



**MassDOT**  
FY21 Revised Operating Budget  
January 11, 2021

# Overview of Proposed Changes to FY21 Operating Budget

After operating under the Board-approved FY21 operating budget for the first half of the fiscal year (July 1 – December 31), staff is proposing to revise the operating budget for the second half of the fiscal year

The proposed budget revision reflects a substantial number of changes on both the revenue and expense side of the budget, more than is typical, including the following:

- The FY21 budget for the Commonwealth was not signed into law until December 21. The state budget or General Appropriation Act (GAA) includes a different transfer from the Commonwealth Transportation Fund (CTF) than anticipated in the Board-approved budget from June 2020
- A re-forecasting of anticipated toll revenue based on both actual toll collections from July through November and a revised toll revenue forecast from Stantec for the remainder of FY21
- The availability of funding for MassDOT under the federal Coronavirus Response and Relief Supplemental Appropriations Act
- Savings to date and continued anticipated reductions in expenses, for both the toll and non-toll portions of the budget and for both payroll and non-payroll expenses
- The gap between revenue and expenses in the non-toll portion of MassDOT's budget will require a recommended larger draw from non-toll revenues than originally planned



# Overall Approach to FY21 budget

- Goal in FY21 is still to maintain spending at sustainable levels while continuing to implement key priorities, which include:
  - Highway: Maintaining momentum on project delivery to achieve the spending targets in the Capital Investment Plan
  - Registry of Motor Vehicles: Simultaneously making needed investments in safety-related positions while continuing to evolve the service-delivery model for customers
  - Enterprise services: Transitioning to a hybrid (in-office and telework) model for those employees that have been 100% remote while continuing to transform how we work (e.g. more digital, less paper and travel)
- On the expense side, MassDOT implemented cost containment measures at the beginning of our fiscal year to limit discretionary spending, more tightly approve any hires (new FTEs or backfills), manage vendors, and achieve other administrative savings
  - Because interim budgets have been in place for nearly six months, MassDOT never spent at higher levels contemplated before pandemic began
- On the revenue side, the reduction in the Commonwealth Transportation Fund transfer (compared to the one assumed in the Board-approved budget) and continued weakness in toll revenues need to be reflected in a revised budget
- The FY21 operating budget will rely on one-time revenue (reserve draw from non-toll reserves)



# Commonwealth Transportation Fund Transfers

FY21 Budget Revised

\$ in millions	FY17 GAA	FY18 GAA	FY19 GAA	FY 20 GAA	FY21 GAA /FY21 Budget Revised	FY21 Board Approved	vs FY21 Board Approved	vs FY20 GAA
Operations:								
Non Snow & Ice	267.0	241.6	285.5	290.8	291.0	325.2	(34.1)	0.2
Snow & Ice	62.1	61.7	73.0	55.0	90.0	95.0	(5.0)	35.0
Total Operations	329.1	303.3	358.5	345.8	381.0	420.2	(39.1)	35.2
RTAs	82.0	80.4	88.0	90.5	94.0	90.5	3.5	3.5
MRB	9.7	9.4	9.8	10.2	11.0	11.0	0.0	0.8
Total MassDOT	420.8	393.1	456.3	446.5	486.0	521.6	(35.6)	39.5

- MassDOT operations (excluding snow & ice) essentially level-funded at FY20 level of \$290.8M (with an additional \$200,000 for earmarks)
- Snow & Ice funded at a higher level than past years and only \$5M less than requested in House 2 (reducing reliance on supplemental funding)
- Funding for Regional Transit Authorities increased \$3.5M
- Merit Rating Board increase of \$0.8M over FY20, to fund safety positions recommended by Grant Thornton



# New Federal Funding

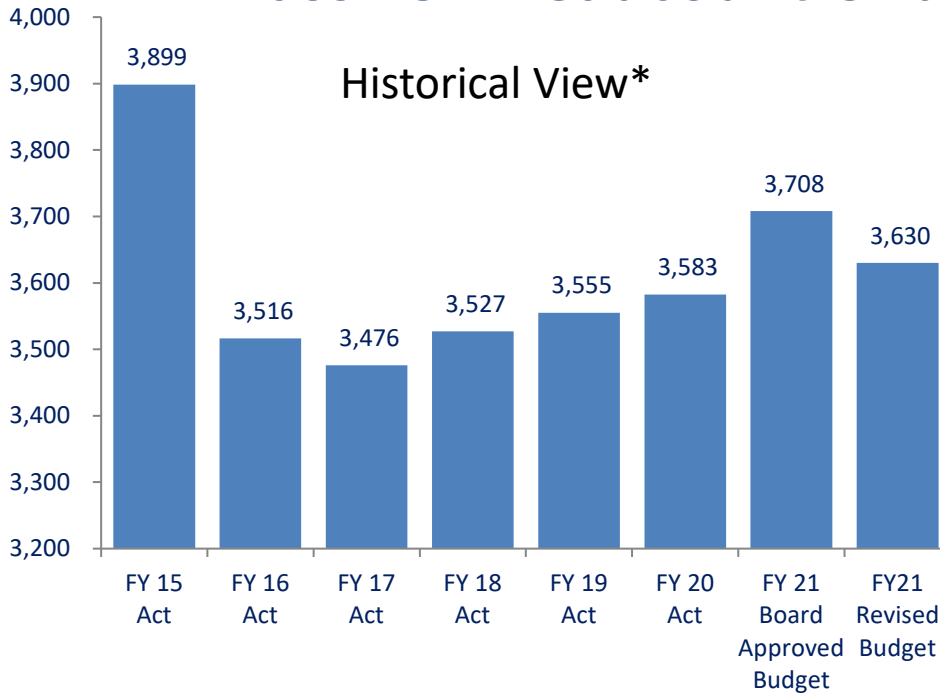
On December 27, President Trump and Congress enacted the “Coronavirus Response and Relief Supplemental Appropriations Act, 2021” which includes a total of \$45 billion for various forms of transportation (highways, transit, Amtrak, airlines and airports and over-the-road bus companies)

