



FFY 2019-2023 TRANSPORTATION IMPROVEMENT PROGRAM

MONTACHUSETT METROPOLITAN PLANNING ORGANIZATION

MPO ENDORSED

May 16, 2018

Prepared by the
MONTACHUSETT REGIONAL PLANNING COMMISSION
FFY 2018 PROGRAM YEAR

Prepared in cooperation with the Massachusetts Department of Transportation and the U.S. Department of Transportation. The views and opinions of the Montachusett Regional Planning Commission expressed herein do not necessarily state or reflect those of the Massachusetts Department of Transportation or the U.S. Department of Transportation.

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The Montachusett MPO and the MRPC fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. The Montachusett MPO operates without regard to race, color, national origin, English Proficiency, ancestry, creed, income, gender, age and/or disability. Any person who believes him/herself or any specific class of persons, to be subject to discrimination prohibited by Title VI may by him/herself or by representative file a written complaint with the MRPC or the MMPO. Complaints are to be filed no later than 180 days from the date of the alleged discrimination. Please contact Glenn Eaton at 978-345-7376 ext. 310 for more information.

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MONTACHUSETT

REGIONAL PLANNING COMMISSION

Offices: 464 Abbott Ave., Leominster, Massachusetts 01453
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MONTACHUSETT METROPOLITAN PLANNING ORGANIZATION ENDORSEMENT OF THE 2019 – 2023 TRANSPORTATION IMPROVEMENT PROGRAM

Whereas, the Montachusett Metropolitan Planning Organization (MMPO) has completed its review in accordance with 23 CFR Part 450 Section 324 (Development and content of the Metropolitan Transportation Plan) and 23 CFR Part 450 Section 326 (Transportation Improvement Program: General) and hereby certifies that the FFY 2019-2023 TIP is financially constrained and that it conforms to the Montachusett 2016-2040 Regional Transportation Plan. Based on the results of the review and analyses, the Montachusett 2016-2040 Regional Transportation Plan and FFY 2019-2023 TIP are consistent with the air quality goals of, and in conformity with, the Massachusetts State Implementation Plan;

Therefore, the Committee of Signatories representing the Montachusett Metropolitan Planning Organization (MMPO) by a majority vote hereby endorses the Montachusett Region FFY 2019-2023 Transportation Improvement Program (TIP).

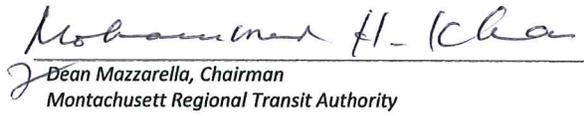


Stephanie Pollack, Secretary and CEO
Massachusetts Department of Transportation



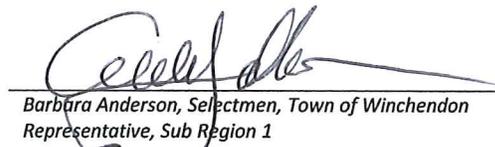
John A. Telepciak, Chairman
Montachusett Regional Planning Commission

Mark Hawke, Mayor
City of Gardner



Dean Mazzarella, Chairman
Montachusett Regional Transit Authority

Stephen DiNatale, Mayor
City of Fitchburg



Barbara Anderson, Selectmen, Town of Winchendon
Representative, Sub Region 1

Kyle Johnson, Selectmen, Town of Ashburnham
Representative, Sub Region 2



Paula Bertram, Selectmen, Town of Lunenburg
Representative, Sub Region 3

Stanley B. Starr, Jr., Selectmen, Town of Lancaster
Representative, Sub Region 4

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Date

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MPO SELF CERTIFICATION COMPLIANCE STATEMENT

This will certify that the Comprehensive, Continuing, Cooperative Transportation Planning Process for Fiscal Years 2018 and 2019 in the Montachusett Metropolitan Planning Organization is addressing major issues facing the region and is being conducted in accordance with all applicable requirements including:

1. 23 USC Section 134, 49 U.S.C. 5303, and this subpart;
2. In nonattainment and maintenance areas, sections 174 & 176 (c) & (d) of the Clean Air Act, as amended (42 U.S.C. 7504, 7506 (c) & (d)) and 40 CFR part 93;
3. Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CFR part 21;
4. 49 U.S.C. 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex, or age in employment or business opportunity;
5. Section 1101 (b) of the Fixing America's Surface Transportation Act (FAST Act), (Pub. L. 114-357) and 49 CFR part 26 regarding the involvement of disadvantaged business enterprises in USDOT funded projects;
6. 23 CFR 230, regarding the implementation of an Equal Employment Opportunity Program on Federal and Federal-Aid construction contracts;
7. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) and 49 CFR Parts 27, 37 and 38;
8. The Older Americans Act, as amended (42 U.S.C. 6101), prohibiting discrimination on the basis of age in programs or activities receiving Federal financial assistance;
9. Section 324 of title 23 U.S.C. regarding the prohibition of discrimination based on gender; and
10. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and 49 CFR part 27 regarding discrimination against individuals with disabilities.
11. Anti-lobbying restrictions found in 49 U.S.C. Part 20. No appropriated funds may be expended by a recipient to influence or attempt to influence an officer or employee of any agency, a Member of Congress, in connection with the awarding of any Federal contract.

The Committee of Signatories representing the Montachusett Metropolitan Planning Organization (MMPO) by a majority vote hereby endorses the Self Certification Compliance Statement for the Montachusett MPO.


Stephanie Pollack, Secretary and CEO
Massachusetts Department of Transportation

John A. Telepciak, Chairman
Montachusett Regional Planning Commission

Mark Hawke, Mayor
City of Gardner

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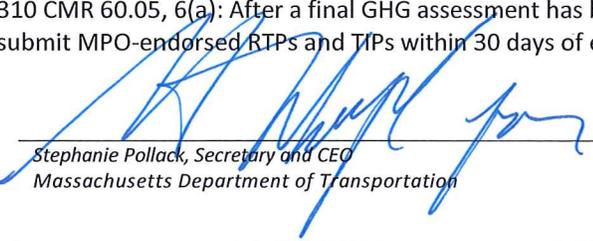


310 CMR 60.05: Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation

Self-Certification Compliance Statement for Metropolitan Planning Organizations

This will certify that the FFY 2019-2023 Transportation Improvement Program for the Montachusett Metropolitan Planning Organization is in compliance with all applicable requirements in the State Regulation 310 CMR 60.05: Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation. The regulation requires the Metropolitan Planning Organizations (MPOs) to:

1. 310 CMR 60.05, 3(b)(1)(a): Evaluate and track the GHG emissions and impacts of RTPs and TIPs;
2. 310 CMR 60.05, 3(b)(1)(b): In consultation with MassDOT, develop and utilize procedures to prioritize and select projects in RTPs, TIPs, and STIPs based on factors that include GHG emissions and impacts;
3. 310 CMR 60.05, 3(b)(1)(c): Quantify net GHG emissions and impacts resulting from the projects in RTPs and TIPs and have made efforts to minimize GHG emissions and impacts;
4. 310 CMR 60.05, 3(b)(1)(d): Determine in consultation with MassDOT that the appropriate planning assumptions used for GHG emissions modeling are consistent with local land use policies, or that local authorities have made documented and credible commitments to establishing such consistency;
5. 310 CMR 60.05, 4(a)(2)(e): Develop public consultation procedures for GHG reporting and related GWSA requirements consistent with current and approved regional public participation plans;
6. 310 CMR 60.05, 4(c): Prior to making final endorsements on the RTPs, TIPs, STIPs, and projects included in these plans, MassDOT and the MPOs shall include the GHG Assessment and information on related GWSA activities in RTPs and TIPs and provide an opportunity for public review and comment on the RTPs, and TIPs.
7. 310 CMR 60.05, 6(a): After a final GHG assessment has been made by MassDOT and the MPOs, MassDOT and the MPOs shall submit MPO-endorsed RTPs and TIPs within 30 days of endorsement to the Department for review of the GHG assessment.


Stephanie Pollack, Secretary and CEO
Massachusetts Department of Transportation

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Montachusett Regional Planning Commission

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MONTACHUSETT METROPOLITAN PLANNING ORGANIZATION SIGNATORIES

Massachusetts Department of Transportation (MassDOT) Secretary	Stephanie Pollack
MassDOT Highway Division Administrator	Jonathan L. Gulliver.
Montachusett Regional Planning Commission (MRPC) Chairman	John A. Telepciak
Montachusett Regional Transit Authority (MART) Chairman	Mayor Dean Mazzarella
Mayor City of Gardner	Mayor Mark Hawke
Mayor City of Fitchburg	Mayor Stephen DiNatale
Winchendon Board of Selectmen <i>Subregion 1</i>	Barbara Anderson
Ashburnham Board of Selectmen <i>Subregion 2</i>	Kyle Johnson
Lunenburg Board of Selectmen <i>Subregion 3</i>	Paula Bertram
Lancaster Board of Selectmen <i>Subregion 4</i>	Stanley B. Starr, Jr.

MPO SUB-SIGNATORY COMMITTEE MEMBERS

David Mohler, Director OTP, MassDOT, for Secretary Stephanie Pollack
Arthur Frost, Project Development Engineer for Administrator Jonathan L. Gulliver
Glenn Eaton, Executive Director, MRPC, for Chairman Telepciak
Mohammed H. Khan, Administrator, MART, for Chairman Mayor Dean Mazzarella

EXOFFICIO MEMBERS

Jeffrey H. McEwen, Administrator	Federal Highway Administration
Mary Beth Mello, Administrator	Federal Transit Administration

MONTACHUSETT REGIONAL PLANNING COMMISSION (MRPC) OFFICERS

John A. Telepciak, Chairman	Phillipston
Guy Corbosiero, Vice Chairman	Winchendon
Michael Pineo, Secretary	Sterling
Alan Pease, Treasurer	Ashby
Roger Hoyt, Asst. Treasurer	Ashburnham

MONTACHUSETT JOINT TRANSPORTATION COMMITTEE (MJTC) OFFICERS

Jon Wyman, Chairman	Westminster
Noreen Piazza, Vice Chairman	Lancaster
Doug Walsh, Secretary	Athol

MONTACHUSETT REGIONAL PLANNING COMMISSION STAFF

Glenn Eaton, Executive Director	John Hume, Planning & Development Director
Linda Parmenter, Administrative/Human Resources Director	Karen Chapman, Principal Planner
Brad Harris, Transportation Director	Noam Goldstein, Regional Planner
George Snow, Principal Transportation Planner	Matthew Leger, Regional Planner
Sheri Bean, Principal Planner	Molly Belanger, Regional Planner
Brian Doherty, Principal Transportation Planner	Jason Stanton, GIS/IT Director
David Fee, Regional Planner	Kayla Kress, GIS Technician
George Kahale, Transit Director	
Holly Ford, Executive Assistant	

MONTACHUSETT JOINT TRANSPORTATION COMMITTEECOMMUNITYAPPOINTED BY SELECTMEN/MAYORAPPOINTED BY PLANNING BOARD

Ashburnham	Jessica Caouette	Joseph McPeak
Ashby		Alan Pease
Athol	Doug Walsh	Doug Walsh
Ayer	Pauline Hamel	
Clinton	Phil Duffy	
Fitchburg		Paula Caron
Gardner	Treavor Beauregard	
Groton		Russell Burke
Harvard		Erin McBee
Hubbardston	Travis Brown	
Lancaster		Noreen Piazza
Leominster	David DiGiovanni	
Lunenburg	Michael Ray Jeffrey	Kenneth Chenis
Petersham	Nancy Allen	
Phillipston	Gordon Robertson	
Royalston	Roland Hamel	
Shirley		Robert Thurston
Sterling	John Kilcoyne	Michael Pineo
Templeton	Alan Mayo	Charles Carroll
Townsend	Ed Kukkula	
Westminster		Jon Wyman
Winchendon	Albert Gallant	Tracy Murphy

EXOFFICIO MEMBERS

Bryan Pounds	Office of Transportation Planning (OTP) and Massachusetts Department of Transportation (MassDOT)
Pamela Stephenson	Federal Highway Administration (FHWA), Administrator
Mary Beth Mello	Federal Transit Administration (FTA), Administrator Department of Environmental Protection (DEP)
Jeffery Hoynoski	MassDOT Highway Division - District 2
Arthur Frost	MassDOT Highway Division - District 3 Montachusett Regional Planning Commission (MRPC)
Mohammed Khan	Montachusett Regional Transit Authority (MART)

ORGANIZATION MEMBERS

Al Futterman	Nashua River Watershed Association (NRWA)
Tony Salerno	Amalgamated Transit Union #690 (ATU 690)
Kit Walker	Fitchburg Airport Commission North Central MA Chamber of Commerce Fitchburg Council on Aging Mass Development
Peter Lowitt	Devens Enterprise Commission (DEC)
Patricia Pistone	Montachusett Opportunity Council, Inc.
Robert Benoit	The ARC of Opportunity

INTRODUCTION

This document is the product of a comprehensive, continuing and cooperative effort to improve and sustain the transportation systems of the Montachusett Region. The decisions and priorities established within are derived and shaped through outreach to and input from local officials, the Montachusett Joint Transportation Committee (MJTC), the Montachusett Regional Transit Authority (MART), the Montachusett Regional Planning Commission (MRPC), the Massachusetts Department of Transportation (MassDOT), the MassDOT Highway Division and any and all interested individuals, organizations and stakeholders in the public at large. Throughout the development and decision-making process, all individuals in the Region are strongly encouraged to participate in the transportation planning process, voice any opinions or concerns and help shape and guide the development of this document.

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) DEVELOPMENT PROCESS

Requirement for Transportation Improvement Program (TIP)

The TIP is required under Federal Regulations issued jointly by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). This TIP is a prioritized listing of transportation projects proposed for implementation for the Montachusett Region during the future five federal fiscal years. This time period is broken down into the coming year (Year 1 Element) and the following four years (Year 2 through Year 5). The fiscal years are project specific where possible. The TIP projects are also identified by funding category so that where necessary priorities may be established for projects within each funding program. Unless otherwise noted, the agency responsible for implementing highway projects is the Massachusetts Department of Transportation Highway Division and, for transit projects, the Montachusett Regional Transit Authority. The reader will note that some of the same projects may be found again in this year's Year 1 Element because they have been delayed by various problems in their design or environmental requirements, while other projects found in last year's TIP have been removed due to implementation.

Procedures for Development of TIP

The MRPC staff annually develops the TIP project listing. Sources used include the MassDOT's Project Information System, MassDOT Highway Division Districts 2 and 3, local officials, the Montachusett Joint Transportation Committee (MJTC), the Regional Transportation Plan (RTP), the Montachusett Metropolitan Planning Organization (MMPO), regional stakeholders, the general public and Transportation Control Measures (TCMs) identified in the Transportation Element of the State Implementation Plan (TESIP).

The local planning process conforms to the private enterprise requirements of the FTA Act, Section 5309, Section 5303 and Section 5307. Specifically, this is demonstrated in the FTA Section 5307 Urban Area Formula Program. Funding from each of these grants is supplied to private transportation providers who provide, under contract, mass transportation services to the Montachusett Regional Transit Authority and to various communities to through Council on Aging services. The private operators are Management of Transportation Services, Inc., Management of Transportation Services Gardner, Inc., Dial-A-Mart Services, Inc., and Management of Transportation Services Gardner, Athol Division. Input from all the providers is utilized in the planning process.

Public Participation Procedures

The Montachusett Public Participation Program (PPP) establishes the procedures utilized to ensure “opportunities for any and all interested individuals to participate early and often in the transportation decision making process.” The PPP also seeks to outline “the process that the MMPO will use to reach out to persons identified under the regulations/laws of Title VI, Environmental Justice (EJ), Limited English Proficiency (LEP), Americans With Disabilities Act (ADA) and as well as any other traditionally underrepresented population.” The MRPC recently amended the PPP in order to change the length for public review and comment periods for the TIP, the Unified Planning Work Program (UPWP), the Regional Transportation Plan (RTP) and other major transportation related documents from 30 days to 21 days. This change allows for a more consistent review process and schedule while still providing ample opportunity for public involvement. After a 45-day public review and comment period, the amended PPP was endorsed by the MPO on March 15, 2017 and became effective as of this date. The PPP also includes provisions for the MPO to reduce the comment period for required documents to a minimum of 10 days under extraordinary circumstances. The PPP is “considered a living document that will change, grow and adapt in order to help the MMPO sustain its work to engage diverse community members throughout its Region. Therefore, the MMPO will modify its public participation methods and activities over time, based on ideas and feedback from community members and the MMPO’s evaluation of its public participation process and effectiveness.” Future updates and/or revisions will also be undertaken as requirements and/or changes are identified due to the passage of the FAST Act, and any future continuing resolutions or federal authorizing legislation.

In conformance with the amended PPP, the draft TIP is distributed for a 21-day public review and comment period. Following completion of the 21-day review period, any comments or issues received are addressed and reflected in the final TIP. This document is then reviewed by the MJTC/MRPC and MMPO and is recommended for endorsement by the Montachusett Metropolitan Planning Organization (MMPO) at a subsequent MMPO meeting.

The fully endorsed TIP is then distributed to Federal, State and local agencies and groups, including FTA, FHWA, the Environmental Protection Agency (EPA) and the Department of Environmental Protection (DEP), again, in conformance with the PPP.

Throughout the development procedure, the Montachusett Transportation Improvement Program (TIP) is compiled in accordance with Title 23 CFR Section 450.324 and 310 CMR 60.03(6)h that requires that the TIP development provide an adequate opportunity for public review and comment. As such, during the TIP development process, a memo announcing the commencement of the TIP was distributed to members of the MPO outreach list including those identified as serving the Title VI and EJ populations. The memo was also translated into Spanish based on our current LEP (Limited English Proficiency) Plan. These memos identified upcoming times and dates where the TIP was to be discussed. It also invited comments and input from all potentially impacted populations including those of Title VI and EJ. These memos were also published to the MRPC webpage. For a listing of the groups contacted as well as a list of meeting dates, please refer to the Coordination/Consultation Process section later in this document.

The Montachusett Regional Transit Authority, a FTA Section 5307/5310/5339 applicant, has consulted with the Montachusett Regional Planning Commission and concurs that the public involvement process adopted by the MPO for the development of the TIP satisfies the public hearing requirements that pertain to the development of the “Program of Projects” (POP) for regular Section 5307, Urbanized Area Formula Program, grant applications including the provision for public notice and the time established for public review and comment.

For FTA projects that are not routine, i.e. applications that require an environmental assessment or an environmental impact statement, the public involvement provided for herein for the TIP review is not sufficient. Additional public involvement, as presented in the joint FHWA/FTA environmental regulations, 23 CFR part 771 will be required by FTA for grant approval.

Coordination/Consultation Process

During the development process of the TIP, the MRPC coordinates with:

- MassDOT Highway Division Districts 2 and 3;
- MassDOT Office of Transportation Planning;
- Montachusett Regional Transit Authority;
- Montachusett Metropolitan Planning Organization;
- Montachusett Joint Transportation Committee.

In addition to specific meetings scheduled for TIP project and Transportation Evaluation Criteria (TEC) review, public meetings of the MJTC and MRPC provide opportunity for input from the general public and interested groups. Notices related to the TIP development and the public comment periods are disseminated to members of the MRPC Transportation Mailing Matrix in accordance with the Montachusett Public Participation Plan (PPP) (MPO endorsed May 25, 2016 and Amended March 25, 2017).

As part of this outreach process, efforts to ensure meeting the requirements of Environmental Justice and Title VI of the 1964 Civil Rights Act are continually examined. This includes the development of a Limited English Proficiency (LEP) Access Plan (MPO Adopted September 2013), translation of memos and certain documents into other languages (based upon the LEP, this is currently done for Spanish), the availability of translation tools for the MRPC website and the inclusion of advocates for special groups in the MJTC membership. MRPC staff maintains a continual review and update process of electronic contact information, i.e. email addresses, in order to correct issues such as broken or non-existent addresses and personnel changes. This electronic mailing list comprises the major PPP distribution list for transportation issues and notices. The update of this electronic mailing list remains an important aspect of our public participation process.

Members of the outreach list include but are not limited to:

Public/Private Groups - Montachusett Joint Transportation Committee (MJTC) Members; Montachusett Regional Planning Commission (MRPC) Members; Montachusett Metropolitan Planning Organization (MMPO) Members; Mayors; Boards of Selectmen; Planning Departments; Planning Boards; City and Town Clerks; Town Administrators; Police Departments; Fire Departments; Public Work Departments; Conservation Commissions; Congressmen; Senators; State Senators and Representatives ; Local Media; Libraries; Councils on Aging; Private Transportation Providers; Regional Transit Authority; Chambers of Commerce; City Councilors; Environmental Protection Agency; Department of Environmental Management; State and Federal Agencies; Housing Authorities; School Districts; Hospitals and Medical Centers; Trail Advocacy Groups and Organizations; Community Development Corporations; and Emergency Management Agencies and Directors.

Special Interest Groups - Montachusett Opportunity Council; Local Transit Union; Cleghorn Neighborhood Center; Spanish American Center; MA Rehab Commission; Fitchburg Spanish Council; Local Community Development Corporations; Airport Managers; Neighborhood Groups; Community Action Groups

The FFY 2019 – 2023 TIP has been or will be discussed at the following scheduled meetings:

- January 10, 2018 – MJTC Meeting
- January 11, 2018 – MRPC Meeting
- January 24, 2018 – Montachusett MPO Meeting
- February 1, 2018 – MRPC Meeting

- February 13, 2018 – TIP Readiness Day
- February 14, 2018 – MJTC Meeting
- February 21, 2018 – Montachusett MPO Meeting
- March 1, 2018 – MRPC Meeting
- March 14, 2018 – MJTC Meeting (Meeting Cancelled Due to Weather)
- March 28, 2018 – Montachusett MPO Meeting
- April 5, 2018 – MRPC Meeting
- April 11, 2018 – MJTC Meeting
- April 18, 2018 – Montachusett MPO Meeting
- May 3, 2018 – MRPC Meeting
- May 9, 2018 – MJTC Meeting
- May 16, 2018 – Montachusett MPO Meeting
- June 7, 2018 – MRPC Meeting
- June 13, 2018 – MJTC Meeting
- June 20, 2018 – Montachusett MPO Meeting
- July 5, 2018 – MRPC Meeting
- July 11, 2018 – MJTC Meeting
- July 18, 2018 – Montachusett MPO Meeting

Through this extensive mailing and notification process, it is anticipated that local and state agencies and officials, as well as other groups/organizations, will be notified of the TIP development process and further coordination and/or consultation will occur as decisions and documents are prepared. As stated in 23 CFR 450.316 (3) (b) the MPO continues to seek to consult with “agencies and officials responsible for other planning activities within the Metropolitan Planning Area (MPA) that are affected by transportation or coordinate its planning process (to the maximum extent practicable) with such planning activities”.

In addition, notices and information encouraging input to the TIP development process have been placed on the MRPC website. This includes all appropriate meeting dates, memos announcing the start of the comment period and the availability of draft documents as well as the draft document itself. These posting were also made to the website in a Spanish language version. Upon endorsement of the TIP by the MPO, final versions of the TIP as well as a project summary are then made available via the MRPC website. All comments received during the public comment and review period, as well as appropriate responses to them, are detailed in the Appendix Comments and Responses at the end of this document.

Project Selection/Prioritization – Transportation Evaluation Criteria

For the purposes of project selection and programming, any project listed in Year 1 of the endorsed TIP will be considered to have the concurrence of the MPO without further action required. Prioritization of projects will have taken place by virtue of placement of a project in Years 1 to 5 of the TIP. Out years may contain unallocated funding amounts based upon anticipated federal aid regional target funds. These yearly listing will be further defined as specific projects in subsequent year TIPs.

Prioritization of projects is based upon input from MassDOT regarding project design and implementation status, local prioritization from chief elected officials, scoring of the project based upon the Transportation Evaluation Criteria (TEC), fiscal constraints for the Montachusett Region, consensus vote by the MJTC and formal adoption by the MPO. Throughout this procedure, input from local citizens are reviewed and considered where appropriate in the prioritization process.

As indicated, an initial project listing is obtained from MassDOT and the local communities. These projects are then reviewed one by one to ascertain their current status as to design and potential advertising dates. Projects are then scored and evaluated utilizing the Transportation Evaluation Criteria (TEC). The TEC is a series of criteria to “be applied by the appropriate implementing agency during the project development stage to ensure that our limited budgetary and staff resources are committed to the best proposals; to assist the MPO process of programming federal funding through the regional Transportation Improvement Programs; and to examine existing projects in the pipeline to determine which should ultimately proceed to design and construction.”

The criteria are used to cover all types of transportation projects from simple resurfacing to reconstruction and expansion. Benefits and impacts are examined for transportation as well as economic development, community effects, environmental justice issues, land use and environmental impacts. Final scores based upon the TEC then become part of the decision and prioritization process.

The Montachusett TEC is based on a scoring scale of 0 to 100 with the higher the score the greater the project priority. To establish the 100-point scale, 25 separate questions were derived and grouped into six (6) categories. The categories and individual questions/criteria per category breakdown as follows:

Montachusett TEC Category and Scoring Summary

Category	No. of Individual Questions/Criteria	Total Maximum Category Score
Condition	4	12
Mobility	4	16
Safety	4	20
Community Effects and Support	5	20
Land Use and Economic Development	4	16
Environmental Effects	4	16
Totals	25	100

The Maximum Category scores reflect the relative importance of that category as determined by the MPO during the establishment of the Montachusett TEC, i.e. Safety and Community Effects and Support were deemed to be of greater significance in the prioritization process. For a sample TEC scoring sheet, please refer to the appendix of this document.

At the start of each TIP development cycle, MPO staff reviews the latest information and status of the regions projects in order to update their individual TEC scores. As projects move forward, more details related to their scope, purpose and impacts can usually be derived. This in turn results in a better ability to score the project based on the TEC questions.

After all projects are scored, a prioritized listing is established by the MPO. This listing helps to drive the development of each of the individual federal fiscal years of the TIP. Two additional elements of the project also play into the prioritization process; the projects estimated total cost and its current design status. The current design status of a project significantly affects its potential for advertisement in a particular fiscal year. Delays in permitting, right-of-way, environmental impacts, etc. can prevent a highly-scored project from being included in particular year. Thus, close coordination with MassDOT on project development is an important aspect of developing a workable TIP. In addition, the TIP is required to be fiscally constrained, i.e. a region cannot program more projects than the anticipated federal funds available for its region. MassDOT provides each region with these federal “target” figures to assist in the development of a fiscally constrained document. These fiscal limits can impact how many projects can be allocated in a certain year, thus consensus on cost estimates are also key in the TIP process. From this, a project listing by fiscal year is developed. The listing is then reviewed by state and local

officials, as well as the MJTC and the MPO, to determine fiscal constraint by funding year. Any problems are then identified. Through the MPO, projects are adjusted and prioritized in order to resolve the identified problems.

The following table provides the Montachusett FFY 2019 – 2023 TIP Project Priority Listing based upon their respective TEC scoring.

MONTACHUSETT MPO FFY 2019-2023 TIP PROJECTS - TEC SCORING PRIORITIZED LISTING

3/14/2018

Project ID #	Community	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Total	Design Status	Est Cost ProjectInfo	
605651	Leominster	Leominster- Reconstruction on Rt 13	3	3	3	1	4	4	2	3	5	5	5	5	2	2	2	2	1	4	1	2	3	2	0	0	0	64	75%	\$5,200,000	
608779	Lancaster	Lancaster- Intersection Improvements on Route 117/Route 70 at Lunenburg Road and Route 117/Route 70 at Main Street	2	2	3	1	4	4	2	4	4	2	4	4	2	2	2	2	4	3	2	1	4	2	0	1	1	62	25% (as of 9/27/2017)	\$2,500,590	
608548	Winchendon	Winchendon- Improvements & Related Work on Central Street (Route 202), from Front Street to Maple Street (0.5 Miles)	3	3	2	1	1	3	3	2	3	3	2	3	3	3	3	2	4	4	1	2	2	1	0	1	0	55	Preliminary Design	\$2,777,428	
608723	Athol	Athol- Intersection Improvements at Crescent Street and Chestnut Hill Avenue	3	3	1	1	0	1	3	0	3	3	3	3	4	3	2	2	3	3	2	2	2	1	1	0	1	50	Preliminary Design 25%	\$4,371,060	
601957	Ashburnham	Ashburnham- Resurfacing & Related Work on Rt 101	3	2	1	1	0	1	2	1	4	4	4	4	2	0	0	2	3	1	2	1	3	1	2	0	0	44	25% (Town) in Progress (2/15/17); Design Change (2/13/18)	\$4,500,000	
606420	Fitchburg	Fitchburg- Intersection & Signal Improvements @ Rt 2A (Lunenburg St) & John Fitch Highway	0	1	3	0	4	1	1	1	4	4	4	4	2	2	2	0	3	2	1	1	2	2	0	0	0	44	Preliminary Design (ProjectInfo)	\$1,800,000	
607848	Hubbardston	Hubbardston- Resurfacing and Related Work on Route 68, from Williamsville Road to the Gardner C.L.	4	3	2	1	0	1	2	1	0	3	1	0	3	0	0	3	4	3	1	3	3	0	3	0	3	44	75% Recvd 10/11/17	\$5,768,528	
607446	Westminster	Westminster - Intersection Improvements, Route 2A at Route 140	2	1	3	0	2	2	0	2	4	2	4	4	2	0	0	2	3	3	1	0	4	2	0	0	0	43	25% Comments to DE 10/17/2016	\$1,395,022	
608415	Athol	Athol- Intersection Improvements at Route 2A and Brookside Road	3	3	3	1	0	1	2	1	3	2	3	3	1	0	2	1	3	3	2	2	2	1	0	0	0	42	Pre 25%	\$1,544,720	
607902	Ayer	Ayer- Reclamation & Related Work on Route 2A, from Harvard Road to Main Street	4	3	3	1	0	0	3	0	2	2	2	0	1	3	3	3	3	2	2	0	3	0	0	1	0	41	25% DPH 10/17/2017; Moving to 75%	\$3,869,145	
608832	Lancaster	Lancaster- Interchange Improvements at Route 2 Exit 34 (Old Union Turnpike)	1	0	3	0	0	2	1	2	4	0	4	5	0	1	2	1	4	3	2	1	1	2	0	1	1	41	Preliminary Design	\$4,800,000	
608728	Winchendon	Winchendon- Resurfacing & Related Work on Route 202, from the Templeton Town Line to Main Street (3.1 Miles)	4	2	1	1	0	2	1	2	3	2	0	3	2	1	1	2	3	2	2	2	2	0	0	0	0	38	PS&E	\$1,652,389	
604499	Leominster	Leominster- Resurfacing And Related Work on Rt 12 (Central St)	3	0	3	0	0	1	2	0	4	4	4	4	1	2	1	1	1	2	1	1	1	1	0	0	0	1	37	NTP to begin work on contract	\$8,350,150
604961	Clinton	Clinton- Resurfacing & Related Work on Rt 110 (High St)	4	2	2	1	0	1	1	0	2	2	3	3	1	1	1	1	3	1	1	1	3	0	1	0	1	36	75% Under Review	\$1,825,448	
606640	Ayer	Ayer- Resurfacing & Related Work on Rt 2A (Fitchburg Rd & Park St)	3	3	2	1	0	1	2	0	2	2	0	0	2	1	1	1	3	2	1	1	3	0	1	0	3	35	Preliminary Design (ProjectInfo)	\$2,400,000	
601965	Groton/Pepperell/Townsend	Groton- Pepperell- Townsend- Resurfacing & Related Work on Rt 119	4	0	3	0	0	1	0	0	3	3	3	4	1	0	0	2	0	1	1	1	3	0	0	1	3	34	Preliminary Design (ProjectInfo)	\$0	
608424	Templeton	Templeton- Reconstruction of Route 68, From King Phillip Trail (Route 202) North to the Phillipston Town Line (2.65 Miles)	4	2	0	1	0	2	3	0	0	0	0	0	3	2	2	2	2	4	3	1	2	0	1	0	-1	33	25%	\$5,575,826	
608784	Templeton	Templeton- Roundabout Construction at The Intersection of Patriots Road, South Main Street, North Main Street and Gardner Road	4	2	2	1	0	2	2	2	2	2	2	2	2	0	0	1	1	3	2	0	0	0	0	1	0	33	Preliminary Design	\$1,852,694	
607432	Westminster	Westminster - Rehabilitation & Box Widening on Rt 140, From Patricia Rd to the Princeton T.L.	3	2	2	0	0	1	0	1	3	0	2	3	0	0	0	2	3	2	1	0	4	0	3	0	0	32	Preliminary Design (ProjectInfo)	\$4,200,000	
608879	Winchendon	Winchendon- Resurfacing & Related Work on Maple Street (Route 202), From Vine Street to Glenallen Street (1.36 Miles)	3	2	1	1	0	1	2	1	0	1	0	0	2	2	2	2	4	2	2	2	1	0	0	1	0	32	Pre 25%	\$1,680,444	
608891	Gardner	Gardner- Resurfacing and Rumble Strip Installation on Route 140	3	1	3	0	0	0	0	0	4	2	4	4	2	0	1	1	1	3	1	0	1	0	0	0	0	31	Preliminary Design (ProjectInfo)	\$1,200,000	
607604	Sterling/West Boylston	Sterling/West Boylston - Improvements on Route 140 at I-190	2	1	3	1	1	2	1	2	2	0	0	2	0	0	0	2	1	2	1	1	4	1	0	0	0	29	Preliminary Design (ProjectInfo)	\$800,000	
608793	Hubbardston	Hubbardston- Highway Reconstruction of Route 68 (Main Street), from 1,000 ft North of Williamsville Road to Elm Street	3	2	2	1	0	0	2	0	0	2	0	2	2	0	0	1	2	3	1	1	2	0	0	2	0	28	25% (as of 1/9/2018)	\$2,230,070	
607431	Westminster	Westminster - Resurfacing & Related Work on Route 140, From Route 2A to Patricia Road	2	2	2	0	0	1	0	1	2	0	0	2	1	0	0	2	3	1	1	1	4	0	0	0	0	25	75% Recv 2/6/2018	\$1,500,745	
608888	Gardner	Gardner- Reclamation and Related Work on Pearson Boulevard	3	0	3	0	0	1	4	1	0	0	0	0	1	1	1	1	1	2	1	0	1	1	0	1	0	23	25%	\$864,518	
608177	Ashby	Ashby - Reconstruction of Route 119 (Townsend Road) from Bernhardt Road to Route 31.	2	1	2	0	0	1	1	1	2	0	0	2	0	0	0	0	1	1	0	0	2	0	0	2	2	20	Preliminary Design	\$6,900,000	

AMENDMENT/ADJUSTMENT PROCEDURES

In order to minimize constraints on programming projects, the endorsed TIP will have the provision, as adopted by the MPO, that will allow relatively minor modifications be made to the TIP without formal MPO action. Significant changes will continue to require MPO action through the amendment process.

