



10 Financial Analysis



FINANCIAL ANALYSIS

Introduction

Federal regulations regarding Regional Transportation Plans require that a financial analysis be included that examines the anticipated needs of the Region with reasonably expected federal and state funds. This chapter outlines the development of those funding estimates and determines if the Montachusett RTP is fiscally constrained.

Expected Funding – Highway

To assist in the development of the financial component of the RTP, the Massachusetts Department of Transportation (MassDOT) Office of Transportation Planning (OTP) developed highway funding estimates for the life span of the document, i.e. to the year 2040. Federal and state highway funding estimates were developed in five-year increments. Data was provided for the entire Commonwealth as well as for each particular MPO. Refer to Table 10-1 below.



Table 10-1. Massachusetts Funding Estimates FFY 2020 to 2040

	Base OA in today's dollars w/2.2% increase starting in 2025	August redistribution	Base OA + August Redistribution	GANs repayment	Funding less GANs repayments	Funding w/ non-federal match	Statewide Items	Funding available for MPOs
2020	\$626,330,019	\$50,000,000	\$676,330,019	\$81,570,000	\$594,760,019	\$743,450,024	\$504,945,083	\$238,504,940
2021	\$641,988,270	\$50,000,000	\$691,988,270	\$85,190,000	\$606,798,270	\$758,497,838	\$515,165,433	\$243,332,404
2022	\$658,744,163	\$50,000,000	\$708,744,163	\$89,590,000	\$619,154,163	\$773,942,704	\$525,655,458	\$248,287,245
2023	\$676,662,005	\$50,000,000	\$726,662,005	\$93,985,000	\$632,677,005	\$790,846,256	\$537,136,211	\$253,710,045
2024	\$689,684,333	\$50,000,000	\$739,684,333	\$98,715,000	\$640,969,333	\$801,211,666	\$544,176,311	\$257,035,355
2025	\$704,857,388	\$50,000,000	\$754,857,388	\$103,650,000	\$651,207,388	\$814,009,235	\$552,868,314	\$261,140,921
2026	\$720,364,251	\$50,000,000	\$770,364,251	\$108,835,000	\$661,529,251	\$826,911,564	\$561,631,468	\$265,280,095
2027	\$736,212,264	\$50,000,000	\$786,212,264	\$86,302,372	\$699,909,893	\$874,887,366	\$594,216,235	\$280,671,131
2028	\$752,408,934	\$50,000,000	\$802,408,934	\$86,302,372	\$716,106,563	\$895,133,203	\$607,967,039	\$287,166,164
2029	\$768,961,931	\$50,000,000	\$818,961,931	▲ GANs conclude	\$818,961,931	\$1,023,702,413	\$695,290,179	\$328,412,234
2030	\$785,879,093	\$50,000,000	\$835,879,093		\$835,879,093	\$1,044,848,867	\$709,652,675	\$335,196,192
2031	\$803,168,433	\$50,000,000	\$853,168,433		\$853,168,433	\$1,066,460,542	\$724,331,145	\$342,129,397
2032	\$820,838,139	\$50,000,000	\$870,838,139		\$870,838,139	\$1,088,547,674	\$739,332,542	\$349,215,132
2033	\$838,896,578	\$50,000,000	\$888,896,578		\$888,896,578	\$1,111,120,722	\$754,663,969	\$356,456,753
2034	\$857,352,303	\$50,000,000	\$907,352,303		\$907,352,303	\$1,134,190,378	\$770,332,688	\$363,857,691
2035	\$876,214,053	\$50,000,000	\$926,214,053		\$926,214,053	\$1,157,767,567	\$786,346,118	\$371,421,448
2036	\$895,490,762	\$50,000,000	\$945,490,762		\$945,490,762	\$1,181,863,453	\$802,711,844	\$379,151,609
2037	\$915,191,559	\$50,000,000	\$965,191,559		\$965,191,559	\$1,206,489,449	\$819,437,616	\$387,051,833
2038	\$935,325,773	\$50,000,000	\$985,325,773		\$985,325,773	\$1,231,657,217	\$836,531,355	\$395,125,862
2039	\$955,902,941	\$50,000,000	\$1,005,902,941		\$1,005,902,941	\$1,257,378,676	\$854,001,156	\$403,377,519
2040	\$976,932,805	\$50,000,000	\$1,026,932,805		\$1,026,932,805	\$1,283,666,006	\$871,855,293	\$411,810,713
							\$21,066,582,819	

Assumptions used in compiling this data were as follows:

1. Federal funding and state match for the period of 2020 – 2024 reflect current TIP allocations;
2. Beginning in 2025 a 2.2% growth rate (average of last 4 yrs. Of FAST Act) is applied to the federal funding amounts;
3. August redistribution of Federal Funds is assumed to be \$50million per year through to 2040;



4. GANs (Grant Anticipation Notes) repayment is provided until 2026; the remainder is split between 2027 & 2028
5. Funding available for MPO Target Programming is approximately one-third (1/3) of the total Federal Aid and Non-Federal Aid funding.

The available statewide figures for each program were then allocated to the various MPO's in the Commonwealth based upon the following assumptions:

1. Interstate Maintenance distribution was based on the percent of Interstate lanes miles per MPO region;
2. NHS distribution was based on the percentage of NHS lane miles per MPO region;
3. Statewide Bridge funds were allocated to each MPO based upon the percentage of bridges contained within each jurisdiction;
4. Federal Aid funding targets were distributed to each MPO based upon the existing Massachusetts Association of Regional Planning Agencies (MARPA) (a working group comprised of the 13 MA RPA's) TIP target percentages.

The resulting fund estimates for the Montachusett MPO based upon the above assumptions and allocations are as follows:



Table 10-2. Montachusett MPO Funding Allocations 2020 to 2040

	Funding available for MPOs	Montachusett MPO Targets	Bridges	IM	NHS	Remain SW	NFA Preservation
	MARPA formula ►	4.4596%	8.2093%	1.9892%	6.2274%	4.4596%	4.4596%
2020	\$238,504,940	\$10,636,366	\$16,230,536	\$830,730	\$5,074,220	\$8,205,272	\$4,459,600
2021	\$243,332,404	\$10,851,652	\$14,761,077	\$546,912	\$4,206,302	\$10,717,156	\$4,459,600
2022	\$248,287,245	\$11,072,618	\$16,230,536	\$506,353	\$3,981,181	\$10,638,844	\$4,459,600
2023	\$253,710,045	\$11,314,453	\$17,035,476	\$546,176	\$4,391,467	\$10,330,468	\$4,459,600
2024	\$257,035,355	\$11,462,749	\$16,623,166	\$718,284	\$4,836,874	\$10,163,596	\$4,459,600
	1st five years ►	\$55,337,838	\$80,880,790	\$3,148,455	\$22,490,044	\$50,055,336	\$22,298,000
2025	\$261,140,921	\$11,645,841	\$16,888,684	\$729,757	\$4,914,132	\$10,325,937	\$4,557,711
2026	\$265,280,095	\$11,830,431	\$17,156,375	\$741,324	\$4,992,023	\$10,489,607	\$4,557,711
2027	\$280,671,131	\$12,516,810	\$18,151,755	\$784,334	\$5,281,651	\$11,098,193	\$4,557,711
2028	\$287,166,164	\$12,806,462	\$18,571,806	\$802,485	\$5,403,874	\$11,355,017	\$4,557,711
2029	\$328,412,234	\$14,645,872	\$21,239,300	\$917,747	\$6,180,040	\$12,985,954	\$4,557,711
	2nd five years ►	\$63,445,416	\$92,007,920	\$3,975,647	\$26,771,720	\$56,254,708	\$22,788,556
2030	\$335,196,192	\$14,948,409	\$21,678,037	\$936,704	\$6,307,700	\$13,254,203	\$4,657,981
2031	\$342,129,397	\$15,257,603	\$22,126,426	\$956,079	\$6,438,168	\$13,528,353	\$4,657,981
2032	\$349,215,132	\$15,573,598	\$22,584,679	\$975,880	\$6,571,507	\$13,808,535	\$4,657,981
2033	\$356,456,753	\$15,896,545	\$23,053,014	\$996,117	\$6,707,779	\$14,094,880	\$4,657,981
2034	\$363,857,691	\$16,226,598	\$23,531,653	\$1,016,799	\$6,847,050	\$14,387,525	\$4,657,981
	3rd five years ►	\$77,902,753	\$112,973,809	\$4,881,580	\$32,872,204	\$69,073,496	\$23,289,904
2035	\$371,421,448	\$16,563,911	\$24,020,821	\$1,037,936	\$6,989,384	\$14,686,608	\$4,760,456
2036	\$379,151,609	\$16,908,645	\$24,520,752	\$1,059,538	\$7,134,850	\$14,992,272	\$4,760,456
2037	\$387,051,833	\$17,260,964	\$25,031,680	\$1,081,615	\$7,283,516	\$15,304,659	\$4,760,456
2038	\$395,125,862	\$17,621,033	\$25,553,849	\$1,104,178	\$7,435,452	\$15,623,920	\$4,760,456
2039	\$403,377,519	\$17,989,024	\$26,087,506	\$1,127,237	\$7,590,731	\$15,950,204	\$4,760,456
	4th five years ►	\$86,343,576	\$125,214,609	\$5,410,503	\$36,433,933	\$76,557,662	\$23,802,282
2040	\$411,810,713	\$18,365,111	\$26,632,903	\$1,150,803	\$7,749,427	\$16,283,666	\$4,865,186
	5th five years ►	\$18,365,111	\$26,632,903	\$1,150,803	\$7,749,427	\$16,283,666	\$4,865,186
	Total ►	\$301,394,694	\$437,710,032	\$18,566,989	\$126,317,328	\$268,224,869	\$97,043,929

Funding estimates under the above category labelled “Montachusett MPO Targets” represent the funds that are utilized in the development of the annual Transportation Improvement Program (TIP). By providing these “Target” funding levels, the MPO’s are able to develop fiscally constrained TIP’s for each Federal Fiscal Year (FFY). These funds are also considered discretionary in that the MPO has direct input into the types of projects that are prioritized and funded. In addition to typical road projects, bicycle and pedestrian projects, site specific intersection



projects, congestion relief projects, safety improvement projects, and projects with air quality benefits are funded through these targets.

In order to establish funding levels for the categories under the Montachusett MPO Targets, information from the FFY 2020-2024 TIP and the future planning scenarios were examined.

The first five-year block of the funding targets, i.e. FFY 2020 to 2024, coincide with the endorsed FFY 2020-2024 TIP and therefore are consistent across both planning scenarios. For the time frame covering FFY 2025 to 2040, the financial analysis was based upon the future planning scenarios discussed in the RTP Scenarios chapter.

Regional Highway Needs

Bridge Needs

As illustrated in the Infrastructure chapter of this RTP, the number of Structurally Deficient (SD) bridges in the Montachusett Region has trended upward from 2018. Overall, there has been a significant reduction in SD bridges from 2006, a decrease of some 17 bridges. This is due to the emphasis placed on bridges through the Accelerated Bridge program by MassDOT. In order to prevent any “backsliding” within the region, it is important to maintain an emphasis on SD bridges by the Commonwealth as bridge priorities fall under the purview and discretion of MassDOT’s Bridge Section. Within the Montachusett Region, some 35 bridges are currently identified as SD.