## **New law appropriates \$10B in additional state highway funding**

- Federal Highway Administration has not yet issued any guidance about the amounts to be distributed or allowable uses
- Based on preliminary interpretation of the law:
  - MA is expected to receive approximately \$150M
  - Funds can be used for capital or operating and for toll or non-toll
  - Funds are available until September 30, 2024
- Because this funding can be used to cover either operating or capital needs and to replace toll revenues if those revenues do not rebound in FY22, staff recommends that none of this funding be used for the FY21 operating budget and to further evaluate how the funding will be used for FY22
- Additional updates will be provided to the F&A Committee and the Board



# MassDOT Headcount Under Revised FY21 Budget



## Closer View

Division	FY 20 Actual	FY21 Revised Budget	FTEs as of 12/29/20**
Aeronautics / Planning & Enterprises / Rail & Transit	471	474	474
Highway	2,311	2,367	2,331
RMV (Operation)	753	743	730
Merit Rating Board	48	52	47
<b>TOTAL</b>	<b>3,583</b>	<b>3,636</b>	<b>3,582</b>

- The revised FY21 budget caps total full-time equivalent positions at 3,636
- Since the beginning of FY21, MassDOT has been using a new position justification process
  - Separate hiring targets have been established for Highway, RMV and rest of MassDOT
- RMV headcount assumes continuation of more than 50 safety-related positions filled since the Grant Thornton report; customer service headcount will be achieved via attrition without affecting service given growing number of online and drop-off options
- Additional headcount for Highway will be focused on hiring and training two “classes” of entry-level engineers annually (in January and summer) to address project delivery needs

\*FY15-FY20 actual reflects end of June pay period ending and excludes toll collectors

\*\*Reflects actuals and known onboarding/departures



# Key Changes in Revenue and Expenses

**MassDOT maintains separate Toll and Non-Toll budgets and each must balance**

## **Non-toll:**

- Key challenge is revising budget to reflect \$35M less in transfers from the Commonwealth Transportation Fund than assumed in the Board-approved budget
- Some of the lower revenue is offset by \$7.3 million reduction in operations expenditures
- Staff recommendation is to increase draw from non-toll operating reserve

## **Toll:**

- Toll revenue collected July through November exceeded targets established for FY21 Board-approved budget, but decline in traffic and toll collections beginning in October necessitated re-forecasting of toll revenue for remainder of FY21
  - Net result is assumption of \$44M more in toll revenue than originally forecast for FY21, combining collections above forecast for the first five months of the fiscal year but a new forecast below the original forecast for the remainder of the fiscal year
- Revised Toll budget needs \$117M in additional draw down of reserves for capital due to projected Toll capital spending higher than presented to the Board in June



# Non-Toll Operating

# Overview of Revised Non-Toll Budget

## Revenue:

- Non-Toll operating revenue is \$38.9M less in revised budget than in Board-approved budget, primarily due to \$35.7M less in transfers from the Commonwealth Transportation Fund (CTF)

## Expense:

- \$7M less in operations expenditures due to
  - Maintaining total FTEs and salaries at a flat level
  - Funding the Vermonter project from the capital budget
  - Various administrative savings
- Snow and ice budget reduced from \$95M in Board-approved budget to \$90M to reflect actual CTF transfer (still reflects substantial reduction in reliance on supplemental budgets compared to budget amounts in FY20 and prior budgets)

## Balancing the Non-Toll Budget:

- Staff recommends a \$13.9M increase in withdrawal from the operating reserve



# Non-Toll Operating Revenue

FY21 Budget Revised

\$ in millions	General	MRB	MVITF	Federal Grants	Total FY21 Budget Revised	FY 21 Budget Board		vs FY21 Budget Board	
						Approved	FY20 Budget	Approved	vs FY20 Budget
REVENUE:									
Operating Revenue	27.6	0.0	0.0	0.0	27.6	29.6	28.8	(2.0)	(1.1)
Commonwealth Transfers	475.0	11.0			486.0	521.7	446.5	(35.7)	39.5
Federal Grants				31.3	31.3	31.7	19.6	(0.4)	11.7
Motor Vehicle Inspection Trust Fund			64.8		64.8	64.8	57.3	0.0	7.5
Investment Income	0.5		0.3		0.8	1.6	1.2	(0.8)	(0.4)
Total Revenue	503.2	11.0	65.1	31.3	610.5	649.4	553.3	(38.9)	57.2

- (\$2.0M) Operating Revenue due to elimination of access permit fee increase
- (\$35.7M) Commonwealth Transfers reduction as described on previous slide 4
- (\$0.8M) decrease due to significant drop in Massachusetts Municipal Depository Trust rate. This interest is earned through daily cash available balance.



