed to repair and/or facility replacements for SGR

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$4.8	\$4.8	\$1.5	\$0.3	\$3.6	\$15.0
Total	\$4.8	\$4.8	\$1.5	\$0.3	\$3.6	\$15.0

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:

Exploring consultant services to assist with asset management

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

54% of grade
crossings in
desired state

FY2017-2021 size: \$14.7 million over five years

FY2018-2022 size request: \$36.5 million over five years

Justification for FY2018-2022 program size:

- FY17-FY21 program categorized underway projects (prior federal OA) as part of Safety/Capital maintenance program
- FY 17-FY21 program size only accounted for new federal OA spending available (plus state match)

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$5.2	\$4.4	\$3.5	\$1.5	\$1.6	\$16.1
FHWA	\$7.2	\$5.5	\$2.3	\$2.3	\$2.3	\$19.5
Private	\$0.1	\$0.3	\$0.1	\$0.2	\$0.2	\$1.0
Total	\$12.5	\$10.2	\$5.8	\$3.9	\$4.1	\$36.5

Program size for discussion.

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:

Exploring consultant services to assist with asset management

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: Program did not exist in same format

FY2018-2022 size request: \$5.3 million over five years

Justification for FY2018-2022 program size:

- FY 17-FY21 program included \$5.3 million in asset category for vehicles
- FY18-FY22 program maintains the same funding level to address SGR issues to maintain or restore usage of the facilities

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$1.1	\$0	\$1.0	\$0	\$3.2	\$5.3
Total	\$1.1	\$0	\$1.0	\$0	\$3.2	\$5.3

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:

Exploring consultant services to assist with asset management

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: Program did not exist in same format

FY2018-2022 size request: \$138.3 million over five years

Justification for FY2018-2022 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	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$40.7	\$33.0	\$24.2	\$21.8	\$18.5	\$138.3
Total	\$40.7	\$33.0	\$24.2	\$21.8	\$18.5	\$138.3

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

FY2017-2021 size: \$49.9 million over five years

FY2018-2022 size request: \$50.1 million over five years

Justification for FY2018-2022 program size:

Updated federal dollar estimates in the out years have resulted in a small increase in the program size. Bond cap amount remains flat for all five years.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$4.1	\$4.0	\$4.1	\$4.0	\$4.1	\$20.3
FTA	\$7.1	\$6.0	\$6.0	\$6.0	\$6.0	\$31.2
Total	\$11.2	\$10.0	\$10.1	\$10.1	\$10.1	\$51.5

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

FY2017-2021 size: \$14.0 million over five years

FY2018-2022 size request: \$10.0 million over five years

Justification for FY2018-2022 program size:

Updated project lists for all five years were submitted by the RTAs which may account for changes in the overall amount of funding forecasted.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$1.8	\$2.7	\$2.0	\$1.8	\$1.7	\$10.0
Total	\$1.8	\$2.7	\$2.0	\$1.8	\$1.7	\$10.0

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

FY2017-2021 size: \$11.6 million over five years

FY2018-2022 size request: \$11.6 million over five years

Justification for FY2018-2022 program size:

This program is funded at a flat level for five years.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$2.3	\$2.4	\$2.4	\$2.4	\$2.4	\$11.8
Total	\$2.3	\$2.4	\$2.4	\$2.4	\$2.4	\$11.8

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 rule. Target completion is 2018.

Program performance:

Tracker target

Not established - demand response vehicle age
Not established - revenue vehicle condition

PfP tool forecast

7.4 average fleet age in years (up from 4.9)

FY2017-2021 size: \$58.3 million over five years

FY2018-2022 size request: \$75.0 million over five years

Justification for FY2018-2022 program size:

The updated program size reflects the total need as identified by the RTAs. Bond funds leverage RTAs' federal funds.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$14.4	\$14.8	\$14.2	\$21.2	\$10.5	\$75.0
Total	\$14.4	\$14.8	\$14.2	\$21.2	\$10.5	\$75.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