As indicated in the Infrastructure section, if bridge funding does not remain a priority, more bridges can slip into SD conditions and the positive trend started in 2006 will be reversed and the trend over the last year will continue and likely grow exponentially.

Pavement Needs

The region contains a mix of state and local jurisdiction federal aid eligible roads. In addition, those roads classified as NHS are eligible for Interstate Maintenance (IM) and NHS funding. Those roads are under the purview of MassDOT and are assumed to be funded from statewide NHS/IM allocations. These are approximately 157 miles (or 23%) of the total regional federal aid roads in this category. That leaves approximately 77%, or 523 miles, of roads that are eligible to be funded with regional discretionary, or target, funding.



An analysis conducted in the prior RTP established a regional yearly pavement improvement need of \$139,667,895 in order to bring all roads up to good to excellent condition. This figure was expressed in 2016 dollars and is the starting point for the analysis of pavement maintenance needs for the 2020 RTP.

Outlined under the Pavement section of this RTP, a slight change was noted between the percentages of road miles classified as Excellent, Good, Fair and Poor. Those changes are listed below.

Table 10-3: Pavement Condition Change

		State		Local		Combined	
		%	% Points Change	%	% Points Change	%	% Points Change
2019	Excellent	31%	-16%	22%	9%	24%	-1%
	Good	36%	10%	18%	-3%	23%	1%
	Fair	21%	7%	25%	-14%	24%	-6%
	Poor	12%	0%	35%	8%	29%	6%

These percent changes were applied to the cost calculations in 2016 to establish a new yearly pavement estimate. This figure is \$143,028,574 in 2016 dollars. Adjusting at 4% per year for inflation, the new 2019 starting figure is now \$160,192,000.

If MPO Federal Aid Target funds are applied and allocated to maintenance projects based on prior patterns identified from 2010 to 2020 projects (as shown below under Scenario 1 – Status Quo), 66% of target funds would be allocated to pavement projects.

Table 10-4: Scenario 1 Pavement Backlog

Regional Funds	2020-2024	2025-2029	2030-2034	2035-2040
MPO Target Funds	\$36,105,876	\$29,372,872	\$49,329,750	\$69,107,734
Est. Pavement Needs	(\$469,908,739)	(\$760,960,547)	(\$728,102,038)	(\$690,451,425)
Balance	(\$433,802,864)	(\$731,587,675)	(\$678,772,288)	(\$621,343,691)

Utilizing an unrealistic assumption that pavement deterioration will not occur between 2020 and 2040, spending at a rate of 66% of target funds on maintenance would not see a switch over to 100% excellent roads during the life of this RTP. To accelerate this process and see a switch over



during this RTP cycle, spending 95% of target funds on maintenance will cause a switch over in 2038.

It must be noted that pavement conditions as well as repair costs are continually changing variables based on many different factors. As one road is repaired, additional sections can be overlooked and quickly fall into disrepair requiring more extensive rehabilitation needs and costs. These allocations can quickly be overrun resulting in maintenance needs surpassing available funds. A robust pavement management program is one way to better project road needs and stretch maintenance dollars by utilizing more routine and preventative maintenance. Therefore, this analysis should be viewed as illustrative of the continuing infrastructure problem.

Major Infrastructure Projects

Through the development of this RTP, several projects or needs were identified. Some of these are relatively large in terms of scope, design or possibly cost. These have been identified as “Major Infrastructure” projects. They will likely entail several years of study, public outreach and design before implementation. However, for the Montachusett region only one of these projects is assumed to occur during the life of the RTP, the Route 2 Interchange at South Athol Road.

Table 10-5: Major Infrastructure Projects Included in Fiscal Analysis

Major Infrastructure Project	2020-2024	2025-2029	2030-2034	2035-2039	2040	
Route 2 at South Athol Road - New Interchange & Bridge		\$14,233,118	\$14,233,118			\$28,466,236

- **Route 2 at South Athol Road:** The town of Athol has presented a project to construct a new interchange with Route 2 at South Athol Road. This new interchange would help the town improve access to Route 2 for commercial and passenger vehicles, thus relieving congestion on smaller local roads, extending the pavement life of those roads, expanding the town’s economic base and provide quicker emergency response times. Estimated cost in 2020 dollars - \$20,000,000. Programmed for 2029 and 2030 with YOE costs factored in.



Other major projects identified during the RTP process are summarized below but, as mentioned, are not incorporated into the financial plan of the RTP as these are still concepts with little analysis and subsequently, no cost estimates.

Table 10-6: Major Infrastructure Projects

Community	Location	Potential Impact/Benefit
Athol, Phillipston	Route 2 Lane Addition	Capacity
Fitchburg	Route 31 RR Bridge	Access
Fitchburg	Wachusett Station Improvements	Complete Streets, Access
Fitchburg	John Fitch Highway Stormwater and Complete Streets upgrades.	Complete Streets, Stormwater, GHG
Fitchburg	Route 2 at Mt. Elam Rd.	Safety, GHG
Lancaster	Route 117 at Bolton Flats	Drainage Upgrades
Leominster	Route 190 at Route 2	Capacity, Safety
Leominster	Route 13 Interchange on Route 2	Safety, GHG
Leominster/ Fitchburg	Merriam Ave./ South St. Corridor	Capacity, GHG
Sterling	Route 62 at Route 140	Safety
Westminster	Route 140 at Mile Hill Rd.	Stormwater Upgrades

Non-Funded Major Infrastructure Projects

- Route 2 Lane Addition from Phillipston to Athol: The town of Athol has raised the question of a possible expansion of Route 2 from its current two-lane configuration to four lanes. The project limits start from the Phillipston town line to approximately Route 202 near the Athol/Orange town line.
- Route 2 at Mt. Elam Road: For a number of years, the state has tried to address a safety, access and environmental issue along Route 2 in the vicinity of Mt Elam Road. Bordering the Notown Reservoir, the state must address an environmental issue related to runoff into the city of Leominster's drinking supply. Additionally, a traffic signal currently exists at the Route 2/Mt Elam Road intersection that is the site of many vehicular crashes.
- Wachusett Station Improvements: Wachusett Station is a new commuter rail parking lot and train station on the Fitchburg Commuter Rail Line. Built to house over 400 vehicles, this station is the start and end point for this line into Boston. The need for a solution to the current railroad underpass on Route 31 located just north of the station which constricts all modes of traffic in that area, and bicycle and pedestrian accommodations should be considered.



Remaining Regional Needs

Table 10-7 below is derived from crash analysis in the Safety section of this RTP. Locations and corridors with a high number of fatal crashes are listed along with possible costs associated with increasing safety.

Table 10-7: Fatal Crash Corridors

All Crashes with Fatal Crash Corridor Names by MassDOT Urban / Rural Areas					
ID	Communities	Fatal Crash Corridors*	Urban Crashes	Rural Crashes	Cost Estimate
8	Athol	Pequoig & Pinedale Avenue, Athol	14		\$500,000
25	Athol	Route 2 near Orange TL, Athol	11		\$500,000
26	Athol	Route 2 near Phillipston TL, Athol	9		\$500,000
28	Ayer	Route 2A & Washington Street, Ayer	77		\$500,000
13	Ashburnham	Route 119 Rindge State Road, Ashburnham		2	\$250,000
16	Ashburnham	Route 12 Winchendon Road, Ashburnham	8		\$500,000
39	Ashburnham	Sherbert Road, Ashburnham		3	\$250,000
10	Ashby	Rindge Road, Ashby	7	7	\$250,000
38	Athol & Phillipston	Rt 2A State/Templeton Rd, Athol/Phillipston	6	6	\$250,000
33	Clinton	Route 62 Boylston Mechanic Street, Clinton	13		\$500,000
35	Clinton	Routes 62/70/110 Main Street, Clinton	49		\$500,000
1	Fitchburg	Airport Road Crawford Street, Fitchburg	55		\$500,000
2	Fitchburg	Boulder Drive, Fitchburg	30		\$500,000
3	Fitchburg	Canton Salem Street, Fitchburg	22		\$500,000
31	Fitchburg & Ashby	Route 31, Fitchburg/Ashby (south)	107	7	\$500,000
4	Gardner	Green & Elm St, Gardner	94		\$500,000
5	Gardner	Howard St, Gardner	12		\$500,000
20	Gardner	Route 2 American Legion Circle, Gardner	66		\$500,000
34	Gardner	Route 68 West Street, Gardner	38		\$500,000
7	Groton	Longley Street, Groton	8		\$500,000
12	Harvard	Route 110 Ayer Road, Harvard	34	10	\$500,000
11	Leominster	River Street, Leominster	2		\$500,000
14	Leominster	Route 12 Central Street, Leominster	189		\$500,000
40	Leominster	Union Street Washington Street, Leominster	25		\$500,000
42	Leominster	Washington Street, Leominster	22		\$500,000
9	Lunenburg	Pleasant Street, Lunenburg	1		\$500,000
37	Lunenburg & Leominster	Rt 13 Electric Ave Main St, Lunenburg/Leominster	158		\$500,000
32	Royalston	Route 32 Athol Richmond Road, Royalston		1	\$250,000
19	Sterling	Route 140 Redemption Rock Trail, Sterling		13	\$250,000
6	Sterling & Lancaster	I 190 Southbound, Sterling/Lancaster	9		\$500,000
21	Templeton	Route 2 Exits 20 & 21, Templeton	23		\$500,000
41	Townsend	Wallace Hill Road, Townsend		6	\$250,000
24	Westminster	Route 2 Exits 25 & 26, Westminster	46		\$500,000
29	Westminster	Route 2A State Road West, Westminster	12		\$500,000
36	Westminster & Ashburnham	Rt 12 Ashburnham State Rd, Westminster/Ashburnham	1	14	\$250,000
17	Westminster & Gardner	Route 140 at Rt 2 Exit 24, Westminster/Gardner	19		\$500,000
18	Winchendon	Route 140 Gardner Road, Winchendon		32	\$500,000
27	Winchendon	Route 202 Baldwinville State Road, Winchendon	14		\$500,000
			1,181	101	
			92%	8%	
			1,282		

*Corridors listed alphabetically



Table 10-8 below is derived from crash analysis in the Safety section of this RTP. High crash locations are listed along with possible costs associated with increasing safety.