# Non-Toll Operating Expense

FY21 Budget Revised

\$ in millions	General	MRB	MVITF	Federal Grants	Total FY21 Budget Revised	FY 21 Budget Board		vs FY21 Budget Board	
						Approved	FY20 Budget	Approved	vs FY20 Budget
EXPENDITURES:									
Employee Compensation and Benefits	277.0	5.1	5.1	1.7	288.9	297.5	293.9	(8.6)	(5.0)
Office and Administrative Expenses	30.3	0.5	0.0	0.0	30.8	31.1	29.3	(0.4)	1.5
Professional Services	27.3	0.0	6.8	0.7	34.9	39.1	36.6	(4.2)	(1.8)
Construction and Maintenance	94.9	0.0			94.9	100.1	56.2	(5.2)	38.8
IT Services and Equipment	26.0	5.3	0.4	0.6	32.3	32.5	32.7	(0.2)	(0.4)
Materials, Supplies, and Equipment	5.9	0.1			6.0	5.9	11.3	0.0	(5.3)
Grants, Subsidies, and ISA	100.7		2.5	8.7	112.0	100.8	111.1	11.2	0.9
Total Expenditures	562.2	11.0	14.8	11.8	599.8	607.0	571.1	(7.3)	28.7

- (\$8.6M) less in Employee Compensation than previously proposed due to FTE level remaining flat
- (\$4.2M) Professional Services decrease due to net department saving and shifting the Vermonter back to capital
- (\$5.2M) decrease in snow & ice funding to \$90M from \$95M
- \$11.2M Grants, Subsidies, and ISA increase due to:
  - \$4.4M Federal Grant balance forward from FY20
  - \$3.7M RTAs discretionary grants balance rolled from FY20 and \$3.5M increased funding
  - (\$0.4M) net TNC grant saving and funding Earmark



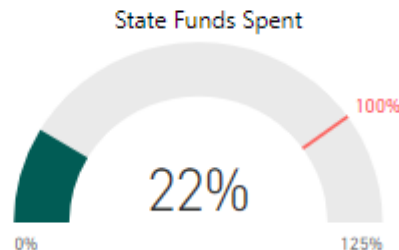
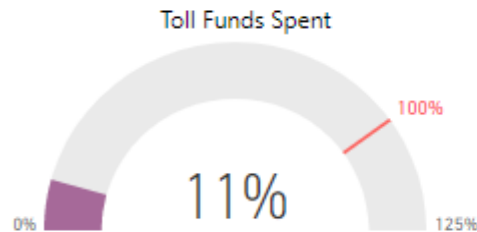
# Snow & Ice YTD as of 12/30/2020

## Snow & Ice Budget and Expenditure Analysis

Total Annual Budget  
**\$97,742,197**

Total YTD Expenditures  
**20,246,313**

Budget Remaining  
**\$77,495,884**



Expenditures from SIMS

**\$14,544,829**  
Equipment Cost

### Budget & Expenditures Totals

Category	Budget	Actual YTD Expenditures	In Process (SIMS)	Budget Remaining
<b>1-Hired Equipment</b>	<b>\$53,682,500</b>	<b>\$6,598,937</b>	<b>\$7,945,892</b>	<b>\$39,137,671</b>
State Funded	\$53,682,500	\$6,598,937	\$7,945,892	\$39,137,671
<b>2-Snow &amp; Ice Control Materials</b>	<b>\$32,800,000</b>	<b>\$3,037,148</b>		<b>\$29,762,852</b>
State Funded	\$28,000,000	\$2,702,996		\$25,297,004
Toll Funded	\$4,800,000	\$334,153		\$4,465,847
<b>3-Equipment, Repairs &amp; Accessories</b>	<b>\$1,237,500</b>	<b>\$715,970</b>		<b>\$521,530</b>
State Funded	\$1,187,500	\$715,970		\$471,530
Toll Funded	\$50,000	\$0		\$50,000
<b>4-Overtime Salary Costs</b>	<b>\$9,892,197</b>	<b>\$1,948,367</b>		<b>\$7,943,830</b>
State Funded	\$6,996,465	\$1,436,712		\$5,559,753
Toll Funded	\$2,895,733	\$511,655		\$2,384,078
<b>5-Operational Services</b>	<b>\$130,000</b>	<b>\$0</b>		<b>\$130,000</b>
State Funded	\$130,000	\$0		\$130,000
<b>State Funds</b>	<b>\$89,996,465</b>	<b>\$11,454,614</b>	<b>\$7,945,892</b>	<b>\$70,595,959</b>
<b>Toll Funds</b>	<b>\$7,745,733</b>	<b>\$845,808</b>		<b>\$6,899,925</b>
<b>Grand Total</b>	<b>\$97,742,197</b>	<b>\$12,300,421</b>	<b>\$7,945,892</b>	<b>\$77,495,884</b>