Minor modifications may include such actions as:

- moving a project in either direction between the sequential years, ex. Years 1 and 2, Years 2 and 3, etc.;
- changes in funding amounts (typically less than 10% of the total cost) or categories within the same fiscal year.

Minor modifications will be accomplished through an agreed-upon administrative action with the approval of the MPO. That action will include approval of the modification by the MPO at a duly constituted meeting and written notification of the MPO members. Under an adjustment, a formal signatory endorsement and a 21-day public review period will not be required.

Significant changes to the TIP include major actions such as:

- the addition or deletion of a Federal Aid project;
- if the design, scope or budget of a project is found to have changed significantly as determined by the MJTC and MPO (typically cost changes of more than 10%);
- moving a project from Non-Federal Aid to one of the Federal Aid funding categories;
- moving a project in either direction between non-sequential fiscal years, ex. from Year 1 of the TIP to Year 3;
- advancing a project from the Appendix project list to either Years 1, 2, 3 or 4.
- advancing a project from the out Year 5 to either Years 1, 2 or 3.

Significant changes to the TIP will require formal endorsement of an amendment. This amendment process will include a 21-day public comment period, or an abbreviated comment period of not less than ten (10) days under what the MPO considers to be extraordinary circumstances, as outlined in the federal planning regulations and the Montachusett Public Participation Program (as endorsed May 25, 2016 and amended on March 15, 2017), approval of the amendment and signatory endorsement by MPO members at a subsequent MPO meeting.

The MPO will review each request change and determine whether the adjustment or amendment procedure is required for the proposed action.

COORDINATION WITH REGIONAL TRANSPORTATION PLANNING

The 2016 Montachusett Regional Transportation Plan (RTP) was completed and endorsed by the MPO on July 30, 2015. It provides the basic framework for implementing future short-range and long-range transportation and air quality improvements in the Montachusett Region. In addition, it sets the basic transportation goals and objectives for the region. These goals and objectives are consistent with the long-range land use plan and the social, economic, and environmental policies of the region.

The 2016 Regional Transportation Plan (RTP) serves as a long-term blueprint of the region's transportation system. The current network is compared to the past and envisioned 25 years into the future. Needs are identified and a framework of

projects and priorities are set across all modes, i.e. highway, transit, bicycle and pedestrian, freight, etc. The RTP also serves to provide as a basis for any federally financed transportation and transit project, program or study.

The Transportation Plan decisions reflect the federally certified 3C (comprehensive, cooperative and continuing) process, and are based upon Federal, State and local policies, detailed technical analysis, and citizen participation.

Projects in the Fiscal Year 2019-2023 TIP are consistent with the previous as well as the current Regional Transportation Plan for the Montachusett Region as completed in 2003, 2007, 2012 and 2016. The transit portion of the region's transportation system and its needs is broken down into several components. These include operations of the Regional Transit Authority and its capital funding needs, as well as commuter rail services (from the MBTA) with park-and-ride managed by the RTA.

Recommendations in the Regional Transportation Plan concerning the Transit Authority component of the region's transportation system are drawn directly from transit development studies and other work tasks. Recommendations made to improve the MART transit system include:

- Continued monitoring of routes and schedules so that any beneficial changes can be identified and implemented;
- Alternative sources of funding for continued transit operations must be developed and instituted;
- The marketing effort must be upgraded and increased to inform the public of transit availability and efficiency;
- Additional support equipment, ramp equipped buses, lift equipped vans, etc., should be acquired;
- Driver safety, CPR, first aid, and sensitivity courses should be maintained;
- Transit services for the elderly and individuals with disabilities should continue to be upgraded as necessary to insure both availability and accessibility in compliance with MART's ADA complementary paratransit plan;
- Paratransit services provided by MART to social service agency clients should continue to be monitored for coordination of effort;

Recommendations for funding of the Mobility Assistance Program including the Section 5310 program are also noted in the Regional Transportation Plan. It states that in order to provide increased mobility for Montachusett residents that do not own automobiles or that choose to be less dependent on the automobile; MART will need to continue to develop and implement appropriate and innovative public transit programs. It also states that elderly and disabled services provided by MART and social service agencies should continue to be monitored for coordination of effort. The vehicles that MART is requesting under MAP would be used as replacements to the vehicles operated in the Dial-A-MART, COA, and ADA complementary Paratransit programs. The Dial-A-MART program coordinates transportation services for social service agencies, disability community advocacy organizations, etc. located in the Montachusett Region.

Capital funding needs can be broken down into three categories: vehicles for revenue service, capital equipment purchases, and construction/rehabilitation projects. The Regional Transportation Plan states that in addition to increased and improved routing and scheduling, it will be necessary for MART to maintain and improve the operating condition of its vehicle fleet. Federal Regulations under MAP-21 and the FAST Act also require that federal recipients maintain their federally funded assets in a State of Good Repair under a Transit Asset Management Plan. Vehicle fleets, equipment and facilities will be programmed under the TIP in accordance with meeting the goals established in that plan.

EQUITY DISTRIBUTION ANALYSIS OF TIP PROJECTS

MassDOT and FHWA require MPO’s to include a geographic and social equity analysis of past and current TIP projects. This analysis is broken into two parts. The first is an examination of federal target eligible projects contained within this TIP, i.e. FFY 2019-2023. The second involves a five year “look back” at prior TIP projects. For this analysis that would include projects from FFY 2014 to 2018.

Methodology

Projects identified for the two analyses include site specific projects, i.e. bridge replacements/rehabilitations and intersection improvements, as well as road and highway segments that may stretch several miles and across multiple communities. The identified projects were then mapped for each analysis against identified Environmental Justice and/or Title VI populations. Staff then assessed the project locations relative to the identified populations.

For each of these analysis, the 2015 American Community Survey 5-year estimates were utilized. All applicable maps can be found in the appendix of this document. The table below illustrates which ACS table was used to obtain the data for each variable used in determining Environmental Justice and Title VI designated areas.

2015 ACS Source Data

Variable	2015 ACS Table
Median Household Income	B19013
Minority	B03002
Limited English Proficiency (LEP)	B16002
Elderly	B01001
Individuals with Disabilities	DP02
Foreign Born	B05002

Environmental Justice and Title VI populations are defined in the tables below.

Environmental Justice and Title VI Definitions for Analysis

Environmental Justice Block Groups
<ol style="list-style-type: none"> 1. Block group whose annual median household income is equal to or less than 65 percent (%) of the statewide median (\$62,133 in 2010); or 2. Twenty-five percent (25%) or more of the residents identifying as minority; or 3. Twenty-five percent (25%) or more of the households having no one over the age of 14 who speaks English only or very well - Limited English Proficiency (LEP).

FHWA Title VI Communities
<ol style="list-style-type: none"> 1. <u>Elderly</u> (% of Total Population > 65 that is higher than the regional average of 13.98%) 2. <u>Individuals with Disabilities</u> (% of population with a disability that is higher than the regional average of 12.35%) 3. <u>Minority</u> (% of population including Hispanic or Latino of any race that is considered non-white and is higher than the regional average of 17.46%) 4. <u>Foreign Born</u> (% of population that is Foreign Born and is higher than the regional average of 7.85%) 5. <u>Language</u> (% of Population Spoken Language Other than English that is higher than the regional average of 13.56%)

FTA Title VI Communities

- | |
|--|
| <ol style="list-style-type: none">1. <u>Minority</u> (% of population including Hispanic or Latino of any race that is considered non-white and is higher than the regional average of 17.46%)2. <u>Low Income</u> (% Estimated Below Poverty Level that is higher than the regional average of 11.93%) |
|--|

FFY 2019-2023 Target Eligible Projects

To assess the possible benefits or burdens of the projects within the FFY 2019-2023 TIP, those projects identified as federal aid target eligible were identified. The analysis for this TIP is limited to these projects as they are the projects with the most programming control of the MPO. Bridge projects as well as those on the Interstate system, etc., are prioritized at the state level.

The following table identifies 25 target eligible projects in the Montachusett Region, listed by their calculated TEC score as well as their anticipated FFY year listing for this TIP. Some of the projects are identified as being listed in the Appendix of the TIP. The Appendix is a listing of projects without an identified funding source or program year due to design status and/or fiscal constraint issues.

FFY 2019-2023 Target Eligible Projects

FFY 2019-2023 TIP Year	MassDOT ID #	Community	Description	TEC	Est Cost ProjectInfo	Within EJ Population	Within Title VI Population	
							FHWA	FTA
2020	605651	Leominster	Leominster- Reconstruction on Rt 13	64	\$5,681,060	X	X	X
2020	608779	Lancaster	Lancaster- Intersection Improvements on Route 117/Route 70 at Lunenburg Road and Route 117/Route 70 at Main Street	62	\$2,600,614		X	X
2021	608548	Winchendon	Winchendon- Improvements & Related Work on Central Street (Route 202), from Front Street to Maple Street (0.5 Miles)	55	\$2,999,622	X		
Appendix	608723	Athol	Athol- Intersection Improvements at Crescent Street and Chestnut Hill Avenue	50	\$4,371,060	X	X	X
2023	601957	Ashburnham	Ashburnham- Resurfacing & Related Work on Rt 101	44	\$5,220,000			
Appendix	606420	Fitchburg	Fitchburg- Intersection & Signal Improvements @ Rt 2A (Lunenburg St) & John Fitch Highway	44	\$1,800,000	X	X	X
2019	607848	Hubbardston	Hubbardston- Resurfacing and Related Work on Route 68, from Williamsville Road to the Gardner C.L.	44	\$4,044,376			
2019	607446	Westminster	Westminster - Intersection Improvements, Route 2A at Route 140	43	\$2,176,454			
Appendix	608415	Athol	Athol- Intersection Improvements at Route 2A and Brookside Road	42	\$1,544,720	X	X	X
2021	607902	Ayer	Ayer- Reclamation & Related Work on Route 2A, from Harvard Road to Main Street	41	\$4,362,276	X	X	X
2023	608832	Lancaster	Lancaster- Interchange Improvements at Route 2 Exit 34 (Old Union Turnpike)	41	\$5,568,000	X		
2019	608728	Winchendon	Winchendon- Resurfacing & Related Work on Route 202, from the Templeton Town Line to Main Street (3.1 Miles)	38	\$1,596,635			
2022	604499	Leominster	Leominster- Reconstruction And Related Work on Rt 12 (Central St), Including Rehabilitation of L-08-022	37	\$9,352,168	X	X	X
2019	604961	Clinton	Clinton- Resurfacing & Related Work on Rt 110 (High St)	36	\$2,436,388	X	X	X
Appendix	606640	Ayer	Ayer- Resurfacing & Related Work on Rt 2A (Fitchburg Rd & Park St)	35	\$2,400,000	X	X	X
Appendix	608424	Templeton	Templeton- Reconstruction of Route 68, From King Phillip Trail (Route 202) North to the Phillipston Town Line (2.65 Miles)	33	\$5,575,826		X	X
2021	608784	Templeton	Templeton- Roundabout Construction at The Intersection of Patriots Road, South Main Street, North Main Street and Gardner Road	33	\$2,000,910		X	X
Appendix	607432	Westminster	Westminster - Rehabilitation & Box Widening on Rt 140, From Patricia Rd to the Princeton T.L.	32	\$4,200,000			
Appendix	608879	Winchendon	Winchendon- Resurfacing & Related Work on Maple Street (Route 202), From Vine Street to Glenallen Street (1.36 Miles)	32	\$1,680,444	X		
2022	608891	Gardner	Gardner- Resurfacing and Rumble Strip Installation on Route 140	31	\$1,248,000	X	X	X
2021	607604	Sterling/West Boylston	Sterling/West Boylston - Improvements on Route 140 at I-190	29	\$996,840		X	
Appendix	608793	Hubbardston	Hubbardston- Highway Reconstruction of Route 68 (Main Street), from 1,000 ft North of Williamsville Road to Elm Street	28	\$2,230,070			
2020	607431	Westminster	Westminster - Resurfacing & Related Work on Route 140, From Route 2A to Patricia Road	25	\$1,560,775			
Appendix	608888	Gardner	Gardner- Reclamation and Related Work on Pearson Boulevard	23	\$968,261	X	X	X
Appendix	608177	Ashby	Ashby - Reconstruction of Route 119 (Townsend Road) from Bernhardt Road to Route 31.	20	\$6,900,000			
\$83,514,499						Within EJ Population	Within Both FHWA & FTA Title VI Population	
						\$44,411,999	\$44,341,283	
							FHWA	FTA
							\$45,338,123	\$44,341,283

FFY 2019-2023 Target Eligible Projects Equity Analysis

An analysis of the geographic distribution of the twenty-five projects within the 2019-2023 TIP resulted in an understanding of the percentage of TIP projects and TIP funds allocated within Environmental Justice and Title VI areas. The results of this analysis are as follows:

- Thirteen (13) of the 25 projects (52%) are within or directly adjacent to identified EJ block groups representing a total cost of \$44,411,999, or 53% of the total project costs of \$83,514,499. As seen in the table below, the percentage of TIP funds allocated within EJ areas is significantly above the percentage of the region’s population that lives within EJ block groups, indicating an equitable distribution of TIP projects and funds within the region.

Equity Analysis Summary – EJ versus FFY 2019-2023 Target Eligible Projects

	Population Represented in Communities (2015)	Percent Population Represented	TIP Project Investment	Percent Projects in EJ/Non EJ Communities by Total Investment (\$)
Within EJ Communities	74,488	31%	\$ 44,411,999	53%
Outside EJ Communities	166,106	69%	\$ 39,102,500	47%
Total	240,594	100%	\$ 83,514,499	100%

- Fourteen (14) of the 25 projects (56%) were located in FHWA Title VI areas with a total cost of \$45,338,123 , or 54% of the total project costs of \$83,514,499. From the table below, one may conclude that the percentage of total TIP funds invested in FHWA Title VI communities is not proportionate to the percentage of the region’s population living in FHWA Title VI communities. However, because FHWA Title VI designated is aggregated at the community level, it is very likely that a significant portion of the populations living in FHWA Title VI designated communities do not possess the characteristics of FHWA Title VI designations. Therefore, there is a significant possibility that the actual percentage of the region that possesses FHWA Title VI characteristics is lower than the figures presented below.

Equity Analysis Summary – FHWA Title VI versus FFY 2019-2023 Target Eligible Projects

	Population Represented in Communities (2015)	Percent Population Represented	TIP Project Investment	Percent Projects in EJ/Non EJ Communities by Total Investment (\$)
Within FHWA Title VI Communities	188,426	78%	\$ 45,338,121	54%
Outside FHWA Title VI Communities	52,168	22%	\$ 38,176,376	46%
Total	240,594	100%	\$ 83,514,499	100%

- Thirteen (13) of the 25 projects (52%) were located in FTA Title VI areas with a total cost of \$44,341,283, or 53% of the total project costs of \$83,514,499. As with the FHWA Title VI Community Analysis, the regional FTA Title VI population numbers may be skewed to be greater than they are due to the level of analysis being at the community level.

Equity Analysis Summary – FTA Title VI versus FFY 2019-2023 Target Eligible Projects

	Population Represented in Communities (2015)	Percent Population Represented	TIP Project Investment	Percent Projects in EJ/Non EJ Communities by Total Investment (\$)
Within FTA Title VI Communities	160,335	67%	\$ 44,341,283	53%
Outside FTA Title VI Communities	80,259	33%	\$ 39,173,216	47%
Total	240,594	100%	\$ 83,514,499	100%

2014-2018 Projects Five Year Lookback

The following table identifies 24 projects for the Montachusett Region implemented in the last five years, i.e. from 2014 to 2018. All projects appeared in a prior TIP and were advertised for construction, initiated construction or completed construction prior to the development of this TIP.

2014-2018 Projects – Five Year Lookback

MassDOT ID #	Community	Description	Est Cost Project Info	TIP Year	Within EJ Population	Within Title VI Population	
						FHWA	FTA
603514	Leominster	Bridge Replacement, L-08-014, Whitney Street Over the Monoosnoc Brook	\$2,873,163	2014	X	X	X
604439	Winchendon	Multi-Use Trail Construction (North Central Pathway - Phase V) Includes W-39-023, W-39-024 & W-39-028	\$1,987,709	2015	X		
604515	Royalston	Bridge Replacement, R-12-006, North Fitzwilliam Road Over Lawrence Brook	\$1,313,437	2016		X	
604838	Winchendon	Bridge Replacement, W-39-001, Harris Road Over Tarbell Brook	\$2,129,943	2016			
604928	Leominster	Reconstruction of Mechanic Street, From Laurel Street to The Leominster Connector	\$2,929,315	2016	X	X	X
604960	Clinton	Reconstruction & Related Work on Water Street and Bolton Road (1.2 Miles)	\$4,433,939	2015	X	X	X
605696	Hubbardston	Superstructure Replacement, H-24-004, Burnshirt Road Over Burnshirt River	\$909,527	2014			
606408	Athol	Reconstruction of West Royalston Road, From Silver Lake Street to The Royalston T.L. (Approx. 2 Miles)	\$1,996,354	2014		X	X
606636	Athol	Scenic Byway Access & Overlook Construction	\$323,467	2014	X	X	X
607114	Lancaster	Bridge Replacement, L-02-018, Jackson Road Over Route 2	\$5,924,599	2015		X	X
607296	Athol	Median Delineator Replacement on Route 2, From South Athol Road to 1,330 Ft. West of State Road (6 Miles)	\$588,376	2014		X	X
607419	Westminster	Deck Replacement, W-28-023, Route 2A/140 Over Route 2	\$2,672,775	2015			
607436	Hubbardston	Resurfacing and Related Work on Burnshirt Road	\$1,103,640	2014			
607641	Athol/Phillipston	Resurfacing & Related Work on Route 2A, From Route 32 To Routes 2/202 (Mm 36.7 - Mm 40.7: 4 Miles)	\$2,352,856	2014	X	X	X
607909	Sterling	Bridge Joints Repairs and Beam-End Repairs At 5 Bridges On I-190	\$10,021,616	2015		X	
604699	Sterling	Intersection Improvements at Rt 12 And Chocksett Rd	\$4,700,000	2016		X	
607529	Winchendon	Bridge Replacement, W-39-015, North Royalston Rd Over Tarbell Brook	\$2,243,868	2017			
608250	Royalston	Bridge Replacement, R-12-001 (B35), Stockwell Road Over Lawrence Brook	\$857,005	2017		X	
607475	Winchendon	Resurfacing & Related Work on Route 12, From Mill Street/Beginning of State Highway to New Hampshire State Line	\$1,571,623	2017			
608188	Gardner/Leominster/Sterling	Intersection Improvements at 3 Locations	\$2,622,497	2018	X	X	X
606124	Fitchburg/Lunenburg/Leominster	Reconstruction of Summer Street and North Street	\$9,939,131	2018	X	X	X
608179	Royalston	Bridge Replacement, R-12-009, North Fitzwilliam Road Over Lawrence Brook	\$1,721,880	2018		X	
605094	Fitchburg	Bridge Replacement, F-04-003, State Route 31 over Lawrence Brook	\$3,120,258	2018		X	X
608864	Gardner	Bridge Replacement, G-01-008, Pleasant Street over the B&M Railroad	\$4,404,240	2018	X	X	X
Total			\$72,741,218		Within EJ Population	Within Both FHWA & FTA Title VI Population	
					\$31,866,317	\$41,508,195	
						FHWA	FTA
						\$60,122,133	\$41,508,195

2014-2018 Projects Five Year Lookback Equity Analysis

An examination of projects funded over the last five TIPs, identified 24 individual projects with an estimated total cost of \$72,741,218. A geographic distribution of these 24 projects against those areas categorized as Environmental Justice (EJ) or Title VI areas resulted in the following:

- Nine (9) of the 24 projects (38%) are within or directly adjacent to identified EJ block groups representing a total cost of \$31,866,317 , or 44% of the total project costs of \$72,741,218. As seen in the table below, the percentage of TIP funds allocated within EJ areas is significantly above the percentage of the region’s population that lives within EJ block groups.

Equity Analysis Summary – EJ versus FFY 2014-2018 Projects

	Population Represented in Communities (2015)	Percent Population Represented	TIP Project Investment	Percent Projects in EJ/Non EJ Communities by Total Investment (\$)
Within EJ Communities	74,488	31%	\$ 31,866,317	44%
Outside EJ Communities	166,106	69%	\$ 40,874,901	56%
Total	240,594	100%	\$ 72,741,218	100%

- Seventeen (17) of the 24 projects (71%) were located in FHWA Title VI areas with a total cost of \$60,122,133 , or 83% of the total project costs of \$72,741,218. As mentioned previously, the community-level of analysis in determining Title VI communities means that there is a likelihood that a number of people within the population do not possess the characteristics that apply to Title VI communities, and therefore the allocation of 83% of TIP funds within these communities may be well above an equitable percentage.

Equity Analysis Summary – FHWA Title VI versus FFY 2014-2018 Projects

	Population Represented in Communities (2015)	Percent Population Represented	TIP Project Investment	Percent Projects in EJ/Non EJ Communities by Total Investment (\$)
Within FHWA Title VI Communities	188,426	78%	\$ 60,122,133	83%
Outside FHWA Title VI Communities	52,168	22%	\$ 12,619,085	17%
Total	240,594	100%	\$ 72,741,218	100%

- Twelve (12) of the 24 projects (50%) were located in FTA Title VI areas with a total cost of \$41,508,195, or 57% of the total project costs of \$72,741,218. As with the FHWA Title VI Community Analysis, the regional FTA Title VI population numbers may be skewed to be greater than they are due to the level of analysis being at the community level, and therefore the allocation of 57% of TIP funds within these communities is likely equitable.

Equity Analysis Summary – FTA Title VI versus FFY 2014-2018 Projects

	Population Represented in Communities (2015)	Percent Population Represented	TIP Project Investment	Percent Projects in EJ/Non EJ Communities by Total Investment (\$)
Within FTA Title VI Communities	160,335	67%	\$ 41,508,195	57%
Outside FTA Title VI Communities	80,259	33%	\$ 31,233,023	43%
Total	240,594	100%	\$ 72,741,218	100%

Summary of Equity Analysis

The percentage of TIP funds that have been allocated in Environmental Justice areas is greater than the percentage of the region’s population that reside in Environmental Justice areas. Additionally, 17 out of 24, or 71% of TIP projects in the past five years have been located in either FHWA or FTA Title VI Communities. Overall, it can be determined that the projects implemented through the TIP process in the past five years have benefitted the Environmental Justice and Title VI populations in an equitable manner. Such analysis will be conducted on a yearly basis to ensure that the Environmental Justice and Title VI populations continue to benefit from the transportation planning process in the Montachusett Region.

SPECIAL EFFORTS FOR ELDERLY AND DISABLED

The U.S. Department of Transportation's regulations regarding Nondiscrimination on the Basis of Handicap requires that transit operators certify that "special efforts are being made in its service to provide transportation that handicapped persons, including wheelchair users and semi-ambulatory persons can use." The Montachusett Regional Transit Authority (MART) has been so certified by FTA. The Montachusett Regional Planning Commission annually monitors and updates MART's compliance with the Americans with Disabilities Act Regulations. In compliance with a DOT rule to implement the transportation provisions of the ADA, MART has submitted an ADA compliance Para-transit plan and at this time has met all six criteria established by the Regulations; therefore, the ADA plan is complete. The following policies regarding special efforts are currently in effect.

- half fare on fixed route transit for eligible elderly and disabled individuals;
- fixed route service designed to serve elderly housing, shopping centers, medical facilities, and elderly social centers;
- curb-to-curb service with lift equipped vans provided by local Councils on Aging/private operators;
- half fare on commuter rail service for elderly and disabled individuals;
- continuation of next day ADA eligible van service which operates the same hours as fixed route service;
- operation of Dial-A-MART program which is a coordination of transportation needs of clients of social service agencies;
- no restriction on trip purpose for ADA Para-transit services;
- a twenty percent discount on monthly bus passes for eligible elderly and disabled individuals;

FY19 Projects

Projects in the FY19 TIP in the Section 5307 category contain program elements for the elderly and disabled. The estimated costs in the Year 1 Element in the Section 5307 category include the costs of operating the special services described above.

Section 5310 projects are awarded by the state through a grant process. Projects awarded within the Montachusett region will be amended into the TIP after award.

FEDERAL LEGISLATION

In December 2015, the Federal Surface Transportation Authorization known as Fixing America’s Surface Transportation (FAST) Act passed into law. The FAST Act “largely maintains current structures and funding shares between highways and transit” and “makes changes and reforms to many Federal transportation programs, including streamlining the approval processes for new transportation projects, providing new safety tools, and establishing new programs to advance critical freight projects” (source: U. S. DOT website). The FAST Act retains most of the planning requirements of prior federal regulations, i.e. Moving Ahead for Progress in the 21st Century (MAP-21) and the Safe Accountable Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

The FAST Act added two additional factors to the eight planning factors for both metro and statewide planning identified in MAP-21:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
- Increase the safety of the transportation system for all motorized and non-motorized users;
- Increase the ability of the transportation system to support homeland security and to safeguard the personal security of motorized and non-motorized users;
- Increase accessibility and mobility of people and freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system;
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
- Enhance travel and tourism.

A key feature of the FAST Act legislation that is maintained from prior legislation “is the establishment of a performance- and outcome-based program. The objective...is for States to invest resources in projects that collectively will make progress toward the achievement of the national goals.” National performance goals have been established in seven areas:

- Safety - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- Infrastructure condition - To maintain the highway infrastructure asset system in a state of good repair.
- Congestion reduction - To achieve a significant reduction in congestion on the National Highway System.
- System reliability - To improve the efficiency of the surface transportation system.
- Freight movement and economic vitality - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.

- Environmental sustainability - To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- Reduced project delivery delays - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Performance measures and targets are required to be established by FHWA, state DOTs, MPOs and other stakeholders in consultation with each other over the upcoming years. The Montachusett MPO is committed to working with MassDOT, FHWA and other partners to develop and track the performance of elements of the regional transportation system and to utilize these performance measures as a tool or guide in the transportation planning process.

Regional Transportation Plan – Performance Measures

MRPC staff has continued to review available data, information, state and federal goals and requirements in order to develop and expand regional local performance measures. A series of performance measures were identified during the development of the 2016 Regional Transportation Plan (RTP). These performance measures form the basis for system monitoring in the Montachusett Region only. Additionally, the regional performance measures are incorporated into the decision-making process for the TIP and where applicable are linked to transportation investment decisions, i.e. the Transportation Evaluation Criteria (TEC). As these measures are further defined and reviewed by the MPO, it is expected that the TEC will also be revised and/or updated to reflect them.

As the MassDOT moves forward and defines statewide performance measures in response to federal guidelines, the MPO will review and vote on whether to adopt the state developed performance measure or continue to maintain a comparable regional performance measure.

The following tables outline the RTP defined Goals, Objectives and Performance Measures that address the seven National performance goals.

Regional Transportation Plan Goals, Objectives and Performance Measures Summary

Goal 1 – Improve and Maintain Safety and Security	
Objectives	Performance Measures
<ul style="list-style-type: none"> • Seek to reduce the number and severity of vehicular crashes within the region across all modes. 	1. Reduce the Regional EPDO and percentage of fatal and injury crashes among vehicles, bicycles and pedestrians by 10% over a 10-year period.
<ul style="list-style-type: none"> • Promote projects that are designed to address high crash locations and prioritize their implementation. 	2. Reduce the fatality rate by 10% and the serious injury rate by 10% from current levels in 10 years.
<ul style="list-style-type: none"> • Promote and encourage education outreach programs to drivers, pedestrians and bicyclists regarding rules and responsibilities. 	3. Identify and/or implement 4 to 5 corrective projects at identified top 10 high incident locations over a 10-year period.
<ul style="list-style-type: none"> • Expand community involvement with federal and state programs and education initiatives such as Safe Routes to School. 	4. Conduct 1 to 2 Road Safety Audits at identified high crash locations every 2 years.
<ul style="list-style-type: none"> • Seek to improve user awareness along all transportation networks through better identification, pavement markings and signage with an emphasis on bicycle and pedestrian routes. 	5. Increase the number of communities involved in the Safe Routes to School program.

Goal 1 – Improve and Maintain Safety and Security (cont.)	
Objectives	Performance Measures
<ul style="list-style-type: none"> • Seek to expand the number and use of variable message signs along major roads such as Route 2 and I-190 to inform drivers of potential unsafe conditions and important alerts. 	6. Maintain involvement with the Central MA Regional Homeland Security Council and evacuation planning efforts.
<ul style="list-style-type: none"> • Promote projects that address key identified emergency and evacuation routes in order to maintain effectiveness. 	7. Maintain the average number of preventable fixed route crashes under 2+ per month and demand responsive crashes under 5+ per month.

Goal 2 – Reduce Congestion and Improve Mobility	
Objectives	Performance Measures
<ul style="list-style-type: none"> • Monitor locations and promote projects that address congested roadways within the region. 	1. Conduct Travel Time data collection along 3 to 5 major roadways throughout region on an annual basis.
<ul style="list-style-type: none"> • Support programs that quickly and efficiently address bridge deficiencies across all modes with an emphasis on freight and rail locations. 	2. Identify 1 bottleneck location and conduct a study every 2 years in order to develop and/or implement corrective measures.
<ul style="list-style-type: none"> • Encourage communities to address local mobility issues in order to promote mode shift options in congested areas. 	3. Increase the number of Complete Street certified communities within the region. Seek to have a majority of communities formally certified within 10 years.
<ul style="list-style-type: none"> • Seek to increase travel options within the region through the promotion of trails, Complete Streets, transit, land use and their interactions. 	

Goal 3 – Promote and Seek Equitable Transportation for All	
Objectives	Performance Measures
<ul style="list-style-type: none"> • Seek to increase access to transit options through improved dissemination of available service information. 	1. Increase formal membership and public outreach within Montachusett Joint Transportation Committee (MJTC) of Title VI and Environmental Justice groups.
<ul style="list-style-type: none"> • Improve outreach and partnerships between RTA's and social service agencies, schools, health centers, neighborhood organizations, etc. 	2. Conduct benefits/burdens review of federal aid projects identified through the TIP process on an annual basis.
<ul style="list-style-type: none"> • Seek to expand and increase transit service operations to improve job access and commercial services for all users. 	3. Continue to work with the Montachusett Regional Transit Authority (MART) to expand outreach to and usage by Title VI and Environmental Justice communities through promotions and training methods on how to utilize the system.
<ul style="list-style-type: none"> • Promote the development of improvements and options across all modes for areas that serve Title VI and Environmental Justice populations. 	
<ul style="list-style-type: none"> • Monitor fee options in order to maintain equitability for all users. 	
<ul style="list-style-type: none"> • Actively seek and identify organizations and agencies of Title VI and Environmental Justice populations and conduct direct outreach to encourage involvement and participation in the planning process. 	

Goal 4 – Improve System Preservation and Maintenance of All Modes	
Objectives	Performance Measures
<ul style="list-style-type: none"> • Seek to encourage and prioritize preservation projects within communities in order to maintain a state of good repair for all modes. 	1. Continue pavement management data collection and analysis efforts on an annual basis through a rotating 3-year schedule of federal aid eligible roadways.

Goal 4 – Improve System Preservation and Maintenance of All Modes (cont.)	
Objectives	Performance Measures
<ul style="list-style-type: none"> Continue to monitor, and revise as needed, the Transportation Evaluation Criteria (TEC) to encourage those projects that help to maintain a state of good repair. 	2. Increase the percentage of categorized “Good” to “Excellent” federal aid eligible roadway miles within the region over a 10-year period.
<ul style="list-style-type: none"> Continue the promotion and prioritization of bridge projects throughout the region. 	3. Decrease the number of identified “Structurally Deficient” bridges within the Region.
<ul style="list-style-type: none"> Encourage communities to maintain and monitor trails that provide transportation options throughout the year. 	4. Review and revise the Transportation Evaluation Criteria (TEC) every 2 to 5 years to maintain a viable prioritization process.
<ul style="list-style-type: none"> Seek to encourage additional funds for maintenance as well as the development of a potential federal/state funded preservation program. 	5. Maintain the number of road service calls due to mechanical failures on the fixed route and demand responsive systems under 10 per month.
<ul style="list-style-type: none"> Encourage and support continued operation, maintenance, state of good repair and expansion of the transit system. 	6. Maintain a percentage of operated scheduled trips per month at 90% or better.
<ul style="list-style-type: none"> Encourage communities with viable preservation projects to seek funding and implementation through and in collaboration with the Transportation Improvement Program (TIP) process. 	7. Achieve an average on time ranking on the fixed route system of 95% by 2040.
<ul style="list-style-type: none"> Encourage state and local officials to evaluate the benefits of a joint procurement process for equipment, materials and services to help reduce costs. 	