Table 10-8: High Crash Locations

RANK (2015)	ID	MUNICIPALITIES	High Crash Locations for Safety Projects for 2020 RTP	BIKE HCL	PED HCL	Top200 2016	Top200 2015	Safety Project Location in 2016 RTP Safety Project List	Estimated Cost
97	18	ASHBY	GREENVILLE ROAD (SR31 NB) at TURNPIKE ROAD						
67	33	FITCHBURG	AIRPORT ROAD at BENSON STREET						\$ 1,000,000
27	90	FITCHBURG	BEMIS ROAD at AIRPORT ROAD					•	\$ 1,000,000
90	14	FITCHBURG	BEMIS ROAD at ROBERT STREET						\$ 1,000,000
12	65	FITCHBURG	BOULDER DRIVE at MAIN STREET (SR2A EB)		•	•			\$ 1,000,000
67	81	FITCHBURG	BOULDER DRIVE at PUTNAM STREET						\$ 1,000,000
81	21	FITCHBURG	CLARENDON STREET at DANIELS STREET						\$ 1,000,000
55	79	FITCHBURG	ELECTRIC AVENUE at ROLLSTONE ROAD					•	\$ 1,000,000
34	88	FITCHBURG	FRANKLIN ROAD at OAK HILL ROAD			•			\$ 1,000,000
17	6	FITCHBURG	JOHN FITCH HIGHWAY						\$ 1,000,000
81	73	FITCHBURG	JOHN FITCH HIGHWAY at BEMIS ROAD						\$ 1,000,000
90	56	FITCHBURG	JOHN FITCH HIGHWAY at NORTH STREET					•	\$ 1,250,000
18	46	FITCHBURG	JOHN FITCH HIGHWAY at SUMMER STREET					•	\$ 1,000,000
81	2	FITCHBURG	LAUREL STREET (SR2A EB) at SOUTH STREET						\$ 1,000,000
90	49	FITCHBURG	LAUREL STREET at PUTNAM STREET						\$ 1,000,000
40	62	FITCHBURG	LUNENBURG STREET (SR2A EB) at JOHN FITCH HIGHWAY						\$ 1,000,000
103	51	FITCHBURG	LUNENBURG STREET (SR2A EB) at TOWNSEND STREET						\$ 1,000,000
23	27	FITCHBURG	MAIN STREET (SR2A EB)		•			•	\$ 1,000,000
67	72	FITCHBURG	MAIN STREET at CUSHING STREET		•				\$ 1,000,000
35	45	FITCHBURG	MAIN STREET at MILL STREET		•				\$ 1,000,000
60	64	FITCHBURG	MAIN STREET at RIVER STREET (SR31 NB)						\$ 1,000,000
67	39	FITCHBURG	MAIN STREET at WATER STREET		•			•	\$ 1,000,000
97	55	FITCHBURG	PEARL STREET at COOLIDGE AVENUE						\$ 1,000,000
30	67	FITCHBURG	ROUTE 2 (SR2 EB) at MOUNT ELAM ROAD					•	\$ 1,250,000
65	25	FITCHBURG	ROUTE 2 (SR2 EB) at RAMP-RT 2 EB TO RT 31						\$ 1,000,000
51	69	FITCHBURG	SOUTH STREET at ELECTRIC AVENUE						\$ 1,000,000
97	34	FITCHBURG	SOUTH STREET at ROCKDALE AVENUE						\$ 1,000,000
8	20	FITCHBURG	SOUTH STREET at WANOOSNOC ROAD			•		•	\$ 1,000,000
103	86	FITCHBURG	WALLACE AVENUE at ELM STREET						\$ 750,000
10	9	FITCHBURG	WATER STREET (SR12 NB)					•	\$ 1,000,000
39	32	FITCHBURG	WATER STREET (SR12 NB)					•	\$ 1,000,000
97	53	FITCHBURG	WATER STREET (SR12 NB)					•	\$ 1,000,000
74	61	FITCHBURG	WATER STREET (SR12 NB) at ABBOTT AVENUE					•	\$ 750,000
60	83	FITCHBURG	WATER STREET (SR12 NB) at BENSON STREET					•	\$ 750,000
13	23	FITCHBURG	WATER STREET (SR12 NB) at BIRCH STREET						\$ 1,000,000
67	93	FITCHBURG	WATER STREET (SR12 NB) at JOHN T CENTRINO MEMORIAL DRIVE						\$ 1,000,000
3	42	FITCHBURG	WATER STREET (SR12 NB) at WANOOSNOC ROAD			•	•	•	\$ 750,000
57	80	FITCHBURG	WESTMINSTER STREET (SR2A EB) at ASHBURNHAM STREET (SR12 NB)					•	\$ 1,000,000
48	8	FITCHBURG	WESTMINSTER STREET (SR2A EB) at PRINCETON ROAD					•	\$ 1,000,000
7	71	FITCHBURG	WHALON STREET at PIERCE AVENUE			•		•	\$ 1,000,000
21	68	GARDNER	AMERICAN LEGION CIRCLE (SR68 NB) at DOUGLAS ROAD					•	\$ 1,000,000
55	85	GARDNER	CENTRAL STREET (SR101 NB) at MAIN STREET (SR68 NB)						\$ 1,000,000
59	78	GARDNER	ELM STREET at PEARL STREET (SR101 NB)					•	\$ 1,000,000
48	13	GARDNER	GREEN STREET					•	\$ 1,000,000
24	58	GARDNER	MAIN STREET (SR68 NB) at TIMPANY BOULEVARD (SR68 SB) (1 of 2)		•			•	\$ 1,000,000
26	76	GARDNER	MAIN STREET (SR68 NB) at WILLOW STREET		•			•	\$ 1,000,000
48	95	GARDNER	PARKER STREET (SR101 NB) at OAK STREET						\$ 1,000,000
8	29	GARDNER	PEARSON BOULEVARD at UNION SQUARE			•		•	\$ 1,000,000
81	3	GARDNER	ROUTE 2 at RAMP-RT 2 WB TO RT 68					•	\$ 1,250,000
16	89	GARDNER	TIMPANY BOULEVARD (SR68 NB) NORTH OF UNION STREET						\$ 1,000,000
43	10	GARDNER	TIMPANY BOULEVARD (SR68 NB) at WEST BROADWAY (SR2A EB)					•	\$ 1,000,000
40	57	GARDNER	MAIN STREET (SR68 NB) at TIMPANY BOULEVARD (SR68 SB) (2 of 2)		•				\$ 1,000,000
30	101	GROTON	MAIN STREET (SR119 EB) at LOWELL ROAD (SR40 EB)						\$ 1,000,000



Table 10-8: High Crash Locations (continued)

5	105	HARVARD	AYER ROAD (SR110 EB) at ROUTE 2 (SR2 EB)						•	\$ 1,250,000
65	82	LANCASTER	INTERSTATE 190 (I190 NB) at RAMP-RT 190 NB FROM RT 117							\$ 1,000,000
51	48	LANCASTER	LOWER BOLTON ROAD (SR110 EB) at HIGH STREET EXTENSION (SR110 EB)							\$ 1,000,000
74	52	LANCASTER	MAIN STREET (SR117 EB) at LUNENBURG ROAD (SR70 NB)						•	\$ 1,250,000
81	16	LANCASTER	ROUTE 2 (SR2 EB)							\$ 1,250,000
6	28	LANCASTER	ROUTE 2 (SR2 EB) at JACKSON ROAD						•	\$ 1,250,000
74	50	LANCASTER	ROUTE 2 (SR2 EB) at RAMP-RT 2 EB TO OLD TURNPIKE RD (RT 70)						•	\$ 1,250,000
60	75	LANCASTER	ROUTE 2 (SR2 WB) at RAMP-RT 2 WB TO FORT POND RD (SHIRLEY RD)							\$ 1,250,000
30	44	LEOMINSTER	CENTRAL STREET (SR12 NB) at LITCHFIELD STREET							\$ 1,250,000
25	17	LEOMINSTER	COMMERCIAL ROAD							\$ 1,000,000
90	60	LEOMINSTER	LANCASTER STREET (SR117 EB) at VISCOLOID AVENUE							\$ 1,000,000
20	70	LEOMINSTER	MAIN STREET (SR12 NB) at MONUMENT SQUARE (SR12 NB)			•			•	\$ 1,000,000
22	5	LEOMINSTER	MAIN STREET (SR13 NB) at MEAD STREET							\$ 1,000,000
2	100	LEOMINSTER	MAIN STREET (SR13 NB) at NASHUA STREET			•			•	\$ 1,000,000
29	104	LEOMINSTER	MAIN STREET (SR13 NB) at NORTH STREET							\$ 1,000,000
60	92	LEOMINSTER	MAIN STREET (SR13 NB) at PROSPECT STREET			•				\$ 1,000,000
40	59	LEOMINSTER	MAIN STREET (SR13 NB) at RIVER STREET			•				\$ 1,000,000
97	87	LEOMINSTER	MECHANIC STREET at FIFTH STREET							\$ 1,000,000
43	22	LEOMINSTER	MECHANIC STREET at LEOMINSTER CONNECTOR							\$ 1,000,000
51	98	LEOMINSTER	MECHANIC STREET at WATER STREET			•				\$ 1,000,000
35	47	LEOMINSTER	MERRIAM AVENUE at LINDELL AVENUE							\$ 1,000,000
60	37	LEOMINSTER	MILL STREET at HAWS STREET						•	\$ 1,000,000
4	66	LEOMINSTER	NORTH MAIN STREET (SR12 NB) AT FRUIT STREET/NELSON STREET					•	•	\$ 1,000,000
38	24	LEOMINSTER	NORTH MAIN STREET (SR12 NB) AT HOLMAN AVENUE						•	\$ 1,000,000
57	12	LEOMINSTER	NORTH MAIN STREET (SR12 NB) AT WESTLAND AVENUE						•	\$ 1,000,000
81	36	LEOMINSTER	NORTH MAIN STREET (SR12 NB) AT ERDMAN WAY (1 OF 2)						•	\$ 750,000
90	91	LEOMINSTER	NORTH MAIN STREET (SR12 NB) at STATE STREET (2 of 2)							\$ 750,000
90	30	LEOMINSTER	NORTH MAIN STREET (SR12 NB) at STATE STREET (1 of 2)						•	\$ 750,000
103	41	LEOMINSTER	NORTH MAIN STREET (SR12 NB) MIDBLOCK ERDMAN WAY/MOORE STREET						•	\$ 1,000,000
11	63	LEOMINSTER	NORTH MAIN STREET (SR12 NB) at HAMILTON STREET				•		•	\$ 1,000,000
51	40	LEOMINSTER	NORTH MAIN STREET (SR12 NB) at WASHINGTON STREET							\$ 1,250,000
43	19	LEOMINSTER	ROUTE 2 (SR2 EB) at MAIN STREET (SR13 NB)							\$ 1,250,000
15	103	LEOMINSTER	ROUTE 2 (SR2 EB) at MEAD STREET						•	\$ 1,250,000
81	31	LEOMINSTER	ROUTE 2 (SR2 EB) at MEAD STREET							\$ 1,250,000
19	26	LEOMINSTER	ROUTE 2 (SR2 EB) at MERRIAM AVENUE						•	\$ 1,250,000
67	35	LEOMINSTER	ROUTE 2 (SR2 EB) at MERRIAM AVENUE							\$ 1,250,000
1	43	LEOMINSTER	ROUTE 2 (SR2 EB) at RAMP-RT 12 NB TO RT 2 WB							\$ 1,250,000
74	77	LEOMINSTER	ROUTE 2 (SR2 EB) at RAMP-RT 12 NB TO RT 2 WB							\$ 1,250,000
43	74	LEOMINSTER	ROUTE 2 (SR2 EB) at RAMP-RT 2 EB TO HAWS ST						•	\$ 1,250,000
81	11	LEOMINSTER	SACK BOULEVARD at CINEMA BOULEVARD							\$ 1,000,000
90	97	LEOMINSTER	WASHINGTON STREET at MERRIAM AVENUE							\$ 1,000,000
28	1	LEOMINSTER	WEST STREET at PARK STREET			•			•	\$ 1,000,000
74	54	LEOMINSTER	WHITNEY STREET at SPRUCE STREET							\$ 1,000,000
67	102	LEOMINSTER (75%) / FITCHBURG (25%)	NORTH MAIN STREET (SR12 NB) AT ERDMAN WAY (2 OF 2)						•	\$ 750,000
81	96	LUNENBURG	MASSACHUSETTS AVENUE (SR2A EB) at ELECTRIC AVENUE (SR13 NB)						•	\$ 1,000,000
30	94	SHIRLEY	TOWNSEND ROAD at GROTON ROAD (SR225 EB)						•	\$ 1,000,000
35	99	STERLING	INTERSTATE 190 (I190 NB)						•	\$ 1,250,000
43	7	STERLING	INTERSTATE 190 (I190 SB) at RAMP-RT 190 SB TO RT 12						•	\$ 1,250,000
14	84	STERLING	LEOMINSTER ROAD (SR12 NB) at CHOCKSETT ROAD						•	\$ 1,000,000
97	38	STERLING	REDEMPTION ROCK TRAIL (SR140 NB) at PRINCETON ROAD							\$ 1,000,000
74	15	TOWNSEND	MAIN STREET (SR119 EB)							\$ 1,000,000
74	4	WINCHENDON	SPRING STREET (SR12 NB) at CENTRAL STREET							\$ 1,000,000