# Non-Toll Operating Summary

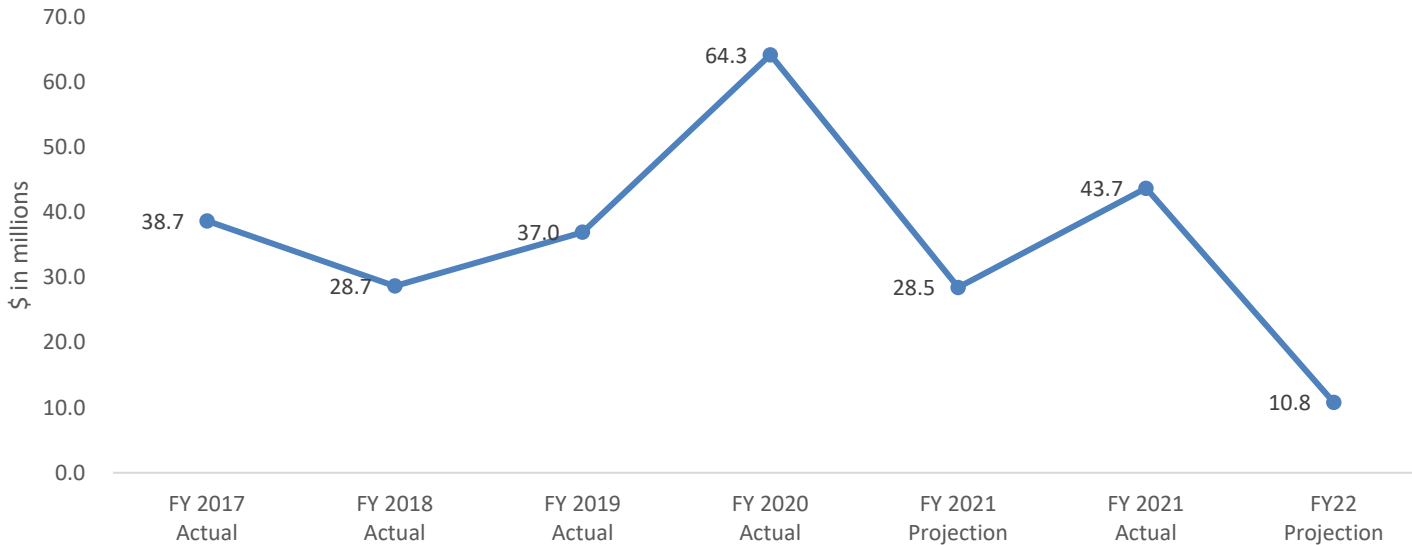
FY21 Budget Revised

\$ in millions	General	MRB	MVITF	Federal Grants	Total FY21 Budget Revised	FY 21 Budget Board		vs FY21 Budget Board	
					Approved	FY20 Budget	Approved	vs FY20 Budget	
REVENUE:									
Operating Revenue	27.6	0.0	0.0	0.0	27.6	29.6	28.8	(2.0)	(1.1)
Commonwealth Transfers	475.0	11.0			486.0	521.7	446.5	(35.7)	39.5
Federal Grants				31.3	31.3	31.7	19.6	(0.4)	11.7
Motor Vehicle Inspection Trust Fund			64.8		64.8	64.8	57.3	0.0	7.5
Investment Income	0.5		0.3		0.8	1.6	1.2	(0.8)	(0.4)
Total Revenue	503.2	11.0	65.1	31.3	610.5	649.4	553.3	(38.9)	57.2
EXPENDITURES:									
Employee Compensation and Benefits	277.0	5.1	5.1	1.7	288.9	297.5	293.9	(8.6)	(5.0)
Office and Administrative Expenses	30.3	0.5	0.0	0.0	30.8	31.1	29.3	(0.4)	1.5
Professional Services	27.3	0.0	6.8	0.7	34.9	39.1	36.6	(4.2)	(1.8)
Construction and Maintenance	94.9	0.0			94.9	100.1	56.2	(5.2)	38.8
IT Services and Equipment	26.0	5.3	0.4	0.6	32.3	32.5	32.7	(0.2)	(0.4)
Materials, Supplies, and Equipment	5.9	0.1			6.0	5.9	11.3	0.0	(5.3)
Grants, Subsidies, and ISA	100.7		2.5	8.7	112.0	100.8	111.1	11.2	0.9
Total Expenditures	562.2	11.0	14.8	11.8	599.8	607.0	571.1	(7.3)	28.7
Excess (deficit) Revenue over Expenditures	(59.0)	0.0	50.2	19.4	10.7	42.4	(17.8)	(31.7)	28.5
Other Financing Sources/Uses:									
Interfund Transfer In / (Out)	50.2		(50.2)		0.0	0.0		0.0	0.0
Reserve Draw DOT	32.9				32.9	19.0	48.8	13.9	(15.9)
Reserve Draw RTA	3.7				3.7		4.0	3.7	(0.3)
Reserve Draw ANFCOVID	8.0				8.0		0.0	8.0	8.0
Transfer out to Capital	(35.8)			(19.4)	(55.3)	(61.3)	(35.0)	6.0	(20.3)
Total Other Financing Sources	59.0	0.0	(50.2)	(19.4)	(10.7)	(42.3)	17.8	31.6	(28.5)
Net Revenue (Expense)	0.0	0.0	0.0	(0.0)	0.0	0.0	(0.0)	(0.0)	0.0