Goal 5 – Improve Economic Vitality and Freight Movement	
Objectives	Performance Measures
<ul style="list-style-type: none"> Seek to promote economic advantages of the regional trail network and recreational destinations. 	1. Revise, update and distribute a Regional Trail map, in coordination with the Montachusett Regional Trail Coalition (MRTC), by 2020.
<ul style="list-style-type: none"> Seek to establish and prioritize major trail connections throughout the region. 	2. Review and analyze 1 to 2 freight corridors through development of a Unified Planning Work Program (UPWP) task every 5 years.
<ul style="list-style-type: none"> Seek to promote and expand commuter transit and rail options beyond the urban centers. 	
<ul style="list-style-type: none"> Prioritize and improve railroad and other restricted bridges in order to enhance freight mobility. 	
<ul style="list-style-type: none"> Seek to improve freight and general vehicle access and connection to Route 2 throughout the region. 	

Goal 6 – Improve Transportation Options and Promote Healthy Modes	
Objectives	Performance Measures
<ul style="list-style-type: none"> Seek to expand travel options and modes across the region through improved connections and services. 	1. Increase the number of bicycle facilities, ex. Bicycle racks and lockers and on-board bus racks, at transit centers within 12 years.
<ul style="list-style-type: none"> Promote additional bicycle facilities for transit centers and vehicles. 	2. Conduct 3 to 4 walk audits over a 12-year period in interested communities.
<ul style="list-style-type: none"> Promote an improved local review process that addresses issues related to Complete Streets, trail development, sidewalk implementation and mobility improvement as well as mode shift options within their community. 	3. Establish a top 5 list of prioritized trail connections, within and across communities, in 4 years with updates every 4 years.

Goal 6 – Improve Transportation Options and Promote Healthy Modes (cont.)	
Objectives	Performance Measures
<ul style="list-style-type: none"> • Seek to increase and encourage a shift from single occupant vehicles to transit, bicycle and pedestrian modes through improved transit, van/car pool and trail options. • Improve infrastructure, i.e. sidewalks, benches, shelters, shared lanes, etc., along competing modes to encourage increased usage. 	

Goal 7 – Reduce Green House Gas and Promote Environmental Practices and Sustainability	
Objectives	Performance Measures
<ul style="list-style-type: none"> • Seek to reduce Greenhouse Gas emissions through support and implementation of Congestion Mitigation Air Quality (CMAQ) and Transportation Alternative Program (TAP) projects as well as state mode shift goals. 	1. Increase percentage of alternative fuel vehicles within the overall transit fleet by 2020.
<ul style="list-style-type: none"> • Prioritize vehicle replacement in the transit fleet with applicable and cost effective alternative fuel vehicles. 	2. Program and implement 100% of Congestion Mitigation Air Quality (CMAQ) projects within the regional Transportation Improvement Program (TIP).
<ul style="list-style-type: none"> • Encourage communities to promote and support Green Streets through Low Impact (LID) and Transit Oriented (TOD) Development projects as well as stormwater drainage improvement. 	
<ul style="list-style-type: none"> • Encourage and promote transit options to new residential and smart growth developments. 	
<ul style="list-style-type: none"> • Encourage and support the use of alternative fuel vehicles by the public with infrastructure support services and by transit systems through vehicle replacement programs. 	

As previously stated, these performance measures are to be utilized on a regional level to assist in monitoring RTP goals. They are not intended to replace any state performance measure adopted by the MPO. For a status review of the Regional Performance Measures, please refer to the MRPC report “*Montachusett Performance Measures: Monitoring Regional Objectives – September 2017.*”

Transportation Performance Management

FHWA defines Transportation Performance Management as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals. In short, Transportation Performance Management:

- Is systematically applied, a regular ongoing process
- Provides key information to help decision makers allowing them to understand the consequences of investment decisions across transportation assets or modes
- Improving communications between decision makers, stakeholders and the traveling public.
- Ensuring targets and measures are developed in cooperative partnerships and based on data and objective information

Effective on April 14, 2016 FHWA established a final rule on the first of its Performance Measures, Safety Measures (PM 1). Targets related to PM 1 were then set by MassDOT.

Statewide Performance Measures - Safety

The Montachusett MPO has chosen via a formal vote at the January 24, 2018 MPO meeting to adopt the statewide safety performance measure targets set by MassDOT for Calendar Year (CY) 2018. In setting these targets, MassDOT has followed FHWA guidelines by using statewide crash data and Highway Performance Monitoring System (HPMS) data for vehicle miles traveled (VMT) in order to calculate 5 year, rolling average trendlines for all FHWA defined safety measures. CY 2018 targets for four of the five safety measures—total number of fatalities, rate of fatalities per 100 million vehicle miles traveled, total number of serious injuries, and rate of serious injuries per 100 million VMT—were established by extending their respective trendlines into the 2014-2018 time period. All four of these measures reflect a decrease in statewide trends. The fifth safety measure, total number of combined serious injuries and fatalities for non-motorized modes, is the only safety measure for which the statewide trendline depicts an increase. MassDOT's effort to increase the non-motorized mode share throughout the Commonwealth has posed a challenge to simultaneously reducing non-motorized injuries and fatalities. Rather than adopt a target that depicts an increase in the trendline, MassDOT has elected to establish a target of non-motorized fatalities and injuries in CY 2018 to remain constant from the rolling average for 2011-2015. In recent years, MassDOT and the Montachusett MPO have invested in "complete streets," bicycle and pedestrian, intersection and safety improvements in both the Capital Investment Plan (CIP) and Statewide Transportation Improvement Program (STIP) that address increasing mode share and incorporate safety mitigation elements into projects. Moving forward, the Montachusett MPO, alongside MassDOT, is actively seeking to improve data collection and methodology for bicycle and pedestrian VMT counts, and to continue analyzing crash clusters and crash counts that include both motorized and non-motorized modes in order to address safety issues at these locations.

In all safety categories, MassDOT has established a long-term target of "Toward Zero Deaths" through MassDOT's Performance Measures Tracker and will be establishing safety targets for the MPO to consider for adoption each calendar year. While the MPO is not required by FHWA to report on annual safety performance targets, FHWA guidelines require MPOs to adopt MassDOT's annual targets or perennially establish their own. As stated above, the Montachusett MPO formally voted on January 24, 2018 to adopt the MassDOT Safety Performance Measures as described.

The safety measures MassDOT has established for CY 2018, and that Montachusett MPO has adopted, are as follows:

1. **Fatalities:** The target number of fatalities for years CY 2018 is 352.3, down from an average of 361 fatalities for the years 2011-2015. [See the following Table and Figure 1 for Montachusett MPO vs. statewide comparison of the trend for this performance measure]
2. **Rate of Fatalities per 100 million VMT:** The target fatality rate for years CY 2018 is 0.611, down from a 0.641 average for years 2011-2015. [See the following Table and Figure 1 for Montachusett MPO vs. statewide comparison of the trend for this performance measure]
3. **Serious Injuries:** The target number of serious injuries for CY2018 is 2,895.9, down from the average of 3,251.8 for years 2011-2015. [See the following Table and Figure 2 for Montachusett MPO vs. statewide comparison of the trend for this performance measure]
4. **Rate of Serious Injuries per 100 million VMT:** The target serious injury rate for CY2018 is 5.01 per year, down from the 5.78 average rate for years 2011-2015. [See the following Table and Figure 2 for Montachusett MPO vs. statewide comparison of the trend for this performance measure]
5. **Total Number of Combined Serious Injuries and Fatalities for Non-Motorized Modes:** The CY2018 target number of fatalities and serious injuries for non-motorists is 540.8 per year, the same as the average for years 2011-2015. [See the following Table and Figure 3 for Montachusett MPO vs. statewide comparison of the trend for this performance measure]

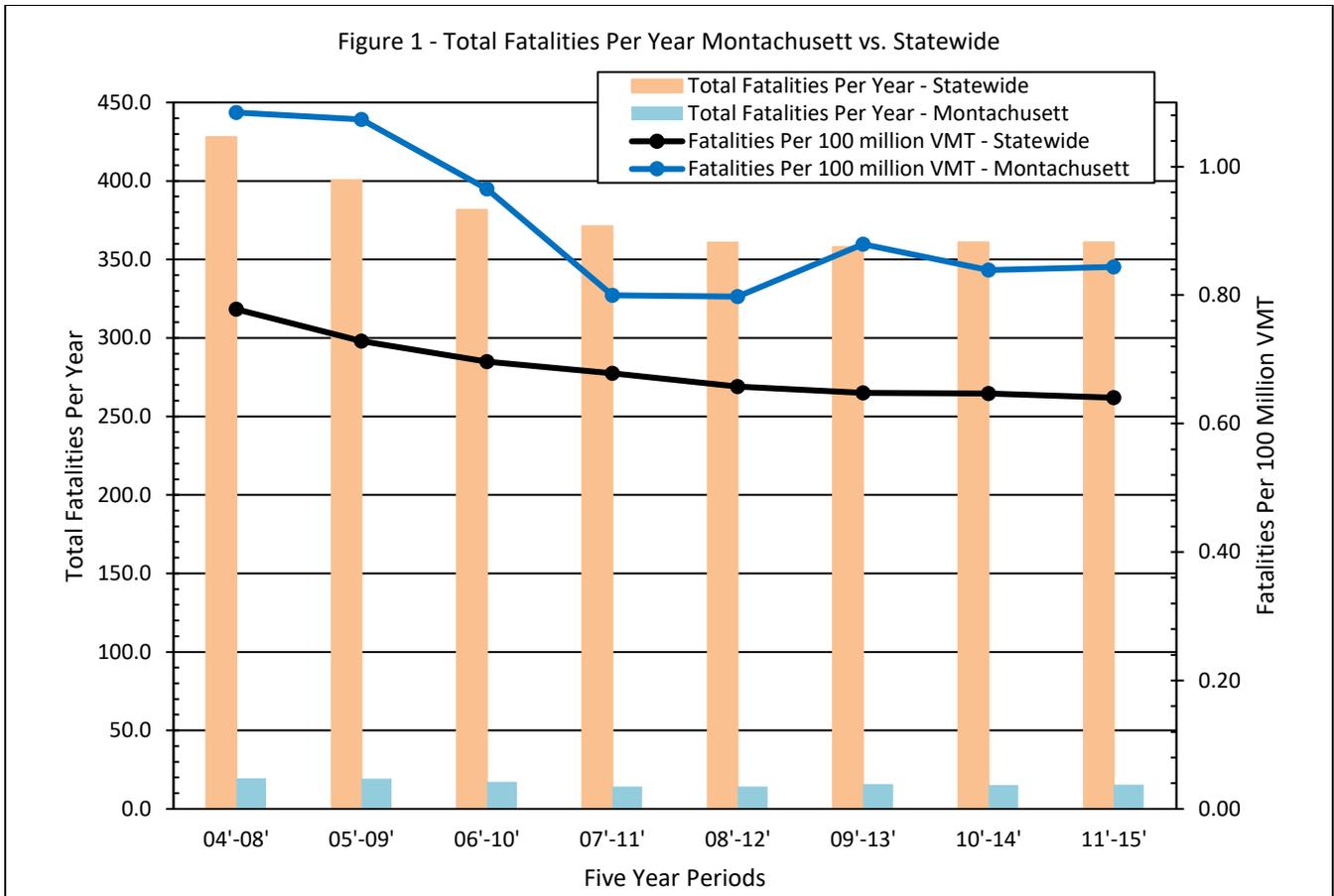
Safety Trends and Rates Comparison of Statewide vs. Montachusett MPO

Total Fatalities Per Year: Montachusett MPO vs. Statewide (Figure 1)									
		Five Year Periods							
		04'-08'	05'-09'	06'-10'	07'-11'	08'-12'	09'-13'	10'-14'	11'-15'
Figure 1	Total Fatalities Per Year - Statewide	427.8	400.6	381.6	371.2	360.8	358	361	361
	Fatalities Per 100 million VMT - Statewide	0.78	0.73	0.70	0.68	0.66	0.65	0.65	0.64
	Total Fatalities Per Year - Montachusett	19.4	19.2	17.2	14.2	14.2	15.8	15.2	15.4
	Fatalities Per 100 million VMT - Montachusett	1.08	1.07	0.97	0.80	0.80	0.88	0.84	0.84

Total Serious Injuries Per Year: Montachusett MPO vs. Statewide (Figure 2)									
		Five Year Periods							
		04'-08'	05'-09'	06'-10'	07'-11'	08'-12'	09'-13'	10'-14'	11'-15'
Figure 2	Total Serious Injuries Per Year - Statewide	4564.0	4237.6	3914.6	3714.2	3595.2	3438.0	3365.8	3251.8
	Serious Injuries Per 100 million VMT - Statewide	8.30	7.70	7.14	6.79	6.55	6.23	6.04	5.78
	Total Serious Injuries Per Year - Montachusett	145.0	128.6	126.8	124.6	125.4	121.8	119.2	109.4
	Serious Injuries Per 100 million VMT - Montachusett	8.11	7.19	7.13	7.03	7.05	6.81	6.61	5.99

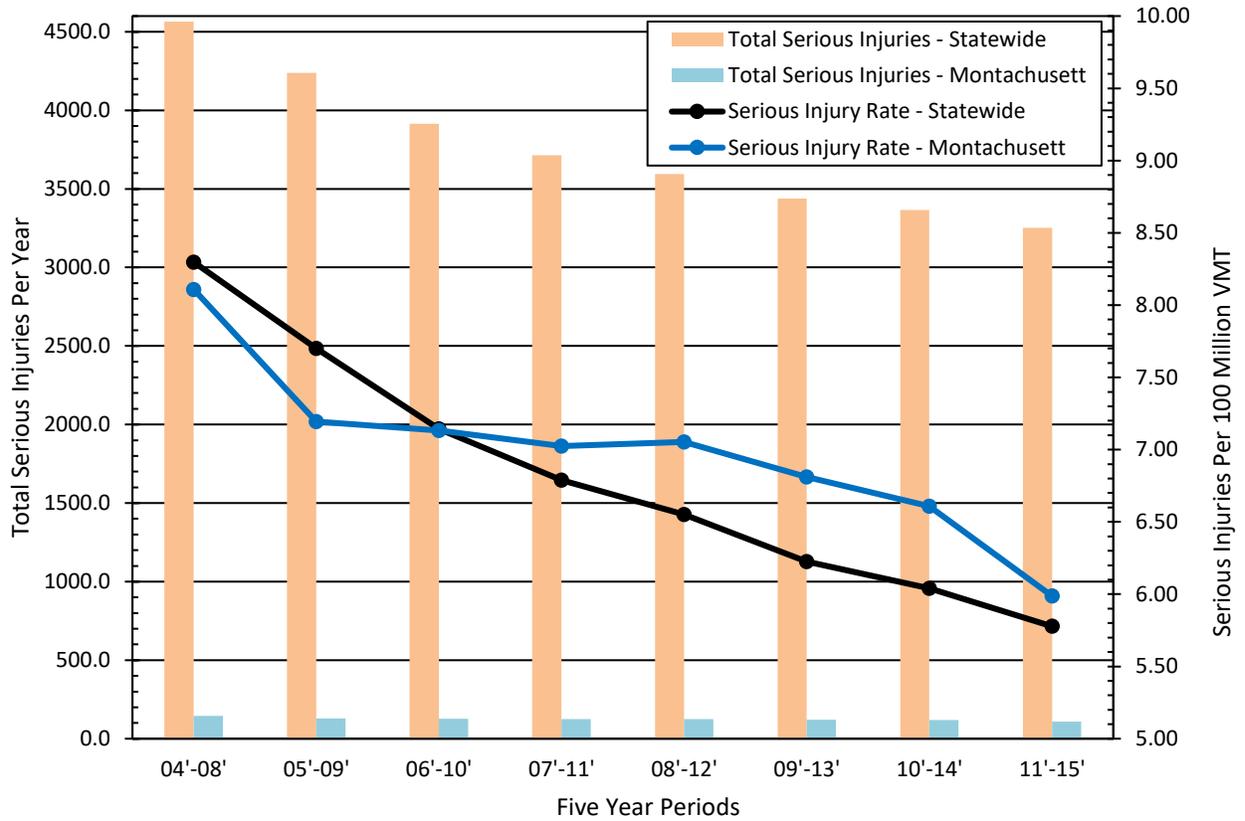
Total Combined Serious Injuries & Fatalities for Non-Motorized Modes Per Year: Montachusett MPO vs. Statewide (Figure 3)									
		Five Year Periods							
		04'-08'	05'-09'	06'-10'	07'-11'	08'-12'	09'-13'	10'-14'	11'-15'
Figure 3	Total Combined Serious Injuries & Fatalities Avg. Per Year - Statewide	417.8	408.4	424.0	449.4	488.6	506.2	535.4	540.8
	Total Combined Serious Injuries & Fatalities Avg. Per Year - Montachusett	13.6	11.0	10.4	11.4	12.4	13.0	13.8	14.0

Source of Data: MassDOT, Office of Transportation Planning



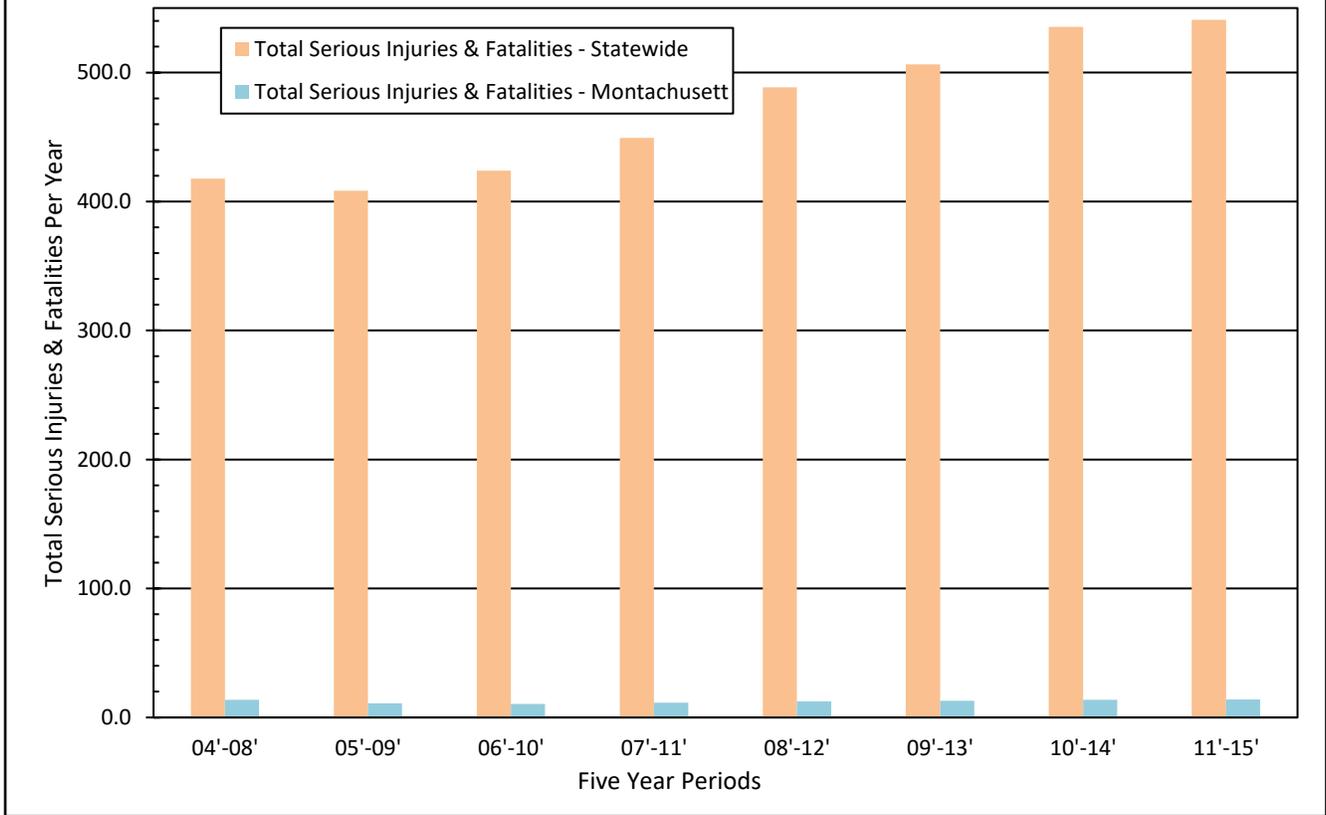
Source of Data: MassDOT, Office of Transportation Planning

Figure 2 - Total Serious Injuries Per Year Montachusett MPO vs. Statewide



Source of Data: MassDOT, Office of Transportation Planning

Figure 3 - Total Combined Serious Injuries & Fatalities for Non-Motorized Modes
Per Year Montachusett MPO vs. Statewide



Source of Data: MassDOT, Office of Transportation Planning

In addition to the Safety Measures (PM 1), it is anticipated that the following performance measures which were implemented by FHWA and targets set by MassDOT will be presented to the MPO in the coming months.

- Pavement and Bridge Condition Measures (PM 2)
- Performance of NHS, Freight and CMAQ Measures (PM 3)

Targets established by MassDOT in reference to PM 2 and PM 3 may then be adopted by the MPO, or the MPO may adopt its own targets.

Transit Asset Management

In July 2016, FTA published a Final Rule for Transit Asset Management. The rule requires FTA grantees to develop asset management plans for their public transportation assets, including vehicles, facilities, equipment, and other infrastructure.

In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) mandated, and in 2015 the Fixing America's Surface Transportation Act (FAST) reauthorized, FTA to develop a rule to establish a strategic and systematic process of operating, maintaining and improving public transportation capital assets effectively through their entire life cycle. FTA's national Transit Asset Management System Rule:

- Defines "state of good repair"
- Requires grantees to develop a TAM plan
- Establishes performance measures
- Establishes annual reporting requirements to the National Transit Database
- Requires FTA to provide technical assistance

TAM requirements in this final rule are part of a larger performance management context. MAP-21 created a performance-based and multimodal program to strengthen the U.S. transportation system, which is comprised of a series of nine rules overseen by FTA and the Federal Highway Administration (FHWA). FTA is tasked with developing other rules, including the National Public Transit Safety Plan and the Public Transportation Agency Safety Plan, and has worked jointly with FHWA on a rule to manage Statewide and Metropolitan Planning.

The Montachusett Regional Transit Authority (MART) has been working to develop a TAM. Data collection is near completion and the plan is expected to be available on or around July 1, 2018. The Montachusett MPO will adopt targets in the following categories sometime in the fall of 2018:

- Rolling Stock and Equipment
- Facilities
- Infrastructure

TRANSPORTATION FUNDING PROGRAMS

Description of Highway Programs

Federal Aid is received by the State as reimbursement, and the State is required to contribute a matching share to most projects receiving Federal funds.

The FAST Act has generally maintained the program structure of MAP-21 that had combined several activities previously carried out under existing formula programs into a new core formula program structure. The FAST Act includes the following:

- National Highway Performance Program (NHPP)
- Surface Transportation Block Grant Program (STBGP)
- Highway Safety Improvement Program (HSIP)
- Railway-Highway Grade Crossings Program
- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- National Highway Freight Program (NHFP)
- STBGP Set-Aside (formerly the Transportation Alternatives Program (TAP))

This TIP includes projects funded under these programs as well as potentially carried over programs from prior federal authorizations such as High Priority Program (HPP) funds.

All of the programs listed are administered by the MassDOT. A project may be initiated by MassDOT or the local community. If approved, the project is submitted to Federal Highway Administration for funding. A description of each of these programs follows:

- National Highway Performance Program (NHPP): The enhanced National Highway Performance Program (NHPP) is composed of rural and urban roads serving major population centers, international border crossings, intermodal transportation facilities, and major travel destinations. It includes the Interstate System, all principal arterials (including some not previously designated as part of the NHS) and border crossings on those routes, highways that provide motor vehicle access between the NHS and major intermodal transportation facilities, and the network of highways important to U.S. strategic defense (STRAHNET) and its connectors to major military installations. The funding split for this program is generally 80% federal 20% state.
- Surface Transportation Block Grant Program (STBGP): The FAST Act converts the long-standing Surface Transportation Program into the Surface Transportation Block Grant Program acknowledging that this program has the most flexible eligibilities among all Federal-aid highway programs and aligning the program's name with how FHWA has historically administered it. The STBG promotes flexibility in State and local transportation decisions and provides flexible funding to best address State and local transportation needs. As under MAP-21, the FAST Act directs FHWA to apportion funding as a lump sum for each State then divide that total among apportioned programs. Each State's STBG apportionment is calculated based on a percentage specified in law. The funding split for this program is generally 80% federal 20% state.
- Highway Safety Improvement Program (HSIP): The FAST Act continues the Highway Safety Improvement Program (HSIP) to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-

State-owned public roads and roads on tribal lands. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. The funding split is 90% federal and 10% state.

- Congestion Mitigation and Air Quality (CMAQ): The CMAQ program is continued in the FAST Act to provide a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas). The funding split for this program is generally 80% federal 20% state.
- STBGP Set-Aside: The FAST Act eliminates the MAP-21 Transportation Alternatives Program (TAP) and replaces it with a set-aside of Surface Transportation Block Grant (STBG) program funding for transportation alternatives (TA). These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. The funding split for this program is generally 80% federal 20% state.
- Nationally Significant Freight & Highway Projects (NSFHP) Program: The FAST Act establishes the NSFHP program to provide financial assistance through competitive grants known as FASTLANE grants or credit assistance to nationally and regionally significant freight and highway projects that align with the program goals, i.e. improve safety, efficiency and reliability, generate economic benefits, reduce highway congestion and bottlenecks, improve freight connectivity, enhance the resiliency of critical highway infrastructure, improve roadways vital to national energy security, and address the impacts of population growth on freight and people movement. The funding split is generally 60% federal and 40% other sources. An additional 20% may be funded with other federal assistance dollars.
- High Priority Projects: This program provides designated funding for specific projects identified in SAFETEA-LU. Projects are identified with a specified amount of funding over the 5 years of SAFETEA-LU. The funds designated for a project are available only for that project until expended. HPP projects are fully funded and are included on the TIP when they are expected to be “ready to go.” The funding split is 80% federal and 20% state.

FAST Act funding information from FHWA Fact Sheets found at the FAST Act website:

<http://www.fhwa.dot.gov/fastact/factsheets/index.cfm>

Glossary of Terms

The terms used in the main part of this TIP are defined as follows:

- MassDOT Project ID: indicates Massachusetts Department of Transportation Highway Division Project Identification Number.
- MassDOT Project Description: indicates the city or town in which the project is to be implemented and gives details of the type of work to be performed and specific locations.
- MassDOT District: indicates in which MassDOT Highway Division District of the Montachusett Region the project occurs. The communities in the MRPC Region fall within District 2, with offices in Northampton, and District 3, with offices in Worcester.

- Funding Source: indicates funding program under which the project is eligible for dollar allocations, such as National Highway Performance Program or Surface Transportation Block Grant Program.
- Total Programmed Funds, Federal Funds, Non-Federal Funds: presented for each project for each fiscal year are estimated total costs and the source/share of the funds, i.e. Federal or State. Projects where costs and activity are not available will be labeled NA.
- Additional Information: indicates information pertinent to the project in order to provide the reader with a more detail look at the project. This includes, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project TEC score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information such as the current cost of the project (in Year 1 dollars) and the Year of Expenditure (YOE) cost based on the inflation factor for that year (i.e. Year 2 – YOE increase of 4%; Year 3 – YOE increase of 8%; Year 4 – YOE increase of 12%; and Year 5 – YOE increase of 16%).

Description of Transit Funding Programs

The FAST Act supports transit funding through fiscal year 2020, reauthorizes FTA programs and includes changes to improve mobility, streamline capital project construction and acquisition, and increase the safety of public transportation systems across the country. Discretionary and Formula funds are also available. Formula grant programs are funded to States based on formulas of population. Each grant program is referred to by name and usually by a number that correlates to the section number of the authorization.

Formula Grants

- Urbanized Area Formula Program (5307) Funds: This formula program makes funds available on the basis of a statutory formula to all urbanized areas in the country. Eligible activities are capital projects, planning and job access/reverse commute projects. Operating assistance is continued as an eligible expense under Section 5307. Operating assistance caps are now in place for urbanized areas over 200,000 but operating fewer than 100 buses (no rail), not just those under 200,000 (as determined by the U.S. Census Bureau), as is the case in previous law.
- Transportation for Elderly Persons and Persons with Disabilities (5310) Funds: This program provides capital funding for transportation services for elderly and disabled persons. Authorization under MAP-21 has moved the formula allocation from a single statewide allocation to an Urbanized Area allocation. The funds may go to private, non-profit organizations or to public bodies which coordinate service. Also funds available to our area are in a single allocation with two other “Small Urban” areas, therefore MassDOT has made all the apportioned funds a competitive application. No less than 55% of these funds must be used for capital projects. Up to 45% may be used for operating assistance projects that would formerly been eligible under New Freedom funds. No more than 10% may be used be a recipient for Administrative Expenses associated with a project. The Rail and Transit Division of the Massachusetts Department of Transportation through the State Transportation Bond authorization program, makes capital grants available through its Mobility Assistance Program to public agencies to purchase vehicles and related equipment for transporting elderly and disabled persons.
- Formula Grants for Other than Urbanized Areas (5311) Funds: program provides capital, planning, and operating assistance to states to support public transportation in rural areas with populations of less than 50,000, where many residents often rely on public transit to reach their destinations. The program also provides funding for state and national training and technical assistance through the Rural Transportation Assistance Program. States must spend at least 15% of its annual apportionment for the development and support of intercity bus transportation, unless it

can certify, after consultation with intercity bus service providers, that the intercity bus needs of the state are being adequately met.

- Bus and Bus Facilities (5339) Funds: This program provides capital assistance for new and replacement buses, related equipment, and facilities. These funds have both a formula-based program by urbanized area and a competitive discretionary program. As with the 5310 formula, 5339 is apportioned to our region via the state thru an allocation for “Small Urban,” with a statewide allocation as well. Therefore, a competitive process thru MassDOT has been established for the 3-small urban and 3 rural RTA’s to obtain these funds. The Federal share of eligible capital costs is no more than 80 percent of the net capital project cost. MART can also apply as a direct recipient when discretionary funds are released via a Notice of Funding Availability (NOFA) by USDOT/FTA.
- State of Good Repair Formula Grants (5337): Eligible recipients are state and local government authorities in urbanized areas with fixed guideway public transportation facilities operating for at least 7 years. The Montachusett Regional Transit Authority is not an eligible recipient since there is not currently any fixed guideway or high-speed motorbus operated under the authority.

Discretionary Grants

The Federal Transit Administration and the U.S. Department of Transportation still have a few discretionary grant programs that MART is eligible to apply under. A Notice of Funding Availability (NOFA) is published in the Federal Register each year stating program amounts and instructions for applying for these Competitive grants. Please see FTA’s website for more details at <http://www.fta.dot.gov/grants/15926.html>.

- Capital Investment Grants (5309): This is FTA’s primary grant program for funding major transit capital investments, including heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. It is a discretionary grant program unlike most others in government. Instead of an annual call for applications and selection of awardees by the Federal Transit Administration (FTA), the law requires that projects seeking CIG funding complete a series of steps over several years to be eligible for funding. For New Starts and Core Capacity projects, the law requires completion of two phases in advance of receipt of a construction grant agreement – Project Development and Engineering. For Small Starts projects, the law requires completion of one phase in advance of receipt of a construction grant agreement – Project Development. The law also requires projects to be rated by FTA at various points in the process according to statutory criteria evaluating project justification and local financial commitment.
- TIGER (USDOT): The Transportation Investment Generating Economic Recovery, or TIGER Discretionary Grant program, provides a unique opportunity for the U.S. Department of Transportation to invest in road, rail, transit and port projects that promise to achieve critical national objectives. The TIGER program enables DOT to use a rigorous process to select projects with exceptional benefits, explore ways to deliver projects faster and save on construction costs, and make investments in our Nation’s infrastructure that make communities more livable and sustainable.
- Low or No Emission Vehicle Deployment Program (5339 c): The main purpose of the LoNo Program is to deploy the cleanest and most energy efficient U.S.-made transit buses that have been largely proven in testing and demonstrations but are not yet widely deployed in transit fleets. The LoNo Program provides funding for transit agencies for capital acquisitions and leases of zero emission and low-emission transit buses, including acquisition, construction, and leasing of required supporting facilities such as recharging, refueling, and maintenance facilities.

- [Public Transportation Innovative and other Research & Technology Programs – 5312](#): Under the FAST Act there are currently 3 programs eligible under 5312 research/demonstration funds. All of them have the same goal of providing funding to develop innovative products and services assisting transit agencies in better meeting the needs of their customers.
- [Pilot Program for Transit-Oriented Development Planning - 5309](#): helps support FTA’s mission of improving public transportation for America’s communities by providing funding to local communities to integrate land use and transportation planning with a transit capital investment that is seeking or recently received funding through the [Capital Investment Grant \(CIG\) Program](#). Comprehensive planning funded through the program must examine ways to improve economic development and ridership, foster multimodal connectivity and accessibility, improve transit access for pedestrian and bicycle traffic, engage the private sector, identify infrastructure needs, and enable mixed-use development near transit stations.

STATE POLICIES AND DIRECTIVES

GreenDOT

GreenDOT is the Massachusetts Department of Transportation’s sustainability initiative. It is designed to support the implementation of the following state laws.