The remaining project needs identified in this RTP include various safety improvements at intersections or along corridors, congestion improvements, pedestrian/bicycle improvements, etc. The funding for these improvements is assumed to be derived from the statewide funding



allocated to the Montachusett region as well as through the discretionary MPO Funding (“Target”) amounts.

Projects include, but are not limited to, those listed in the various parts of this RTP. These projects are assumed to be implemented during the timeframe of this RTP. Most are in need of further study in order to determine potential solutions for the location.

For planning purposes, it is assumed that funding will be derived from the estimated allocations to the region from various statewide categories (i.e. Interstate Maintenance, NHS, Infrastructure, Remaining Statewide Programs and Non-Federal Aid Preservation) as well as through identified funding categories, programs or bands, i.e. Safety, Pedestrian & Pedestrian Facilities, Complete Streets etc.

Non-Funded Major Infrastructure Projects

Table 10-9: Highway Funding vs. Needs

Highway Available Funding vs. Needs Funding

AVAILABLE FUNDING	2020-2024	2025-2029	2030-2034	2035-2039	2040	2020-2040
Statewide Programs	\$178,872,625	\$201,798,551	\$243,090,993	\$267,418,989	\$56,681,985	\$947,863,143
Bridges	\$80,880,790	\$92,007,920	\$112,973,809	\$125,214,609	\$26,632,903	\$437,710,031
Interstate Maintenance	\$3,148,455	\$3,975,647	\$4,881,580	\$5,410,503	\$1,150,803	\$18,566,988
National Highway System	\$22,490,044	\$26,771,720	\$32,872,204	\$36,433,933	\$7,749,427	\$126,317,328
Remaining Statewide Programs	\$50,055,336	\$56,254,708	\$69,073,496	\$76,557,662	\$16,283,666	\$268,224,868
Non-Federal Aid Preservation	\$22,298,000	\$22,788,556	\$23,289,904	\$23,802,282	\$4,865,186	\$97,043,928
MPO Funding (Discretionary Funding)	\$55,337,838	\$63,445,416	\$77,902,753	\$86,343,577	\$18,365,111	\$301,394,695
Road Maintenance & Infrastructure	\$55,337,838	\$41,873,975	\$51,415,817	\$56,986,761	\$12,120,973	\$217,735,364
Safety	-	\$8,247,904	\$10,127,358	\$11,224,665	\$2,387,464	\$31,987,391
Pedestrian & Bicycle Facilities	-	\$6,978,996	\$8,569,303	\$9,497,793	\$2,020,162	\$27,066,254
Complete Streets	-	\$3,806,725	\$4,674,165	\$5,180,615	\$1,101,907	\$14,763,411
Climate Change & Environment	-	\$1,268,908	\$1,558,055	\$1,726,872	\$367,302	\$4,921,137
Congestion Relief	-	\$1,268,908	\$1,558,055	\$1,726,872	\$367,302	\$4,921,137
Transit Options	-					
Regional Access	-					
Community Access	-					
Other	-					
TOTAL AVAILABLE FUNDING	\$234,210,463	\$265,243,967	\$320,993,746	\$353,762,566	\$75,047,096	\$1,249,257,838



Table 10-9: Highway Funding vs. Needs (continued)

ESTIMATED FUNDING NEEDS	2020-2024	2025-2029	2030-2034	2035-2039	2040	2020-2040
Statewide Programs	\$42,643,034	\$99,815,706	\$122,370,981	\$86,015,443	\$55,593,025	\$406,438,189
Bridges	\$17,612,774	\$6,624,972	\$8,278,593	\$9,374,068	\$10,098,533	\$51,988,940
Interstate Maintenance	\$1,879,150	\$9,562,712	\$2,671,011	\$3,000,000	\$3,500,000	\$20,612,873
National Highway System	\$19,863,110	\$57,331,126	\$56,992,493	\$42,554,454	\$20,000,000	\$196,741,183
Remaining Statewide Programs	\$1,248,000	\$0	\$2,106,617	\$2,385,377	\$2,569,729	\$8,309,723
Non-Federal Aid Preservation	\$2,040,000	\$26,296,896	\$52,322,267	\$28,701,544	\$19,424,763	\$128,785,470
MPO Funding (Discretionary Funding)	\$52,634,604	\$63,445,416	\$77,902,753	\$86,343,577	\$18,365,111	\$298,691,461
Road Maintenance & Infrastructure	\$45,180,825	\$32,140,857	\$41,682,699	\$56,986,761	\$12,120,973	\$188,112,115
Safety	\$2,653,189	\$5,747,904	\$7,627,358	\$11,224,665	\$2,387,464	\$29,640,580
Pedestrian & Bicycle Facilities	\$1,165,335	\$6,978,996	\$8,569,303	\$9,497,793	\$2,020,162	\$28,231,589
Complete Streets	\$0	\$3,806,725	\$4,674,165	\$5,180,615	\$1,101,907	\$14,763,411
Climate Change & Environment	\$3,635,255	\$268,908	\$558,055	\$1,726,872	\$367,302	\$6,556,392
Congestion Relief	\$0	\$268,908	\$558,055	\$1,726,872	\$367,302	\$2,921,137
Transit Options	\$0	\$0	\$0	\$0	\$0	\$0
Regional Access	\$0	\$0	\$0	\$0	\$0	\$0
Community Access	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0
Major Infrastructure Project - <i>Rt 2 at South Athol Rd Interchange & Bridge</i>		\$14,233,118	\$14,233,118			\$28,466,236
MPO Estimated Needs	\$52,634,604	\$63,445,416	\$77,902,753	\$86,343,577	\$18,365,111	\$298,691,461
TOTAL ESTIMATED NEEDS	\$95,277,638	\$177,494,240	\$214,506,852	\$172,359,020	\$73,958,136	\$733,595,886

Table 10-10: Fiscal Constraint

AVAILABLE LESS MPO NEEDS	2020-2024	2025-2029	2030-2034	2035-2039	2040	2020-2040
TOTAL AVAILABLE MPO FUNDING (Discretionary Funding)	\$52,634,604	\$63,445,416	\$77,902,753	\$86,343,577	\$18,365,111	\$298,691,461
Major Infrastructure Projects		\$14,233,118	\$14,233,118			\$28,466,236
TOTAL MPO ESTIMATED NEEDS	\$52,634,604	\$63,445,416	\$77,902,753	\$86,343,577	\$18,365,111	\$298,691,461
<i>Available Funding Less Estimated Needs</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>

Table 10-10 above shows the total available MPO funding vs. estimated MPO needs. The bottom row of this table shows any left-over monies in funding vs. needs for the 20-year time period of the RTP. If any unspent MPO Discretionary funds are identified, they should not be considered “surplus” funds due to unidentified needs and additional unforeseen costs which could arise



during this time period. The main purpose of this table is to demonstrate fiscal constraint. The fiscal constraint demonstrated by Table 10-10 should allow for implementation of additional TIP funded projects beyond the identified needs as they stand. It should also be noted that this fiscal constraint analysis applies to all three funding scenarios included in this RTP.

Expected Funding - Transit

Expected Transit Funding

MassDOT Transit also developed and provided each MPO and Regional Transit Authority with funding estimates for transit planning purposes using the following assumption:

- Federal funding and state match for the period of 2020 – 2024 reflect current TIP allocations and funding for FFY 2025 is assumed to grow at a rate determined by funding category from FFY 2025 onward.

The following table provides estimates for the Montachusett Regional Transit Authority (MART).