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

FY2017-2021 size: \$13.8 million over five years

FY2018-2022 size request: \$25.0 million over five years

Justification for FY2018-2022 program size:

The poor state of repair of legacy administration and terminal buildings are severely restricting the potential economic impact of successful airports, as well as impeding the positive momentum of marginal airports. Centralizing essential services provided by the administration buildings will position facilities as true nerve centers to improve safety, increase efficiency, promote business growth, attract and improve relations with the community, and overall optimization of the airport asset.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Local	\$0.2	\$0.4	\$0.3	\$0.2	\$0.2	\$1.3
Bond	\$4.7	\$8.0	\$4.9	\$4.5	\$2.9	\$25.0
Total	\$4.9	\$8.4	\$5.2	\$4.7	\$3.1	\$26.3

Program size for discussion.

Totals may not add due to rounding

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. Staff are updating this inventory to assess condition and prioritization.

Program performance:

Tracker target

0 failed or missing curb ramps

PfP tool forecast

58% decrease in failed curb ramps

FY2017-2021 size: \$19.4 million over five years

FY2018-2022 size request: \$19.4 million over five years

Justification for FY2018-2022 program size:

- PfP forecasts a 58% decrease in failed curb ramps based on the average annual spending provided over the next five years
- Program is in the early stages of development with the goal of developing and obligating projects over the course of the next two to three years.
- Recommend rolling program forward at \$19.4 million

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$0.4	\$0.7	\$0.3	\$0.1	\$0.2	\$1.7
FHWA	\$1.6	\$1.3	\$2.6	\$0.4	\$0.7	\$6.6
Total	\$2.0	\$2.0	\$2.9	\$0.5	\$0.9	\$8.3

Staff recommends CPC accept program size as requested

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.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$50.0 million over five years

FY2018-2022 size request: \$50.0 million over five years

Justification for FY2018-2022 program size:

- Level fund this grant program
- Highway would like to increase the size of the program, but that is subject to available funds and trade offs

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$8.6	\$9.4	\$10.0	\$10.0	\$2.5	\$40.5
Total	\$8.6	\$9.4	\$10.0	\$10.0	\$2.5	\$40.5

Staff recommends CPC accept 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

FY2017-2021 size: \$77.9 million over five years

FY2018-2022 size request: \$72.5 million over five years

Justification for FY2018-2022 program size:

- Recommend program size remain relatively consistent for the next five years, including the new fifth year (FY2022)
- Program staff are focusing on project development and implementation in the next CIP cycle

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$2.2	\$2.3	\$2.9	\$2.8	\$2.4	\$12.5
FHWA	\$7.2	\$11.4	\$7.0	\$11.1	\$9.6	\$46.3
Tolls	\$1.1	\$0.6	\$0.6	\$0.3	\$0.2	\$2.9
Total	\$10.5	\$14.4	\$10.5	\$14.2	\$12.2	\$61.7

Staff recommends CPC accept 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

Move to zero
fatalities

Move to zero
injuries

PfP tool forecast

1,530 economic-
weighted EPDO
crashes reduced

FY2017-2021 size: \$130.1 million over five years

FY2018-2022 size request: \$160.7 million over five years

Justification for FY2018-2022 program size:

- Recommend program size remain consistent for the next five years, including additional capacity programmed into the new fifth year (FY2022)
- Average annual spend will result in 1,530 less crashes per PfP tool forecast

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$6.5	\$5.5	\$4.4	\$4.7	\$4.0	\$25.1
FHWA	\$20.8	\$24.4	\$24.6	\$26.1	\$25.6	\$121.5
Tolls	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2
Total	\$27.5	\$30.0	\$29.0	\$30.8	\$29.5	\$146.7

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

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 tool

FY2017-2021 size: \$824.5 million over five years

FY2018-2022 size request: \$1,261.0 million over five years

Justification for FY2018-2022 program size:

- Recommend program size is due construction spending on Charlton / Oxford, Route 79 and 495/90 interchange between FY2020 and FY2022
- Forecasted program size does not include construction spending on the I-90 Viaduct based on the current ad date of October 2022

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$34.3	\$36.7	\$42.1	\$80.1	\$166.3	\$359.5
FHWA	\$86.4	\$126.6	\$109.7	\$193.9	\$285.4	\$802.0
CARM	\$6.9	\$3.4	\$19.8	\$0	\$0	\$31.2
Tolls	\$6.8	\$0	\$0	\$0	\$0	\$6.8
Total	\$134.5	\$166.7	\$171.7	\$274.0	\$451.7	\$1,198.6

Program size for discussion.