- Climate Protection and Green Economy Act (Mass. Gen. L. c. 21N)
- Green Communities Act (Chapter 169 of the Acts of 2008)
- Healthy Transportation Compact (section 33 of Chapter 25 of the Acts of 2009)
- Leading by Example (Executive Order of Governor Patrick, no. 488)
- MassDOT’s youMove Massachusetts planning initiative
- The “Complete Streets” design standards of the 2006 MassDOT Highway Division Project Development and Design Guide, as amended

The GreenDOT initiative incorporates three main goals:

1. Reduce greenhouse gas (GHG) emissions
2. Promote the healthy transportation modes of walking, bicycling, and public transit
3. Support smart growth development

Through the GreenDOT policy, MassDOT will seek to “promote sustainable economic development, protect the natural environment, and enhance the quality of life for all the Commonwealth’s residents and visitors.”

Mode Shift Goals

As part of implementation plan for GreenDOT, in October 2012 MassDOT announced a “Mode Shift” goal designed to reduce the number of individuals travelling by alone by automobile.

The Mode Shift goals are measured in Personal Miles Traveled (PMT) and are as follows:

MA Mode Shift Goals - Personal Miles Traveled (PMT)				
<u>Year</u>	<u>Bicycling PMT</u>	<u>Transit PMT</u>	<u>Walking PMT</u>	<u>Total</u>
2010 (baseline)	150.4m	1.83b	101.1m	2.08b
2020 (benchmark)	330.0m	3.99b	223.9m	4.55b
2030 (goal year)	516.0m	5.93b	333.6m	6.78b

Source: <http://transportation.blog.state.ma.us/blog/2012/12/massdot-goal-triple-bicycling-transit-walking.html>

weMove Massachusetts

MassDOT released weMove Massachusetts (WMM): Planning for Performance, the Commonwealth of Massachusetts' 2040 Long-Range Transportation Plan (LRTP) in May of 2014. This plan includes seven major components:

1. Transportation Reform - emphasis on customers, innovation, accountability, performance management, efficiency, stewardship and stronger collaboration across transportation divisions;
2. Data and Analysis - critical to sound decision making;
3. Transportation System Needs Identification– to help choose the right transportation investments;
4. youMove Massachusetts Themes - ten value statements that capture the diverse values users;
5. Customer and Stakeholder Engagement– incorporate the priorities of customers and stakeholders;
6. Statewide Transportation Plans– implement modal plans;
7. Statewide Priorities and Policies– ensure accountability.

Source: <https://massmoves.org/resource/wemove-massachusetts-planning-for-performance/>

The policies of the Commonwealth will be reviewed, considered and incorporated in the planning studies developed as part of the work tasks outlined in this UPWP. Recommendations derived from these studies will be consistent with state policies.

Healthy Transportation Policy Directive

On September 20, 2013, MassDOT announced the Healthy Transportation Policy Directive designed to increase bicycling, transit and walking options. The directive is intended to promote multimodal access for users of the transportation networks and systems.

The Healthy Transportation Directive builds upon the goals established under MassDOT's GreenDOT Implementation Plan and mode shift goal. The Directive requires all MassDOT Districts to review all projects under design to "ensure they are consistent with ...goals."

Elements included in the Directive are as follows:

All MassDOT facilities will consider adjacent land uses and be designed to include wider sidewalks, landscaping, crossing opportunities and other features to enhance healthy transportation options; Reviews will be conducted of cluster sites where incidents have occurred with healthy transportation users; MassDOT will develop a guide to assist communities proposing Shared Use Paths on or along rail beds in order to accelerate the path design process.

Additional information on the Healthy Transportation Policy Directive and MassDOT's GreenDOT comprehensive environmental responsibility and sustainability initiative can be viewed at

<https://www.mass.gov/files/documents/2016/11/pf/greendot.pdf>.

701 CMR 7.00 Use of Road Flaggers and Police Details on Public Works Projects

701 CMR 7.00 (the Regulation) was promulgated and became law on October 3, 2008. Under this Regulation, the CMR is applicable to any Public Works Project that is performed within the limits of, or that impact traffic on, any Public Road. The Municipal Limitation referenced in this Regulation is applicable only to projects where the Municipality is the Awarding Authority.

For all projects contained in the TIP, the Commonwealth is the Awarding Authority. Therefore, all projects must be considered and implemented in accordance with 701 CMR 7.00, and the Road Flagger and Police Detail Guidelines.

By placing a project on the TIP, the Municipality acknowledges that 701 CMR 7.00 is applicable to its project and design and construction will be fully compliant with this Regulation.

This information and additional information relative to guidance and implementation of the Regulation can be found by contacting the MassDOT Highway Division. (www.massdot.state.ma.us/highway/Main.aspx)

SUMMARY OF PROGRAMMED FUNDS BY FUNDING CATEGORY

The following table and chart present a summary of total funds programmed within the Montachusett Region by funding category for each federal fiscal year of this TIP. All figures presented represent the total project costs, i.e. federal/state/local amounts combined, for that particular funding category.

SUMMARY OF PROGRAMMED FUNDS BY FUNDING CATEGORY – HIGHWAY

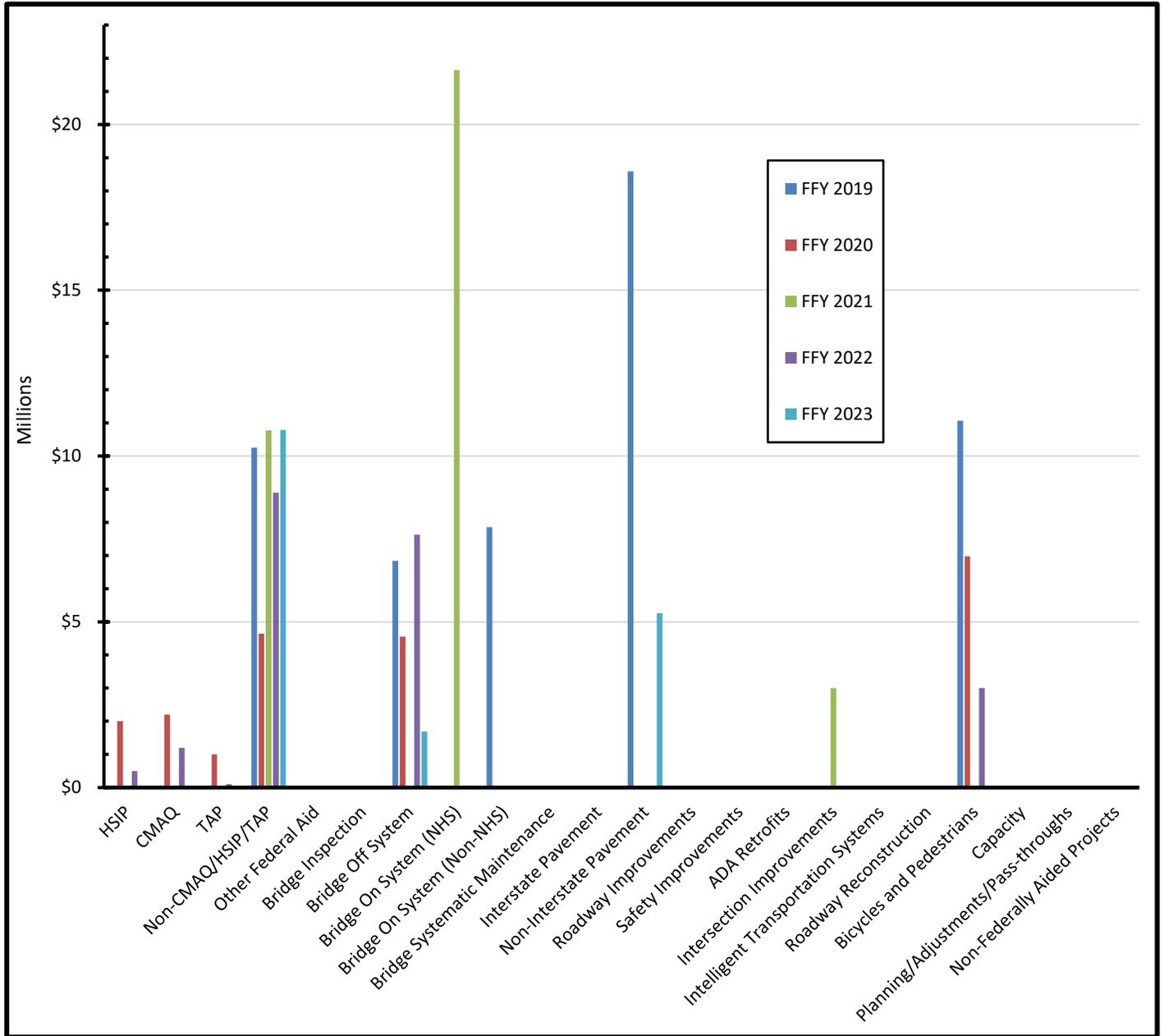
Funding Category	FFY 2019	FFY 2020	FFY 2021	FFY 2022	FFY 2023	Total FFY 2019- 2023
HSIP	\$0	\$2,000,000	\$0	\$500,000	\$0	\$2,500,000
CMAQ	\$0	\$2,200,000	\$0	\$1,200,000	\$0	\$3,400,000
TAP	\$0	\$1,000,000	\$0	\$100,000	\$0	\$1,100,000
Non-CMAQ/HSIP/TAP	\$10,253,853	\$4,642,449	\$10,768,212	\$8,896,168	\$10,788,000	\$45,348,682
Other Federal Aid	\$0	\$0	\$0	\$0	\$0	\$0
Bridge Inspection	\$0	\$0	\$0	\$0	\$0	\$0
Bridge Off System	\$6,843,175	\$4,556,140	\$0	\$7,628,624	\$1,684,320	\$20,712,259
Bridge On System (NHS)	\$0	\$0	\$21,643,216	\$0	\$0	\$21,643,216
Bridge On System (Non-NHS)	\$7,860,160	\$0	\$0	\$0	\$0	\$7,860,160
Bridge Systematic Maintenance	\$0	\$0	\$0	\$0	\$0	\$0
Interstate Pavement	\$0	\$0	\$0	\$0	\$0	\$0
Non-Interstate Pavement	\$18,585,000	\$0	\$0	\$0	\$5,260,298	\$23,845,298
Roadway Improvements	\$0	\$0	\$0	\$0	\$0	\$0
Safety Improvements	\$0	\$0	\$0	\$0	\$0	\$0
ADA Retrofits	\$0	\$0	\$0	\$0	\$0	\$0
Intersection Improvements	\$0	\$0	\$3,000,000	\$0	\$0	\$3,000,000
Intelligent Transportation Systems	\$0	\$0	\$0	\$0	\$0	\$0
Roadway Reconstruction	\$0	\$0	\$0	\$0	\$0	\$0
Bicycles and Pedestrians	\$11,059,443	\$6,971,456	\$0	\$3,000,000	\$0	\$21,030,899
Capacity	\$0	\$0	\$0	\$0	\$0	\$0
Planning/Adjustments/Pass-throughs	\$0	\$0	\$0	\$0	\$0	\$0
Non-Federally Aided Projects	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal FHWA	\$54,601,631	\$21,370,045	\$35,411,428	\$21,324,792	\$17,732,618	\$150,440,514

SUMMARY OF PROGRAMMED FUNDS BY FUNDING CATEGORY – TRANSIT

Funding Category	FFY 2019	FFY 2020	FFY 2021	FFY 2022	FFY 2023	Total FFY 2019- 2023
5307 Operating/Capital	\$5,665,000	\$5,805,000	\$5,975,000	\$6,040,000	\$5,525,000	\$29,010,000
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	\$300,000	\$0	\$750,000	\$0	\$0	\$1,050,000
5320	\$0	\$0	\$0	\$0	\$0	\$0
Other Federal	\$0	\$0	\$0	\$0	\$0	\$0
Other Non-Federal	\$152,119	\$0	\$0	\$0	\$0	\$152,119
Subtotal FTA	\$6,117,119	\$5,805,000	\$6,725,000	\$6,040,000	\$5,525,000	\$30,212,119
GRAND TOTAL	\$60,718,750	\$27,175,045	\$42,136,428	\$27,364,792	\$23,257,618	\$180,652,633

NOTE: All funding amounts listed are Total costs that include federal and matching non-federal funds.

SUMMARY OF PROGRAMMED FUNDS BY FUNDING CATEGORY – HIGHWAY



FEDERAL REQUIREMENTS

Financial Plan for the FFY 2019-2023 Transportation Improvement Program Montachusett MPO

The financial plan contained herein is financially constrained and indicates that the Montachusett Metropolitan Planning Organization Transportation Improvement Program (TIP) reflects the highway program emphasis on the maintenance and operation of the current roadway and bridge system with the ability to provide for additional capital improvements. Only projects for which funds can be expected have been included.

The following table compares anticipated federal target funds (Federal \$ (M) Target/Availability) to the federal funds for those projects programmed in each Fiscal Year (Federal \$ (M) Programmed). For each fiscal year, programmed funds do not exceed anticipated target funds.

Federal Target Funds vs. Federal Funds Programmed

Federal Agency	Funding Category	2019			Federal \$ (M) Target/ Availability
		Total \$ (M) Programmed	Federal \$ (M) Programmed	Non-Federal \$ (M) Programmed	
FHWA	HSIP	0.000	0.000	0.000	0.000
	CMAQ	0.000	0.000	0.000	0.000
	TAP	0.000	0.000	0.000	0.000
	Non-CMAQ/HSIP/TAP	10.254	8.203	2.051	0.000
	Total HSIP/CMAQ/TAP/STP	10.254	8.203	2.051	8.203
	Other Federal Aid	0.000	0.000	0.000	0.000
	Bridge Inspection	0.000	0.000	0.000	0.000
	Bridge Off System	6.843	5.475	1.369	5.475
	Bridge On System (NHS)	0.000	0.000	0.000	0.000
	Bridge On System (Non-NHS)	7.860	6.288	1.572	6.288
	Bridge Systematic Maintenance	0.000	0.000	0.000	0.000
	Interstate Pavement	0.000	0.000	0.000	0.000
	Non-Interstate Pavement	18.585	14.868	3.717	14.868
	Roadway Improvements	0.000	0.000	0.000	0.000
	Safety Improvements	0.000	0.000	0.000	0.000
	ADA Retrofits	0.000	0.000	0.000	0.000
	Intersection Improvements	0.000	0.000	0.000	0.000
	Intelligent Transportation Systems	0.000	0.000	0.000	0.000
	Roadway Reconstruction	0.000	0.000	0.000	0.000
	Bicycles and Pedestrians	11.059	8.848	2.212	8.848
	Capacity	0.000	0.000	0.000	0.000
Planning/Adjustments/Pass-throughs	0.000	0.000	0.000	0.000	
Non-Federally Aided Projects	0.000	0.000	0.000	0.000	
		54.602	43.681	10.920	43.681
FTA	5307 Operating/Capital	5.665	3.272	2.393	3.272
	5309 Operating/Capital	0.000	0.000	0.000	0.000
	5310 Capital	0.000	0.000	0.000	0.000
	5311 Operating	0.000	0.000	0.000	0.000
	5337 Capital	0.000	0.000	0.000	0.000
	5339 Capital	0.300	0.240	0.060	0.240
	5320	0.000	0.000	0.000	0.000
	Other Federal	0.000	0.000	0.000	0.000
	Other Non-Federal	0.152	0.000	0.152	0.000
			6.117	3.512	2.605	3.512

Federal Target Funds vs. Federal Funds Programmed (cont.)

		2020			
Federal Agency	Funding Category	Total \$ (M) Programmed	Federal \$ (M) Programmed	Non-Federal \$ (M) Programmed	Federal \$ (M) Target/ Availability
FHWA	HSIP	2.000	1.800	0.200	0.000
	CMAQ	2.200	1.760	0.440	0.000
	TAP	1.000	0.800	0.200	0.000
	Non-CMAQ/HSIP/TAP	4.642	3.714	0.928	0.000
	Total HSIP/CMAQ/TAP/STP	9.842	8.074	1.768	8.709
	Other Federal Aid	0.000	0.000	0.000	0.000
	Bridge Inspection	0.000	0.000	0.000	0.000
	Bridge Off System	4.556	3.645	0.911	3.645
	Bridge On System (NHS)	0.000	0.000	0.000	0.000
	Bridge On System (Non-NHS)	0.000	0.000	0.000	0.000
	Bridge Systematic Maintenance	0.000	0.000	0.000	0.000
	Interstate Pavement	0.000	0.000	0.000	0.000
	Non-Interstate Pavement	0.000	0.000	0.000	0.000
	Roadway Improvements	0.000	0.000	0.000	0.000
	Safety Improvements	0.000	0.000	0.000	0.000
	ADA Retrofits	0.000	0.000	0.000	0.000
	Intersection Improvements	0.000	0.000	0.000	0.000
	Intelligent Transportation Systems	0.000	0.000	0.000	0.000
	Roadway Reconstruction	0.000	0.000	0.000	0.000
	Bicycles and Pedestrians	6.971	5.577	1.394	5.577
	Capacity	0.000	0.000	0.000	0.000
Planning/Adjustments/Pass-throughs	0.000	0.000	0.000	0.000	
Non-Federally Aided Projects	0.000	0.000	0.000	0.000	
		21.370	17.296	4.074	17.931
FTA	5307 Operating/Capital	5.805	3.384	2.421	3.384
	5309 Operating/Capital	0.000	0.000	0.000	0.000
	5310 Capital	0.000	0.000	0.000	0.000
	5311 Operating	0.000	0.000	0.000	0.000
	5337 Capital	0.000	0.000	0.000	0.000
	5339 Capital	0.000	0.000	0.000	0.000
	5320	0.000	0.000	0.000	0.000
	Other Federal	0.000	0.000	0.000	0.000
	Other Non-Federal	0.000	0.000	0.000	0.000
		5.805	3.384	2.421	3.384

Federal Target Funds vs. Federal Funds Programmed (cont.)

		2021				
Federal Agency	Funding Category	Total \$ (M) Programmed	Federal \$ (M) Programmed	Non-Federal \$ (M) Programmed	Federal \$ (M) Target/ Availability	
FHWA	HSIP	0.000	0.000	0.000	0.000	
	CMAQ	0.000	0.000	0.000	0.000	
	TAP	0.000	0.000	0.000	0.000	
	Non-CMAQ/HSIP/TAP	10.768	8.615	2.154	0.000	
	Total HSIP/CMAQ/TAP/STP		10.768	8.615	2.154	8.681
	Other Federal Aid		0.000	0.000	0.000	0.000
	Bridge Inspection		0.000	0.000	0.000	0.000
	Bridge Off System		0.000	0.000	0.000	0.000
	Bridge On System (NHS)		21.643	17.315	4.329	17.315
	Bridge On System (Non-NHS)		0.000	0.000	0.000	0.000
	Bridge Systematic Maintenance		0.000	0.000	0.000	0.000
	Interstate Pavement		0.000	0.000	0.000	0.000
	Non-Interstate Pavement		0.000	0.000	0.000	0.000
	Roadway Improvements		0.000	0.000	0.000	0.000
	Safety Improvements		0.000	0.000	0.000	0.000
	ADA Retrofits		0.000	0.000	0.000	0.000
	Intersection Improvements		3.000	2.400	0.600	2.400
	Intelligent Transportation Systems		0.000	0.000	0.000	0.000
	Roadway Reconstruction		0.000	0.000	0.000	0.000
	Bicycles and Pedestrians		0.000	0.000	0.000	0.000
Capacity		0.000	0.000	0.000	0.000	
Planning/Adjustments/Pass-throughs		0.000	0.000	0.000	0.000	
Non-Federally Aided Projects		0.000	0.000	0.000	0.000	
		35.411	28.329	7.082	28.396	
FTA	5307 Operating/Capital	5.975	3.520	2.455	3.520	
	5309 Operating/Capital	0.000	0.000	0.000	0.000	
	5310 Capital	0.000	0.000	0.000	0.000	
	5311 Operating	0.000	0.000	0.000	0.000	
	5337 Capital	0.000	0.000	0.000	0.000	
	5339 Capital	0.750	0.600	0.150	0.600	
	5320	0.000	0.000	0.000	0.000	
	Other Federal	0.000	0.000	0.000	0.000	
	Other Non-Federal	0.000	0.000	0.000	0.000	
		6.725	4.120	2.605	4.120	

Federal Target Funds vs. Federal Funds Programmed (cont.)

		2022				
Federal Agency	Funding Category	Total \$ (M) Programmed	Federal \$ (M) Programmed	Non-Federal \$ (M) Programmed	Federal \$ (M) Target/ Availability	
FHWA	HSIP	0.500	0.450	0.050	0.000	
	CMAQ	1.200	0.960	0.240	0.000	
	TAP	0.100	0.080	0.020	0.000	
	Non-CMAQ/HSIP/TAP	8.896	7.117	1.779	0.000	
	Total HSIP/CMAQ/TAP/STP		10.696	8.607	2.089	8.908
	Other Federal Aid		0.000	0.000	0.000	0.000
	Bridge Inspection		0.000	0.000	0.000	0.000
	Bridge Off System		7.629	6.103	1.526	6.103
	Bridge On System (NHS)		0.000	0.000	0.000	0.000
	Bridge On System (Non-NHS)		0.000	0.000	0.000	0.000
	Bridge Systematic Maintenance		0.000	0.000	0.000	0.000
	Interstate Pavement		0.000	0.000	0.000	0.000
	Non-Interstate Pavement		0.000	0.000	0.000	0.000
	Roadway Improvements		0.000	0.000	0.000	0.000
	Safety Improvements		0.000	0.000	0.000	0.000
	ADA Retrofits		0.000	0.000	0.000	0.000
	Intersection Improvements		0.000	0.000	0.000	0.000
	Intelligent Transportation Systems		0.000	0.000	0.000	0.000
	Roadway Reconstruction		0.000	0.000	0.000	0.000
	Bicycles and Pedestrians		3.000	2.400	0.600	2.400
Capacity		0.000	0.000	0.000	0.000	
Planning/Adjustments/Pass-throughs		0.000	0.000	0.000	0.000	
Non-Federally Aided Projects		0.000	0.000	0.000	0.000	
		21.325	17.110	4.215	17.411	
FTA	5307 Operating/Capital	6.040	3.572	2.468	3.572	
	5309 Operating/Capital	0.000	0.000	0.000	0.000	
	5310 Capital	0.000	0.000	0.000	0.000	
	5311 Operating	0.000	0.000	0.000	0.000	
	5337 Capital	0.000	0.000	0.000	0.000	
	5339 Capital	0.000	0.000	0.000	0.000	
	5320	0.000	0.000	0.000	0.000	
	Other Federal	0.000	0.000	0.000	0.000	
	Other Non-Federal	0.000	0.000	0.000	0.000	
		6.040	3.572	2.468	3.572	

Federal Target Funds vs. Federal Funds Programmed (cont.)

		2023				
Federal Agency	Funding Category	Total \$ (M) Programmed	Federal \$ (M) Programmed	Non-Federal \$ (M) Programmed	Federal \$ (M) Target/ Availability	
FHWA	HSIP	0.000	0.000	0.000	0.000	
	CMAQ	0.000	0.000	0.000	0.000	
	TAP	0.000	0.000	0.000	0.000	
	Non-CMAQ/HSIP/TAP	10.788	8.630	2.158	0.000	
	Total HSIP/CMAQ/TAP/STP		10.788	8.630	2.158	9.052
	Other Federal Aid		0.000	0.000	0.000	0.000
	Bridge Inspection		0.000	0.000	0.000	0.000
	Bridge Off System		1.684	1.347	0.337	1.347
	Bridge On System (NHS)		0.000	0.000	0.000	0.000
	Bridge On System (Non-NHS)		0.000	0.000	0.000	0.000
	Bridge Systematic Maintenance		0.000	0.000	0.000	0.000
	Interstate Pavement		0.000	0.000	0.000	0.000
	Non-Interstate Pavement		5.260	4.208	1.052	4.208
	Roadway Improvements		0.000	0.000	0.000	0.000
	Safety Improvements		0.000	0.000	0.000	0.000
	ADA Retrofits		0.000	0.000	0.000	0.000
	Intersection Improvements		0.000	0.000	0.000	0.000
	Intelligent Transportation Systems		0.000	0.000	0.000	0.000
	Roadway Reconstruction		0.000	0.000	0.000	0.000
	Bicycles and Pedestrians		0.000	0.000	0.000	0.000
Capacity		0.000	0.000	0.000	0.000	
Planning/Adjustments/Pass-throughs		0.000	0.000	0.000	0.000	
Non-Federally Aided Projects		0.000	0.000	0.000	0.000	
		17.733	14.186	3.547	14.608	
FTA	5307 Operating/Capital	5.525	3.160	2.365	3.160	
	5309 Operating/Capital	0.000	0.000	0.000	0.000	
	5310 Capital	0.000	0.000	0.000	0.000	
	5311 Operating	0.000	0.000	0.000	0.000	
	5337 Capital	0.000	0.000	0.000	0.000	
	5339 Capital	0.000	0.000	0.000	0.000	
	5320	0.000	0.000	0.000	0.000	
	Other Federal	0.000	0.000	0.000	0.000	
	Other Non-Federal	0.000	0.000	0.000	0.000	
			5.525	3.160	2.365	3.160

1. Moneys do not include statewide federal aid or Regional "Mega" projects which are programmed but are excluded from the regional targets provided to MRPC.
2. FTA Programmed amounts are Federal dollars only and do not include state or local shares.

Major Expansion or Other Capital Projects

MART is involved in one major and other minor capital building projects:

1. Ayer Commuter Rail Parking Facility with Kiss-and-Ride Drop-off/Bus Stop.
2. Infrastructure improvements/replacements to our ITS system components.
3. Infrastructure improvements to our ageing Fitchburg facilities.

Operating vs Capital Expenditures

For the purposes of this table, operating projects under the Highway section are considered those projects that maintain the operation of existing facilities or infrastructure, i.e. resurfacing/rehabilitation of road surfaces, rehabilitation/replacement of a bridge, intersection geometrics, etc. Capital projects are assumed to be those projects that involve the construction of a new facility to the transportation network.

In the case of the Highway Element of this TIP, two projects were considered to be capital expenditures. One project occurs in FFY 2019 and 2020, project #608193 Fitchburg/Leominster Twin City Rail trail through Advanced Construction funding. In FFY 2022, one project is considered capital, project #607347 Gardner North Central Pathway Construction Phase VI.

On the Transit side, capital projects were assumed to include rehabilitation/renovation projects on existing transit facilities.

Operating vs Capital Expenditures

FFY		Highway (Fed & NFA)	Transit (Fed & NFA)	Total	Percent of Total
2019	Operating	\$43,542,188	\$4,575,000	\$48,117,188	79.25%
	Capital	\$11,059,443	\$1,542,119	\$12,601,562	20.75%
	<i>Total</i>	<i>\$54,601,631</i>	<i>\$6,117,119</i>	<i>\$60,718,750</i>	
2020	Operating	\$14,398,589	\$4,575,000	\$18,973,589	69.82%
	Capital	\$6,971,456	\$1,230,000	\$8,201,456	30.18%
	<i>Total</i>	<i>\$21,370,045</i>	<i>\$5,805,000</i>	<i>\$27,175,045</i>	
2021	Operating	\$35,411,428	\$4,575,000	\$39,986,428	94.90%
	Capital	\$0	\$2,150,000	\$2,150,000	5.10%
	<i>Total</i>	<i>\$35,411,428</i>	<i>\$6,725,000</i>	<i>\$42,136,428</i>	
2022	Operating	\$18,324,792	\$4,575,000	\$22,899,792	83.68%
	Capital	\$3,000,000	\$1,465,000	\$4,465,000	16.32%
	<i>Total</i>	<i>\$21,324,792</i>	<i>\$6,040,000</i>	<i>\$27,364,792</i>	
2023	Operating	\$17,732,618	\$4,575,000	\$22,307,618	95.92%
	Capital	\$0	\$950,000	\$950,000	4.08%
	<i>Total</i>	<i>\$17,732,618</i>	<i>\$5,525,000</i>	<i>\$23,257,618</i>	

STATUS OF PREVIOUS ANNUAL ELEMENT PROJECTS

Status of Highway Projects

ID Number	Community - Project Description	Award/Advert. Date/Notice to Proceed Date	Estimated Cost	Funding Category
604439	Winchendon – Multi-Use Trail Construction, North Central Pathway Phase VI, includes W-39-023, W-39-024 & W-39-028	NTP 3/12/2015	\$1,693,423	CMAQ
604838	Winchendon - Bridge Replacement, W-39-001, Harris Road over Tarbell Brook	NTP 3/10/2016	\$3,180,815	BR-Off
604928	Leominster- Reconstruction of Mechanic Street, from Laurel Street to the Leominster Connector	NTP 3/9/2016	\$3,602,034	CMAQ, STP
604960	Clinton- Reconstruction & Related Work on Water Street and Bolton Road	Adv 11/1/2014	\$5,494,460	STP, TAP
605696	Hubbardston – Bridge Replacement, H-24-004, Burnshirt Road over Burnshirt River	NTP 9/25/2014	\$813,562	BR-Off
606408	Athol – Reconstruction of West Royalston Road from Silver Lake St to Royalston T.L.	NTP 4/24/2014	\$1,776,827	STP
606636	Athol – Scenic Byway Access & Overlook Construction	NTP 8/6/2014	\$273,125	TAP/TE
607114	Lancaster - Superstructure Replacement, L-02-018, Jackson Road over Route 2.	NTP 8/6/2015	\$6,000,608	BR-Off
607296	Athol-Phillipston – Median Delineator Replacement on Route 2	NTP 5/23/2014	\$510,160	STP
607436	Hubbardston - Resurfacing & Related Work on Burnshirt Road	NTP 11/24/2014	\$958,383	STP
607641	Athol-Phillipston - Resurfacing & Related work on Route 2A from Route 32 to Routes 2/202	NTP 10/9/2014	\$2,000,223	NFA
607475	Winchendon - Resurfacing & Related Work on Route 12, From Mill Street/Beginning of State Highway to New Hampshire State Line	Adv 3/4/2017	\$1,571,623	NHPP
607529	Winchendon - Bridge Replacement, W-39-015, North Royalston Rd Over Tarbell Brook	Exp Adv 4th Quarter FFY 2017	\$2,243,868	STP
607909	Sterling - Bridge Joints Repairs and Beam-End Repairs at 5 Bridges On I-190	NTP 9/15/2015	\$10,021,616	NFA
608250	Royalston - Bridge Replacement, R-12-001 (B35), Stockwell Road Over Lawrence Brook	Exp Adv 4th Quarter FFY 2017	\$857,005	BR-Off
604699	Sterling - Intersection Improvements at Rte 12 And Chocksett Rd	NTP 2/3/2017	\$4,332,105	CMAQ
607419	Westminster - Deck Replacement, W-28-023, Route 2A/140 Over Route 2	Fall 2016	\$2,672,775	NFA

Status of FFY 2018 Montachusett TIP Projects

MassDOT Project #	Community	Description	Status
608188	Multiple	Gardner - Leominster- Sterling- Intersection Improvements at 3 Locations	Expected advertisement before September 2018.
606124	Multiple	Fitchburg – Lunenburg – Leominster - Reconstruction of Summer Street and North Street	Advertised on #/##/2017; Construction start expected in 2018.
604767	Gardner	Gardner - North Central Pathway Design	Project added to FFY 2018 as part of TIP Amendment #1; Expected advertisement.
607127	Hubbardston	Hubbardston - Bridge Replacement, H-24-009, Evergreen Road Over Mason Brook	Project removed from FFY 2018 as part of TIP Amendment #4 on 4/18/2018; Expected to be included in FFY 2019
608179	Royalston	Royalston - Bridge Replacement, R-12-009, North Fitzwilliam Road Over Lawrence Brook	Expected advertisement before September 2018.
605094	Fitchburg	Fitchburg - Bridge Replacement, F-04-003, State Route 31 Over Phillips Brook	Expected advertisement before September 2018.
608864	Gardner	Gardner - Bridge Replacement, G-01-008, Pleasant Street Over The B&M Railroad	Expected advertisement before September 2018.

Status of Transit Projects

RTA	Section	Description	Federal Funds	Approval Status	Grant #	Comments
Montachusett	5307	50/50 Operating Assistance	\$2,300,000	Unobligated	TBD	Partial apportionments released in March 2018
Montachusett	5307	ADA Paratransit Service	\$300,000	Unobligated	TBD	Partial apportionments released in March 2018
Montachusett	5307	Replace Paratransit Vans (5)	\$245,000	Unobligated	TBD	In process of writing FTA application for funds
Montachusett	5307	Acquire Misc. Support Equip.	\$80,000	Unobligated	TBD	In process of writing FTA application for funds
Montachusett	5307	Acquire – Bus Route Signing	\$360,000	Unobligated	TBD	In process of writing FTA application for funds
Montachusett	5339	Rehab Admin/Main Facility (two projects)	\$440,000	Unobligated	TBD	In process of writing FTA application for funds
Montachusett	5307	50/50 Operating Assistance	\$2,114,000	Obligated	MA-2017-18	Fully expended as of 6/30/17
Montachusett	5307	ADA Paratransit Service	\$286,000	Obligated	MA-2017-18	Fully expended as of 6/30/17
Montachusett	5307	Replace Paratransit Vans (5)	\$260,000	Obligated	MA-2017-18	Fully expended as of 6/30/17
Montachusett	5307	Rehab Admin/Main Facility	\$237,400	Obligated	MA-2017-18	Project has punch list items for spring. ~ \$30,000 remains.
Montachusett	5307	Rehab Admin/Main Facility	\$252,600	Obligated	MA-2017-18	Fully expended as of 12/30/17
Montachusett	5307	Acquire Misc. Support Equip.	\$80,000	Obligated	MA-2017-18	Fully expended as of 6/30/17
Montachusett	5307 CMAQ	Wachusett Station Enhancements	\$296,000	Obligated	MA-2017-08	\$41K in outlays; \$69K under contract; \$185K remains to be obligated
Montachusett	5310	R2W ADP Software/Hardware	\$250,000	Obligated	MA-2017-15	Fully contracted; \$177,200 in outlays as of 3/31/18
Montachusett	5307	Acquire Shop Equipment	\$56,000	Obligated	MA-2016-15	Project finished under budget. \$8K remain to be obligated.
Montachusett	5307	Rehab Bus Park & Ride Lot – Fitchburg Decks & CMU Walls	\$264,000	Obligated	MA-2016-15	Project awarded for ~\$150K. Remaining funds to be obligated to similar projects at same location with budget revision to grant.
Montachusett	5307	Acquire Misc Support Equip	\$240,000	Obligated	MA-90-X705	Minor outlay in 2017; \$153K remains to be obligated
Montachusett	5307	Acquire Support Vehicles	\$75,555	Obligated	MA-90-X668	Reimbursed funds to be spent in FY18 prior to 5/31/18.
Montachusett	FHWA 113	Ayer Parking Lot Improvements	\$3,229,064	Obligated	MA-55-0006	\$339,381 in outlays thru Mar 2018, ~\$200K in obligations. Construction not until SFY19.