Table 10-11: Estimated Transit Funding

Inflation rates based on total FAST Act (2016–2020) funding levels								= final number published in the apportionment table								= preliminary number			
SECTION 5307 (inflation rate: 2.08%)																			
	Fast Act			FFY 2021	FFY 2022	FFY 2023	FFY 2024	FFY 2025	FFY 2026	FFY 2027	FFY 2028	FFY 2029							
	FFY 2018	FFY 2019	FFY 2020																
Boston UZA	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate							
MART	\$ 131,573	\$ 134,310	\$ 137,103	\$ 139,955	\$ 142,866	\$ 145,838	\$ 148,871	\$ 151,968	\$ 155,129	\$ 158,355	\$ 161,649	\$ 165,011							
Worcester UZA	FFY 2018	FFY 2019	FFY 2020	FFY 2021	FFY 2022	FFY 2023	FFY 2024	FFY 2025	FFY 2026	FFY 2027	FFY 2028	FFY 2029							
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate							
MART	\$ 47,199	\$ 48,181	\$ 49,183	\$ 50,206	\$ 51,250	\$ 52,316	\$ 53,404	\$ 54,515	\$ 55,649	\$ 56,807	\$ 57,988	\$ 59,194							
Massachusetts	FFY 2018	FFY 2019	FFY 2020	FFY 2021	FFY 2022	FFY 2023	FFY 2024	FFY 2025	FFY 2026	FFY 2027	FFY 2028	FFY 2029							
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate							
MART	\$ 3,165,772	\$ 3,231,620	\$ 3,298,838	\$ 3,367,454	\$ 3,437,497	\$ 3,508,997	\$ 3,581,984	\$ 3,656,489	\$ 3,732,544	\$ 3,810,181	\$ 3,889,433	\$ 3,970,333							
Section 5307	FFY 2018	FFY 2019	FFY 2020	FFY 2021	FFY 2022	FFY 2023	FFY 2024	FFY 2025	FFY 2026	FFY 2027	FFY 2028	FFY 2029							
	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate							
MART	\$ 3,344,544	\$ 3,414,111	\$ 3,485,124	\$ 3,557,615	\$ 3,631,613	\$ 3,707,151	\$ 3,784,259	\$ 3,862,972	\$ 3,943,322	\$ 4,025,343	\$ 4,109,070	\$ 4,194,539							
Total	\$ 207,889,676	\$ 212,213,781	\$ 216,627,828	\$ 221,133,687	\$ 225,733,267	\$ 230,428,519	\$ 235,221,433	\$ 240,114,038	\$ 245,108,410	\$ 250,206,665	\$ 255,410,964	\$ 260,723,512							

SECTION 5307 (inflation rate: 2.08%)												
Boston UZA	FFY 2030	FFY 2031	FFY 2032	FFY 2033	FFY 2034	FFY 2035	FFY 2036	FFY 2037	FFY 2038	FFY 2039	FFY 2040	
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
MART	\$ 168,444	\$ 171,947	\$ 175,524	\$ 179,175	\$ 182,902	\$ 186,706	\$ 190,589	\$ 194,554	\$ 198,600	\$ 202,731	\$ 206,948	
Worcester UZA	FFY 2030	FFY 2031	FFY 2032	FFY 2033	FFY 2034	FFY 2035	FFY 2036	FFY 2037	FFY 2038	FFY 2039	FFY 2040	
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
MART	\$ 60,426	\$ 61,682	\$ 62,965	\$ 64,275	\$ 65,612	\$ 66,977	\$ 68,370	\$ 69,792	\$ 71,244	\$ 72,725	\$ 74,238	
Massachusetts	FFY 2030	FFY 2031	FFY 2032	FFY 2033	FFY 2034	FFY 2035	FFY 2036	FFY 2037	FFY 2038	FFY 2039	FFY 2040	
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
MART	\$ 4,052,916	\$ 4,137,216	\$ 4,223,270	\$ 4,311,114	\$ 4,400,786	\$ 4,492,322	\$ 4,585,762	\$ 4,681,146	\$ 4,778,514	\$ 4,877,907	\$ 4,979,368	
Section 5307	FFY 2030	FFY 2031	FFY 2032	FFY 2033	FFY 2034	FFY 2035	FFY 2036	FFY 2037	FFY 2038	FFY 2039	FFY 2040	
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
MART	\$ 4,281,785	\$ 4,370,846	\$ 4,461,760	\$ 4,554,564	\$ 4,649,299	\$ 4,746,005	\$ 4,844,722	\$ 4,945,492	\$ 5,048,358	\$ 5,153,364	\$ 5,260,554	
Total	\$ 266,146,561	\$ 271,682,410	\$ 277,333,404	\$ 283,101,938	\$ 288,990,459	\$ 295,001,460	\$ 301,137,491	\$ 307,401,150	\$ 313,795,094	\$ 320,322,032	\$ 326,984,731	



Table 10-11: Estimated Transit Funding (continued)

SECTION 5310 (inflation rate: 2.09%)												
Section	Fast Act			FFY 2021 Estimate	FFY 2022 Estimate	FFY 2023 Estimate	FFY 2024 Estimate	FFY 2025 Estimate	FFY 2026 Estimate	FFY 2027 Estimate	FFY 2028 Estimate	FFY 2029 Estimate
	FFY 2018 Actual	FFY 2019 Estimate	FFY 2020 Estimate									
5310												
Boston	\$ 3,524,282	\$ 3,597,939	\$ 3,673,136	\$ 3,749,905	\$ 3,828,278	\$ 3,908,289	\$ 3,989,972	\$ 4,073,363	\$ 4,158,496	\$ 4,245,409	\$ 4,334,138	\$ 4,424,721
Barnstable	\$ 319,835	\$ 326,520	\$ 333,344	\$ 340,311	\$ 347,423	\$ 354,684	\$ 362,097	\$ 369,665	\$ 377,391	\$ 385,279	\$ 393,331	\$ 401,551
Worcester	\$ 413,044	\$ 421,677	\$ 430,490	\$ 439,487	\$ 448,672	\$ 458,049	\$ 467,623	\$ 477,396	\$ 487,374	\$ 497,560	\$ 507,969	\$ 518,575
Springfield	\$ 539,877	\$ 551,160	\$ 562,680	\$ 574,440	\$ 586,445	\$ 598,702	\$ 611,215	\$ 623,989	\$ 637,031	\$ 650,345	\$ 663,937	\$ 677,813
Providence	\$ 184,757	\$ 188,618	\$ 192,561	\$ 196,585	\$ 200,694	\$ 204,888	\$ 209,170	\$ 213,542	\$ 218,005	\$ 222,561	\$ 227,213	\$ 231,962
Small Urban	\$ 628,752	\$ 641,893	\$ 655,308	\$ 669,004	\$ 682,987	\$ 697,261	\$ 711,834	\$ 726,711	\$ 741,899	\$ 757,405	\$ 773,235	\$ 789,395
Rural	\$ 357,706	\$ 365,182	\$ 372,814	\$ 380,606	\$ 388,561	\$ 396,682	\$ 404,972	\$ 413,436	\$ 422,077	\$ 430,899	\$ 439,904	\$ 449,098
Total	\$ 5,968,253	\$ 6,092,989	\$ 6,220,333	\$ 6,350,338	\$ 6,483,060	\$ 6,618,556	\$ 6,756,884	\$ 6,898,103	\$ 7,042,273	\$ 7,189,456	\$ 7,339,716	\$ 7,493,116

SECTION 5310 (inflation rate: 2.09%)											
Section	FFY 2030	FFY 2031	FFY 2032	FFY 2033	FFY 2034	FFY 2035	FFY 2036	FFY 2037	FFY 2038	FFY 2039	FFY 2040
5310	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Boston	\$ 4,517,198	\$ 4,611,607	\$ 4,707,990	\$ 4,806,387	\$ 4,906,840	\$ 5,009,393	\$ 5,114,089	\$ 5,220,974	\$ 5,330,092	\$ 5,441,491	\$ 5,555,218
Barnstable	\$ 409,944	\$ 418,512	\$ 427,259	\$ 436,188	\$ 445,305	\$ 454,612	\$ 464,113	\$ 473,813	\$ 483,716	\$ 493,825	\$ 504,146
Worcester	\$ 529,413	\$ 540,478	\$ 551,774	\$ 563,306	\$ 575,079	\$ 587,098	\$ 599,369	\$ 611,895	\$ 624,684	\$ 637,740	\$ 651,069
Springfield	\$ 691,980	\$ 706,442	\$ 721,207	\$ 736,280	\$ 751,668	\$ 767,378	\$ 783,416	\$ 799,790	\$ 816,505	\$ 833,570	\$ 850,992
Providence	\$ 236,810	\$ 241,759	\$ 246,812	\$ 251,970	\$ 257,236	\$ 262,612	\$ 268,101	\$ 273,704	\$ 279,425	\$ 285,265	\$ 291,227
Small Urban	\$ 805,894	\$ 822,737	\$ 839,932	\$ 857,487	\$ 875,408	\$ 893,704	\$ 912,383	\$ 931,452	\$ 950,919	\$ 970,793	\$ 991,083
Rural	\$ 458,485	\$ 468,067	\$ 477,849	\$ 487,836	\$ 498,032	\$ 508,441	\$ 519,068	\$ 529,916	\$ 540,991	\$ 552,298	\$ 563,841
Total	\$ 7,649,722	\$ 7,809,602	\$ 7,972,822	\$ 8,139,454	\$ 8,309,569	\$ 8,483,239	\$ 8,660,538	\$ 8,841,544	\$ 9,026,332	\$ 9,214,982	\$ 9,407,575

SECTION 5311(f) (inflation rate: 2.09%)												
	Fast Act			FFY 2021 Estimate	FFY 2022 Estimate	FFY 2023 Estimate	FFY 2024 Estimate	FFY 2025 Estimate	FFY 2026 Estimate	FFY 2027 Estimate	FFY 2028 Estimate	FFY 2029 Estimate
	FFY 2018 Actual	FFY 2019 Estimate	FFY 2020 Estimate									
Statewide	\$ 579,656	\$ 591,771	\$ 604,139	\$ 616,765	\$ 629,656	\$ 642,816	\$ 656,250	\$ 669,966	\$ 683,968	\$ 698,263	\$ 712,857	\$ 727,756

SECTION 5311(f) (inflation rate: 2.09%)											
	FFY 2030 Estimate	FFY 2031 Estimate	FFY 2032 Estimate	FFY 2033 Estimate	FFY 2034 Estimate	FFY 2035 Estimate	FFY 2036 Estimate	FFY 2037 Estimate	FFY 2038 Estimate	FFY 2039 Estimate	FFY 2040 Estimate
Statewide	\$ 742,966	\$ 758,494	\$ 774,346	\$ 790,530	\$ 807,052	\$ 823,920	\$ 841,139	\$ 858,719	\$ 876,667	\$ 894,989	\$ 913,694

SECTION 5339 (inflation rate: 3.83%)												
	Fast Act			FFY 2021 Estimate	FFY 2022 Estimate	FFY 2023 Estimate	FFY 2024 Estimate	FFY 2025 Estimate	FFY 2026 Estimate	FFY 2027 Estimate	FFY 2028 Estimate	FFY 2029 Estimate
	FFY 2018 Actual	FFY 2019 Estimate	FFY 2020 Estimate									
Worcester UZA												
MART	\$ 8,941	\$ 9,283	\$ 9,639	\$ 10,008	\$ 10,391	\$ 10,789	\$ 11,203	\$ 11,632	\$ 12,077	\$ 12,540	\$ 13,020	\$ 13,519
Other												
Apportionments	FFY 2018 Actual	FFY 2019 Estimate	FFY 2020 Estimate	FFY 2021 Estimate	FFY 2022 Estimate	FFY 2023 Estimate	FFY 2024 Estimate	FFY 2025 Estimate	FFY 2026 Estimate	FFY 2027 Estimate	FFY 2028 Estimate	FFY 2029 Estimate
Small Urban	\$ 698,200	\$ 724,941	\$ 752,706	\$ 781,535	\$ 811,468	\$ 842,547	\$ 874,817	\$ 908,322	\$ 943,111	\$ 979,232	\$ 1,016,736	\$ 1,055,677
Statewide	\$ 3,500,000	\$ 3,634,050	\$ 3,773,234	\$ 3,917,749	\$ 4,067,799	\$ 4,223,595	\$ 4,385,359	\$ 4,553,318	\$ 4,727,711	\$ 4,908,782	\$ 5,096,788	\$ 5,291,995
By RTA												
MART	\$ 8,941	\$ 9,283	\$ 9,639	\$ 10,008	\$ 10,391	\$ 10,789	\$ 11,203	\$ 11,632	\$ 12,077	\$ 12,540	\$ 13,020	\$ 13,519
Total	\$ 9,661,981	\$ 10,032,035	\$ 10,416,262	\$ 10,815,205	\$ 11,229,427	\$ 11,659,514	\$ 12,106,074	\$ 12,569,736	\$ 13,051,157	\$ 13,551,017	\$ 14,070,021	\$ 14,608,902