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:

Currently installing the asset management component of enterprise service / self service tools SERVICEnow. Phase I will capture assets currently in use and will be complete by the end of 2017. Phase II will identify what is not in the system and add geo location to the assets. Phase III will link the asset management modules to our financial reporting systems.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$8.4 million over five years

FY2018-2022 size request: \$15.0 million over five years

Justification for FY2018-2022 program size:

Beacon Installation (\$1M) and State Highway Access Permitting system (\$1.4M) currently under way.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
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 / 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:

Currently installing the asset management component of enterprise service / self service tools SERVICEnow. Phase I will capture assets currently in use and will be complete by the end of 2017. Phase II will identify what is not in the system and add geo location to the assets. Phase III will link the asset management modules to our financial reporting systems.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$18.8 million over five years

FY2018-2022 size request: \$20.0 million over five years

Justification for FY2018-2022 program size:

Funding MBTA Financial Systems upgrades is under consideration.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$4.0	\$4.0	\$4.0	\$4.0	\$4.0	\$20.0
Total	\$4.0	\$4.0	\$4.0	\$4.0	\$4.0	\$20.0

Staff recommends CPC accept 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:

Currently installing the asset management component of enterprise service / self service tools SERVICEnow. Phase I will capture assets currently in use and will be complete by the end of 2017. Phase II will identify what is not in the system and add geo location to the assets. Phase III will link the asset management modules to our financial reporting systems.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$6.5 million over five years

FY2018-2022 size request: \$15.0 million over five years

Justification for FY2018-2022 program size:

CRASH, FAPRO and Highway Document Management underway. A number of other projects such as Aurigo's Capital Planning and Tracking System and Masterworks Module Implementations and HR Learning Management System under consideration.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
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 / 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 Asset Management Plan completed in 2014 and will be updated during CY2017. Enterprise Asset Management (EAM) System for physical infrastructure assets being rolled out at this time. State of Good Repair (SGR) Database upgrade completed. Professional Services to be used to establish/develop physical infrastructure asset condition assessment standards in alignment with FTA's TAM Ruling

Program performance:

Tracker target

Not established -
platform
accessibility

PfP tool forecast

Need to update
model

FY2017-2021 size: \$98.6 million over five years

FY2018-2022 size request: \$189.5 million over five years

Justification for FY2018-2022 program size:

Increase in program due to additional spending in FY18-FY22 on elevator program, Downtown Crossing Station and Oak Grove station.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FTA	\$59.6	\$56.5	\$31.2	\$7.0	\$1.2	\$155.5
MBTA Bond	\$11.0	\$9.3	\$5.9	\$2.8	\$1.7	\$30.5
MBTA Pay-Go	\$2.9	\$0.6	\$0	\$0	\$0	\$3.5
Total	\$73.5	\$66.4	\$37.1	\$9.8	\$2.8	\$189.5

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / MBTA / Federal programs and mandates

Program purpose and need statement:

This program implements federally-mandated safety projects for the commuter rail system, including Positive Train Control (PTC). Projects undertaken with Homeland Security funds are also included here.

Status of asset management system:

MBTA Asset Management Plan completed in 2014 and will be updated during CY2017. Enterprise Asset Management (EAM) System for physical infrastructure assets being rolled out at this time. State of Good Repair (SGR) Database upgrade completed. Professional Services to be used to establish/develop physical infrastructure asset condition assessment standards in alignment with FTA's TAM Ruling.