Revised budget, as proposed, would increase draw from non-toll operating reserves by \$13.9M for a total of \$32.9M, with the available balance at the beginning of FY22 projected to be \$10.8M



## Non-Toll Operating General Reserve



- Non-toll Operating general reserve balance came in at \$43.7M available for the beginning of FY21, higher than the projected balance of \$28.5M that was presented to the Board in June due to increased federal reimbursement for capital payroll, postponed payment of Bargaining Unit B retro to FY21 and other miscellaneous items finishing the year under budget
- If the Board approves a FY21 reserve draw of \$32.9M, the available balance at the beginning of FY22 is projected to be \$10.8M

Note: FY15 – FY22 Actual reflects beginning balance  
Non-Toll operating reserve not including MRB/RTAs



# Toll Operating

# Overview of Revised Toll Budget

## Revenue:

- Toll revenue collected July through November exceeded targets established for FY21 Board-approved budget, but decline in traffic and toll collections beginning in October necessitated re-forecasting of toll revenue for remainder of FY21
  - Net result is assumption of \$44M more in toll revenue than originally forecast, combining collections above forecast for the first five months of the fiscal year and new forecast below the original one for the remainder of the fiscal year
- Revenues do not include \$55M from potential Fenway Center air rights real estate transaction

## Expense:

- \$8.3M less in operations expenditures

## Bottom Line for the Toll Budget:

- The revised budget reflects an increase of \$45.8M in the excess of revenue over expenses
- Additional \$117M reserve draw is needed due to capital spending is higher than presented to the Board in June



# Toll Operating Revenue

FY21 Budget Revised

\$ in millions	MHS	WT	Tobin	FY21 Budget Revised	FY 21		vs FY21	
					Budget Board Approved	FY20 Budget	Budget Board Approved	vs FY20 Budget
REVENUE:								
Toll Revenue								
Operating Revenue*	32.0	37.0	0.1	69.1	64.0	46.3	5.1	22.7
Toll Collections	129.5	126.3	31.0	286.8	247.8	413.4	38.9	(126.7)
Total Toll Revenue	161.5	163.3	31.1	355.8	311.8	459.8	44.0	(104.0)
Commonwealth Transfers	125.0			125.0	125.0	125.0	0.0	0.0
Investment Income**	4.9	1.0	0.5	6.3	12.8	20.2	(6.5)	(13.9)
Total Revenue	291.3	164.3	31.6	487.1	449.6	605.0	37.5	(117.8)

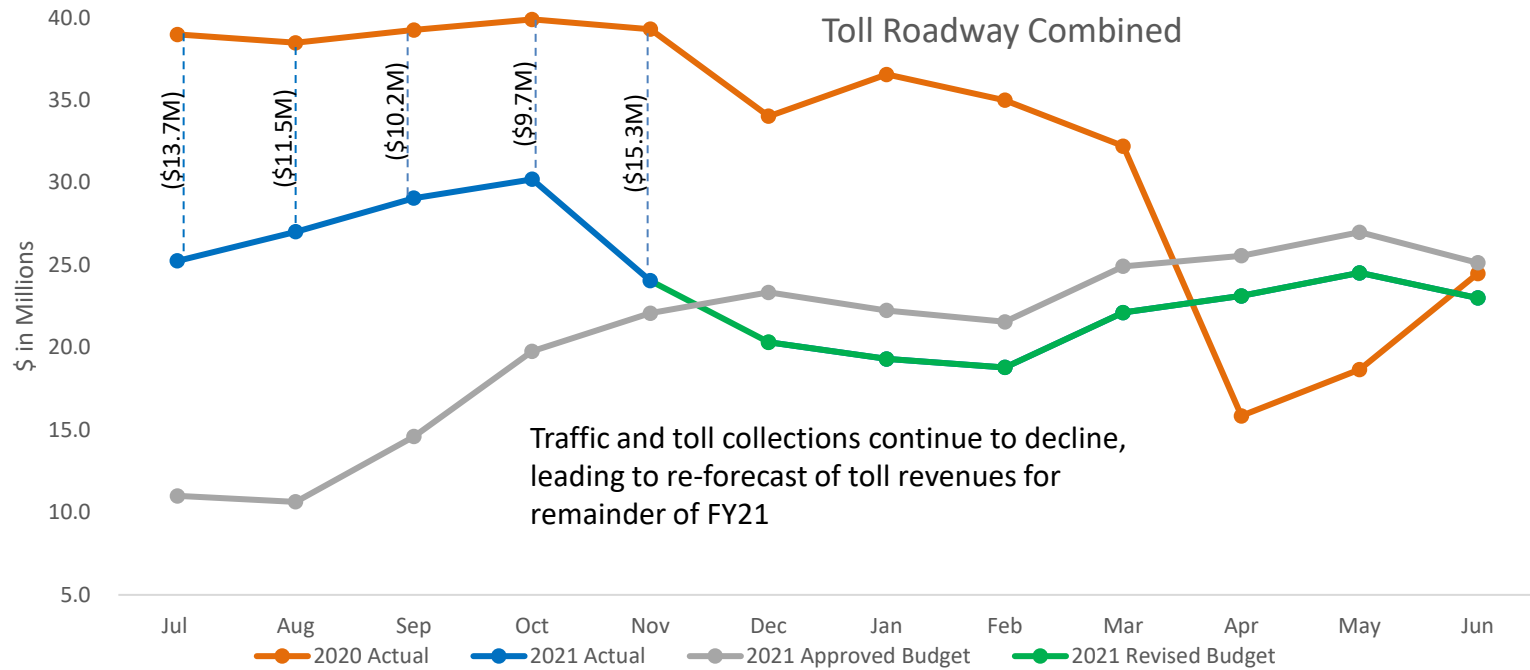
- \$5.1M Departmental increase due to air and ground rights over the Turnpike real estate transaction
- \$38.9M Toll Collections increase to reflect actual Jul-Nov and latest Dec-Jun projection based off “Stantec More Severe” analysis
- (\$6.5M) decrease due to significant drop in Massachusetts Municipal Depository Trust rate. This interest is earned through daily cash available balance.