SECTION 5339 (inflation rate: 3.83%)											
Worcester UZA	FFY 2030 Estimate	FFY 2031 Estimate	FFY 2032 Estimate	FFY 2033 Estimate	FFY 2034 Estimate	FFY 2035 Estimate	FFY 2036 Estimate	FFY 2037 Estimate	FFY 2038 Estimate	FFY 2039 Estimate	FFY 2040 Estimate
MART	\$ 14,037	\$ 14,574	\$ 15,132	\$ 15,712	\$ 16,314	\$ 16,938	\$ 17,587	\$ 18,261	\$ 18,960	\$ 19,686	\$ 20,440
Other	FFY 2030 Estimate	FFY 2031 Estimate	FFY 2032 Estimate	FFY 2033 Estimate	FFY 2034 Estimate	FFY 2035 Estimate	FFY 2036 Estimate	FFY 2037 Estimate	FFY 2038 Estimate	FFY 2039 Estimate	FFY 2040 Estimate
Apportionments											
Small Urban	\$ 1,096,110	\$ 1,138,091	\$ 1,181,680	\$ 1,226,938	\$ 1,273,930	\$ 1,322,721	\$ 1,373,382	\$ 1,425,982	\$ 1,480,597	\$ 1,537,304	\$ 1,596,183
Statewide	\$ 5,494,679	\$ 5,705,125	\$ 5,923,631	\$ 6,150,506	\$ 6,386,070	\$ 6,630,657	\$ 6,884,611	\$ 7,148,292	\$ 7,422,071	\$ 7,706,337	\$ 8,001,489
By RTA	FFY 2030 Estimate	FFY 2031 Estimate	FFY 2032 Estimate	FFY 2033 Estimate	FFY 2034 Estimate	FFY 2035 Estimate	FFY 2036 Estimate	FFY 2037 Estimate	FFY 2038 Estimate	FFY 2039 Estimate	FFY 2040 Estimate
MART	\$ 14,037	\$ 14,574	\$ 15,132	\$ 15,712	\$ 16,314	\$ 16,938	\$ 17,587	\$ 18,261	\$ 18,960	\$ 19,686	\$ 20,440
Total	\$ 15,168,423	\$ 15,749,374	\$ 16,352,575	\$ 16,978,879	\$ 17,629,170	\$ 18,304,367	\$ 19,005,424	\$ 19,733,332	\$ 20,489,119	\$ 21,273,852	\$ 22,088,640



Capital & Operating Needs

The following table summarizes anticipated needs by the Regional Transit Authority over the life of this plan. Currently the only identified needs are within the time period of the 2020-2024 TIP. These first five years are shown along with available funding from each fund category. Years 2025-2040 in Table 10-13 show estimated funding levels which will be fully utilized by MART for capital and operating needs.

Table 10-12: Transit Funds Programmed

Funding Category	FFY 2020	FFY 2021	FFY 2022	FFY 2023	FFY 2024	Total FFY 2020-2024
5307 Operating/Capital	\$5,582,500	\$5,652,500	\$5,162,500	\$5,472,500	\$5,107,500	\$26,977,500
5309 Operating/Capital	\$0	\$0	\$0	\$0	\$0	\$0
5310 Capital	\$0	\$0	\$0	\$0	\$0	\$0
5311 Operating	\$0	\$0	\$0	\$0	\$0	\$0
5337 Capital	\$0	\$0	\$0	\$0	\$0	\$0
5339 Capital	\$0	\$900,000	\$0	\$0	\$925,000	\$1,825,000
5320	\$0	\$0	\$0	\$0	\$0	\$0
Other Federal	\$0	\$0	\$0	\$0	\$0	\$0
Other Non-Federal	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal FTA	\$5,582,500	\$6,552,500	\$5,162,500	\$5,472,500	\$6,032,500	\$28,802,500
GRAND TOTAL	\$35,176,706	\$38,432,031	\$26,331,866	\$27,167,472	\$22,523,220	\$149,631,296

Table 10-13: Anticipated Funding Programs

Available Funds	2020-2024	2025-2029	2030-2034	2035-2039	2040	Total
TOTAL 5307	\$ 36,331,522.74	\$ 40,270,489.39	\$ 44,636,508	\$ 49,475,879	\$ 10,521,108	\$ 181,235,507.23
TOTAL 5339	\$1,825,000	\$ 52,031	\$ 75,769	\$ 91,433	\$ 20,440	\$2,064,673
AVAILABLE FUNDING	\$ 38,156,522.74	\$ 40,322,520.23	\$ 44,712,276.90	\$ 49,567,312.42	\$ 10,541,547.92	\$ 183,300,180.20

Estimated Funding Needs	2020-2024	2025-2029	2030-2034	2035-2039	2040	Total
TOTAL 5307	\$26,977,500	\$ 40,270,489.39	\$ 44,636,508.28	\$ 49,475,879.28	\$ 10,521,107.54	\$171,881,484
TOTAL 5339	\$1,825,000	\$ 52,031	\$ 75,769	\$ 91,433	\$ 20,440	\$ 2,064,673
ESTIMATED FUNDING NEEDS	\$28,802,500	\$40,322,520	\$44,712,277	\$49,567,312	\$10,541,548	\$173,946,157
DIFFERENCE FUNDING MINUS NEEDS	\$ 9,354,022.74	\$ -	\$ -	\$ -	\$ -	\$ 9,354,022.74



Scenario Financial Analysis

Scenario 1 - Status Quo examined past TIP funding patterns in order to establish the following breakdown for the identified funding categories:

Table 10-14. Average Percent per Funding Category – FFY 2010 to 2020

Average Percent of Total Funding Per Category FFY 2010 to FFY 2020		
Road Maintenance & Infrastructure	\$107,666,164	65.83%
Safety (High Crash Locations)	\$20,999,284	12.84%
Pedestrian & Bicycle Facilities	\$17,392,242	10.63%
Complete Streets	\$9,744,916	5.96%
Climate Change & Environment	\$4,248,888	2.60%
Congestion Relief	\$3,494,626	2.14%
Transit Options		
Regional Access		
Community Access		
Totals	\$163,546,120	100.00%

Carrying these percentages through for 2020 to 2040, the following table illustrates the Montachusett MPO Target funds allocation for Scenario 1 – Status Quo.



Table 10-15. Financial Plan – Scenario 1 Status Quo

Funding Program	%	FFY 2020-2024 TIP					2025	2026	2027	2028	2029
		2020	2021	2022	2023	2024					
		\$10,636,366	\$10,851,652	\$11,072,618	\$11,314,453	\$11,462,749					
		\$55,337,838							\$63,445,416		
Road Maintenance & Infrastructure	66%	\$6,455,865	\$8,241,745	\$8,318,169	\$10,820,246	\$11,344,800	\$7,686,255	\$7,808,084	\$8,261,095	\$3,097,964	\$4,385,552
Safety	13%	\$1,055,190	\$1,047,285	\$550,714	\$0	\$0	\$1,513,959	\$1,537,956	\$1,627,185	\$414,840	\$653,963
Pedestrian & Bicycle Facilities	11%	\$1,055,190	\$0	\$110,145	\$0	\$0	\$1,281,043	\$1,301,347	\$1,376,849	\$1,408,711	\$1,611,046
Complete Streets	6%	\$0	\$0	\$0	\$0	\$0	\$698,750	\$709,826	\$751,009	\$768,388	\$878,752
Climate Change & Environment	2%	\$1,266,256	\$1,047,285	\$1,321,714	\$0	\$0	\$232,917	\$236,609	\$250,336	\$0	\$0
Congestion Relief	2%	\$0	\$0	\$0	\$0	\$0	\$232,917	\$236,609	\$250,336	\$0	\$0
Transit Options	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Regional Access	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Community Access	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Major Infrastructure Project - Rt 2 at S. Athol Rd										\$7,116,559	\$7,116,559
	100%	\$9,832,501	\$10,336,315	\$10,300,742	\$10,820,246	\$11,344,800	\$11,645,841	\$11,830,431	\$12,516,810	\$12,806,462	\$14,645,872

Funding Program	%	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
		\$14,948,409	\$15,257,603	\$15,573,598	\$15,896,545	\$16,226,598	\$16,563,911	\$16,908,645	\$17,260,964	\$17,621,033	\$17,989,024	\$18,365,111
				\$77,902,753					\$86,343,576			\$18,365,111
Road Maintenance & Infrastructure	66%	\$4,597,327	\$4,813,763	\$10,278,575	\$10,491,720	\$10,709,555	\$10,932,181	\$11,159,706	\$11,392,236	\$11,629,882	\$11,872,756	\$12,120,973
Safety	13%	\$693,293	\$733,488	\$2,024,568	\$2,066,551	\$2,109,458	\$2,153,308	\$2,198,124	\$2,243,925	\$2,290,734	\$2,338,573	\$2,387,464
Pedestrian & Bicycle Facilities	11%	\$1,644,325	\$1,678,336	\$1,713,096	\$1,748,620	\$1,784,926	\$1,822,030	\$1,859,951	\$1,898,706	\$1,938,314	\$1,978,793	\$2,020,162
Complete Streets	6%	\$896,905	\$915,456	\$934,416	\$953,793	\$973,596	\$993,835	\$1,014,519	\$1,035,658	\$1,057,262	\$1,079,341	\$1,101,907
Climate Change & Environment	2%	\$0	\$0	\$311,472	\$317,931	\$324,532	\$331,278	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
Congestion Relief	2%	\$0	\$0	\$311,472	\$317,931	\$324,532	\$331,278	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
Transit Options	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Regional Access	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Community Access	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Major Infrastructure Project - Rt 2 at S. Athol Rd		\$7,116,559	\$7,116,559									
	100%	\$14,948,409	\$15,257,602	\$15,573,598	\$15,896,545	\$16,226,598	\$16,563,911	\$16,908,645	\$17,260,964	\$17,621,033	\$17,989,024	\$18,365,111



Scenario 2 (Multiple Hubs) - Scenario 2 seeks to promote and emphasize the longer transportation networks that connect one town to another. This promotes inter (or between) community access at the cost of the in-town transportation networks. The following breakdowns in funding are provided for scenario 2.