AIR QUALITY CONFORMITY INFORMATION - MONTACHUSETT METROPOLITAN PLANNING ORGANIZATION - FFY 2019-2023 TRANSPORTATION IMPROVEMENT PROGRAM

Since most all of Massachusetts (with limited exceptions) was designated on 5/21/12 by the United States Environmental Protection Agency as “unclassifiable/attainment” for the latest ozone standard, a conformity determination for the Montachusett 2019-23 TIP is not required. Further details and background information are provided below:

Introduction

The 1990 Clean Air Act Amendments (CAAA) require metropolitan planning organizations within nonattainment and maintenance areas to perform air quality conformity determinations prior to the approval of Long-Range Transportation Plans (LRTPs) and Transportation Improvement Programs (TIPs), and at such other times as required by regulation. A nonattainment area is one that the U.S. Environmental Protection Agency (EPA) has designated as not meeting certain air quality standards. A maintenance area is a nonattainment area that now meets the standards and has been re-designated as maintaining the standard. A conformity determination is a demonstration that plans, programs, and projects are consistent with the State Implementation Plan (SIP) for attaining the air quality standards. The CAAA requirement to perform a conformity determination ensures that federal approval and funding go to transportation activities that are consistent with air quality goals.

The entire Commonwealth of Massachusetts was previously classified as nonattainment for ozone and was divided into two nonattainment areas. The Eastern Massachusetts ozone nonattainment area included Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Plymouth, Suffolk, and Worcester counties. Berkshire, Franklin, Hampden, and Hampshire counties comprised the Western Massachusetts ozone nonattainment area. With these classifications, the 1990 Clean Air Act Amendments (CAAA) required the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x), the two major precursors to ozone formation to achieve attainment of the ozone standard.

Legislative and Regulatory Background

The 1970 Clean Air Act defined a one-hour national ambient air quality standard (NAAQS) for ground-level ozone. The 1990 CAAA further classified degrees of nonattainment of the one-hour standard based on the severity of the monitored levels of the pollutant. The entire commonwealth of Massachusetts was classified as being in serious nonattainment for the one-hour ozone standard, with a required attainment date of 1999. The attainment date was later extended, first to 2003 and a second time to 2007.

In 1997, the EPA proposed a new, eight-hour ozone standard that replaced the one-hour standard, effective June 15, 2005. Scientific information had shown that ozone could affect human health at lower levels, and over longer exposure times than one hour. The new standard was challenged in court, and after a lengthy legal battle, the courts upheld it. It was finalized in June 2004. The eight-hour standard is 0.08 parts per million, averaged over eight hours and not to be exceeded more than once per year. Nonattainment areas were again further classified based on the severity of the eight-hour values. Massachusetts as a whole was classified as being in moderate nonattainment for the eight-hour standard and was separated into two nonattainment areas—Eastern Massachusetts and Western Massachusetts.

In March 2008, EPA published revisions to the eight-hour ozone NAAQS establishing a level of 0.075 ppm, (March 27, 2008; 73 FR 16483). In 2009, EPA announced it would reconsider this standard because it fell outside of the range recommended by the Clean Air Scientific Advisory Committee. However, EPA did not take final action on the reconsideration so the standard would remain at 0.075 ppm.

After reviewing data from Massachusetts monitoring stations, EPA sent a letter on December 16, 2011 proposing that only Dukes County would be designated as nonattainment for the new proposed 0.075 ozone standard. Massachusetts concurred with these findings.

On May 21, 2012, (77 FR 30088), the final rule was published in the Federal Register, defining the 2008 NAAQS at 0.075 ppm, the standard that was promulgated in March 2008. A second rule published on May 21, 2012 (77 FR 30160), revoked the 1997 ozone NAAQS to occur one year after the July 20, 2012 effective date of the 2008 NAAQS.

Also, on May 21, 2012, the air quality designations areas for the 2008 NAAQS were published in the Federal Register. In this Federal Register, the only area in Massachusetts that was designated as nonattainment is Dukes County. All other Massachusetts counties were classified as unclassifiable/attainment.

Therefore, conformity for ozone in the Montachusett MPO is required until July 20, 2013 for only the 1997 ozone standard. Since this 2019-23 TIP will complete its collective development, review, and approval by the Federal Highway Administration after July 20, 2013 – when this standard will be revoked, and since the latest area designations do not require conformity under the current 2008 standard, the MPO does not need to perform a conformity determination for ozone on the program.

TRANSPORTATION AND TRANSIT PROJECT PRIORITIES: FEDERAL & STATE SECTIONS

Please note that the projects listed represent the best available information at the time of compilation. Actual implementation is subject to right of way, design, land taking, local action and/or other issues that could delay project time frames and subsequently advertising and award dates.

In addition, federal guidance requires that the TIP reflect Year of Expenditure (YOE) dollars for projects and programs. To accommodate this requirement, individual project cost estimates provided by MassDOT have been adjusted by a four percent per year inflation factor depending upon its year of placement in the TIP (for this TIP, Federal Years 2020, 2021, 2022 and 2023). Year 1 cost estimates remain as provided but projects in Year 2, 3, 4 or 5 (i.e. FFY 2020, 2021, 2022 or 2023) have been increased by a YOE factor of 4%, 8%, 12% or 16%, respectively.

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2019 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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▶ Section 1A / Regionally Prioritized Projects

▶ Regionally Prioritized Projects

Non-Interstate Pavement	608728	Montachusett	Winchendon	WINCHENDON- RESURFACING & RELATED WORK ON ROUTE 202, FROM THE TEMPLETON TOWN LINE TO MAIN STREET (3.1 MILES)	2	STP	\$ 1,596,635	\$ 1,277,308	\$ 319,327	Construction; Total \$1,596,635; YOE Total \$1,596,635; STP; TEC = 38; D2 Project; 100% Design & PS&E;	
Roadway Reconstruction	604961	Montachusett	Clinton	CLINTON- RESURFACING & RELATED WORK ON ROUTE 110 (HIGH STREET)	3	STP	\$ 2,436,388	\$ 1,949,110	\$ 487,278	Construction; Total \$2,436,388; YOE Total \$2,436,388; STP; TEC = 36; 75% Under Review;	
Roadway Reconstruction	607848	Montachusett	Hubbardston	HUBBARDSTON- RESURFACING AND RELATED WORK ON ROUTE 68, FROM WILLIAMSVILLE ROAD TO THE GARDNER C.L.	3	STP	\$ 4,044,376	\$ 3,235,501	\$ 808,875	Construction; Total \$4,044,376; YOE Total \$4,044,376; STP; TEC = 44; 75% Design; Book Job;	
Intersection Improvements	607446	Montachusett	Westminster	WESTMINSTER- INTERSECTION IMPROVEMENTS, ROUTE 2A AT ROUTE 140	3	STP	\$ 2,176,454	\$ 1,741,163	\$ 435,291	Construction; Total \$2,176,454; YOE Total \$2,176,454; STP; TEC = 43; 100% Design Recvd 3/15/2018;	
Regionally Prioritized Projects subtotal ▶							\$ 10,253,853	\$ 8,203,082	\$ 2,050,771	◀ 80% Federal + 20% Non-Federal	

▶ Section 1A / Fiscal Constraint Analysis

Section 1A Instructions: MPO Template Name) Choose Regional Name from dropdown list to populate header and MPO column;
Column C) Enter ID from ProjectInfo; **Column E)** Choose Municipality Name from dropdown list; **Column H)** Choose the Funding Source being used for the project - if multiple funding sources are being used enter multiple lines; **Column I)** Enter the total amount of funds being programmed in this fiscal year and for each funding source; **Column J)** Federal funds autocalculates. Please verify the amount and only change if needed for flex. **Column K)** Non-federal funds autocalculates. Please verify the split/match - if matching an FTA flex, coordinate with Rail & Transit Division before programming; **Column L)** Enter Additional Information as described - please do not use any other format.

Total Regional Federal Aid Funds Programmed ▶	\$ 10,253,853	\$ 10,253,853	◀Total	\$ -	Target Funds Available
STP programmed ▶	\$ 10,253,853	\$ 8,203,082	◀ STP		
HSIP programmed ▶	\$ -	\$ -	◀ HSIP		
CMAQ programmed ▶	\$ -	\$ -	◀ CMAQ		
TAP programmed ▶	\$ -	\$ -	◀ TAP		

▶ Section 1B / Earmark or Discretionary Grant Funded Projects

▶ Other Federal Aid

	Montachusett		Other Federal Aid	HPP	\$ -	\$ -	\$ -	
	Montachusett		Other Federal Aid	HPP	\$ -	\$ -	\$ -	
Other Federal Aid subtotal ▶					\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2019 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections

	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
Bridge Program / Inspections subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / Off-System

	Bridge Program	608260	Montachusett	ATHOL	ATHOL- BRIDGE REPLACEMENT, A-15-005, WASHINGTON AVE OVER ATHOL POND OUTLET	2	STP-BR-OFF	\$ 2,485,419	\$ 1,988,335	\$ 497,084	
	Bridge Program	608259	Montachusett	TOWNSEND	TOWNSEND- BRIDGE REPLACEMENT, T-07-013, WEST MEADOW ROAD OVER LOCKE BROOK	3	STP-BR-OFF	\$ 991,896	\$ 793,517	\$ 198,379	
AMENDMENT: Move Project - (FROM 2018)	Bridge Program	607127	Montachusett	HUBBARDSTON	HUBBARDSTON- BRIDGE REPLACEMENT, H-24-009, EVERGREEN ROAD OVER MASON BROOK	3	STP-BR-OFF	\$ 3,365,860	\$ 2,692,688	\$ 673,172	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
Bridge Program / Off-System subtotal ►								\$ 6,843,175	\$ 5,474,540	\$ 1,368,635	◀ 80% Federal + 20% Non-Federal

► Bridge Program / On-System (NHS)

	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (NHS) subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / On-System (Non-NHS)

	Bridge Program	608612	Montachusett	ATHOL	ATHOL- BRIDGE REPLACEMENT, A-15-008, CRESCENT STREET OVER MILLERS RIVER	2	NHPP-Off	\$ 7,860,160	\$ 6,288,128	\$ 1,572,032	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (Non-NHS) subtotal ►								\$ 7,860,160	\$ 6,288,128	\$ 1,572,032	◀ 80% Federal + 20% Non-Federal

► Bridge Program / Systematic Maintenance

	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
Bridge Program / Systematic Maintenance subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2019 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
► Interstate Pavement											
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
Interstate Pavement subtotal ►								\$ -	\$ -	\$ -	◀ 90% Federal + 10% Non-Federal
► Non-Interstate Pavement											
	Non-Interstate Pavement	608475	Montachusett	Multiple	LANCASTER- HARVARD- LITTLETON RESURFACING AND RELATED WORK ON ROUTE 2	3	NHPP	\$ 18,585,000	\$ 14,868,000	\$ 3,717,000	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
Non-Interstate Pavement subtotal ►								\$ 18,585,000	\$ 14,868,000	\$ 3,717,000	◀ 80% Federal + 20% Non-Federal
► Roadway Improvements											
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
Roadway Improvements subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2019 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Safety Improvements

	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
Safety Improvements subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 2B / State Prioritized Modernization Projects

► ADA Retrofits

	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -	
	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -	
ADA Retrofits subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Intersection Improvements

	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
Intersection Improvements subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Intelligent Transportation Systems

	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
Intelligent Transportation System subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2019 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MFO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Roadway Reconstruction

Roadway Reconstruction			Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
Roadway Reconstruction			Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
Roadway Reconstruction			Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
Roadway Reconstruction			Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
Roadway Reconstruction subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 2C / State Prioritized Expansion Projects

► Bicycles and Pedestrians

Bicycles and Pedestrians	608193		Montachusett	Multiple	FITCHBURG- LEOMINSTER- RAIL TRAIL CONSTRUCTION (TWIN CITIES RAIL TRAIL)	3	CMAQ	\$ 11,059,443	\$ 8,847,554	\$ 2,211,889	Construction / PSAC score 45 / Total Project Cost \$18,030,899 / AC YR 1 of 2
Bicycles and Pedestrians			Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
Bicycles and Pedestrians			Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
Bicycles and Pedestrians subtotal ►								\$ 11,059,443	\$ 8,847,554	\$ 2,211,889	◀ 80% Federal + 20% Non-Federal

► Capacity

Capacity			Montachusett		Capacity			\$ -	\$ -	\$ -	
Capacity			Montachusett		Capacity			\$ -	\$ -	\$ -	
Capacity subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2019 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Section 3 / Planning / Adjustments / Pass-throughs

► Planning / Adjustments / Pass-throughs

			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program I, (SPR I), Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program II, (SPR II), Research	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Recreational Trails	Multiple		\$ -	\$ -	\$ -	
Other Statewide Items subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 4 / Non-Federally Aided Projects

► Non-Federally Aided Projects

	Non Federal Aid		Montachusett		Non-Federal Aid			\$ -		\$ -	
	Non-Federally Aided Projects		Montachusett		Non-Federal Aid			\$ -		\$ -	
Non-Federal Aid subtotal ►								\$ -		\$ -	◀ 100% Non-Federal

2019 Summary

	TIP Section 1 - 3: ▼	TIP Section 4: ▼	Total of All Projects ▼	
Total ►	\$ 54,601,631	\$ -	\$ 54,601,631	◀ Total Spending in Region
Federal Funds ►	\$ 43,681,305	\$ -	\$ 43,681,305	◀ Total Federal Spending in Region
Non-Federal Funds ►	\$ 10,920,326	\$ -	\$ 10,920,326	◀ Total Non-Federal Spending in Region

701 CMR 7.00 Use of Road Flaggers and Police Details on Public Works Projects / 701 CMR 7.00 (the Regulation) was promulgated and became law on October 3, 2008. Under this Regulation, the CMR is applicable to any Public works Project that is performed within the limits of, or that impact traffic on, any Public Road. The Municipal Limitation referenced in this Regulation is applicable only to projects where the Municipality is the Awarding Authority. For all projects contained in the TIP, the Commonwealth is the Awarding Authority. Therefore, all projects must be considered and implemented in accordance with 701 CMR 7.00, and the Road Flagger and Police Detail Guidelines. By placing a project on the TIP, the Municipality acknowledges that 701 CMR 7.00 is applicable to its project and design and construction will be fully compliant with this Regulation. This information, and additional information relative to guidance and implementation of the Regulation can be found at the following link on the MassDOT Highway Division website: <http://www.massdot.state.ma.us/highway/flaggers/main.aspx>

2020 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Section 1A / Regionally Prioritized Projects

► Regionally Prioritized Projects

Intersection Improvements	608779	Montachusett	Lancaster	LANCASTER- INTERSECTION IMPROVEMENTS ON ROUTE 117/ROUTE 70 AT LUNENBURG ROAD AND ROUTE 117/ROUTE 70 AT MAIN STREET	3	CMAQ	\$ 1,000,000	\$ 800,000	\$ 200,000	Construction; Total \$2,500,590; YOE Total \$2,600,614; HSIP/CMAQ/STP; TEC = 62; 25% Design;
Intersection Improvements	608779	Montachusett	Lancaster	LANCASTER- INTERSECTION IMPROVEMENTS ON ROUTE 117/ROUTE 70 AT LUNENBURG ROAD AND ROUTE 117/ROUTE 70 AT MAIN STREET	3	STP	\$ 600,614	\$ 480,491	\$ 120,123	
Intersection Improvements	608779	Montachusett	Lancaster	LANCASTER- INTERSECTION IMPROVEMENTS ON ROUTE 117/ROUTE 70 AT LUNENBURG ROAD AND ROUTE 117/ROUTE 70 AT MAIN STREET	3	HSIP	\$ 1,000,000	\$ 900,000	\$ 100,000	
Roadway Reconstruction	607431	Montachusett	Westminster	WESTMINSTER- RESURFACING & RELATED WORK ON ROUTE 140, FROM ROUTE 2A TO PATRICIA ROAD	3	STP	\$ 1,560,775	\$ 1,248,620	\$ 312,155	Construction; Total \$1,500,745; YOE Cost \$1,560,775; TEC = 25; TIP Day est FFY 2020; 75% Design Recv 2/6/2018;
Roadway Reconstruction	605651	Montachusett	Leominster	LEOMINSTER- RECONSTRUCTION ON ROUTE 13, FROM HAWES STREET TO PROSPECT STREET	3	CMAQ	\$ 1,200,000	\$ 960,000	\$ 240,000	Construction; Total \$5,462,558; YOE Total \$5,681,060; HSIP/CMAQ/TAP/STP; TEC = 64; TAP Proponent State/Leominster; cost includes Utilities; 75% Design;
Roadway Reconstruction	605651	Montachusett	Leominster	LEOMINSTER- RECONSTRUCTION ON ROUTE 13, FROM HAWES STREET TO PROSPECT STREET	3	STP	\$ 2,481,060	\$ 1,984,848	\$ 496,212	
Roadway Reconstruction	605651	Montachusett	Leominster	LEOMINSTER- RECONSTRUCTION ON ROUTE 13, FROM HAWES STREET TO PROSPECT STREET	3	HSIP	\$ 1,000,000	\$ 900,000	\$ 100,000	
Roadway Reconstruction	605651	Montachusett	Leominster	LEOMINSTER- RECONSTRUCTION ON ROUTE 13, FROM HAWES STREET TO PROSPECT STREET	3	TAP	\$ 1,000,000	\$ 800,000	\$ 200,000	
Regionally Prioritized Projects subtotal ►							\$ 9,842,449	\$ 8,073,959	\$ 1,768,490	◀ 80% Federal + 20% Non-Federal

► Section 1A / Fiscal Constraint Analysis

Section 1A Instructions: MPO Template Name) Choose Regional Name from dropdown list to populate header and MPO column; Column C) Enter ID from ProjectInfo; Column E) Choose Municipality Name from dropdown list; Column H) Choose the Funding Source being used for the project - if multiple funding sources are being used enter multiple lines; Column I) Enter the total amount of funds being programmed in this fiscal year and for each funding source; Column J) Federal funds autocalculates. Please verify the amount and only change if needed for flex. Column K) Non-federal funds autocalculates. Please verify the split/match - if matching an FTA flex, coordinate with Rail & Transit Division before programming; Column L) Enter Additional Information as described - please do not use any other format.

Total Regional Federal Aid Funds Programmed ►	\$ 9,842,449	\$ 10,636,366	◀ Total	\$ 793,917	Target Funds Available
STP programmed ►	\$ 4,642,449	\$ 3,713,959	◀ STP		
HSIP programmed ►	\$ 2,000,000	\$ 1,800,000	◀ HSIP		
CMAQ programmed ►	\$ 2,200,000	\$ 1,760,000	◀ CMAQ		
TAP programmed ►	\$ 1,000,000	\$ 800,000	◀ TAP		

► Section 1B / Earmark or Discretionary Grant Funded Projects

► Other Federal Aid

	Montachusett	Other Federal Aid	HPP	\$ -	\$ -	\$ -	
	Montachusett	Other Federal Aid	HPP	\$ -	\$ -	\$ -	
Other Federal Aid subtotal ►				\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2020 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections

	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
Bridge Program / Inspections subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / Off-System

	Bridge Program	608635	Montachusett	SHIRLEY	SHIRLEY- BRIDGE REPLACEMENT, S-13-005, CARRYING LONGLEY ROAD OVER THE MULPUS BROOK	3	STP-BR-OFF	\$ 1,764,940	\$ 1,411,952	\$ 352,988	
	Bridge Program	608639	Montachusett	WESTMINSTER	WESTMINSTER- BRIDGE REPLACEMENT, W-28-010, CARRYING WHITMANVILLE ROAD OVER THE WHITMAN RIVER	3	STP-BR-OFF	\$ 2,791,200	\$ 2,232,960	\$ 558,240	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
Bridge Program / Off-System subtotal ►								\$ 4,556,140	\$ 3,644,912	\$ 911,228	◀ 80% Federal + 20% Non-Federal

► Bridge Program / On-System (NHS)

	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (NHS) subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / On-System (Non-NHS)

	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (Non-NHS) subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Bridge Program / Systematic Maintenance

	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
Bridge Program / Systematic Maintenance subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2020 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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► Interstate Pavement

	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
Interstate Pavement subtotal ►								\$ -	\$ -	\$ -	◀ 90% Federal + 10% Non-Federal

► Non-Interstate Pavement

	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
Non-Interstate Pavement subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Roadway Improvements

	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
Roadway Improvements subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2020 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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► Safety Improvements

	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
Safety Improvements subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 2B / State Prioritized Modernization Projects

► ADA Retrofits

	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -	
	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -	
ADA Retrofits subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Intersection Improvements

	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
Intersection Improvements subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Intelligent Transportation Systems

	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
Intelligent Transportation System subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2020 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
► Roadway Reconstruction											
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
Roadway Reconstruction subtotal ►								\$ -	\$ -	\$ -	◄ Funding Split Varies by Funding Source
► Section 2C / State Prioritized Expansion Projects											
► Bicycles and Pedestrians											
	Bicycles and Pedestrians	608193	Montachusett	Multiple	FITCHBURG- LEOMINSTER- RAIL TRAIL CONSTRUCTION (TWIN CITIES RAIL TRAIL)	3	CMAQ	\$ 6,971,456	\$ 5,577,165	\$ 1,394,291	Construction / PSAC score 45 / Total Project Cost \$18,030,899 / AC YR 2 of 2
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
Bicycles and Pedestrians subtotal ►								\$ 6,971,456	\$ 5,577,165	\$ 1,394,291	◄ 80% Federal + 20% Non-Federal
► Capacity											
	Capacity		Montachusett		Capacity			\$ -	\$ -	\$ -	
	Capacity		Montachusett		Capacity			\$ -	\$ -	\$ -	
Capacity subtotal ►								\$ -	\$ -	\$ -	◄ Funding Split Varies by Funding Source
► Section 3 / Planning / Adjustments / Pass-throughs											
► Planning / Adjustments / Pass-throughs											
			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program I, (SPR I), Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program II, (SPR II), Research	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Recreational Trails	Multiple		\$ -	\$ -	\$ -	
Other Statewide Items subtotal ►								\$ -	\$ -	\$ -	◄ Funding Split Varies by Funding Source

2020 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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► Section 4 / Non-Federally Aided Projects

► Non-Federally Aided Projects

	Non Federal Aid		Montachusett		Non-Federal Aid			\$ -		\$ -	
	Non-Federally Aided Projects		Montachusett		Non-Federal Aid			\$ -		\$ -	
Non-Federal Aid subtotal ►								\$ -		\$ -	◀ 100% Non-Federal

2020 Summary

TIP Section 1 - TIP Section 4: Total of All
3: ▼ ▼ Projects ▼

Total ►	\$ 21,370,045	\$ -	\$ 21,370,045	◀ Total Spending in Region
Federal Funds ►	\$ 17,296,036		\$ 17,296,036	◀ Total Federal Spending in Region
Non-Federal Funds ►	\$ 4,074,009	\$ -	\$ 4,074,009	◀ Total Non-Federal Spending in Region

701 CMR 7.00 Use of Road Flaggers and Police Details on Public Works Projects / 701 CMR 7.00 (the Regulation) was promulgated and became law on October 3, 2008. Under this Regulation, the CMR is applicable to any Public works Project that is performed within the limits of, or that impact traffic on, any Public Road. The Municipal Limitation referenced in this Regulation is applicable only to projects where the Municipality is the Awarding Authority. For all projects contained in the TIP, the Commonwealth is the Awarding Authority. Therefore, all projects must be considered and implemented in accordance with 701 CMR 7.00, and the Road Flagger and Police Detail Guidelines. By placing a project on the TIP, the Municipality acknowledges that 701 CMR 7.00 is applicable to its project and design and construction will be fully compliant with this Regulation. This information, and additional information relative to guidance and implementation of the Regulation can be found at the following link on the MassDOT Highway Division website: <http://www.massdot.state.ma.us/Highway/flaggers/main.aspx>

2021 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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► Section 1A / Regionally Prioritized Projects

► Regionally Prioritized Projects

Roadway Reconstruction	608784	Montachusett	Templeton	TEMPLETON- ROUNDABOUT CONSTRUCTION AT THE INTERSECTION OF PATRIOTS ROAD, SOUTH MAIN STREET, NORTH MAIN STREET AND GARDNER ROAD	2	STP	\$ 2,409,474	\$ 1,927,579	\$ 481,895	Construction; Total \$2,230,994; YOECost \$2,409,474; TEC = 33; Prelim Design;
Roadway Reconstruction	607604	Montachusett	Multiple	STERLING- WEST BOYLSTON- IMPROVEMENTS ON ROUTE 140 AT I-190	3	STP	\$ 996,840	\$ 797,472	\$ 199,368	Construction; Total \$923,000; YOECost \$996,840; TEC = 29; Prelim Design;
Roadway Reconstruction	607902	Montachusett	Ayer	AYER- RECLAMATION & RELATED WORK ON ROUTE 2A, FROM HARVARD ROAD TO MAIN STREET	3	STP	\$ 4,362,276	\$ 3,489,821	\$ 872,455	Construction; Total \$4,039,144; YOECost \$4,362,276; TEC = 41; 25% Design moving to 75%;
Roadway Reconstruction	608548	Montachusett	Winchendon	WINCHENDON- IMPROVEMENTS & RELATED WORK ON CENTRAL STREET (ROUTE 202), FROM FRONT STREET TO MAPLE STREET (0.5 MILES)	2	STP	\$ 2,999,622	\$ 2,399,698	\$ 599,924	Construction; Total \$2,777,428; YOECost \$2,999,622; STP; TEC = 55; Pre-25%Design; Part of Overall Downtown Improvement Program;
Regionally Prioritized Projects subtotal ►							\$ 10,768,212	\$ 8,614,570	\$ 2,153,642	◀ 80% Federal + 20% Non-Federal

► Section 1A / Fiscal Constraint Analysis

Section 1A Instructions: MPO Template Name) Choose Regional Name from dropdown list to populate header and MPO column; **Column C)** Enter ID from ProjectInfo; **Column E)** Choose Municipality Name from dropdown list; **Column H)** Choose the Funding Source being used for the project - if multiple funding sources are being used enter multiple lines; **Column I)** Enter the total amount of funds being programmed in this fiscal year and for each funding source; **Column J)** Federal funds autocalculates. Please verify the amount and only change if needed for flex. **Column K)** Non-federal funds autocalculates. Please verify the split/match - if matching an FTA flex, coordinate with Rail & Transit Division before programming; **Column L)** Enter Additional Information as described - please do not use any other format.

Total Regional Federal Aid Funds Programmed ►	\$ 10,768,212	\$ 10,851,652	◀ Total	\$ 83,440	Target Funds Available
STP programmed ►	\$ 10,768,212	\$ 8,614,570	◀ STP		
HSIP programmed ►	\$ -	\$ -	◀ HSIP		
CMAQ programmed ►	\$ -	\$ -	◀ CMAQ		
TAP programmed ►	\$ -	\$ -	◀ TAP		

► Section 1B / Earmark or Discretionary Grant Funded Projects

► Other Federal Aid

		Montachusett		Other Federal Aid		HPP	\$ -	\$ -	\$ -	
		Montachusett		Other Federal Aid		HPP	\$ -	\$ -	\$ -	
Other Federal Aid subtotal ►							\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2021 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections

	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
Bridge Program / Inspections subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / Off-System

	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
Bridge Program / Off-System subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Bridge Program / On-System (NHS)

	Bridge Program	608189	Montachusett	FITCHBURG	FITCHBURG- BRIDGE REPLACEMENT AND RELATED WORK, F-04-017, WATER STREET (STATE 2A) OVER BOULDER DRIVE AND PANAM RAILROAD & F-04-018, WATER STREET (ROUTE 12) OVER NORTH NASHUA RIVER	3	NHPP-On	\$ 21,643,216	\$ 17,314,573	\$ 4,328,643	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (NHS) subtotal ►								\$ 21,643,216	\$ 17,314,573	\$ 4,328,643	◀ Funding Split Varies by Funding Source

► Bridge Program / On-System (Non-NHS)

	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (Non-NHS) subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Bridge Program / Systematic Maintenance

	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
Bridge Program / Systematic Maintenance subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2021 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
► Interstate Pavement											
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
Interstate Pavement subtotal ►								\$ -	\$ -	\$ -	◀ 90% Federal + 10% Non-Federal
► Non-Interstate Pavement											
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
Non-Interstate Pavement subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Roadway Improvements											
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
Roadway Improvements subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2021 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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► Safety Improvements

	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
Safety Improvements subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 2B / State Prioritized Modernization Projects

► ADA Retrofits

	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -	
	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -	
ADA Retrofits subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Intersection Improvements

	Intersection Improvements	608561	Montachusett	Leominster	LEOMINSTER- IMPROVEMENTS AT ROUTE 12 (NORTH MAIN STREET) AT HAMILTON STREET; ROUTE 12 (NORTH MAIN STREET) AT NELSON STREET	3	HSIP	\$ 3,000,000	\$ 2,700,000	\$ 300,000	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
Intersection Improvements subtotal ►								\$ 3,000,000	\$ 2,700,000	\$ 300,000	◀ Funding Split Varies by Funding Source

► Intelligent Transportation Systems

	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
Intelligent Transportation System subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2021 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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► Roadway Reconstruction											
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
Roadway Reconstruction subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 2C / State Prioritized Expansion Projects

► Bicycles and Pedestrians											
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
Bicycles and Pedestrians subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Capacity											
	Capacity		Montachusett		Capacity			\$ -	\$ -	\$ -	
	Capacity		Montachusett		Capacity			\$ -	\$ -	\$ -	
Capacity subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 3 / Planning / Adjustments / Pass-throughs

► Planning / Adjustments / Pass-throughs											
			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program I, (SPR I), Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program II, (SPR II), Research	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Recreational Trails	Multiple		\$ -	\$ -	\$ -	
Other Statewide Items subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2021 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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► Section 4 / Non-Federally Aided Projects

► Non-Federally Aided Projects

	Non Federal Aid		Montachusett		Non-Federal Aid			\$ -		\$ -	
	Non-Federally Aided Projects		Montachusett		Non-Federal Aid			\$ -		\$ -	
Non-Federal Aid subtotal ►								\$ -		\$ -	◀ 100% Non-Federal

2021 Summary

TIP Section 1 - TIP Section 4: Total of All
3: ▼ ▼ Projects ▼

Total ►	\$ 35,411,428	\$ -	\$ 35,411,428	◀ Total Spending in Region
Federal Funds ►	\$ 28,629,142	\$ -	\$ 28,629,142	◀ Total Federal Spending in Region
Non-Federal Funds ►	\$ 6,782,286	\$ -	\$ 6,782,286	◀ Total Non-Federal Spending in Region

701 CMR 7.00 Use of Road Flaggers and Police Details on Public Works Projects / 701 CMR 7.00 (the Regulation) was promulgated and became law on October 3, 2008. Under this Regulation, the CMR is applicable to any Public works Project that is performed within the limits of, or that impact traffic on, any Public Road. The Municipal Limitation referenced in this Regulation is applicable only to projects where the Municipality is the Awarding Authority. For all projects contained in the TIP, the Commonwealth is the Awarding Authority. Therefore, all projects must be considered and implemented in accordance with 701 CMR 7.00, and the Road Flagger and Police Detail Guidelines. By placing a project on the TIP, the Municipality acknowledges that 701 CMR 7.00 is applicable to its project and design and construction will be fully compliant with this Regulation. This information, and additional information relative to guidance and implementation of the Regulation can be found at the following link on the MassDOT Highway Division website: <http://www.massdot.state.ma.us/Highway/flaggers/main.aspx>

2022 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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Section 1A / Regionally Prioritized Projects

Regionally Prioritized Projects

Roadway Reconstruction	604499	Montachusett	Leominster	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	3	STP	\$ 7,552,168	\$ 6,041,734	\$ 1,510,434	Construction; Total \$8,350,150; YOE Cost \$9,352,168; STP; TEC = 37; Possible Eligible for HSIP/CMAQ/TAP; TAP Proponent State/Leominster; Contract to Scope Given NTP; CMAQ Benefit TBD; Prelim Design;
Roadway Reconstruction	604499	Montachusett	Leominster	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	3	HSIP	\$ 500,000	\$ 450,000	\$ 50,000	
Roadway Reconstruction	604499	Montachusett	Leominster	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	3	CMAQ	\$ 1,200,000	\$ 960,000	\$ 240,000	
Roadway Reconstruction	604499	Montachusett	Leominster	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	3	TAP	\$ 100,000	\$ 80,000	\$ 20,000	
Non-Interstate Pavement	608891	Montachusett	Gardner	GARDNER- RESURFACING AND RUMBLE STRIP INSTALLATION ON ROUTE 140	3	STP	\$ 1,344,000	\$ 1,075,200	\$ 268,800	Construction; Total \$1,200,000; YOE Cost \$1,344,000; TEC = 31; Book Job; Prelim Design;
Regionally Prioritized Projects subtotal ▶							\$ 10,696,168	\$ 8,606,934	\$ 2,089,234	◀ 80% Federal + 20% Non-Federal

Section 1A / Fiscal Constraint Analysis

Section 1A Instructions: MPO Template Name) Choose Regional Name from dropdown list to populate header and MPO column; **Column C)** Enter ID from ProjectInfo; **Column E)** Choose Municipality Name from dropdown list; **Column H)** Choose the Funding Source being used for the project - if multiple funding sources are being used enter multiple lines; **Column I)** Enter the total amount of funds being programmed in this fiscal year and for each funding source; **Column J)** Federal funds autocalculates. Please verify the amount and only change if needed for flex. **Column K)** Non-federal funds autocalculates. Please verify the split/match - if matching an FTA flex, coordinate with Rail & Transit Division before programming; **Column L)** Enter Additional Information as described - please do not use any other format.