Note: \*MHS investment income including \$0.3M MTA general fund

\*\*Not including \$55M potential Fenway Center air rights real estate transaction

# Toll Collection Actual/Budget



	FY20 Jul-Nov Actual	FY21 Jul-Nov Actual	FY20 Annual Actual	FY21 Annual Revised Budget	\$ Variance		% Change	
					FY21 Jul-Nov Actual vs FY20 Jul-Nov Actual	FY21 Annual Rev Budget vs FY20 Annual Actual	FY21 Jul-Nov Actual vs FY20 Jul-Nov Actual	FY21 Annual Rev Budget vs FY20 Annual Actual
MHS	103.4	58.1	207.6	129.5	(45.3)	(78.2)	-43.8%	-37.6%
WT	73.3	62.4	146.8	126.3	(10.8)	(20.5)	-14.8%	-14.0%
Tobin	19.3	15.0	38.3	31.0	(4.3)	(7.3)	-22.2%	-19.1%
Total	195.9	135.6	392.8	286.8	(60.4)	(106.0)	-30.8%	-27.0%

# Toll Operating Expense

FY21 Budget Revised

	FY21 Budget Revised				FY 21 Budget Board Approved		FY20 Budget		vs FY21 Budget Board Approved		vs FY20 Budget	
\$ in millions	MHS	WT	Tobin	FY21 Budget Revised	FY 21 Budget Board Approved	FY20 Budget						
<b>EXPENDITURES:</b>												
Employee Compensation and Benefits	48.5	35.0	4.3	87.8	88.9	91.1			(1.1)		(3.3)	
Office and Administrative Expenses	23.7	7.3	2.3	33.4	33.4	38.3			0.0		(4.9)	
Professional Services	33.7	20.9	3.8	58.4	65.6	69.2			(7.2)		(10.8)	
Construction and Maintenance	9.4	6.7	0.5	16.5	16.5	16.2			0.0		0.3	
IT Services and Equipment	5.8	4.5	0.0	10.3	10.3	10.7			(0.0)		(0.4)	
Materials, Supplies, and Equipment	6.6	4.5	0.4	11.5	11.5	12.3			0.0		(0.8)	
Grants, Subsidies, and ISA	1.1	0.2	0.0	1.3	1.3	1.7			0.0		(0.4)	
Debt Service	145.4			145.4	145.4	136.6			0.0		8.8	
<b>Total Expenditures</b>	<b>274.1</b>	<b>79.1</b>	<b>11.3</b>	<b>364.5</b>	<b>372.8</b>	<b>376.1</b>			<b>(8.3)</b>		<b>(11.6)</b>	

- (\$1.1M) less in Employee Compensation than previously proposed due to flat level of FTEs and salaries
- (\$7.2M) Professional Services decrease due to net saving for state police class that was paid out in FY20 and police details funded out of capital construction contracts