Table 10-16: Scenario 2 Funding Categories

	Funding Percentage Per Strategy Federal Aid Target Funds Scenario 2 – Multiple Hubs	Total Allocation % to Funding Category	Allocated % Funding Towards Inter Community Network	Allocated % Towards Remaining Projects
1	Road Maintenance & Infrastructure	40%	30%	10%
2	Transit Options	14%	10%	4%
3	Pedestrian & Bicycle Facilities	12%	10%	2%
4	Safety (High Crash Locations)	9%	7%	2%
5	Climate Change & Environment	6%	4%	2%
6	Congestion Relief	4%	3%	1%
7	Complete Streets	5%	3%	2%
8	Regional Access	5%	5%	0%
9	Community Access	4%	4%	0%
10	Other	1%	1%	0%

Carrying these percentages through for 2020 to 2040, the following table illustrates the Montachusett MPO Target funds allocation for Scenario 2 – Multiple Hubs. The Major Infrastructure Project previously identified, Route 2 at South Athol Road Interchange & Bridge, is identified for funding in FFY's 2028, 2029, 2030 and 2031.



Table 10-17: Financial Plan – Scenario 2 Multiple Hubs

Funding Program	% Allocated	% Sub Allocated	FFY 2020-2024 TIP									
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
			\$10,636,366	\$10,851,652	\$11,072,618	\$11,314,453	\$11,462,749	\$11,645,841	\$11,830,431	\$12,516,810	\$12,806,462	\$14,645,872
			\$55,337,838							\$63,445,416		
Road Maintenance & Infrastructure	40%		\$6,455,865	\$8,241,745	\$8,318,169	\$10,820,246	\$11,344,800	\$4,658,336	\$4,732,172	\$5,006,724	\$567,318	\$1,464,587
Multiple Hubs - Inter-Community		30%						\$3,493,752	\$3,549,129	\$3,755,043	\$0	\$0
		10%						\$1,164,584	\$1,183,043	\$1,251,681	\$567,318	\$1,464,587
Safety	9%		\$1,055,190	\$1,047,285	\$550,714	\$0	\$0	\$1,048,126	\$1,064,739	\$1,126,513	\$256,129	\$352,836
Multiple Hubs - Inter-Community		7%						\$815,209	\$828,130	\$876,177	\$0	\$59,919
		2%						\$232,917	\$236,609	\$250,336	\$256,129	\$292,917
Pedestrian & Bicycle Facilities	12%		\$1,055,190	\$0	\$110,145	\$0	\$0	\$1,397,501	\$1,419,652	\$1,502,017	\$1,536,775	\$1,757,505
Multiple Hubs - Inter-Community		10%						\$1,164,584	\$1,183,043	\$1,251,681	\$1,280,646	\$1,464,587
		2%						\$232,917	\$236,609	\$250,336	\$256,129	\$292,917
Complete Streets	5%		\$0	\$0	\$0	\$0	\$0	\$582,292	\$591,522	\$625,841	\$640,323	\$732,294
Multiple Hubs - Inter-Community		3%						\$349,375	\$354,913	\$375,504	\$384,194	\$439,376
		2%						\$232,917	\$236,609	\$250,336	\$256,129	\$292,917
Climate Change & Environment	6%		\$1,266,256	\$1,047,285	\$1,321,714	\$0	\$0	\$698,750	\$709,826	\$751,009	\$256,129	\$292,917
Multiple Hubs - Inter-Community		4%						\$465,834	\$473,217	\$500,672	\$0	\$0
		2%						\$232,917	\$236,609	\$250,336	\$256,129	\$292,917
Congestion Relief	4%		\$0	\$0	\$0	\$0	\$0	\$465,834	\$473,217	\$500,672	\$0	\$146,459
Multiple Hubs - Inter-Community		3%						\$349,375	\$354,913	\$375,504	\$0	\$0
		1%						\$116,458	\$118,304	\$125,168	\$0	\$146,459
Transit Options	14%		\$0	\$0	\$0	\$0	\$0	\$1,630,418	\$1,656,260	\$1,752,353	\$1,792,905	\$2,050,422
Multiple Hubs - Inter-Community		10%						\$1,164,584	\$1,183,043	\$1,251,681	\$1,280,646	\$1,464,587
		4%						\$465,834	\$473,217	\$500,672	\$512,258	\$585,835
Regional Access	5%		\$0	\$0	\$0	\$0	\$0	\$582,292	\$591,522	\$625,841	\$0	\$0
Multiple Hubs - Inter-Community		5%						\$582,292	\$591,522	\$625,841	\$0	\$0
		0%						\$0	\$0	\$0	\$0	\$0
Community Access	4%		\$0	\$0	\$0	\$0	\$0	\$465,834	\$473,217	\$500,672	\$512,258	\$585,835
Multiple Hubs - Inter-Community		4%						\$465,834	\$473,217	\$500,672	\$512,258	\$585,835
		0%						\$0	\$0	\$0	\$0	\$0
Other	1%		\$0	\$0	\$0	\$0	\$0	\$116,458	\$118,304	\$125,168	\$128,065	\$146,457.72
Major Infrastructure Project - Rt 2 at S. Athol Rd											\$7,116,559	\$7,116,559
		100%	\$9,832,501	\$10,336,315	\$10,300,742	\$10,820,246	\$11,344,800	\$11,645,841	\$11,830,431	\$12,516,810	\$12,806,462	\$14,645,872



Table 10-17: Financial Plan – Scenario 2 Multiple Hubs (continued)

Funding Program	% Allocat'd	% Sub Allocat'd	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
			\$14,948,409	\$15,257,603	\$15,573,598	\$15,896,545	\$16,226,598	\$16,563,911	\$16,908,645	\$17,260,964	\$17,621,033	\$17,989,024	\$18,365,111
					\$77,902,753					\$86,343,576			\$18,365,111
Road Maintenance & Infrastructure	40%		\$1,494,841	\$1,525,760	\$6,229,439	\$6,358,618	\$6,490,639	\$6,625,564	\$6,763,458	\$6,904,386	\$7,048,413	\$7,195,610	\$7,346,044
Multiple Hubs - Inter-Community		30%	\$0	\$0	\$4,672,079	\$4,768,964	\$4,867,979	\$4,969,173	\$5,072,594	\$5,178,289	\$5,286,310	\$5,396,707	\$5,509,533
		10%	\$1,494,841	\$1,525,760	\$1,557,360	\$1,589,655	\$1,622,660	\$1,656,391	\$1,690,865	\$1,726,096	\$1,762,103	\$1,798,902	\$1,836,511
Safety	9%		\$507,130	\$664,818	\$1,401,624	\$1,430,689	\$1,460,394	\$1,490,752	\$1,521,778	\$1,553,487	\$1,585,893	\$1,619,012	\$1,652,860
Multiple Hubs - Inter-Community		7%	\$208,161.63	\$359,666.21	\$1,090,152	\$1,112,758	\$1,135,862	\$1,159,474	\$1,183,605	\$1,208,267	\$1,233,472	\$1,259,232	\$1,285,558
		2%	\$298,968	\$305,152	\$311,472	\$317,931	\$324,532	\$331,278	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
Pedestrian & Bicycle Facilities	12%		\$1,793,809	\$1,830,912	\$1,868,832	\$1,907,585	\$1,947,192	\$1,987,669	\$2,029,037	\$2,071,316	\$2,114,524	\$2,158,683	\$2,203,813
Multiple Hubs - Inter-Community		10%	\$1,494,841	\$1,525,760	\$1,557,360	\$1,589,655	\$1,622,660	\$1,656,391	\$1,690,865	\$1,726,096	\$1,762,103	\$1,798,902	\$1,836,511
		2%	\$298,968	\$305,152	\$311,472	\$317,931	\$324,532	\$331,278	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
Complete Streets	5%		\$747,420	\$762,880	\$778,680	\$794,827	\$811,330	\$828,196	\$845,432	\$863,048	\$881,052	\$899,451	\$918,256
Multiple Hubs - Inter-Community		3%	\$448,452	\$457,728	\$467,208	\$476,896	\$486,798	\$496,917	\$507,259	\$517,829	\$528,631	\$539,671	\$550,953
		2%	\$298,968	\$305,152	\$311,472	\$317,931	\$324,532	\$331,278	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
Climate Change & Environment	6%		\$298,968	\$305,152	\$934,416	\$953,793	\$973,596	\$993,835	\$1,014,519	\$1,035,658	\$1,057,262	\$1,079,341	\$1,101,907
Multiple Hubs - Inter-Community		4%	\$0	\$0	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
		2%	\$298,968	\$305,152	\$311,472	\$317,931	\$324,532	\$331,278	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
Congestion Relief	4%		\$149,484	\$152,576	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
Multiple Hubs - Inter-Community		3%	\$0	\$0	\$467,208	\$476,896	\$486,798	\$496,917	\$507,259	\$517,829	\$528,631	\$539,671	\$550,953
		1%	\$149,484	\$152,576	\$155,736	\$158,965	\$162,266	\$165,639	\$169,086	\$172,610	\$176,210	\$179,890	\$183,651
Transit Options	14%		\$2,092,777	\$2,136,064	\$2,180,304	\$2,225,516	\$2,271,724	\$2,318,948	\$2,367,210	\$2,416,535	\$2,466,945	\$2,518,463	\$2,571,116
Multiple Hubs - Inter-Community		10%	\$1,494,841	\$1,525,760	\$1,557,360	\$1,589,655	\$1,622,660	\$1,656,391	\$1,690,865	\$1,726,096	\$1,762,103	\$1,798,902	\$1,836,511
		4%	\$597,936	\$610,304	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
Regional Access	5%		\$0	\$0	\$778,680	\$794,827	\$811,330	\$828,196	\$845,432	\$863,048	\$881,052	\$899,451	\$918,256
Multiple Hubs - Inter-Community		5%	\$0	\$0	\$778,680	\$794,827	\$811,330	\$828,196	\$845,432	\$863,048	\$881,052	\$899,451	\$918,256
		0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Community Access	4%		\$597,936	\$610,304	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
Multiple Hubs - Inter-Community		4%	\$597,936	\$610,304	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
		0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	1%	1%	\$149,484	\$152,576	\$155,736	\$158,965	\$162,266	\$165,639	\$169,086	\$172,610	\$176,210	\$179,890	\$183,651
Major Infrastructure Project - Rt 2 at S. Athol Rd			\$7,116,559	\$7,116,559									
		100%	\$14,948,409	\$15,257,603	\$15,573,598	\$15,896,545	\$16,226,598	\$16,563,911	\$16,908,645	\$17,260,964	\$17,621,033	\$17,989,024	\$18,365,111



Scenario 3 (Strong Community Centers) - Scenario 3 places the priority on projects that promote travel within (or intra) the community. An emphasis on funding a shorter more contained transportation network promotes a more vibrant town center. The following breakdowns in funding are provided for scenario 3.