Total Regional Federal Aid Funds Programmed ▶	\$ 10,696,168	\$ 11,072,618	◀ Total	\$ 376,450	Target Funds Available
STP programmed ▶	\$ 8,896,168	\$ 7,116,934	◀ STP		
HSIP programmed ▶	\$ 500,000	\$ 450,000	◀ HSIP		
CMAQ programmed ▶	\$ 1,200,000	\$ 960,000	◀ CMAQ		
TAP programmed ▶	\$ 100,000	\$ 80,000	◀ TAP		

Section 1B / Earmark or Discretionary Grant Funded Projects

Other Federal Aid

	Montachusett	Other Federal Aid	HPP	\$ -	\$ -	\$ -	
	Montachusett	Other Federal Aid	HPP	\$ -	\$ -	\$ -	
Other Federal Aid subtotal ▶				\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2022 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections											
	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
Bridge Program / Inspections subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / Off-System											
	Bridge Program	605296	Montachusett	Fitchburg	FITCHBURG- BRIDGE PRESERVATION, F-04-011, CIRCLE STREET OVER NORTH NASHUA RIVER	3	STP-BR-OFF	\$ 3,058,688	\$ 2,446,950	\$ 611,738	
	Bridge Program	608850	Montachusett	Petersham	PETERSHAM- BRIDGE REPLACEMENT, P-08-002, GLEN VALLEY ROAD OVER EAST BRANCH OF SWIFT RIVER	2	STP-BR-OFF	\$ 4,569,936	\$ 3,655,949	\$ 913,987	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
Bridge Program / Off-System subtotal ►								\$ 7,628,624	\$ 6,102,899	\$ 1,525,725	◀ 80% Federal + 20% Non-Federal

► Bridge Program / On-System (NHS)											
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (NHS) subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / On-System (Non-NHS)											
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (Non-NHS) subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Bridge Program / Systematic Maintenance											
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
Bridge Program / Systematic Maintenance subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2022 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
► Interstate Pavement											
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
Interstate Pavement subtotal ►								\$ -	\$ -	\$ -	◀ 90% Federal + 10% Non-Federal
► Non-Interstate Pavement											
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
Non-Interstate Pavement subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Roadway Improvements											
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
Roadway Improvements subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2022 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information	
► Safety Improvements												
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -		
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -		
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -		
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -		
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -		
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -		
								Safety Improvements subtotal ►	\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source
► Section 2B / State Prioritized Modernization Projects												
► ADA Retrofits												
	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -		
	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -		
								ADA Retrofits subtotal ►	\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Intersection Improvements												
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -		
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -		
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -		
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -		
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -		
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -		
								Intersection Improvements subtotal ►	\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source
► Intelligent Transportation Systems												
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -		
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -		
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -		
								Intelligent Transportation System subtotal ►	\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2022 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Roadway Reconstruction

	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
Roadway Reconstruction subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 2C / State Prioritized Expansion Projects

► Bicycles and Pedestrians

	Bicycles and Pedestrians	609108	Montachusett	Gardner	GARDNER- BIKE PATH BRIDGE CONSTRUCTION, NORTH CENTRAL PATHWAY OVER ROUTE 140	3	CMAQ	\$ 3,000,000	\$ 2,400,000	\$ 600,000	Construction / PSAC score 24; Project number changed from 607347 to 609108 with a description change from Bike Path Construction, North Central Pathway (Phase VI) as indicated in MassDOT D3 email on 4/9/2018
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
Bicycles and Pedestrians subtotal ►								\$ 3,000,000	\$ 2,400,000	\$ 600,000	◀ 80% Federal + 20% Non-Federal

► Capacity

	Capacity		Montachusett		Capacity			\$ -	\$ -	\$ -	
	Capacity		Montachusett		Capacity			\$ -	\$ -	\$ -	
Capacity subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Section 3 / Planning / Adjustments / Pass-throughs

► Planning / Adjustments / Pass-throughs

			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program I, (SPR I), Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program II, (SPR II), Research	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Recreational Trails	Multiple		\$ -	\$ -	\$ -	
Other Statewide Items subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2022 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Section 4 / Non-Federally Aided Projects

► Non-Federally Aided Projects

Non Federal Aid	Montachusett	Non-Federal Aid			\$ -		\$ -	
Non-Federally Aided Projects	Montachusett	Non-Federal Aid			\$ -		\$ -	
Non-Federal Aid subtotal ►					\$ -		\$ -	◀ 100% Non-Federal

2022 Summary

	TIP Section 1 - 3: ▼	TIP Section 4: ▼	Total of All Projects ▼	
Total ►	\$ 21,324,792	\$ -	\$ 21,324,792	◀ Total Spending in Region
Federal Funds ►	\$ 17,109,834		\$ 17,109,834	◀ Total Federal Spending in Region
Non-Federal Funds ►	\$ 4,214,958	\$ -	\$ 4,214,958	◀ Total Non-Federal Spending in Region

701 CMR 7.00 Use of Road Flaggers and Police Details on Public Works Projects / 701 CMR 7.00 (the Regulation) was promulgated and became law on October 3, 2008. Under this Regulation, the CMR is applicable to any Public works Project that is performed within the limits of, or that impact traffic on, any Public Road. The Municipal Limitation referenced in this Regulation is applicable only to projects where the Municipality is the Awarding Authority. For all projects contained in the TIP, the Commonwealth is the Awarding Authority. Therefore, all projects must be considered and implemented in accordance with 701 CMR 7.00, and the Road Flagger and Police Detail Guidelines. By placing a project on the TIP, the Municipality acknowledges that 701 CMR 7.00 is applicable to its project and design and construction will be fully compliant with this Regulation. This information, and additional information relative to guidance and implementation of the Regulation can be found at the following link on the MassDOT Highway Division website: <http://www.massdot.state.ma.us/Highway/flaggers/main.aspx>

2023 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Section 1A / Regionally Prioritized Projects

► Regionally Prioritized Projects

Roadway Reconstruction	608832	Montachusett	Lancaster	LANCASTER- INTERCHANGE IMPROVEMENTS AT ROUTE 2 EXIT 34 (OLD UNION TURNPIKE)	3	STP	\$ 5,568,000	\$ 4,454,400	\$ 1,113,600	Construction; Total \$4,800,000; YOE Cost \$5,568,000; TEC = 41; Prelim Design;
Roadway Reconstruction	601957	Montachusett	Ashburnham	ASHBURNHAM- RESURFACING & RELATED WORK ON ROUTE 101	3	STP	\$ 5,220,000	\$ 4,176,000	\$ 1,044,000	Construction; Total \$4,500,000; YOE Total \$5,220,000; TEC = 44; Town Est. at 25% Design; Seeking Funding to Complete Design;
		Montachusett					\$ -	\$ -	\$ -	
		Montachusett					\$ -	\$ -	\$ -	
		Montachusett					\$ -	\$ -	\$ -	
Regionally Prioritized Projects subtotal ►							\$ 10,788,000	\$ 8,630,400	\$ 2,157,600	◀ 80% Federal + 20% Non-Federal

► Section 1A / Fiscal Constraint Analysis

<p>Section 1A Instructions: MPO Template Name) Choose Regional Name from dropdown list to populate header and MPO column; Column C) Enter ID from ProjectInfo; Column E) Choose Municipality Name from dropdown list; Column H) Choose the Funding Source being used for the project - if multiple funding sources are being used enter multiple lines; Column I) Enter the total amount of funds being programmed in this fiscal year and for each funding source; Column J) Federal funds autocalculates. Please verify the amount and only change if needed for flex. Column K) Non-federal funds autocalculates. Please verify the split/match - if matching an FTA flex, coordinate with Rail & Transit Division before programming; Column L) Enter Additional Information as described - please do not use any other format.</p>	Total Regional Federal Aid Funds Programmed ►			\$ 10,788,000	\$ 11,314,453	◀ Total	\$ 526,453	Target Funds Available
	STP programmed ►			\$ 10,788,000	\$ 8,630,400	◀ STP		
	HSIP programmed ►			\$ -	\$ -	◀ HSIP		
	CMAQ programmed ►			\$ -	\$ -	◀ CMAQ		
	TAP programmed ►			\$ -	\$ -	◀ TAP		

► Section 1B / Earmark or Discretionary Grant Funded Projects

► Other Federal Aid

		Montachusett		Other Federal Aid		HPP	\$ -	\$ -	\$ -	
		Montachusett		Other Federal Aid		HPP	\$ -	\$ -	\$ -	
Other Federal Aid subtotal ►							\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2023 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
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► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections

	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Inspection			\$ -	\$ -	\$ -	
Bridge Program / Inspections subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / Off-System

	Bridge Program	TBA	Montachusett	HUBBARDSTON	HUBBARDSTON-BRIDGE REPLACEMENT, H-24-003, WILLIAMSVILE ROAD OVER BURNCHIRT RIVER	3	STP-BR-OFF	\$ 1,684,320	\$ 1,347,456	\$ 336,864	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Off-System			\$ -	\$ -	\$ -	
Bridge Program / Off-System subtotal ►								\$ 1,684,320	\$ 1,347,456	\$ 336,864	◀ 80% Federal + 20% Non-Federal

► Bridge Program / On-System (NHS)

	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (NHS) subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

► Bridge Program / On-System (Non-NHS)

	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / On-System (Non-NHS)			\$ -	\$ -	\$ -	
Bridge Program / On-System (Non-NHS) subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

► Bridge Program / Systematic Maintenance

	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
	Bridge Program		Montachusett		Bridge Program / Systematic Maintenance			\$ -	\$ -	\$ -	
Bridge Program / Systematic Maintenance subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2023 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
► Interstate Pavement											
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
	Interstate Pavement		Montachusett		Interstate Pavement			\$ -	\$ -	\$ -	
Interstate Pavement subtotal ►								\$ -	\$ -	\$ -	◀ 90% Federal + 10% Non-Federal
► Non-Interstate Pavement											
	Non-Interstate Pavement	609107	Montachusett	Multiple	PHILLIPSTON- TEMPLETON- PAVEMENT PRESERVATION AND RELATED WORK ON ROUTE 2	2	NHPP	\$ 5,260,298	\$ 4,208,238	\$ 1,052,060	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
	Non-Interstate Pavement		Montachusett		Non-Interstate Pavement			\$ -	\$ -	\$ -	
Non-Interstate Pavement subtotal ►								\$ 5,260,298	\$ 4,208,238	\$ 1,052,060	◀ 80% Federal + 20% Non-Federal
► Roadway Improvements											
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
	Roadway Improvements		Montachusett		Roadway Improvements			\$ -	\$ -	\$ -	
Roadway Improvements subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2023 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
► Safety Improvements											
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
	Safety Improvements		Montachusett		Safety Improvements			\$ -	\$ -	\$ -	
Safety Improvements subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source
► Section 2B / State Prioritized Modernization Projects											
► ADA Retrofits											
	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -	
	ADA Retrofits		Montachusett		ADA Retrofits			\$ -	\$ -	\$ -	
ADA Retrofits subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Intersection Improvements											
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
	Intersection Improvements		Montachusett		Intersection Improvements			\$ -	\$ -	\$ -	
Intersection Improvements subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source
► Intelligent Transportation Systems											
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
	Intelligent Transportation Systems		Montachusett		Intelligent Transportation Systems			\$ -	\$ -	\$ -	
Intelligent Transportation System subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal

2023 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable: a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information</i>
► Roadway Reconstruction											
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
	Roadway Reconstruction		Montachusett		Roadway Reconstruction			\$ -	\$ -	\$ -	
Roadway Reconstruction subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source
► Section 2C / State Prioritized Expansion Projects											
► Bicycles and Pedestrians											
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
	Bicycles and Pedestrians		Montachusett		Bicycles and Pedestrians			\$ -	\$ -	\$ -	
Bicycles and Pedestrians subtotal ►								\$ -	\$ -	\$ -	◀ 80% Federal + 20% Non-Federal
► Capacity											
	Capacity		Montachusett		Capacity			\$ -	\$ -	\$ -	
	Capacity		Montachusett		Capacity			\$ -	\$ -	\$ -	
Capacity subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source
► Section 3 / Planning / Adjustments / Pass-throughs											
► Planning / Adjustments / Pass-throughs											
			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		ABP GANS Repayment	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Award adjustments, change orders, etc.	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Metropolitan Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program I, (SPR I), Planning	Multiple		\$ -	\$ -	\$ -	
			Montachusett		State Planning and Research Work Program II, (SPR II), Research	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Railroad Crossings	Multiple		\$ -	\$ -	\$ -	
			Montachusett		Recreational Trails	Multiple		\$ -	\$ -	\$ -	
Other Statewide Items subtotal ►								\$ -	\$ -	\$ -	◀ Funding Split Varies by Funding Source

2023 Montachusett Region Transportation Improvement Program

Amendment / Adjustment Type ▼	STIP Program ▼	MassDOT Project ID ▼	Metropolitan Planning Organization ▼	Municipality Name ▼	MassDOT Project Description ▼	MassDOT District ▼	Funding Source ▼	Total Programmed Funds ▼	Federal Funds ▼	Non-Federal Funds ▼	Additional Information ▼ <i>Present information as follows, if applicable:</i> a) Planning / Design / or Construction; b) total project cost and funding sources used; c) advance construction status; d) MPO project score; e) name of entity receiving a transfer; f) name of entity paying the non-state non-federal match; g) earmark details; h) TAP project proponent; i) other information
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► Section 4 / Non-Federally Aided Projects

► Non-Federally Aided Projects

	Non Federal Aid		Montachusett		Non-Federal Aid			\$ -		\$ -	
	Non-Federally Aided Projects		Montachusett		Non-Federal Aid			\$ -		\$ -	
Non-Federal Aid subtotal ►								\$ -		\$ -	◀100% Non-Federal

2023 Summary

TIP Section 1 - TIP Section 4: Total of All Projects ▼

Total ►	\$ 17,732,618	\$ -	\$ 17,732,618	◀ Total Spending in Region
Federal Funds ►	\$ 14,186,094		\$ 14,186,094	◀ Total Federal Spending in Region
Non-Federal Funds ►	\$ 3,546,524	\$ -	\$ 3,546,524	◀ Total Non-Federal Spending in Region

701 CMR 7.00 Use of Road Flaggers and Police Details on Public Works Projects / 701 CMR 7.00 (the Regulation) was promulgated and became law on October 3, 2008. Under this Regulation, the CMR is applicable to any Public works Project that is performed within the limits of, or that impact traffic on, any Public Road. The Municipal Limitation referenced in this Regulation is applicable only to projects where the Municipality is the Awarding Authority. For all projects contained in the TIP, the Commonwealth is the Awarding Authority. Therefore, all projects must be considered and implemented in accordance with 701 CMR 7.00, and the Road Flagger and Police Detail Guidelines. By placing a project on the TIP, the Municipality acknowledges that 701 CMR 7.00 is applicable to its project and design and construction will be fully compliant with this Regulation. This information, and additional information relative to guidance and implementation of the Regulation can be found at the following link on the MassDOT Highway Division website: <http://www.massdot.state.ma.us/Highway/flaggers/main.aspx>

**Transportation Improvement Program (TIP)
Project List (FY2019)**

FTA		Transit Agency	FTA Activity Line Item	Project Description	Carryover					Total Cost	Additional Information	
Program	Project Number				(unobligated)	Federal Funds	State Funds	TDC	Local Funds			
5307												
	5307	RTD0007045	Montachusett Regional Transit Authority	111204	BUY REPLACEMENT <30 FT BUS (3) -		\$360,000	\$90,000	\$0	\$0	\$450,000	Medium Duty/Light Frame Diesel to replace 35ft HD Transit buses
	5307	RTD0007031	Montachusett Regional Transit Authority	300901	UP TO 50% FEDERAL SHARE -		\$2,100,000	\$2,100,000	\$0	\$0	\$4,200,000	Operating Assistance
	5307	RTD0007143	Montachusett Regional Transit Authority	113403	TERMINAL, INTERMODAL (TRANSIT) -		\$24,000	\$6,000	\$0	\$0	\$30,000	Rewiring of all electrical panels and add sub-meters in 100 Main St Intermodal.
	5307	RTD0007026	Montachusett Regional Transit Authority	111215	BUY REPLACEMENT VAN (5) -		\$264,000	\$66,000	\$0	\$0	\$330,000	12 psgr wheelchair vans
	5307	RTD0007046	Montachusett Regional Transit Authority	114403	REHAB/RENOVATE ADMIN/MAINT FACILITY -		\$120,000	\$30,000	\$0	\$0	\$150,000	Replace old AHU's & Water Heaters & Do Infrared in Maintenance Bays
	5307	RTD0007038	Montachusett Regional Transit Authority	114406	REHAB/RENOVATE SHOP EQUIPMENT -		\$32,000	\$8,000	\$0	\$0	\$40,000	New Lube Pumps, Reels, & Meters
	5307	RTD0007047	Montachusett Regional Transit Authority	114220	ACQUIRE MISC SUPPORT EQUIPMENT -		\$72,000	\$18,000	\$0	\$0	\$90,000	Copiers, servers, Accounting Software
	5307	RTD0007030	Montachusett Regional Transit Authority	117C00	NON FIXED ROUTE ADA PARA SERV -		\$300,000	\$75,000	\$0	\$0	\$375,000	Operating
						Subtotal	\$3,272,000	\$2,393,000	\$0	\$0	\$5,665,000	
5309												
						Subtotal	\$0	\$0	\$0	\$0	\$0	
5310												
						Subtotal	\$0	\$0	\$0	\$0	\$0	
5311												
						Subtotal	\$0	\$0	\$0	\$0	\$0	
5337												
						Subtotal	\$0	\$0	\$0	\$0	\$0	
5339												
	5339	RTD0007140	Montachusett Regional Transit Authority	119305	CONSTRUCT PED ACCESS / WALKWAYS -		\$240,000	\$60,000	\$0	\$0	\$300,000	Enhance the public access walkway and drop-off area in front of Ayer CR Station to include restrooms
						Subtotal	\$240,000	\$60,000	\$0	\$0	\$300,000	
5320												
						Subtotal	\$0	\$0	\$0	\$0	\$0	
Other Federal												
						Subtotal	\$0	\$0	\$0	\$0	\$0	
Other Non-Federal												
		RTD0007141	Montachusett Regional Transit Authority	113304	CONSTRUCT - BUS PARK&RIDE LOT -		\$0	\$152,119	\$0	\$0	\$152,119	Multi-year construction project. RTACAP to match old federal for Ayer Project in FY16 & FY17. Funds will supplement matching funds from Ayer for construction phase.
						Subtotal	\$0	\$152,119	\$0	\$0	\$152,119	
						Total	\$3,512,000	\$2,605,119	\$0	\$0	\$6,117,119	

Funds listed under the Carry Over column are included in the Federal Amount

Transportation Improvement Program (TIP)

Project List (FY2020)

FTA		FTA Activity		Carryover							Additional Information	
Program	Project Number	Transit Agency	Line Item	Project Description	(unobligated)	Federal Funds	State Funds	TDC	Local Funds	Total Cost		
5307												
	5307	RTD0007039	Montachusett Regional Transit	119202	PURCHASE BUS SHELTERS		\$40,000	\$10,000	\$0	\$0	\$50,000	
	5307	RTD0007033	Montachusett Regional Transit	117C00	NON FIXED ROUTE ADA PARA SERV -		\$300,000	\$75,000	\$0	\$0	\$375,000	Operating
	5307	RTD0007056	Montachusett Regional Transit	129405	REHAB/RENOV PED ACCESS / WALKWAYS -		\$60,000	\$15,000	\$0	\$0	\$75,000	Enclose canopy walkway to commuter rail station platform
	5307	RTD0007048	Montachusett Regional Transit	116402	REHAB/RENOV COMMUNICATIONS SYSTEM -		\$120,000	\$30,000	\$0	\$0	\$150,000	Replace phone system for transit operations
	5307	RTD0007137	Montachusett Regional Transit	111204	BUY REPLACEMENT <30 FT BUS (2)		\$260,000	\$65,000	\$0	\$0	\$325,000	
	5307	RTD0007049	Montachusett Regional Transit	114403	REHAB/RENOVATE ADMIN/MAINT FACILITY -		\$80,000	\$20,000	\$0	\$0	\$100,000	Upgrade elevator et al, and install co/no system at Water St
	5307	RTD0007032	Montachusett Regional Transit	300901	UP TO 50% FEDERAL SHARE -		\$2,100,000	\$2,100,000	\$0	\$0	\$4,200,000	Operating Assistance
	5307	RTD0007041	Montachusett Regional Transit	114220	ACQUIRE MISC SUPPORT EQUIPMENT -		\$140,000	\$35,000	\$0	\$0	\$175,000	Copiers, servers, and desktop replacements
	5307	RTD0007027	Montachusett Regional Transit	111215	BUY REPLACEMENT VAN (5) -		\$268,000	\$67,000	\$0	\$0	\$335,000	12 psgr wheelchair vans
	5307	RTD0007050	Montachusett Regional Transit	113403	TERMINAL, INTERMODAL (TRANSIT) -		\$16,000	\$4,000	\$0	\$0	\$20,000	Upgrade elevator et al in North Pod of ITC
Subtotal							\$3,384,000	\$2,421,000	\$0	\$0	\$5,805,000	
5309												
Subtotal							\$0	\$0	\$0	\$0	\$0	
5310												
Subtotal							\$0	\$0	\$0	\$0	\$0	
5311												
Subtotal							\$0	\$0	\$0	\$0	\$0	
5337												
Subtotal							\$0	\$0	\$0	\$0	\$0	
5339												
Subtotal							\$0	\$0	\$0	\$0	\$0	
5320												
Subtotal							\$0	\$0	\$0	\$0	\$0	
Other Federal												
Subtotal							\$0	\$0	\$0	\$0	\$0	
Other Non-Federal												
Subtotal							\$0	\$0	\$0	\$0	\$0	
Total							\$3,384,000	\$2,421,000	\$0	\$0	\$5,805,000	

Funds listed under the Carry Over column are included in the Federal Amount

**Transportation Improvement Program (TIP)
Project List (FY2021)**

FTA Program	Project Number	Transit Agency	FTA Activity Line Item	Project Description	Carryover (unobligated)	Federal Funds	State Funds	TDC	Local Funds	Total Cost	Additional Information
5307											
	5307 RTD0007036	Montachusett Regional Transit Authority	114220	ACQUIRE MISC SUPPORT EQUIPMENT -		\$48,000	\$12,000	\$0	\$0	\$60,000	Copiers, servers, and desktop replacements
	5307 RTD0007042	Montachusett Regional Transit Authority	111203	BUY REPLACEMENT 30-FT BUS (2) -		\$680,000	\$170,000	\$0	\$0	\$850,000	Heavy Duty Transit
	5307 RTD0007051	Montachusett Regional Transit Authority	114401	REHAB/RENOVATE ADMINISTRATIVE FACILITY -		\$120,000	\$30,000	\$0	\$0	\$150,000	Replace roof over admin area at 840 N. Main
	5307 RTD0007034	Montachusett Regional Transit Authority	117C00	NON FIXED ROUTE ADA PARA SERV -		\$300,000	\$75,000	\$0	\$0	\$375,000	Operating
	5307 RTD0007037	Montachusett Regional Transit Authority	111215	BUY REPLACEMENT VAN (5) -		\$272,000	\$68,000	\$0	\$0	\$340,000	12 psgr wheelchair vans
	5307 RTD0007035	Montachusett Regional Transit Authority	300901	UP TO 50% FEDERAL SHARE -		\$2,100,000	\$2,100,000	\$0	\$0	\$4,200,000	Operating Assistance
					Subtotal	\$3,520,000	\$2,455,000	\$0	\$0	\$5,975,000	
5309											
					Subtotal	\$0	\$0	\$0	\$0	\$0	
5310											
					Subtotal	\$0	\$0	\$0	\$0	\$0	
5311											
					Subtotal	\$0	\$0	\$0	\$0	\$0	
5337											
					Subtotal	\$0	\$0	\$0	\$0	\$0	
5339											
	5339 RTD0007029	Montachusett Regional Transit Authority	113403	TERMINAL, INTERMODAL (TRANSIT) -		\$600,000	\$150,000	\$0	\$0	\$750,000	Rehabilitate (aesthetic & structural) at 100 Main St Fitchburg built in 1996. Including roof over concourse & south pod.
					Subtotal	\$600,000	\$150,000	\$0	\$0	\$750,000	
5320											
					Subtotal	\$0	\$0	\$0	\$0	\$0	
Other Federal											
					Subtotal	\$0	\$0	\$0	\$0	\$0	
Other Non-Federal											
					Subtotal	\$0	\$0	\$0	\$0	\$0	
					Total	\$4,120,000	\$2,605,000	\$0	\$0	\$6,725,000	

Funds listed under the Carry Over column are included in the Federal Amount

**Transportation Improvement Program (TIP)
Project List (FY2022)**

FTA Program	Project Number	Transit Agency	FTA Activity Line Item	Project Description	Carryover (unobligated)	Federal Funds	State Funds	TDC	Local Funds	Total Cost	Additional Information
5307											
	5307 RTD0007053	Montachusett Regional Transit Authority	114220	ACQUIRE MISC SUPPORT EQUIPMENT -		\$40,000	\$10,000	\$0	\$0	\$50,000	Copiers, servers, and desktop replacements
	5307 RTD0007054	Montachusett Regional Transit Authority	114401	REHAB/RENOVATE ADMINISTRATIVE FACILITY -		\$200,000	\$50,000	\$0	\$0	\$250,000	Rehab interior, asbestos abatement, basement at 840 N. Main
	5307 RTD0007146	Montachusett Regional Transit Authority	117C00	NON FIXED ROUTE ADA PARA SERV -		\$300,000	\$75,000	\$0	\$0	\$375,000	Operating
	5307 RTD0007043	Montachusett Regional Transit Authority	119202	PURCHASE BUS SHELTERS		\$36,000	\$9,000	\$0	\$0	\$45,000	
	5307 RTD0007055	Montachusett Regional Transit Authority	111204	BUY REPLACEMENT <30 FT BUS (2) -		\$240,000	\$60,000	\$0	\$0	\$300,000	Medium Duty
	5307 RTD0007052	Montachusett Regional Transit Authority	111215	BUY REPLACEMENT VAN (5) -		\$276,000	\$69,000	\$0	\$0	\$345,000	12 psgr wheelchair vans
	5307 RTD0007044	Montachusett Regional Transit Authority	114403	REHAB/RENOVATE ADMIN/MAINT FACILITY -		\$380,000	\$95,000	\$0	\$0	\$475,000	Rehabilitate (aesthetic & structural) facility at 1427R Water St Fitchburg built in 1987.
	5307 RTD0007144	Montachusett Regional Transit Authority	300901	UP TO 50% FEDERAL SHARE -		\$2,100,000	\$2,100,000	\$0	\$0	\$4,200,000	Operating Assistance
				Subtotal		\$3,572,000	\$2,468,000	\$0	\$0	\$6,040,000	
5309											
				Subtotal		\$0	\$0	\$0	\$0	\$0	
5310											
				Subtotal		\$0	\$0	\$0	\$0	\$0	
5311											
				Subtotal		\$0	\$0	\$0	\$0	\$0	
5337											
				Subtotal		\$0	\$0	\$0	\$0	\$0	
5339											
				Subtotal		\$0	\$0	\$0	\$0	\$0	
5320											
				Subtotal		\$0	\$0	\$0	\$0	\$0	
Other Federal											
				Subtotal		\$0	\$0	\$0	\$0	\$0	
Other Non-Federal											
				Subtotal		\$0	\$0	\$0	\$0	\$0	
				Total		\$3,572,000	\$2,468,000	\$0	\$0	\$6,040,000	

Funds listed under the Carry Over column are included in the Federal Amount

Transportation Improvement Program (TIP)												
Project List (FY2023)												
FTA		FTA Activity			Carryover							
Program	Project Number	Transit Agency	Line Item	Project Description	(unobligated)	Federal Funds	State Funds	TDC	Local Funds	Total Cost	Additional Information	
5307												
5307	RTD0007256	Montachusett Regional Transit Authority	113404	REHAB/RENOVATE BUS PARK & RIDE LOT -		\$40,000	\$10,000	\$0	\$0	\$50,000	Replace Roofs on garage stairwells at 150 Main St, Fitchburg	
5307	RTD0007139	Montachusett Regional Transit Authority	114401	REHAB/RENOVATE ADMINISTRATIVE FACILITY -		\$40,000	\$10,000	\$0	\$0	\$50,000	Generator for 150 Main (Replacement)	
5307	RTD0007145	Montachusett Regional Transit Authority	300901	UP TO 50% FEDERAL SHARE -		\$2,100,000	\$2,100,000	\$0	\$0	\$4,200,000	Operating Assistance	
5307	RTD0007255	Montachusett Regional Transit Authority	113404	REHAB/RENOVATE BUS PARK & RIDE LOT -		\$200,000	\$50,000	\$0	\$0	\$250,000	Nashua Street Deck re-sealing 5-7 years	
5307	RTD0007138	Montachusett Regional Transit Authority	111215	BUY REPLACEMENT VAN (5) -		\$280,000	\$70,000	\$0	\$0	\$350,000	12 psgr wheelchair vans	
5307	RTD0007147	Montachusett Regional Transit Authority	117C00	NON FIXED ROUTE ADA PARA SERV -		\$300,000	\$75,000	\$0	\$0	\$375,000	Operating	
5307	RTD0007253	Montachusett Regional Transit Authority	113404	REHAB/RENOVATE BUS PARK & RIDE LOT -		\$200,000	\$50,000	\$0	\$0	\$250,000	Paint Garage and conduct a structural survey	
					Subtotal	\$3,160,000	\$2,365,000	\$0	\$0	\$5,525,000		
5309												
					Subtotal	\$0	\$0	\$0	\$0	\$0		
5310												
					Subtotal	\$0	\$0	\$0	\$0	\$0		
5311												
					Subtotal	\$0	\$0	\$0	\$0	\$0		
5337												
					Subtotal	\$0	\$0	\$0	\$0	\$0		
5339												
					Subtotal	\$0	\$0	\$0	\$0	\$0		
5320												
					Subtotal	\$0	\$0	\$0	\$0	\$0		
Other Federal												
					Subtotal	\$0	\$0	\$0	\$0	\$0		
Other Non-Federal												
					Subtotal	\$0	\$0	\$0	\$0	\$0		
					Total	\$3,160,000	\$2,365,000	\$0	\$0	\$5,525,000		
Funds listed under the Carry Over column are included in the Federal Amount												

FFY 2019 - 2023 MONTACHUSETT TIP PROJECT LIST

ADVANCED CONSTRUCTION CONVERSION CHART

FITCHBURG- LEOMINSTER- RAIL TRAIL CONSTRUCTION (TWIN CITIES RAIL TRAIL)

TOTAL COST (NOT FEDERAL FUNDS)

File #	FUNDING CATEGORY	FFY 19	FFY 20	FFY 21	FFY 22	FFY 23	TOTAL
608193	CMAQ (Statewide)	\$11,059,443	\$6,971,456				\$18,030,899
FISCAL YEAR FEDERAL AID TOTALS:		\$11,059,443	\$6,971,456				\$18,030,899
NON - FEDERAL AID (TO BE CONVERTED TO FED. AID BY A/C CONVERSIONS AS SHOWN ABOVE)		\$18,030,899					\$18,030,899

APPENDIX A – REGIONAL PRIORITIES FOR WHICH FUNDING HAS NOT BEEN IDENTIFIED

(For Informational Purposes)

Please note that the projects listed represent the best available information at the time of compilation. Actual implementation is subject to right of way, design, land taking, local action and/or other issues that could delay project time frames and subsequently advertising and award date