Program performance:

Tracker target

**Not established -
platform
accessibility**

PfP tool forecast

**87% of stations
ADA compliant by
2022**

FY2017-2021 size: \$456.1 million over five years

FY2018-2022 size request: \$565.8 million over five years

Justification for FY2018-2022 program size:

- This CIP category primarily reflects spending on the PTC (positive train control) program and funding for Green Line protection program mandated by NTB.
- \$47M of work completed in 2017 on PTC will be paid in FY18, first year of project financed by systems integrator.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FTA	\$39.3	\$50.1	\$39.7	\$37.5	\$18.2	\$184.7
MBTA Bond	\$15.0	\$7.3	\$14.8	\$32.0	\$7.0	\$76.0
Other	\$132.8	\$96.6	\$75.6	\$0	\$0	\$305.0
Total	\$187.1	\$153.9	\$130.0	\$69.5	\$25.2	\$565.8

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / MBTA / System improvements

Program purpose and need statement:

This program includes improvement projects such as AFC 2.0, Green Line Train Protection, and wayfinding. It also includes Red and Orange Line investments in track, infrastructure, and car houses. This program is necessary to increase capacity, modernize the existing system, and enhance customers' experience. It is also needed to assure that vehicles scheduled for delivery in FY2019 will operate as intended and provide maximum benefits.

Status of asset management system:

MBTA Asset Management Plan completed in 2014 and will be updated during CY2017. Enterprise Asset Management (EAM) System for physical infrastructure assets being rolled out at this time. State of Good Repair (SGR) Database upgrade completed. Professional Services to be used to establish/develop physical infrastructure asset condition assessment standards in alignment with FTA's TAM Ruling.

Program performance:

Tracker target

Not established -
platform
accessibility

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$562.6 million over five years

FY2018-2022 size request: \$619.9 million over five years

Justification for FY2018-2022 program size:

- This CIP program category consists primarily of the red line / orange line infrastructure program (\$440M), full yard upgrade of Cabot Yard and Wellington Yard, and AFC 2.0.
- Previously, these yards were only funded for upgrades in critical zones under the red line/orange line infrastructure program.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FTA	\$5.3	\$22.3	\$13.3	\$15.4	\$15.4	\$71.7
MBTA Bond	\$3.2	\$25.4	\$14.4	\$17.2	\$17.2	\$77.4
MBTA Pay-Go	\$8.4	\$13.5	\$1.5	\$0	\$0	\$23.4
State	\$59.8	\$150.3	\$100.0	\$80.5	\$56.7	\$447.4
Total	\$76.7	\$211.5	\$129.2	\$113.1	\$89.3	\$619.9

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



Modernization / Rail / Bridge modernization

Program purpose and need statement:

This program repairs or replaces bridges to upgrade capacity to current industry standards for the line or maintain their utility. Prioritization 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 (ex: 286,000 lbs).

Status of asset management system:

Exploring consultant services to assist with asset management

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: Program did not exist in same format

FY2018-2022 size request: \$0 over five years

Justification for FY2018-2022 program size:

May need to establish program size to address 286,000 lb. modernization initiative from the new Statewide Rail Plan

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$0	\$0	\$0	\$0	\$0

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:

Exploring consultant services to assist with asset management

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: Program did not exist in same format

FY2018-2022 size request: \$18.0 million over five years

Justification for FY2018-2022 program size:

- FY17-FY21 carried \$18 million for projects in facility asset class
- FY 18-FY22 program sized to continue effort to modernize rail facilities to address regulatory and contractual requirements

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$11.8	\$6.2	\$0	\$0	\$0	\$18.0
Total	\$11.8	\$6.2	\$0	\$0	\$0	\$18.0

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 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:

Exploring consultant services to assist with asset management

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$15.0 million over five years

FY2018-2022 size request: \$15.0 million over five years

Justification for FY2018-2022 program size:

FY18-FY22 maintains existing program size

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
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:

Exploring consultant services to assist with asset management

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: Program did not exist in same format

FY2018-2022 size request: \$21.0 million over five years

Justification for FY2018-2022 program size:

- FY17-FY21 plan included a portion of the program spending (\$9 million)
- FY18-FY22 plan includes the total program amount

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$0	\$0	\$4.5	\$4.5	\$12.0	\$21.0
Total	\$0	\$0	\$4.5	\$4.5	\$12.0	\$21.0

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:

Currently installing the asset management component of enterprise service / self service tools SERVICEnow. Phase I will capture assets currently in use and will be complete by the end of 2017. Phase II will identify what is not in the system and add geo location to the assets. Phase III will link the asset management modules to our financial reporting systems.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$5.0 million over five years

FY2018-2022 size request: \$4.9 million over five years

Justification for FY2018-2022 program size:

Program size assumes level funding for FY2018-FY2022

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$1.7	\$1.0	\$1.0	\$1.0	\$0.2	\$4.9
Total	\$1.7	\$1.0	\$1.0	\$1.0	\$0.2	\$4.9

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:

Currently installing the asset management component of enterprise service / self service tools SERVICEnow. Phase I will capture assets currently in use and will be complete by the end of 2017. Phase II will identify what is not in the system and add geo location to the assets. Phase III will link the asset management modules to our financial reporting systems.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$105.0 million over five years

FY2018-2022 size request: \$125.0 million over five years

Justification for FY2018-2022 program size:

FY2017-21 size was increased to \$110M because Real ID and CDLIS budgets were added to initial \$105M. After selection of program integrator (FAST Enterprises) budget was revised to \$125M based on FAST timelines and requirements.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$45.1	\$28.1	\$23.4	\$8.5	\$0	\$105.1
Total	\$45.1	\$28.1	\$23.4	\$8.5	\$0	\$105.1

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Modernization / Registry / Kiosks

Program purpose and need statement:

This program installs kiosks at RMV branches. This program is necessary to improve customer experience.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$5.0 million over five years

FY2018-2022 size request: \$2.5 million over five years

Justification for FY2018-2022 program size:

- Program size assumes level funding for FY2018-FY2022
- Initiative will be launched during FY2018-FY2022

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$2.5
Total	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$2.5

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

FY2017-2021 size: \$24.1 million over five years

FY2018-2022 size request: \$20.8 million over five years

Justification for FY2018-2022 program size:

Updated project lists for all five years were submitted by the RTAs which may account for changes in the overall amount of funding forecasted.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$5.0	\$3.2	\$1.6	\$9.4	\$1.6	\$20.8
Total	\$5.0	\$3.2	\$1.6	\$9.4	\$1.6	\$20.8

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 Regional Transit Authority fleet growth. This program is necessary to meet service needs or expansion.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$7.2 million over five years

FY2018-2022 size request: \$6.2 million over five years

Justification for FY2018-2022 program size:

Updated project lists for all five years were submitted by the RTAs which may account for changes in the overall amount of funding forecasted.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$1.1	\$0.4	\$1.5	\$0	\$3.1	\$6.2
Total	\$1.1	\$0.4	\$1.5	\$0	\$3.1	\$6.2

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 implement the new FTA Transit Asset Management rule. Target completion is 2018.

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP tool

FY2017-2021 size: \$65.2 million over five years

FY2018-2022 size request: \$81.3 million over five years

Justification for FY2018-2022 program size:

These funds are for PVRTA's Maintenance facility and other similar facilities.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$42.9	\$16.1	\$22.0	\$0.2	\$0.1	\$81.3
Total	\$42.9	\$16.1	\$22.0	\$0.2	\$0.1	\$81.3

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Expansion programs



Expansion / Highway / Bicycle and Pedestrian

Program purpose and need statement:

This program constructs multi-use paths and other trails that are independent from a roadway. In addition, this program will meet future needs identified through the ongoing statewide bicycle and pedestrian planning effort.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Ped plan network completed / Bike plan network completed