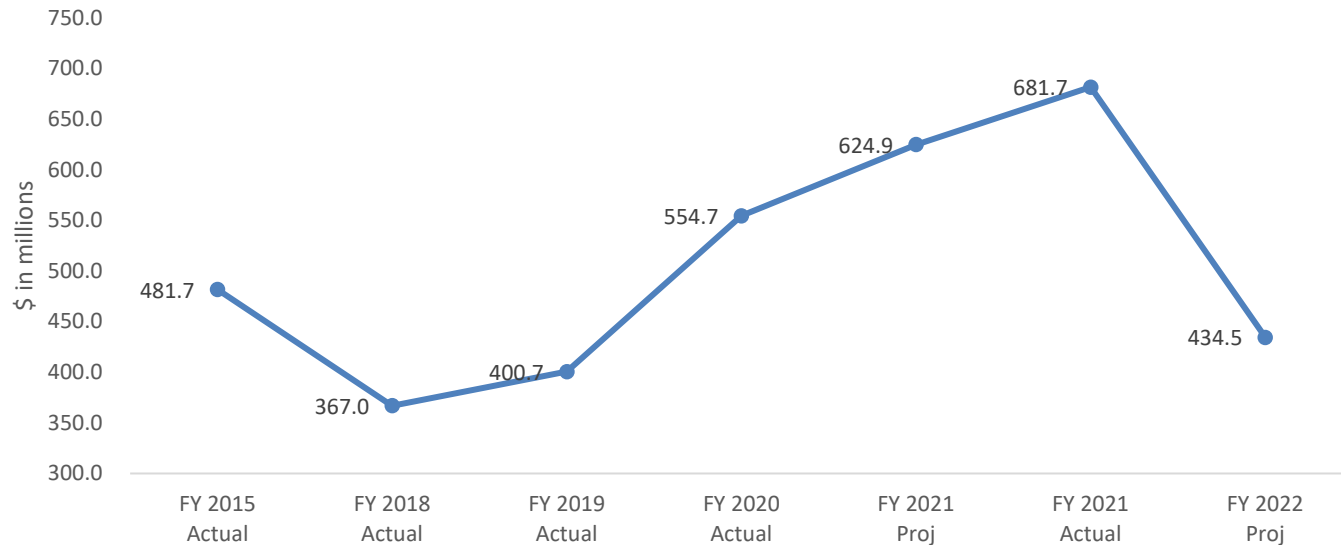


# Toll Operating Summary

					FY21 Budget Revised			
				FY21 Budget Revised	FY 21 Budget Board Approved	FY20 Budget	vs FY21 Budget Board Approved	vs FY20 Budget
\$ in millions	MHS	WT	Tobin					
REVENUE:								
Toll Revenue								
Operating Revenue	32.0	37.0	0.1	69.1	64.0	46.3	5.1	22.7
Toll Collections	129.5	126.3	31.0	286.8	247.8	413.4	38.9	(126.7)
Total Toll Revenue	161.5	163.3	31.1	355.8	311.8	459.8	44.0	(104.0)
Commonwealth Transfers	125.0			125.0	125.0	125.0	0.0	0.0
Investment Income	4.9	1.0	0.5	6.3	12.8	20.2	(6.5)	(13.9)
Total Revenue	291.3	164.3	31.6	487.1	449.6	605.0	37.5	(117.8)
EXPENDITURES:								
Employee Compensation and Benefits	48.5	35.0	4.3	87.8	88.9	91.1	(1.1)	(3.3)
Office and Administrative Expenses	23.7	7.3	2.3	33.4	33.4	38.3	0.0	(4.9)
Professional Services	33.7	20.9	3.8	58.4	65.6	69.2	(7.2)	(10.8)
Construction and Maintenance	9.4	6.7	0.5	16.5	16.5	16.2	0.0	0.3
IT Services and Equipment	5.8	4.5	0.0	10.3	10.3	10.7	(0.0)	(0.4)
Materials, Supplies, and Equipment	6.6	4.5	0.4	11.5	11.5	12.3	0.0	(0.8)
Grants, Subsidies, and ISA	1.1	0.2	0.0	1.3	1.3	1.7	0.0	(0.4)
Debt Service	145.4			145.4	145.4	136.6	0.0	8.8
Total Expenditures	274.1	79.1	11.3	364.5	372.8	376.1	(8.3)	(11.6)
Excess (deficit) Revenue over Expenditures	17.2	85.2	20.3	122.6	76.8	228.9	45.8	(106.2)
Other Financing Sources/Uses:								
Interfund Transfer In / (Out)								
Reserve Draw	90.6	91.3	65.2	247.2	129.9		117.3	247.2
Transfer Out to Capital/Available for Capital	(107.8)	(176.5)	(85.5)	(369.8)	(206.7)	(228.9)	(163.1)	(140.9)
Total Other Financing Sources	(17.2)	(85.2)	(20.3)	(122.6)	(76.8)	(228.9)	(45.8)	106.2
Net Revenue (Expense)/Available for Capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



# Toll Reserve



- Toll Operating reserve balance came in at \$681.7M available for the beginning of FY21, higher than the projected balance of \$624.9M that was presented to the Board in June. The increase is due to FY20 Capital Investment Plan not requiring any reserve draw and other miscellaneous expenses under budget
- FY21 Capital Budget anticipates a reserve draw of \$247.2M. The available balance beginning of FY22 projected to be \$434.5M