Appendix Montachusett MPO Transportation Improvement Program

Project ID #	Community	Description	TEC Total Score	Design Status	Est Cost ProjectInfo	Additional Information
608888	Gardner	GARDNER- RECLAMATION AND RELATED WORK ON PEARSON BOULEVARD	23	25%	\$864,519	Book Job; 25% Design;
608415	Athol	ATHOL- INTERSECTION IMPROVEMENTS AT ROUTE 2A AND BROOKSIDE ROAD	42	Prelim Design	\$1,544,720	
608879	Winchendon	WINCHENDON- RESURFACING & RELATED WORK ON MAPLE STREET (ROUTE 202), FROM VINE STREET TO GLENALLEN STREET (1.36 MILES)	32	25%	\$1,680,444	
608793	Hubbardston	HUBBARDSTON- HIGHWAY RECONSTRUCTION OF ROUTE 68 (MAIN STREET), FROM 1,000 FT NORTH OF WILLIAMSVILLE ROAD TO ELM STREET	28	25%	\$2,230,070	PRC Apprvd 3/23/2017
606640	Ayer	AYER- RESURFACING & RELATED WORK ON RT 2A (FITCHBURG RD & PARK ST)	35	Prelim Design	\$2,400,000	
607432	Westminster	WESTMINSTER - REHABILITATION & BOX WIDENING ON RT 140, FROM PATRICIA RD TO THE PRINCETON T.L.	32	Prelim Design	\$4,200,000	Town support letter; Draft 25% submitted to MassDOT; Town anticipates ready 2021 const. season, i.e FFY 2021
608723	Athol	ATHOL- INTERSECTION IMPROVEMENTS AT CRESCENT STREET AND CHESTNUT HILL AVENUE	50	Prelim Design	\$4,371,060	
608424	Templeton	TEMPLETON- RECONSTRUCTION OF ROUTE 68, FROM KING PHILLIP TRAIL (ROUTE 202) NORTH TO THE PHILLIPSTON TOWN LINE (2.65 MILES)	33	Prelim Design	\$5,575,826	
608177	Ashby	ASHBY - RECONSTRUCTION OF ROUTE 119 (TOWNSEND ROAD) FROM BERNHARDT ROAD TO ROUTE 31.	20	Prelim Design	\$6,900,000	
608443	Ayer/Littleton	LITTLETON- AYER- INTERSECTION IMPROVEMENTS ON ROUTE 2A AT WILLOW ROAD AND BRUCE STREET	37	Prelim Design	\$2,400,000	Multiple MPO's; MAPC
606420	Fitchburg	FITCHBURG- INTERSECTION & SIGNAL IMPROVEMENTS @ RT 2A (LUNENBURG ST) & JOHN FITCH HIGHWAY	44	Prelim Design	\$1,800,000	City Input Required;
					\$33,966,639	

APPENDIX B – MONTACHUSETT MPO TRANSPORTATION EVALUATION CRITERIA

Montachusett Regional Planning Commission
TRANSPORTATION EVALUATION CRITERIA (version 3.0)

Federal Aid Funded Roadway Improvement, Expansion & Preservation Projects

Community	
MassDOT Project No.	
Description	
Design Status	
Est Ad Date	

Category	Line Item #	Scoring Range
		+4 to -4

Condition	1	What is the magnitude of impact to the pavement condition? Based on PCI (MRPC)		<input type="text" value="0"/>
		Excellent to Poor (-4)	Poor to Excellent (+4)	<input type="text"/> (-4 or +4)
		Excellent to Fair (-3)	Fair to Excellent (+3)	<input type="text"/> (-3 or +3)
		Excellent to Good (-2)	Good to Excellent (+2)	<input type="text"/> (-2 or +2)
		Excellent to Excellent or No Change (+1)	Excellent to Excellent or No Change (+1)	<input type="text"/> (+1)
		2	Are there impacts (positive or negative) to other infrastructure elements, i.e. utilities, drainage, sewage, sidewalks, traffic control devices, etc?	<input type="text" value="0"/>
			Drainage (Culverts & Sewers)	<input type="text"/> (-1 to +1)
			Sidewalks	<input type="text"/> (-1 to +1)
			Traffic Control Devices	<input type="text"/> (-1 to +1)
			Utilities	<input type="text"/> (-1 to +1)
		3	Average Daily Traffic (ADT) of Road and/or Intersection	<input type="text" value="0"/>
			Less than 1,000 ADT (0)	<input type="text"/> (0 to +3)
			1,001 to 5,000 ADT (+1)	
			5,001 to 10,000 ADT (+2)	
			Greater than 10,000 ADT (+3)	
		4	Does the project incorporate Complete Street concepts?	<input type="text" value="0"/>
		Yes (+1)	<input type="text"/> (+1)	
		No (0)	<input type="text"/> (0)	

Mobility	5	Does the project have any impact or change (positive or negative) to the magnitude and/or duration of any known congestion issue?		<input type="text" value="0"/>
		Roadway Congestion	<input type="text"/> (-2 to +2)	
		Intersection Congestion	<input type="text"/> (-2 to +2)	
		6	Does the project have any impact or change (positive or negative) to the travel time, connectivity or access of the facility?	<input type="text" value="0"/>
			Reduction/increase in travel time	<input type="text"/> (-2 to +2)
			Network connection or acces change	<input type="text"/> (-2 to +2)
		7	Does the project have any impact or change (positive or negative) to any other mode such as transit, bicycles or pedestrians that utilize the facility?	<input type="text" value="0"/>
			Transit Service Impact - Fixed Route	<input type="text"/> (-1 to +1)
			Transit Service Impact - Other	<input type="text"/> (-1 to +1)
			Bicycle enhancement	<input type="text"/> (-1 to +1)
			Pedestrian enhancement	<input type="text"/> (-1 to +1)
		8	Does the project have any impact or change (positive or negative) to regional or local traffic on the road network outside of the facility itself?	<input type="text" value="0"/>
			Reduction/increase in travel time	<input type="text"/> (-2 to +2)
			Network connection change	<input type="text"/> (-2 to +2)

Safety	9	Does the project have an effect (positive or negative) on the crash rate of the facility?			0
		Yes (+1)	<input type="text"/>	(+1)	
		No (0)	<input type="text"/>	(0)	
		Magnitude of effect (-4 to +4)	<input type="text"/>	(-4 to +4)	
	10	Does the project have an effect (positive or negative) on bicycle or pedestrian safety?			0
		Yes (+1)	<input type="text"/>	(+1)	
		No (0)	<input type="text"/>	(0)	
		Magnitude of effect (-4 to +4)	<input type="text"/>	(-4 to +4)	
	11	Does the project address a known safety issue on the facility?			0
		Yes (+1)	<input type="text"/>	(+1)	
		No (0)	<input type="text"/>	(0)	
		Magnitude of effect (-4 to +4)	<input type="text"/>	(-4 to +4)	
12	Will the project address crash severity on the facility?			0	
	Yes (+1)	<input type="text"/>	(+1)		
	No (0)	<input type="text"/>	(0)		
	Magnitude of effect (-4 to +4)	<input type="text"/>	(-4 to +4)		

Community Effects and Support	13	Is there any impact or change (positive or negative) to residential areas or neighborhoods related to right-of-way, noise, aesthetics, cut-through traffic, or the development/redevelopment of any housing stock?			0
		Right-of-way	<input type="text"/>	(-1 to +1)	
		Noise/aesthetics	<input type="text"/>	(-1 to +1)	
		Traffic flow	<input type="text"/>	(-1 to +1)	
		Housing stock	<input type="text"/>	(-1 to +1)	
	14	Does the project have an effect (positive or negative) on any services to minority, low income or Environmental Justice areas (ex. Transit service, sidewalks, lighting, utilities, etc.)?			0
		Transit services	<input type="text"/>	(-1 to +1)	
		Sidewalks/lighting	<input type="text"/>	(-1 to +1)	
		Utilities	<input type="text"/>	(-1 to +1)	
		Emergency response	<input type="text"/>	(-1 to +1)	
	15	Does the project have any other impacts or benefits (positive or negative) to minority, low income or Environmental Justice areas (ex. Job access, development and/or redevelopment of any housing stock, etc.)?			0
		Job access	<input type="text"/>	(-1 to +1)	
		Housing stock	<input type="text"/>	(-1 to +1)	
		Safety	<input type="text"/>	(-1 to +1)	
		Other	<input type="text"/>	(-1 to +1)	
	16	Is there support for the project from local, regional, legislative governments and the general public?			0
		Local governments	<input type="text"/>	(-1 to +1)	
		Multiple Local governments	<input type="text"/>	(-1 to +1)	
		Legislative government	<input type="text"/>	(-1 to +1)	
		General public	<input type="text"/>	(-1 to +1)	
	17	Is there active participation from the community in the MPO, MRPC and MJTC?			0
	MPO	<input type="text"/>	(-1 to +1)		
	MRPC	<input type="text"/>	(-1 to +1)		
	MJTC	<input type="text"/>	(-2 to +2)		

Introduction

This section summarizes the greenhouse gas (GHG) impacts that are anticipated to result from the projects that are included in this FFY 2019 – 2023 Transportation Improvement Program (TIP). It includes a summary of the state laws and policies that call for reducing greenhouse gas in order to mitigate global climate change, actions that are being taken to respond to these state laws and policies, the role of regional planning and TIP development in reducing GHG emissions and tracking these reductions, and the projected GHG emission impacts from the projects programmed in the TIP.

State Policy Context

The Global Warming Solutions Act (GWSA), which was signed into law in August 2008, makes Massachusetts a leader in setting aggressive and enforceable GHG reduction targets, and implementing policies and initiatives to achieve these targets. In keeping with the law, on December 29, 2010 the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA), in consultation with other state agencies and the public, released the Massachusetts *Clean Energy and Climate Plan for 2020*. In December 2014, the Department of Environmental Protection issued new regulations that require Metropolitan Planning Organizations to quantify impacts from project investments, track progress towards reductions, and consider impacts in the prioritization of GHG impacts from project investments. The targets for overall statewide GHG emissions are:

- By 2020: 25 percent reduction below statewide 1990 GHG emission levels
- By 2050: 80 percent reduction below statewide 1990 GHG emission levels

GreenDOT Policy

The transportation sector is the single largest emitter of greenhouse gases, accounting for over a third of GHG emissions, and therefore the transportation sector is a key focus of the *Clean Energy and Climate Plan*. MassDOT's approach to supporting the implementation of the plan is set forth in its GreenDOT Policy Directive, a comprehensive sustainability initiative that sets three principal objectives:

- **Reduce greenhouse gas (GHG) emissions.** MassDOT will achieve this by taking GHG emissions into account in all of its responsibilities, from strategic planning to project design and construction and system operations.
- **Promote the healthy transportation modes of walking, bicycling, and public transit.** MassDOT will achieve this by pursuing multi-modal, "complete streets" design standards; providing choice in transportation services; and by working with MPOs and other partners to prioritize and program a balance of projects that serve drivers, pedestrians, bicyclists, and public transit riders.
- **To support smart growth development.** MassDOT will achieve this by working with MPOs and other partners to make transportation investments that enable denser, smart growth development patterns that support reduced GHG emissions.

GreenDOT Policy and Metropolitan Planning Organizations

The Commonwealth's thirteen metropolitan planning organizations (MPOs) are integrally involved in helping to achieve the GreenDOT goals and supporting the GHG reductions mandated under the GWSA. The MPOs are most directly involved in helping to achieve the GHG emissions reductions under the second goal – to promote healthy transportation modes through prioritizing and programming an appropriate balance of roadway, transit, bicycle and pedestrian investments – and assist in the third goal by supporting smart growth development patterns through the creation of a balanced multi-modal transportation system. This will be realized through the transportation goals and policies espoused in the 2016 Regional Transportation Plans (RTPs), the major projects planned in the RTPs, and the mix of new transportation projects that are programmed and implemented through the TIPs. The GHG tracking and evaluation processes enable the MPOs to identify the anticipated GHG impacts of the planned and programmed projects, and also to use GHG impacts as a criterion in prioritizing transportation projects.

Regional GHG Tracking and Evaluation in RTPs

MassDOT coordinated with MPOs and regional planning agency (RPA) staffs on the implementation of GHG tracking and evaluation in development of each MPO's 2035 RTPs, which were adopted in September 2011. This collaboration has continued for the MPO's 2040 RTPs and 2019-23 TIPs.

Working together, MassDOT and the MPOs have attained the following milestones:

- Modeling and long-range statewide projections for GHG emissions resulting from the transportation sector. Using the Boston MPO's regional model and the statewide travel demand model for the remainder of the state, GHG emissions were projected for 2020 no-build and build conditions, and for 2040 no-build and build conditions.
- All of the MPOs included these GHG emission projections in their RTPs, along with a discussion of climate change and a statement of MPO support for reducing GHG emissions as a regional goal.

Project-Level GHG Tracking and Evaluation in the Transportation Improvement Program

It is also important to monitor and evaluate the GHG impacts of the transportation projects that are programmed in the MPO Transportation Improvement Programs (TIP). The TIP includes both the larger, regionally-significant projects from the RTPs, which have already had their aggregate GHG impacts calculated and reported in the RTP, as well as smaller projects that are not included in the RTP but that may nevertheless have impacts on GHG emissions. The principal objective of this tracking is to enable the MPOs to evaluate expected GHG impacts of different projects and to use this information as a criterion for prioritizing and programming projects in future TIPs.

In order to monitor and evaluate the GHG impacts of TIP projects, MassDOT and the MPOs have developed the following approach for identifying anticipated GHG impacts and quantifying GHG impacts of projects, when appropriate, through the TIP. Different types of projects will have different anticipated GHG emissions impacts. The different project categories are outlined on the next two pages with this region's project tracking sheet on the third page.

Calculation of GHG Impacts for TIP Projects

The Office of Transportation Planning at MassDOT provided the spreadsheets that are used for determining Congestion Management and Air Quality Improvement (CMAQ) eligibility. These spreadsheets require the same inputs as the CMAQ calculations and have been adapted to provide CO₂ impacts. The data and analysis required for these calculations is available from functional design reports that should be submitted for projects that would produce a measurable GHG impact.

- Projects with Quantified Impacts
 - RTP Projects - Major capacity expansion projects would be expected to have a significant impact on GHG emissions. However, these projects are included in the RTPs and analyzed using the statewide model or Boston regional model, which would reflect their GHG impacts. Therefore, no independent TIP calculations are required.
 - Quantified Decrease in Emissions - Projects that would be expected to produce a measurable decrease in emissions. The approach for calculating these impacts is described below. These projects should be categorized in the following manner:
 - Quantified Decrease in Emissions from Traffic Operational Improvement - An intersection reconstruction or signalization project that is projected to reduce delay and congestion.
 - Quantified Decrease in Emissions from Pedestrian and Bicycle Infrastructure - A shared-use path that would enable increased walking and biking and decreased vehicle-miles traveled (VMT).

- Quantified Decrease in Emissions from New/Additional Transit Service - A bus or shuttle service that would enable increased transit ridership and decreased VMT
 - Quantified Decrease in Emissions from a Park and Ride Lot A park-and-ride lot that would enable increased transit ridership/ increased ridesharing and decreased VMT
 - Quantified Decrease in Emissions from Bus Replacement - A bus replacement that would directly reduce GHG emissions generated by that bus service.
 - Quantified Decrease in Emissions from Complete Streets Improvements - Improvements to roadway networks that include the addition of bicycle and pedestrian accommodations where none were present before.
 - Quantified Decrease in Emissions from Other Improvement
 - Quantified Increase in Emissions – Projects that would be expected to produce a measurable increase in emissions.
- Projects with Assumed Impacts
 - No Assumed Impact/Negligible Impact on Emission - Projects that do not change the capacity or use of a facility (e.g. a resurfacing project that restores a roadway to its previous condition, or a bridge rehabilitation/replacement that restores the bridge to its previous condition) would be assumed to have no GHG impact.
 - Assumed Nominal Decrease in Emissions - Projects that would be expected to produce a minor decrease in emissions that cannot be calculated with any precision. Examples of such projects include roadway repaving or reconstruction projects that add a new sidewalk or new bike lanes. Such a project would enable increased travel by walking or bicycling, but there may be not data or analysis to support any projections of GHG impacts. These projects should be categorized in the following manner:
 - Assumed Nominal Decrease in Emissions from Sidewalk Infrastructure
 - Assumed Nominal Decrease in Emissions from Bicycle Infrastructure
 - Assumed Nominal Decrease in Emissions from Sidewalk and Bicycle Infrastructure
 - Assumed Nominal Decrease in Emissions from Intelligent Transportation Systems (ITS) and/or Traffic Operational Improvements
 - Assumed Nominal Decrease in Emissions from Other Improvements
 - Assumed Nominal Increase in Emissions - Projects that would be expected to produce a minor increase in emissions that cannot be calculated with any precision.

Regional Greenhouse Gas Impact Summary Tables for FFY 2019 – 2023 TIP

The following tables summarize the calculated quantitative and assumed qualitative impacts of the projects included in the regional FFY 2019 – 2023 TIP.

Highway Projects with GHG Emissions Analysis

2019 Regional Project Tracking

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
608728	WINCHENDON- RESURFACING & RELATED WORK ON ROUTE 202, FROM THE TEMPLETON TOWN LINE TO MAIN STREET (3.1 MILES)	Qualitative	No assumed impact/negligible impact on emissions	N/A
604961	CLINTON- RESURFACING & RELATED WORK ON ROUTE 110 (HIGH STREET)	Qualitative	No assumed impact/negligible impact on emissions	N/A
607848	HUBBARDSTON - RESURFACING & RELATED WORK ON ROUTE 68, FROM WILLIAMSVILLE ROAD TO THE GARDNER C.L.	Qualitative	No assumed impact/negligible impact on emissions	N/A
607446	WESTMINSTER- INTERSECTION IMPROVEMENTS, ROUTE 2A AT ROUTE 140	Quantified	Quantified Increase in Emissions	52,162
608260	ATHOL- BRIDGE REPLACEMENT, A-15-005, WASHINGTON AVE OVER ATHOL POND OUTLET	Qualitative	No assumed impact/negligible impact on emissions	N/A
608259	TOWNSEND- BRIDGE REPLACEMENT, T-07-013, WEST MEADOW ROAD OVER LOCKE BROOK	Qualitative	No assumed impact/negligible impact on emissions	N/A
607127	HUBBARDSTON- BRIDGE REPLACEMENT, H-24-009, EVERGREEN ROAD OVER MASON BROOK	Qualitative	No assumed impact/negligible impact on emissions	N/A
608612	ATHOL- BRIDGE REPLACEMENT, A-15-008, CRESCENT STREET OVER MILLERS RIVER	Qualitative	No assumed impact/negligible impact on emissions	N/A
608475	LANCASTER- HARVARD- LITTLETON RESURFACING AND RELATED WORK ON ROUTE 2	Qualitative	Qualitative Decrease in Emissions	N/A
608193	FITCHBURG- LEOMINSTER- RAIL TRAIL CONSTRUCTION (TWIN CITIES RAIL TRAIL)	Quantified	Quantified Decrease in Emissions from Bicycle and Pedestrian Infrastructure	407,831

2020 Regional Project Tracking

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
607431	WESTMINSTER- RESURFACING & RELATED WORK ON ROUTE 140, FROM ROUTE 2A TO PATRICIA ROAD	Qualitative	Qualitative Decrease in Emissions	N/A
605651	LEOMINSTER- RECONSTRUCTION ON ROUTE 13, FROM HAWES STREET TO PROSPECT STREET	Quantified	Quantified Decrease in Emissions from Traffic Operational Improvement	138,448
608779	LANCASTER - INTERSECTION IMPROVEMENTS ON ROUTE 117/ROUTE 70 AT LUNENBURG ROAD AND ROUTE 117/ROUTE 70 AT MAIN STREET	Quantified	Quantified Decrease in Emissions from Traffic Operational Improvement	595,522
608635	SHIRLEY- BRIDGE REPLACEMENT, S-13-005, CARRYING LONGLEY ROAD OVER THE MULPUS BROOK	Qualitative	No assumed impact/negligible impact on emissions	N/A
608639	WESTMINSTER- BRIDGE REPLACEMENT, W-28-010, CARRYING WHITMANVILLE ROAD OVER THE WHITMAN RIVER	Qualitative	No assumed impact/negligible impact on emissions	N/A
608193	FITCHBURG- LEOMINSTER- RAIL TRAIL CONSTRUCTION (TWIN CITIES RAIL TRAIL)	Quantified	Quantified Decrease in Emissions from Bicycle and Pedestrian Infrastructure	See FFY 2019 Table

2021 Regional Project Tracking

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
608784	TEMPLETON- ROUNDABOUT CONSTRUCTION AT THE INTERSECTION OF PATRIOTS ROAD, SOUTH MAIN STREET, NORTH MAIN STREET AND GARDNER ROAD	Qualitative	Qualitative Decrease in Emissions	N/A
607604	STERLING- WEST BOYLSTON- IMPROVEMENTS ON ROUTE 140 AT I-190	Qualitative	No assumed impact/negligible impact on emissions	N/A
607902	AYER- RECLAMATION & RELATED WORK ON ROUTE 2A, FROM HARVARD ROAD TO MAIN STREET	Qualitative	No assumed impact/negligible impact on emissions	N/A
608548	WINCHENDON- IMPROVEMENTS & RELATED WORK ON CENTRAL STREET (ROUTE 202), FROM FRONT STREET TO MAPLE STREET (0.5 MILES)	Qualitative	Qualitative Decrease in Emissions	N/A
608189	FITCHBURG- BRIDGE REPLACEMENT AND RELATED WORK, F-04-017, WATER STREET (STATE 2A) OVER BOULDER DRIVE AND PANAM RAILROAD & F-04-018, WATER STREET (ROUTE 12) OVER NORTH NASHUA RIVER	Qualitative	Qualitative Decrease in Emissions	N/A
608561	LEOMINSTER- IMPROVEMENTS AT ROUTE 12 (NORTH MAIN STREET) AT HAMILTON STREET; ROUTE 12 (NORTH MAIN STREET) AT NELSON STREET	Qualitative	Qualitative Decrease in Emissions	N/A

2022 Regional Project Tracking

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
604499	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	Qualitative	No assumed impact/negligible impact on emissions	N/A
605296	FITCHBURG- BRIDGE PRESERVATION, F-04-011, CIRCLE STREET OVER NORTH NASHUA RIVER	Qualitative	No assumed impact/negligible impact on emissions	N/A
609108	GARDNER- BIKE PATH BRIDGE CONSTRUCTION, NORTH CENTRAL PATHWAY OVER ROUTE 140	Quantified	Quantified Decrease in Emissions from Bicycle and Pedestrian Infrastructure	476,405
608850	PETERSHAM- BRIDGE REPLACEMENT, P-08-002, GLEN VALLEY ROAD OVER EAST BRANCH OF SWIFT RIVER	Qualitative	No assumed impact/negligible impact on emissions	N/A
608891	GARDNER - RESURFACING AND RUMBLE STRIP INSTALLATION ON ROUTE 140	Qualitative	Qualitative Decrease in Emissions	N/A

2023 Regional Project Tracking

MassDOT Project ID	MassDOT Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
601957	ASHBURNHAM - RESURFACING & RELATED WORK ON ROUTE 101	Qualitative	Qualitative Decrease in Emissions	N/A
608832	LANCASTER - INTERCHANGE IMPROVEMENTS AT ROUTE 2 EXIT 34 (OLD UNION TURNPIKE	Quantified	Quantified Decrease in Emissions from Traffic Operational Improvement	Additional Information Needed in Order to Conduct Analysis
TBA	HUBBARDSTON-BRIDGE REPLACEMENT, H-24-003, WILLIAMSVILE ROAD OVER BURNCHIRT RIVER	Qualitative	No assumed impact/negligible impact on emissions	N/A
609107	PHILLIPSTON- TEMPLETON- PAVEMENT PRESERVATION AND RELATED WORK ON ROUTE 2	Qualitative	Qualitative Decrease in Emissions	N/A

Transit Projects with GHG Emissions Analysis

2019 Regional Project Tracking

FTA Program	Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
5307 RTD0007045	BUY REPLACEMENT VAN (5)	Quantified	Quantified Decrease in Emissions from Bus Replacement	166,221.00
5307 RTD0007026	BUY REPLACEMENT <30 FT BUS (3)	Quantified	Quantified Decrease in Emissions from Bus Replacement	24,404.78

2020 Regional Project Tracking

FTA Program	Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
5307 RTD0007027	BUY REPLACEMENT VANS (5)	Quantified	Quantified Decrease in Emissions from Bus Replacement	166,221.00
5307 RTD0007137	BUY REPLACEMENT TROLLEY BUS	Quantified	Quantified Decrease in Emissions from Bus Replacement	1,045.523

2021 Regional Project Tracking

FTA Program	Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
5307 RTD0007042	BUY REPLACEMENT 30-FT BUS (2)	Quantified	Quantified Decrease in Emissions from Bus Replacement	10,846.57
5307 RTD0007037	BUY REPLACEMENT VAN (5)	Quantified	Quantified Decrease in Emissions from Bus Replacement	118,559.25

2022 Regional Project Tracking

FTA Program	Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
5307 RTD0007052	BUY REPLACEMENT VAN (5)	Quantified	Quantified Decrease in Emissions from Bus Replacement	118,559.25
5307 RTD0007055	BUY REPLACEMENT <30 FT BUS (2)	Quantified	Quantified Decrease in Emissions from Bus Replacement	10,846.57

2023 Regional Project Tracking

FTA Program	Project Description	GHG Analysis Type	GHG Impact Description	GHG Impact by the Numbers Change in Summer CO2 Emissions (kilograms/year)
5307 RTD0007138	BUY REPLACEMENT VAN (5)	Quantified	Quantified Decrease in Emissions from Bus Replacement	118,559.50

Montachusett Region Completed Transit Projects GHG

FTA Activity Line Item ▼	Transit Agency ▼	Project Description ▼	Total Cost ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Fiscal Year Programmed (2015 and forward) ▼
111203	Montachusett RTA	BUY REPLACEMENT 30-FT BUS (2)	\$825,800	Quantified	849.088	Quantified Decrease in Emissions from Bus Replacement	2015
111215	Montachusett RTA	BUY REPLACEMENT VAN (5)	\$302,000	Qualitative	1889.915	Qualitative Decrease in Emissions	2015
111215	Montachusett RTA	BUY REPLACEMENT VANS (2)	\$115,000	Qualitative	332.626	Qualitative Decrease in Emissions	2015
111215	Montachusett RTA	BUY REPLACEMENT VAN (5)	\$287,500	Qualitative	1889.915	Qualitative Decrease in Emissions	2016
111215	Montachusett RTA	BUY REPLACEMENT VANS (8)	\$242,675	Qualitative	5442.96	Qualitative Decrease in Emissions	2016
111204	Montachusett RTA	BUY REPLACEMENT <30FT BUS	\$62,392	Quantified	45.168	Quantified Decrease in Emissions from Other Improvements	2016
111215	Montachusett RTA	BUY REPLACEMENT VAN (5)	\$295,000	Quantified	2672.19	Quantified Decrease in Emissions from Bus Replacement	2017
111204	Montachusett RTA	BUY REPLACEMENT <30 FT BUS (2)	\$182,500	Quantified	247.214	Quantified Decrease in Emissions from Bus Replacement	2017
111215	Montachusett RPA	BUY REPLACEMENT VAN (5)	\$306,250	Quantified	36,511.07	Quantified Decrease in Emissions from Bus Replacement	2018

Montachusett Region Completed Highway Projects GHG

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Fiscal Year of Contract Award (2015 and forward) ▼
604699	STERLING- INTERSECTION IMPROVEMENTS AT ROUTE 12 AND CHOCKSETT ROAD	\$5,633,000	Quantified	130,027.48	Quantified Decrease in Emissions from Traffic Operational Improvement	2016
604960	CLINTON- RESURFACING & RELATED WORK ON WATER STREET AND BOLTON ROAD (1.2 MILES)	\$4,433,939	Quantified	12,730.30	Quantified Decrease in Emissions from Traffic Operational Improvement	2016
604439	WINCHENDON- MULTI-USE TRAIL CONSTRUCTION (NORTH CENTRAL PATHWAY - PHASE V) INCLUDES W-39-023, W-39-024 & W-39-028	\$1,987,709	Quantified	3,006.70	Quantified Decrease in Emissions from Bicycle and Pedestrian Infrastructure	2015
604928	LEOMINSTER- RECONSTRUCTION OF MECHANIC STREET, FROM LAUREL STREET TO THE LEOMINSTER CONNECTOR	\$2,929,315	Quantified	5,080.06	Quantified Decrease in Emissions from Traffic Operational Improvement	2016
606124	FITCHBURG- LUNENBURG- LEOMINSTER- RECONSTRUCTION OF SUMMER STREET AND NORTH STREET	\$9,939,131	Quantified	8.83	Quantified Decrease in Emissions from Traffic Operational Improvement (See Emissions Analysis Appendix)	2018

2019 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 1A / Regionally Prioritized Projects

► Regionally Prioritized Projects

608728	WINCHENDON- RESURFACING & RELATED WORK ON ROUTE 202, FROM THE TEMPLETON TOWN LINE TO MAIN STREET (3.1 MILES)	\$ 1,596,635	Qualitative		No assumed impact/negligible impact on emissions	Road surface improvement.
604961	CLINTON- RESURFACING & RELATED WORK ON ROUTE 110 (HIGH STREET)	\$ 2,436,388	Qualitative		No assumed impact/negligible impact on emissions	Road surface improvement.
607848	HUBBARDSTON- RESURFACING AND RELATED WORK ON ROUTE 68, FROM WILLIAMSVILLE ROAD TO THE GARDNER C.L.	\$ 4,044,376	Qualitative		No assumed impact/negligible impact on emissions	Road surface improvement.
607446	WESTMINSTER- INTERSECTION IMPROVEMENTS, ROUTE 2A AT ROUTE 140	\$ 2,176,454	Quantified	52,162	Quantified Increase in Emissions	Intersection safety improvement project
0		\$ -				
0		\$ -				
Quantified Impact ►				52,162		

► Section 1B / Earmark or Discretionary Grant Funded Projects

► Other Federal Aid

0	Other Federal Aid	\$ -				
0	Other Federal Aid	\$ -				
Quantified Impact ►				0		

► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections

0	Bridge Inspection	\$ -				
0	Bridge Inspection	\$ -				
Quantified Impact ►				0		

► Bridge Program / Off-System

608260	ATHOL- BRIDGE REPLACEMENT, A-15-005, WASHINGTON AVE OVER ATHOL POND OUTLET	\$ 2,485,419	Qualitative		No assumed impact/negligible impact on emissions	
608259	TOWNSEND- BRIDGE REPLACEMENT, T-07-013, WEST MEADOW ROAD OVER LOCKE BROOK	\$ 991,896	Qualitative		No assumed impact/negligible impact on emissions	
607127	HUBBARDSTON- BRIDGE REPLACEMENT, H-24-009, EVERGREEN ROAD OVER MASON BROOK	\$ 3,365,860	Qualitative		No assumed impact/negligible impact on emissions	
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
Quantified Impact ►				0		

2019 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
► Bridge Program / On-System (NHS)						
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
Quantified Impact ►				0		
► Bridge Program / On-System (Non-NHS)						
608612	ATHOL- BRIDGE REPLACEMENT, A-15-008, CRESCENT STREET OVER MILLERS RIVER	\$ 7,860,160	Qualitative		No assumed impact/negligible impact on emissions	
0	Bridge Program / On-System (Non-NHS)	\$ -				
0	Bridge Program / On-System (Non-NHS)	\$ -				
Quantified Impact ►				0		
► Bridge Program / Systematic Maintenance						
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
Quantified Impact ►				0		
► Interstate Pavement						
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Non-Interstate Pavement						
608475	LANCASTER- HARVARD- LITTLETON RESURFACING AND RELATED WORK ON ROUTE 2	\$ 18,585,000	Qualitative		Qualitative Decrease in Emissions	
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Roadway Improvements						
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
Quantified Impact ►				0		
► Safety Improvements						
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
Quantified Impact ►				0		

2019 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
► Section 2B / State Prioritized Modernization Projects						
► ADA Retrofits						
0	ADA Retrofits	\$ -				
0	ADA Retrofits	\$ -				
				Quantified Impact ►	0	
► Intersection Improvements						
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
				Quantified Impact ►	0	
► Intelligent Transportation Systems						
0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
				Quantified Impact ►	0	
► Roadway Reconstruction						
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
				Quantified Impact ►	0	
► Section 2C / State Prioritized Expansion Projects						
► Bicycles and Pedestrians						
608193	FITCHBURG- LEOMINSTER- RAIL TRAIL CONSTRUCTION (TWIN CITIES RAIL TRAIL)	\$ 11,059,443	Quantified	407,831	Quantified Decrease in Emissions from Bicycle and Pedestrian Infrastructure	
0	Bicycles and Pedestrians	\$ -				
0	Bicycles and Pedestrians	\$ -				
				Quantified Impact ►	407,831	
► Capacity						
0	Capacity	\$ -				
0	Capacity	\$ -				
				Quantified Impact ►	0	

2019 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 3 / Planning / Adjustments / Pass-throughs

► Planning / Adjustments / Pass-throughs

0	ABP GANS Repayment	\$ -				
0	ABP GANS Repayment	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Metropolitan Planning	\$ -				
0	Metropolitan Planning	\$ -				
0	State Planning and Research Work Program I, (SPR I), Planning	\$ -				
0	State Planning and Research Work Program II, (SPR II), Research	\$ -				
0	Railroad Crossings	\$ -				
0	Railroad Crossings	\$ -				
0	Recreational Trails	\$ -				
Quantified Impact ►				0		

► Section 2A / Non-Federal Projects

► Non-Federally Aided Projects

0	Non-Federal Aid	\$ -				
0	Non-Federal Aid	\$ -				
Quantified Impact ►				0		

2019 Montachusett Region MPO GHG Tracking Summary

Total Quantified Impact ▼

Quantified Impact ► 459,993

2020 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 1A / Regionally Prioritized Projects