PfP tool forecast

1,041 miles of off-road bicycle and pedestrian facilities

FY2017-2021 size: \$220.5 million over five years

FY2018-2022 size request: \$217.8 million over five years

Justification for FY2018-2022 program size:

- New FY2018 program created by combining Bicycle and Multi-Use Path programs.
- Program size is based on \$157.8 million in forecasted federal aid pedestrian and multi-use path projects and
- \$60 million in bond cap funding for bike / pedestrian plan implementation

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$3.7	\$6.1	\$11.4	\$8.3	\$6.6	\$36.1
FHWA	\$14.6	\$44.9	\$23.7	\$32.8	\$26.2	\$142.0
Total	\$18.3	\$51.0	\$35.1	\$41.1	\$32.8	\$178.2

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; Average commute time is metric under development

PfP tool forecast

Not forecasted in PfP

FY2017-2021 size: \$335.4 million over five years

FY2018-2022 size request: \$273.9 million over five years

Justification for FY2018-2022 program size:

- Program size represents spend down on legacy projects that have ongoing commitments through FY2022.
- Program also includes spending on South Coast Rail and Silver Line to Chelsea (MBTA projects) completed by Highway. Those were included in the FY2017 CIP program of Expansion.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$18.4	\$15.5	\$8.2	\$10.2	\$5.8	\$58.1
FHWA	\$62.9	\$31.6	\$34.8	\$39.1	\$22.3	\$190.6
REP	\$9.7	-	-	-	-	\$9.7
Total	\$91.0	\$47.2	\$43.0	\$49.3	\$28.1	\$258.5

Staff recommends CPC accept program size as requested

Totals may not add due to rounding

Expansion / MBTA / Expansion projects

Program purpose and need statement:

This program makes targeted expansions in order to improve access to transit and statewide rail. Examples of projects could include Green Line Extension, and Silver Line to Chelsea.

Status of asset management system:

Not applicable

Program performance:

Tracker target

Not established
in Tracker

PfP tool forecast

Not forecasted in
PfP

FY2017-2021 size: \$1,508.8 million over five years

FY2018-2022 size request: \$1,490.1 million over five years

Justification for FY2018-2022 program size:

- Program size represents spend down on legacy projects that have ongoing commitments through FY2022.
- Program also includes spending on South Coast Rail and Silver Line to Chelsea (MBTA projects) completed by Highway. Those were included in the FY2017 CIP program of Expansion.

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
FTA	\$73.4	\$174.9	\$265.4	\$281.9	\$80.7	\$876.4
MBTA Bond	\$4.1	\$24.1	\$1.8	\$0	\$0	\$30.0
State	\$64.4	\$172.3	\$240.7	\$29.3	\$2.1	\$508.8
Local	\$15.0	\$15.0	\$15.0	\$15.0	\$15.0	\$75.0
Total	\$156.9	\$386.3	\$522.9	\$326.2	\$97.9	\$1,490.1

Staff recommends CPC accept program size as requested

Totals may not add due to rounding



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

FY2017-2021 size: Program did not exist in same format

FY2018-2022 size request: \$111.7 million over five years

Justification for FY2018-2022 program size:

FY18-FY22 program reflects transfer of South Coast Rail current project management effort to Rail Division from MBTA

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
REP	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0	\$100.0
Bond	\$11.7	\$0	\$0	\$0	\$	\$11.7
Total	\$31.7	\$20.0	\$20.0	\$20.0	\$20.0	\$111.7

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

FY2017-2021 size: Program did not exist in same format

FY2018-2022 size request: \$111.7 million over five years

Justification for FY2018-2022 program size:

FY18-FY22 maintains existing program size

Estimated spending over five-years:

Funding source	2018 millions	2019	2020	2021	2022	2018-2022
Bond	\$2.0	\$12.0	\$17.0	\$0	\$1.0	\$32.0
Total	\$2.0	\$12.	\$17.0	\$0	\$1.0	\$32.0

Staff recommends CPC accept program size as requested

Totals may not add due to rounding