Note: FY15 – FY22 balance reflects beginning balance

# Board of Directors Vote

**WHEREAS** the Massachusetts Department of Transportation (“MassDOT”) Board of Directors (“Board”) approved a Fiscal Year 2021 operating budget on June 22, 2020; and

**WHEREAS** MassDOT Staff has operated under such approved budget from July 31, 2020 until today’s date; and

**WHEREAS**, since the Board approved such budget, there have been a substantial number of changes to assumptions underlying the budget that was approved; and

**WHEREAS**, in light of such changes to these assumptions, it is necessary to revise the MassDOT budget for Fiscal Year 2021;

It is hereby

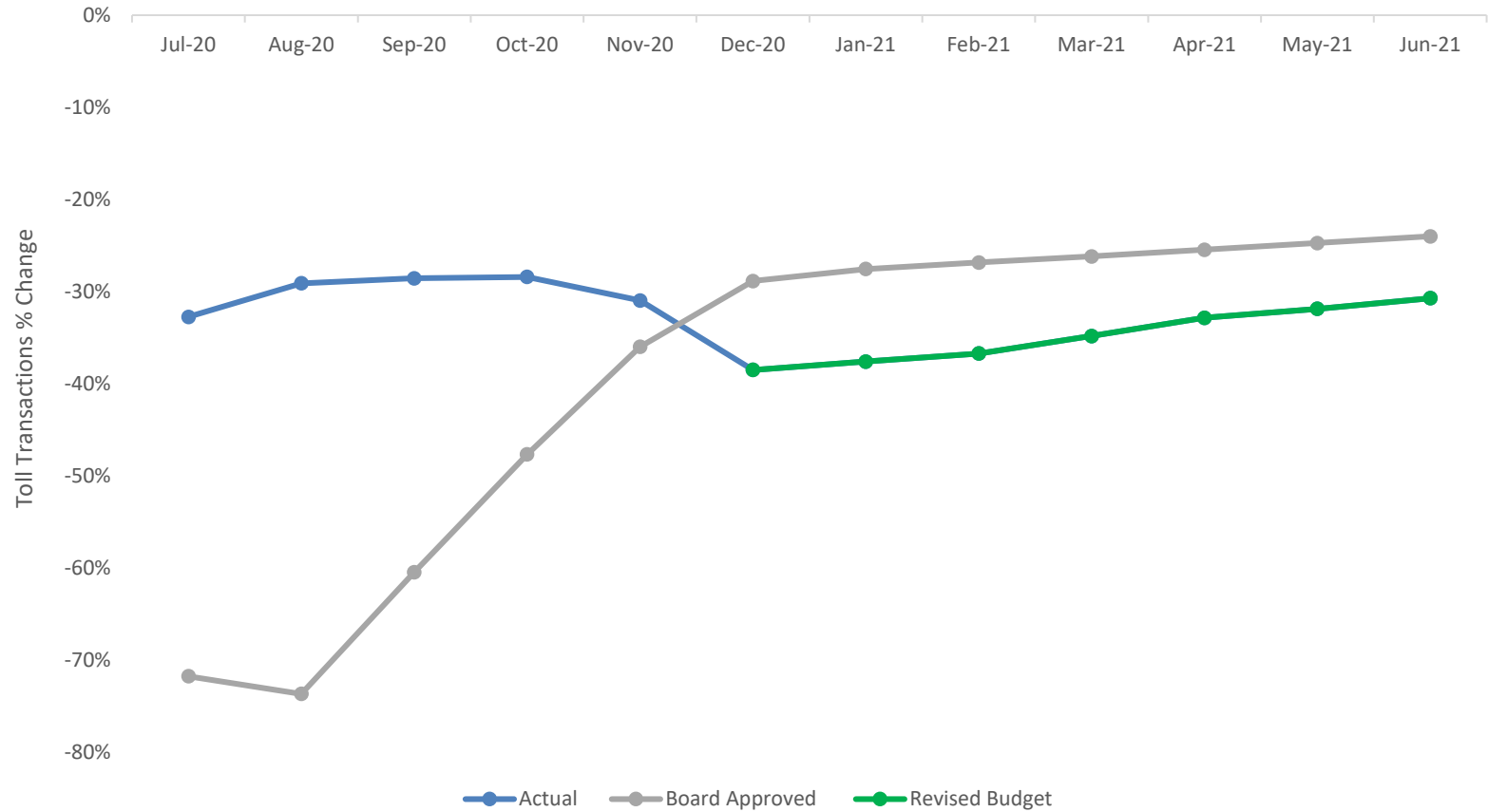
**VOTED:**

That the Board adopts the revised Fiscal Year 2021 Operating Budget for MassDOT, as presented to the Board on January 11, 2021 and as set out in more detail in the document entitled “MassDOT FY21 Revised Operating Budget, January 11, 2021,” attached hereto.



# Appendix

## Toll Transactions % Change compared to Prior Year Actual/Original Forecast



Note: Board approved reflected original "Stantec More Severe" analysis and Revised Budget reflected actual Jul-Nov and latest Dec-Jun projection based off "Stantec More Severe" analysis