Table 10-18: Scenario 3 Funding Categories

	Funding Percentage Per Strategy Federal Aid Target Funds Scenario 2 – Multiple Hubs	Total Allocation % to Funding Category	Allocated % Funding Towards Intra Community Network	Allocated % Towards Remaining Projects
1	Road Maintenance & Infrastructure	40%	30%	10%
2	Transit Options	14%	10%	4%
3	Pedestrian & Bicycle Facilities	12%	10%	2%
4	Safety (High Crash Locations)	9%	7%	2%
5	Climate Change & Environment	6%	4%	2%
6	Congestion Relief	4%	3%	1%
7	Complete Streets	5%	3%	2%
8	Regional Access	5%	5%	0%
9	Community Access	4%	4%	0%
10	Other	1%	1%	0%

Carrying these percentages through for 2020 to 2040, the following table illustrates the Montachusett MPO Target funds allocation for Scenario 3 – Strong Community Centers. The Major Infrastructure Project previously identified, Route 2 at South Athol Road Interchange & Bridge, is identified for funding in FFY's 2028, 2029, 2030 and 2031.



Table 10-19: Financial Plan – Scenario 3 Strong Community Centers

Funding Program	% Allocated	% Sub Allocated	FFY 2020-2024 TIP					2025	2026	2027	2028	2029
			2020	2021	2022	2023	2024					
			\$10,636,366	\$10,851,652	\$11,072,618	\$11,314,453	\$11,462,749					
			\$55,337,838							\$63,445,416		
Road Maintenance & Infrastructure	40%		\$6,455,865	\$8,241,745	\$8,318,169	\$10,820,246	\$11,344,800	\$4,658,336	\$4,732,172	\$5,006,724	\$759,415	\$2,094,462
Strong Centers - Intra-Community		10%						\$1,164,584	\$1,183,043	\$1,251,681	\$0	\$0
Safety	9%	30%	\$1,055,190	\$1,047,285	\$550,714	\$0	\$0	\$3,493,752	\$3,549,129	\$3,755,043	\$759,415	\$2,094,462
Strong Centers - Intra-Community		2%						\$1,048,126	\$1,064,739	\$1,126,513	\$448,226	\$308,796
Pedestrian & Bicycle Facilities	12%	7%	\$1,055,190	\$0	\$110,145	\$0	\$0	\$232,917	\$236,609	\$250,336	\$0	\$0
Strong Centers - Intra-Community		2%						\$815,209	\$828,130	\$876,177	\$448,226	\$308,796
Complete Streets	5%	10%	\$0	\$0	\$0	\$0	\$0	\$1,397,501	\$1,419,652	\$1,502,017	\$1,536,775	\$1,757,505
Strong Centers - Intra-Community		2%						\$232,917	\$236,609	\$250,336	\$256,129	\$292,917
Climate Change & Environment	6%	3%	\$1,266,256	\$1,047,285	\$1,321,714	\$0	\$0	\$1,164,584	\$1,183,043	\$1,251,681	\$1,280,646	\$1,464,587
Strong Centers - Intra-Community		2%						\$582,292	\$591,522	\$625,841	\$640,323	\$732,294
Congestion Relief	4%	4%	\$0	\$0	\$0	\$0	\$0	\$232,917	\$236,609	\$250,336	\$256,129	\$292,917
Strong Centers - Intra-Community		1%						\$349,375	\$354,913	\$375,504	\$384,194	\$439,376
Transit Options	14%	3%	\$0	\$0	\$0	\$0	\$0	\$698,750	\$709,826	\$751,009	\$0	\$0
Strong Centers - Intra-Community		4%						\$232,917	\$236,609	\$250,336	\$0	\$0
Regional Access	5%	10%	\$0	\$0	\$0	\$0	\$0	\$465,834	\$473,217	\$500,672	\$0	\$0
Strong Centers - Intra-Community		5%						\$465,834	\$473,217	\$500,672	\$0	\$0
Community Access	4%	0%	\$0	\$0	\$0	\$0	\$0	\$116,458	\$118,304	\$125,168	\$0	\$0
Strong Centers - Intra-Community		0%						\$349,375	\$354,913	\$375,504	\$0	\$0
Other	1%	1%	\$0	\$0	\$0	\$0	\$0	\$1,630,418	\$1,656,260	\$1,752,353	\$1,792,905	\$2,050,422
Strong Centers - Intra-Community		4%						\$465,834	\$473,217	\$500,672	\$512,258	\$585,835
Major Infrastructure Project - Rt 2 at S. Athol Rd								\$1,164,584	\$1,183,043	\$1,251,681	\$1,280,646	\$1,464,587
			\$0	\$0	\$0	\$0	\$0	\$582,292	\$591,522	\$625,841	\$0	\$0
			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			\$0	\$0	\$0	\$0	\$0	\$465,834	\$473,217	\$500,672	\$512,258	\$585,835
			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
			\$0	\$0	\$0	\$0	\$0	\$465,834	\$473,217	\$500,672	\$512,258	\$585,835
			\$0	\$0	\$0	\$0	\$0	\$116,458	\$118,304.31	\$125,168	\$0	\$0
											\$7,116,559	\$7,116,559
		100%	\$9,832,501	\$10,336,315	\$10,300,742	\$10,820,246	\$11,344,800	\$11,645,841	\$11,830,431	\$12,516,810	\$12,806,462	\$14,645,872



Table 10-19: Financial Plan – Scenario 3 Strong Community Centers (continued)

Funding Program	% Allocat'd	% Sub Allocat'd	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
			\$14,948,409	\$15,257,603	\$15,573,598	\$15,896,545	\$16,226,598	\$16,563,911	\$16,908,645	\$17,260,964	\$17,621,033	\$17,989,024	\$18,365,111
					\$77,902,753					\$86,343,576			
Road Maintenance & Infrastructure	40%		\$2,253,518	\$2,257,860	\$6,229,439	\$6,358,618	\$6,490,639	\$6,625,564	\$6,763,458	\$6,904,386	\$7,048,413	\$7,195,610	\$7,346,044
Strong Cntrs - Intra-Community		10%	\$0	\$0	\$1,557,360	\$1,589,654	\$1,622,660	\$1,656,391.10	\$1,690,865	\$1,726,096	\$1,762,103	\$1,798,902	\$1,836,511
		30%	\$2,253,518	\$2,257,860	\$4,672,079	\$4,768,963	\$4,867,979	\$4,969,173	\$5,072,594	\$5,178,289	\$5,286,310	\$5,396,707	\$5,509,533
Safety	9%		\$346,389	\$543,023	\$1,401,624	\$1,430,689	\$1,460,394	\$1,490,752	\$1,521,778	\$1,553,487	\$1,585,893	\$1,619,012	\$1,652,860
Strong Cntrs - Intra-Community		2%	\$0	\$0	\$311,472	\$317,931	\$324,532	\$331,278	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
		7%	\$346,389	\$543,023	\$1,090,152	\$1,112,758	\$1,135,862	\$1,159,474	\$1,183,605	\$1,208,267	\$1,233,472	\$1,259,232	\$1,285,558
Pedestrian & Bicycle Facilities	12%		\$1,793,809	\$1,830,912	\$1,868,832	\$1,907,585	\$1,947,192	\$1,987,669	\$2,029,037	\$2,071,316	\$2,114,524	\$2,158,683	\$2,203,813
Strong Cntrs - Intra-Community		2%	\$298,968	\$305,152	\$311,472	\$317,931	\$324,532	\$331,278.22	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
		10%	\$1,494,841	\$1,525,760	\$1,557,360	\$1,589,655	\$1,622,660	\$1,656,391	\$1,690,865	\$1,726,096	\$1,762,103	\$1,798,902	\$1,836,511
Complete Streets	5%		\$747,420	\$762,880	\$778,680	\$794,827	\$811,330	\$828,196	\$845,432	\$863,048	\$881,052	\$899,451	\$918,256
Strong Cntrs - Intra-Community		2%	\$298,968	\$305,152	\$311,472	\$317,931	\$324,532	\$331,278	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
		3%	\$448,452	\$457,728	\$467,208	\$476,896	\$486,798	\$496,917	\$507,259	\$517,829	\$528,631	\$539,671	\$550,953
Climate Change & Environment	6%		\$0	\$0	\$934,416	\$953,793	\$973,596	\$993,835	\$1,014,519	\$1,035,658	\$1,057,262	\$1,079,341	\$1,101,907
Strong Cntrs - Intra-Community		2%	\$0	\$0	\$311,472	\$317,931	\$324,532	\$331,278	\$338,173	\$345,219	\$352,421	\$359,780	\$367,302
		4%	\$0	\$0	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
Congestion Relief	4%		\$0	\$0	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
Strong Cntrs - Intra-Community		1%	\$0	\$0	\$155,736	\$158,965	\$162,266	\$165,639	\$169,086	\$172,610	\$176,210	\$179,890	\$183,651
		3%	\$0	\$0	\$467,208	\$476,896	\$486,798	\$496,917	\$507,259	\$517,829	\$528,631	\$539,671	\$550,953
Transit Options	14%		\$2,092,777	\$2,136,064	\$2,180,304	\$2,225,516	\$2,271,724	\$2,318,948	\$2,367,210	\$2,416,535	\$2,466,945	\$2,518,463	\$2,571,116
Strong Cntrs - Intra-Community		4%	\$597,936	\$610,304	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
		10%	\$1,494,841	\$1,525,760	\$1,557,360	\$1,589,655	\$1,622,660	\$1,656,391	\$1,690,865	\$1,726,096	\$1,762,103	\$1,798,902	\$1,836,511
Regional Access	5%		\$0	\$0	\$778,680	\$794,827	\$811,330	\$828,196	\$845,432	\$863,048	\$881,052	\$899,451	\$918,256
Strong Cntrs - Intra-Community		5%	\$0	\$0	\$778,680	\$794,827	\$811,330	\$828,196	\$845,432	\$863,048	\$881,052	\$899,451	\$918,256
		0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Community Access	4%		\$597,936	\$610,304	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
Strong Cntrs - Intra-Community		0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		4%	\$597,936	\$610,304	\$622,944	\$635,862	\$649,064	\$662,556	\$676,346	\$690,439	\$704,841	\$719,561	\$734,604
Other	1%	1%	\$0	\$0	\$155,736	\$158,965	\$162,266	\$165,639	\$169,086	\$172,610	\$176,210	\$179,890	\$183,651
Major Infrastructure Project - Rt 2 at S. Athol Rd			\$7,116,559	\$7,116,559									
		100%	\$14,948,409	\$15,257,603	\$15,573,598	\$15,896,545	\$16,226,598	\$16,563,911	\$16,908,645	\$17,260,964	\$17,621,033	\$17,989,024	\$18,365,111



Highway Conclusion

Fiscal constraint was achieved in the three scenarios presented by including identified and assumed needs within the assumed available funds. A major factor in future financial planning in the region will be the monitoring of assets such as bridge and pavements and needs such as safety improvements and congestion relief. As the conditions of these assets and needs change so must resources allocated to these factors. Remaining available funds will be used to fund these projects as they arise.

Transit Conclusion

Fiscal constraint was demonstrated through forecast tables which act as a guide for possible funding through 2040. In the first 5 years of the RTP (2020-2024) fiscal constraint was demonstrated through the projects listed on the 2020-2024 TIP and available funds. As with the highway network, any additional available funds for the transit system will be utilized in an attempt to further expand options available to the region. Several needs have been identified within this RTP that highlight the potential to broaden the reach and use of transit to serve multiple purposes from medical to commercial.