► Regionally Prioritized Projects						
608779	LANCASTER- INTERSECTION IMPROVEMENTS ON ROUTE 117/ROUTE 70 AT LUNENBURG ROAD AND ROUTE 117/ROUTE 70 AT MAIN STREET	\$ 1,000,000	Quantified	595,522	Quantified Decrease in Emissions from Traffic Operational Improvement	
608779	LANCASTER- INTERSECTION IMPROVEMENTS ON ROUTE 117/ROUTE 70 AT LUNENBURG ROAD AND ROUTE 117/ROUTE 70 AT MAIN STREET	\$ 600,614	Quantified		Quantified Decrease in Emissions from Traffic Operational Improvement	See CMAQ Listing
608779	LANCASTER- INTERSECTION IMPROVEMENTS ON ROUTE 117/ROUTE 70 AT LUNENBURG ROAD AND ROUTE 117/ROUTE 70 AT MAIN STREET	\$ 1,000,000	Quantified		Quantified Decrease in Emissions from Traffic Operational Improvement	See CMAQ Listing
607431	WESTMINSTER- RESURFACING & RELATED WORK ON ROUTE 140, FROM ROUTE 2A TO PATRICIA ROAD	\$ 1,560,775	Qualitative		Qualitative Decrease in Emissions	
605651	LEOMINSTER- RECONSTRUCTION ON ROUTE 13, FROM HAWES STREET TO PROSPECT STREET	\$ 1,200,000	Quantified	138,448	Quantified Decrease in Emissions from Traffic Operational Improvement	
605651	LEOMINSTER- RECONSTRUCTION ON ROUTE 13, FROM HAWES STREET TO PROSPECT STREET	\$ 2,481,060	Quantified		Quantified Decrease in Emissions from Traffic Operational Improvement	See CMAQ Listing
605651	LEOMINSTER- RECONSTRUCTION ON ROUTE 13, FROM HAWES STREET TO PROSPECT STREET	\$ 1,000,000	Quantified		Quantified Decrease in Emissions from Traffic Operational Improvement	See CMAQ Listing
605651	LEOMINSTER- RECONSTRUCTION ON ROUTE 13, FROM HAWES STREET TO PROSPECT STREET	\$ 1,000,000	Quantified		Quantified Decrease in Emissions from Traffic Operational Improvement	See CMAQ Listing
Quantified Impact ►				733,970		

► Section 1B / Earmark or Discretionary Grant Funded Projects

► Other Federal Aid						
0	Other Federal Aid	\$ -				
0	Other Federal Aid	\$ -				
Quantified Impact ►				0		

► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections						
0	Bridge Inspection	\$ -				
0	Bridge Inspection	\$ -				
Quantified Impact ►				0		

► Bridge Program / Off-System						
608635	SHIRLEY- BRIDGE REPLACEMENT, S-13-005, CARRYING LONGLEY ROAD OVER THE MULPUS BROOK	\$ 1,764,940	Qualitative		No assumed impact/negligible impact on emissions	
608639	WESTMINSTER- BRIDGE REPLACEMENT, W-28-010, CARRYING WHITMANVILLE ROAD OVER THE WHITMAN RIVER	\$ 2,791,200	Qualitative		No assumed impact/negligible impact on emissions	
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
Quantified Impact ►				0		

► Bridge Program / On-System (NHS)						
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
Quantified Impact ►				0		

2020 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
► Bridge Program / On-System (Non-NHS)						
0	Bridge Program / On-System (Non-NHS)	\$ -				
0	Bridge Program / On-System (Non-NHS)	\$ -				
0	Bridge Program / On-System (Non-NHS)	\$ -				
Quantified Impact ►				0		
► Bridge Program / Systematic Maintenance						
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
Quantified Impact ►				0		
► Interstate Pavement						
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Non-Interstate Pavement						
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Roadway Improvements						
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
Quantified Impact ►				0		
► Safety Improvements						
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
Quantified Impact ►				0		

2020 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 2B / State Prioritized Modernization Projects

► ADA Retrofits

0	ADA Retrofits	\$ -				
0	ADA Retrofits	\$ -				
Quantified Impact ►				0		

► Intersection Improvements

0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
Quantified Impact ►				0		

► Intelligent Transportation Systems

0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
Quantified Impact ►				0		

► Roadway Reconstruction

0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
Quantified Impact ►				0		

► Section 2C / State Prioritized Expansion Projects

► Bicycles and Pedestrians

608193	FITCHBURG- LEOMINSTER- RAIL TRAIL CONSTRUCTION (TWIN CITIES RAIL TRAIL)	\$ 6,971,456	Quantified		Quantified Decrease in Emissions from Bicycle and Pedestrian Infrastructure	Refer to FFY 2019 Project Listing for Impact Estimate.
0	Bicycles and Pedestrians	\$ -				
0	Bicycles and Pedestrians	\$ -				
Quantified Impact ►				0		

► Capacity

0	Capacity	\$ -				
0	Capacity	\$ -				
Quantified Impact ►				0		

2020 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 3 / Planning / Adjustments / Pass-throughs

► Planning / Adjustments / Pass-throughs

0	ABP GANS Repayment	\$ -				
0	ABP GANS Repayment	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Metropolitan Planning	\$ -				
0	Metropolitan Planning	\$ -				
0	State Planning and Research Work Program I, (SPR I), Planning	\$ -				
0	State Planning and Research Work Program II, (SPR II), Research	\$ -				
0	Railroad Crossings	\$ -				
0	Railroad Crossings	\$ -				
0	Recreational Trails	\$ -				
Quantified Impact ►				0		

► Section 2A / Non-Federal Projects

► Non-Federally Aided Projects

0	Non-Federal Aid	\$ -				
0	Non-Federal Aid	\$ -				
Quantified Impact ►				0		

2020 Montachusett Region MPO GHG Tracking Summary

Total Quantified Impact ▼

Quantified Impact ► 733,970

2021 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 1A / Regionally Prioritized Projects

► Regionally Prioritized Projects						
608784	TEMPLETON- ROUNDABOUT CONSTRUCTION AT THE INTERSECTION OF PATRIOTS ROAD, SOUTH MAIN STREET, NORTH MAIN STREET AND GARDNER ROAD	\$ 2,409,474	Qualitative		Qualitative Decrease in Emissions	As intersection improvements are defined, may result in Small Emissions Impact
607604	STERLING- WEST BOYLSTON- IMPROVEMENTS ON ROUTE 140 AT I-190	\$ 996,840	Qualitative		No assumed impact/negligible impact on emissions	
607902	AYER- RECLAMATION & RELATED WORK ON ROUTE 2A, FROM HARVARD ROAD TO MAIN STREET	\$ 4,362,276	Qualitative		No assumed impact/negligible impact on emissions	
608548	WINCHENDON- IMPROVEMENTS & RELATED WORK ON CENTRAL STREET (ROUTE 202), FROM FRONT STREET TO MAPLE STREET (0.5 MILES)	\$ 2,999,622	Qualitative		Qualitative Decrease in Emissions	Road surface improvement
0		\$ -				
Quantified Impact ►				0		

► Section 1B / Earmark or Discretionary Grant Funded Projects

► Other Federal Aid						
0	Other Federal Aid	\$ -				
0	Other Federal Aid	\$ -				
Quantified Impact ►				0		

► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections						
0	Bridge Inspection	\$ -				
0	Bridge Inspection	\$ -				
Quantified Impact ►				0		
► Bridge Program / Off-System						
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
Quantified Impact ►				0		

2021 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
► Bridge Program / On-System (NHS)						
608189	FITCHBURG- BRIDGE REPLACEMENT AND RELATED WORK, F-04-017, WATER STREET (STATE 2A) OVER BOULDER DRIVE AND PANAM RAILROAD & F-04-018, WATER STREET (ROUTE 12) OVER NORTH NASHUA RIVER	\$ 21,643,216	Qualitative		Qualitative Decrease in Emissions	
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
Quantified Impact ►				0		
► Bridge Program / On-System (Non-NHS)						
0	Bridge Program / On-System (Non-NHS)	\$ -				
0	Bridge Program / On-System (Non-NHS)	\$ -				
0	Bridge Program / On-System (Non-NHS)	\$ -				
Quantified Impact ►				0		
► Bridge Program / Systematic Maintenance						
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
Quantified Impact ►				0		
► Interstate Pavement						
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Non-Interstate Pavement						
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Roadway Improvements						
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
Quantified Impact ►				0		
► Safety Improvements						
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
Quantified Impact ►				0		

2021 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 2B / State Prioritized Modernization Projects

► ADA Retrofits

0	ADA Retrofits	\$ -				
0	ADA Retrofits	\$ -				
Quantified Impact ►				0		

► Intersection Improvements

608561	LEOMINSTER- IMPROVEMENTS AT ROUTE 12 (NORTH MAIN STREET) AT HAMILTON STREET; ROUTE 12 (NORTH MAIN STREET) AT NELSON STREET	\$ 3,000,000	Qualitative		Qualitative Decrease in Emissions	
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
Quantified Impact ►				0		

► Intelligent Transportation Systems

0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
Quantified Impact ►				0		

► Roadway Reconstruction

0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
Quantified Impact ►				0		

► Section 2C / State Prioritized Expansion Projects

► Bicycles and Pedestrians

0	Bicycles and Pedestrians	\$ -				
0	Bicycles and Pedestrians	\$ -				
0	Bicycles and Pedestrians	\$ -				
Quantified Impact ►				0		

► Capacity

0	Capacity	\$ -				
0	Capacity	\$ -				
Quantified Impact ►				0		

2021 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 3 / Planning / Adjustments / Pass-throughs

► Planning / Adjustments / Pass-throughs

0	ABP GANS Repayment	\$ -				
0	ABP GANS Repayment	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Metropolitan Planning	\$ -				
0	Metropolitan Planning	\$ -				
0	State Planning and Research Work Program I, (SPR I), Planning	\$ -				
0	State Planning and Research Work Program II, (SPR II), Research	\$ -				
0	Railroad Crossings	\$ -				
0	Railroad Crossings	\$ -				
0	Recreational Trails	\$ -				
Quantified Impact ►				0		

► Section 2A / Non-Federal Projects

► Non-Federally Aided Projects

0	Non-Federal Aid	\$ -				
0	Non-Federal Aid	\$ -				
Quantified Impact ►				0		

2021 Montachusett Region MPO GHG Tracking Summary

Total Quantified Impact ▼

Quantified Impact ► 0

2022 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 1A / Regionally Prioritized Projects

► Regionally Prioritized Projects

604499	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	\$ 7,552,168	Qualitative		No assumed impact/negligible impact on emissions	
604499	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	\$ 500,000	Qualitative		No assumed impact/negligible impact on emissions	
604499	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	\$ 1,200,000	Qualitative		No assumed impact/negligible impact on emissions	
604499	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	\$ 100,000	Qualitative		No assumed impact/negligible impact on emissions	
608891	GARDNER- RESURFACING AND RUMBLE STRIP INSTALLATION ON ROUTE 140	\$ 1,344,000	Qualitative		Qualitative Decrease in Emissions	
Quantified Impact ►				0		

► Section 1B / Earmark or Discretionary Grant Funded Projects

► Other Federal Aid

0	Other Federal Aid	\$ -				
0	Other Federal Aid	\$ -				
Quantified Impact ►				0		

► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections

0	Bridge Inspection	\$ -				
0	Bridge Inspection	\$ -				
Quantified Impact ►				0		

► Bridge Program / Off-System

605296	FITCHBURG- BRIDGE PRESERVATION, F-04-011, CIRCLE STREET OVER NORTH NASHUA RIVER	\$ 3,058,688	Qualitative		No assumed impact/negligible impact on emissions	
608850	PETERSHAM- BRIDGE REPLACEMENT, P-08-002, GLEN VALLEY ROAD OVER EAST BRANCH OF SWIFT RIVER	\$ 4,569,936	Qualitative		No assumed impact/negligible impact on emissions	
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
Quantified Impact ►				0		

► Bridge Program / On-System (NHS)

0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
Quantified Impact ►				0		

► Bridge Program / On-System (Non-NHS)

0	Bridge Program / On-System (Non-NHS)	\$ -				
0	Bridge Program / On-System (Non-NHS)	\$ -				
0	Bridge Program / On-System (Non-NHS)	\$ -				
Quantified Impact ►				0		

2022 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
► Bridge Program / Systematic Maintenance						
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
Quantified Impact ►				0		
► Interstate Pavement						
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Non-Interstate Pavement						
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Roadway Improvements						
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
Quantified Impact ►				0		
► Safety Improvements						
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
Quantified Impact ►				0		

2022 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
► Section 2B / State Prioritized Modernization Projects						
► ADA Retrofits						
0	ADA Retrofits	\$ -				
0	ADA Retrofits	\$ -				
				Quantified Impact ►	0	
► Intersection Improvements						
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
				Quantified Impact ►	0	
► Intelligent Transportation Systems						
0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
				Quantified Impact ►	0	
► Roadway Reconstruction						
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
				Quantified Impact ►	0	
► Section 2C / State Prioritized Expansion Projects						
► Bicycles and Pedestrians						
609108	GARDNER- BIKE PATH BRIDGE CONSTRUCTION, NORTH CENTRAL PATHWAY OVER ROUTE 140	\$ 3,000,000	Quantified	476,405	Quantified Decrease in Emissions from Bicycle and Pedestrian Infrastructure	
0	Bicycles and Pedestrians	\$ -				
0	Bicycles and Pedestrians	\$ -				
				Quantified Impact ►	476,405	
► Capacity						
0	Capacity	\$ -				
0	Capacity	\$ -				
				Quantified Impact ►	0	

2022 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 3 / Planning / Adjustments / Pass-throughs

► Planning / Adjustments / Pass-throughs

0	ABP GANS Repayment	\$ -				
0	ABP GANS Repayment	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Metropolitan Planning	\$ -				
0	Metropolitan Planning	\$ -				
0	State Planning and Research Work Program I, (SPR I), Planning	\$ -				
0	State Planning and Research Work Program II, (SPR II), Research	\$ -				
0	Railroad Crossings	\$ -				
0	Railroad Crossings	\$ -				
0	Recreational Trails	\$ -				
Quantified Impact ►				0		

► Section 2A / Non-Federal Projects

► Non-Federally Aided Projects

0	Non-Federal Aid	\$ -				
0	Non-Federal Aid	\$ -				
Quantified Impact ►				0		

2022 Montachusett Region MPO GHG Tracking Summary

Total Quantified Impact ▼

Quantified Impact ► 476,405

2023 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 1A / Regionally Prioritized Projects

► Regionally Prioritized Projects

608832	LANCASTER- INTERCHANGE IMPROVEMENTS AT ROUTE 2 EXIT 34 (OLD UNION TURNPIKE)	\$ 5,568,000	Quantified		Quantified Decrease in Emissions from Traffic Operational Improvement	Potential reduction in delays for vehicles entering Route 2; Additional data needed to Quantify
601957	ASHBURNHAM- RESURFACING & RELATED WORK ON ROUTE 101	\$ 5,220,000	Qualitative		Qualitative Decrease in Emissions	
0		\$ -				
0		\$ -				
0		\$ -				
Quantified Impact ►				0		

► Section 1B / Earmark or Discretionary Grant Funded Projects

► Other Federal Aid

0	Other Federal Aid	\$ -				
0	Other Federal Aid	\$ -				
Quantified Impact ►				0		

► Section 2A / State Prioritized Reliability Projects

► Bridge Program / Inspections

0	Bridge Inspection	\$ -				
0	Bridge Inspection	\$ -				
Quantified Impact ►				0		

► Bridge Program / Off-System

TBA	HUBBARDSTON-BRIDGE REPLACEMENT, H-24-003, WILLIAMSVILE ROAD OVER BURNCHEAT RIVER	\$ 1,684,320	Qualitative		No assumed impact/negligible impact on emissions	
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
0	Bridge Program / Off-System	\$ -				
Quantified Impact ►				0		

► Bridge Program / On-System (NHS)

0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
0	Bridge Program / On-System (NHS)	\$ -				
Quantified Impact ►				0		

► Bridge Program / On-System (Non-NHS)

0	Bridge Program / On-System (Non-NHS)	\$ -				
0	Bridge Program / On-System (Non-NHS)	\$ -				
0	Bridge Program / On-System (Non-NHS)	\$ -				
Quantified Impact ►				0		

2023 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
► Bridge Program / Systematic Maintenance						
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
0	Bridge Program / Systematic Maintenance	\$ -				
Quantified Impact ►				0		
► Interstate Pavement						
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
0	Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Non-Interstate Pavement						
609107	PHILLIPSTON- TEMPLETON- PAVEMENT PRESERVATION AND RELATED WORK ON ROUTE 2	\$ 5,260,298	Qualitative		Qualitative Decrease in Emissions	
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
0	Non-Interstate Pavement	\$ -				
Quantified Impact ►				0		
► Roadway Improvements						
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
0	Roadway Improvements	\$ -				
Quantified Impact ►				0		
► Safety Improvements						
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
0	Safety Improvements	\$ -				
Quantified Impact ►				0		
► Section 2B / State Prioritized Modernization Projects						
► ADA Retrofits						
0	ADA Retrofits	\$ -				
0	ADA Retrofits	\$ -				
Quantified Impact ►				0		

2023 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
► Intersection Improvements						
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
0	Intersection Improvements	\$ -				
Quantified Impact ►				0		
► Intelligent Transportation Systems						
0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
0	Intelligent Transportation Systems	\$ -				
Quantified Impact ►				0		
► Roadway Reconstruction						
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
0	Roadway Reconstruction	\$ -				
Quantified Impact ►				0		
► Section 2C / State Prioritized Expansion Projects						
► Bicycles and Pedestrians						
0	Bicycles and Pedestrians	\$ -				
0	Bicycles and Pedestrians	\$ -				
0	Bicycles and Pedestrians	\$ -				
Quantified Impact ►				0		
► Capacity						
0	Capacity	\$ -				
0	Capacity	\$ -				
Quantified Impact ►				0		

2023 GHG Tracking for Montachusett Region Transportation Improvement

MassDOT Project ID ▼	MassDOT Project Description ▼	Total Programmed Funds ▼	GHG Analysis Type ▼	GHG CO ₂ Impact (kg/yr) ▼	GHG Impact Description ▼	Additional Description ▼
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► Section 3 / Planning / Adjustments / Pass-throughs

► Planning / Adjustments / Pass-throughs

0	ABP GANS Repayment	\$ -				
0	ABP GANS Repayment	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Award adjustments, change orders, etc.	\$ -				
0	Metropolitan Planning	\$ -				
0	Metropolitan Planning	\$ -				
0	State Planning and Research Work Program I, (SPR I), Planning	\$ -				
0	State Planning and Research Work Program II, (SPR II), Research	\$ -				
0	Railroad Crossings	\$ -				
0	Railroad Crossings	\$ -				
0	Recreational Trails	\$ -				
Quantified Impact ►				0		

► Section 2A / Non-Federal Projects

► Non-Federally Aided Projects

0	Non-Federal Aid	\$ -				
0	Non-Federal Aid	\$ -				
Quantified Impact ►				0		

2023 Montachusett Region MPO GHG Tracking Summary

Total Quantified Impact ▼

Quantified Impact ► 0

EMISSIONS ANALYSIS

CMAQ Air Quality Analysis Worksheet for Traffic Flow and Intersection Improvements

FILL IN SHADED BOXES ONLY

IP YEAF **2020**

MPO: **Montachusett**

Municipality: **Lancaster**

Project: **608779 - Intersection Improvements on Rt 117/Rt 70 at Lunenburg Rd (Intersection #1)**

Step 1: Calculate Existing AM Peak Hour Total Intersection Delay in Seconds:

Street Name	Dir	Left-Turns (Vol / PHF X delay =) per veh	Total move. delay	+	(Vol / PHF X delay =) per veh	Thru PHF X delay =	Total move. delay	+	(Vol / PHF X delay =) per veh	Right-Turns PHF X delay =	Total move. delay	=	Total approach delay
	NB	0.95	=	0 +	0.95	=	0 +	0.95	=	0 =	0	=	0
Lunenburg	SB	256 0.95 670.0	=	180,547 +	0.95	=	0 +	30 0.95 11.5	=	363 =	180,911	=	180,911
Main St.	EB	0.95	=	0 +	939 0.95 9.0	=	8,896 +	0.95	=	0 =	8,896	=	8,896
Main St.	WB	0.95	=	0 +	590 0.95 0.0	=	0 +	0.95	=	0 =	0	=	0
Total Intersection Delay/Seconds = 189,806													

Step 2: Calculate Existing PM Peak Hour Total Intersection Delay in Seconds:

Street Name	Dir	Left-Turns (Vol / PHF X delay =) per veh	Total move. delay	+	(Vol / PHF X delay =) per veh	Thru PHF X delay =	Total move. delay	+	(Vol / PHF X delay =) per veh	Right-Turns PHF X delay =	Total move. delay	=	Total approach delay
	NB	0.95	=	0 +	0.95	=	0 +	0.95	=	0 =	0	=	0
Lunenburg	SB	232 0.95 964.8	=	235,585 +	0.95	=	0 +	64 0.95 21.9	=	1,475 =	237,041	=	237,041
Main St.	EB	0.95	=	0 +	481 0.95 12.2	=	6,177 +	0.95	=	0 =	6,177	=	6,177
Main St.	WB	0.95	=	0 +	1,265 0.95 0.0	=	0 +	0.95	=	0 =	0	=	0
Total Intersection Delay/Seconds = 243,218													

Step 3: The spreadsheet automatically chooses the peak hour with the longer total intersection delay for the next step in the analysis.

Peak Hour (AM/PM): **PM** Total Intersection Delay: **243,218**

Step 4: Calculate the existing PM Peak Hour Total Intersection Delay with Improvements:

Street Name	Dir	Left-Turns (Vol / PHF X delay =) per veh	Total move. delay	+	(Vol / PHF X delay =) per veh	Thru PHF X delay =	Total move. delay	+	(Vol / PHF X delay =) per veh	Right-Turns PHF X delay =	Total move. delay	=	Total approach delay
	NB	0.95	=	0 +	0.95	=	0 +	0.95	=	0 =	0	=	0
Lunenburg	SB	232 0.95 46.5	=	11,356 +	0.95	=	0 +	64 0.95 29.1	=	1,960 =	13,316	=	13,316
Main St.	EB	45 0.95 15.1	=	715 +	438 0.95 5.3	=	2,432 +	0.95	=	0 =	3,148	=	3,148
Main St.	WB	0.95	=	0 +	819 0.95 21.7	=	18,708 +	448 0.95 11.1	=	5,211 =	23,919	=	23,919
Total Intersection Delay/Seconds = 40,383													

Step 5: Calculate vehicle delay in hours per day:

	(Delay in seconds X Hours per day) /	Seconds per hour =	Delay in hours / day
Existing peak hour intersection delay	(243,218 X 10) /	3600 =	675.6
Peak hour intersection delay w/ improvements	(40,383 X 10) /	3600 =	112.2

Step 6: MOBILE 6 emission factors for arterial idling speed:

	2020	2020	2020	AM or PM 2020
Summer VOC Factor	grams/hour	Summer NOx Factor	grams/hour	Summer CO2 Factor
	0.249	0.629	3.570	3565.610

Step 7: Calculate net emissions change in kilograms per day:

	Delay in Hours per Day	Summer VOC Emissions kilograms/day	Summer NOx Emissions kilograms/day	Winter CO Emissions kilograms/day	Summer CO2 Emissi kilograms/day
Existing Conditions	675.6	0.168	0.425	2.412	2,408.945
With Improvements	112.2	0.028	0.071	0.400	399.970
Net Change		-0.140	-0.354	-2.011	-2,008.975

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)

	Net change per day (kg) X	Avg. weekdays per year	Seasonal adj. X factor =	Adj. net change in kg per year
Summer VOC Emissions	-0.140 X	250	X 1.0188 =	-35.733
Summer NOx Emissions	-0.354 X	250	X 1.0188 =	-90.265
Winter CO Emissions	-2.011 X	250	X 0.9812 =	-493.408
Summer CO2 Emissions	##### X	250	X 1.0000 =	-502,243.797

Calculate cost effectiveness (first year cost per kg of emissions reduced)

Emission	Project Cost /	Adj. net change in kg per year =	First year cost per kilogram
Summer	\$2,500,590 /	-35.733 =	\$69,980
Summer	\$2,500,590 /	-90.265 =	\$27,703
Winter C	\$2,500,590 /	-493.408 =	\$5,068
Summer	\$2,500,590 /	-502,243.797 =	\$5

CMAQ Air Quality Analysis Worksheet for Traffic Flow and Intersection Improvements

FILL IN SHADED BOXES ONLY

TIP YEAR: 2020

MPO: Montachusett

Municipality: Lancaster

Project: 608779 - Intersection Improvements on Rt 117/Rt 70 at Lunenburg Rd (Intersection #2)

Step 1: Calculate Existing AM Peak Hour Total Intersection Delay in Seconds:

Street Name	Dir	Left-Turns (Vol / PHF)	X delay per veh	=	Total move. delay	+ (Vol / PHF)	Thru X delay per veh	=	Total move. delay	+ (Vol / PHF)	Right-Turns PHF	X delay per veh	=	Total move. delay	=	Total approach delay
Main St (Rt 70)	NB	136 / 0.95	89.2	=	12,770	+	0.95	=	0	+	0.95	=	0	=	12,770	
	SB	0.95		=	0	+	0.95	=	0	+	0.95	=	0	=	0	
Main St (Rt 117)	EB	0.95		=	0	+	1,155 / 0.95	=	0	+	0.95	=	0	=	0	
7 Bridge Rd	WB	0.95		=	0	+	474 / 0.95	=	4,690	+	0.95	=	0	=	4,690	
Total Intersection Delay/Seconds =															17,460	

Step 2: Calculate Existing PM Peak Hour Total Intersection Delay in Seconds:

Street Name	Dir	Left-Turns (Vol / PHF)	X delay per veh	=	Total move. delay	+ (Vol / PHF)	Thru X delay per veh	=	Total move. delay	+ (Vol / PHF)	Right-Turns PHF	X delay per veh	=	Total move. delay	=	Total approach delay
Main St (Rt 70)	NB	188 / 0.95	329.4	=	65,187	+	0.95	=	0	+	0.95	=	0	=	65,187	
	SB	0.95		=	0	+	0.95	=	0	+	0.95	=	0	=	0	
Main St (Rt 117)	EB	0.95		=	0	+	868 / 0.95	=	0	+	0.95	=	0	=	0	
7 Bridge Rd	WB	0.95		=	0	+	1,095 / 0.95	=	10,143	+	0.95	=	0	=	10,143	
Total Intersection Delay/Seconds =															75,330	

Step 3: The spreadsheet automatically chooses the peak hour with the longer total intersection delay for the next step in the analysis.

Peak Hour (AM/PM): PM

Total Intersection Delay: 75,330

Step 4: Calculate the existing PM Peak Hour Total Intersection Delay with Improvements:

Street Name	Dir	Left-Turns (Vol / PHF)	X delay per veh	=	Total move. delay	+ (Vol / PHF)	Thru X delay per veh	=	Total move. delay	+ (Vol / PHF)	Right-Turns PHF	X delay per veh	=	Total move. delay	=	Total approach delay
Main St (Rt 70)	NB	188 / 0.95	54.0	=	10,688	+	0.95	=	0	+	0.95	=	0	=	10,688	
	SB	0.95		=	0	+	0.95	=	0	+	0.95	=	0	=	0	
Main St (Rt 117)	EB	0.95		=	0	+	410 / 0.95	=	1,769	+	258 / 0.95	=	997	=	2,767	
7 Bridge Rd	WB	7 / 0.95	5.5	=	41	+	1,088 / 0.95	=	24,165	+	0.95	=	0	=	24,206	
Total Intersection Delay/Seconds =															37,658	

Step 5: Calculate vehicle delay in hours per day:

	(Delay in seconds X Hours per day)	/	Seconds per hour	=	Delay in hours / day
Existing peak hour intersection delay	(75,330 X 10)	/	3600	=	209.2
Peak hour intersection delay w/ improvements	(37,658 X 10)	/	3600	=	104.6

Step 6: MOBILE 6 emission factors for arterial idling speed:

	2020	2020	2020	AM or PM 2020
Summer VOC Factor	0.249	0.629	3.570	3565.610
Summer NOx Factor				
Winter CO Factor				
Summer CO2 Factor				

Step 7: Calculate net emissions change in kilograms per day:

	Delay in Hours per Day	Summer VOC Emissions kilograms/day	Summer NOx Emissions kilograms/day	Winter CO Emissions kilograms/day	Summer CO2 Emissi kilograms/day
Existing Conditions	209.2	0.052	0.132	0.747	746.101
With Improvements	104.6	0.026	0.066	0.373	372.987
Net Change		-0.026	-0.066	-0.374	-373.114

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)

	Net change per day (kg) X	Avg. weekdays per year	Seasonal adj. X	factor	=	Adj. net change in kg per year
Summer VOC Emissions	-0.026 X	250	X	1.0188	=	-6.636
Summer NOx Emissions	-0.066 X	250	X	1.0188	=	-16.764
Winter CO Emissions	-0.374 X	250	X	0.9812	=	-91.638
Summer CO2 Emissions	-373.114 X	250	X	1.0000	=	-93,278.495

Calculate cost effectiveness (first year cost per kg of emissions reduced)

Emission	Project Cost /	Adj. net change in kg per year =	First year cost per kilogram
Summer VOC	\$2,500,590 /	-6.636 =	\$376,796
Summer NOx	\$2,500,590 /	-16.764 =	\$149,161
Winter CO	\$2,500,590 /	-91.638 =	\$27,288
Summer CO2	\$2,500,590 /	-93,278.495 =	\$27

CMAQ Air Quality Analysis Worksheet for Traffic Flow and Intersection Improvements

FILL IN SHADED BOXES ONLY

TIP YEAR: 2020

MPO: Montachusett

Municipality: Lancaster

Project: 608779 - Intersection Improvements on Rt 117/Rt 70 at Lunenburg Rd (Totals)

Step 1: Calculate Existing AM Peak Hour Total Intersection Delay in Seconds:

Street Name	Dir	Left-Turns			Total move. delay	Thru			Total move. delay	Right-Turns			Total move. delay	Total approach delay
		(Vol / PHF)	X delay per veh	=		(Vol / PHF)	X delay per veh	=		(Vol / PHF)	X delay per veh	=		
	NB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
	SB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
	EB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
	WB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
Total Intersection Delay/Seconds =													0	

Step 2: Calculate Existing PM Peak Hour Total Intersection Delay in Seconds:

Street Name	Dir	Left-Turns			Total move. delay	Thru			Total move. delay	Right-Turns			Total move. delay	Total approach delay
		(Vol / PHF)	X delay per veh	=		(Vol / PHF)	X delay per veh	=		(Vol / PHF)	X delay per veh	=		
	NB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
	SB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
	EB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
	WB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
Total Intersection Delay/Seconds =													0	

Step 3: The spreadsheet automatically chooses the peak hour with the longer total intersection delay for the next step in the analysis.

Peak Hour (AM/PM): PM Total Intersection Delay: 0

Step 4: Calculate the existing PM Peak Hour Total Intersection Delay with Improvements:

Street Name	Dir	Left-Turns			Total move. delay	Thru			Total move. delay	Right-Turns			Total move. delay	Total approach delay
		(Vol / PHF)	X delay per veh	=		(Vol / PHF)	X delay per veh	=		(Vol / PHF)	X delay per veh	=		
	NB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
	SB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
	EB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
	WB		0.95	=	0 +		0.95	=	0 +		0.95	=	0 =	0
Total Intersection Delay/Seconds =													0	

Step 5: Calculate vehicle delay in hours per day:

Existing peak hour intersection delay	(	Delay in seconds	X	Hours per day	)	/	Seconds per hour	=	Delay in hours / day
	(	0	X	10	)	/	3600	=	0.0
Peak hour intersection delay w/ improvements	(	0	X	10	)	/	3600	=	0.0

Step 6: MOBILE 6 emission factors for idling speed:

2020	2020	2020	AM or PM
Summer VOC Factor	Summer NOx Factor	Winter CO Factor	2020
grams/hour	grams/hour	grams/hour	grams/hour
0.249	0.629	3.570	AM

Step 7: Calculate net emissions change in kilograms per day:

	Delay in Hours per Day	Summer VOC Emissions kilograms/day	Summer NOx Emissions kilograms/day	Winter CO Emissions kilograms/day	Summer CO2 Emissions kilograms/day
Existing Conditions	0.0	0.000	0.000	0.000	0.000
With Improvements	0.0	0.000	0.000	0.000	0.000
Net Change		0.000	0.000	0.000	0.000

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)

	Net change per day (kg)	Avg. weekdays per year	Seasonal adj. X factor	Adj. net change in kg per year
Summer VOC Emissions	0.000 X 250	X	1.0188 =	-42.369
Summer NOx Emissions	0.000 X 250	X	1.0188 =	-107.030
Winter CO Emissions	0.000 X 250	X	0.9812 =	-585.046
Summer CO2 Emissions	0.000 X 250	X	1.0000 =	-595,522.000

Calculate cost effectiveness (first year cost per kg of emissions reduced)

Emission	Project Cost	Adj. net change in kg per year	First year cost per kilogram
Summer VOC	\$2,500,590	-42.369 =	\$59,019
Summer NOx	\$2,500,590	-107.030 =	\$23,363
Winter CO	\$2,500,590	-585.046 =	\$4,274
Summer CO2	\$2,500,590	-595,522.000 =	\$4

CMAQ Air Quality Analysis Worksheet for Traffic Flow and Intersection Improvements

FILL IN SHADED BOXES ONLY

TIP YEAR: **2014**
 MPO: **MMPO** Municipality: **Leominster**
 Project: **Route 13**

Haws St at Main Street (Route 13) Intersection

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)					
	Net change per day (kg)	Avg. weekdays X per year	X	Seasonal adj. factor	Adj. net change in kg per year
Summer VOC Emissions	0.574	250	X	1.0188	146.151
Summer NOx Emissions	0.256	250	X	1.0188	65.088
Winter CO Emissions	7.041	250	X	0.9812	1,727.258
Summer CO2 Emissions	200.327	250	X	0.9812	49,140.104
Calculate cost effectiveness (first year cost per kg of emissions reduced)					
Emission	Project Cost	Adj. net change in kg per year	=	First year cost per kilogram	
Summer VOC	\$6,837,466	146.151	=	\$46,783	
Summer NOx	\$6,837,466	65.088	=	\$105,049	
Winter CO	\$6,837,466	1,727.258	=	\$3,959	
Summer CO2	\$6,837,466	49,140.104	=	\$139	

Mead St at Main Street (Route 13) Intersection

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)					
	Net change per day (kg)	Avg. weekdays X per year	X	Seasonal adj. factor	Adj. net change in kg per year
Summer VOC Emissions	-0.298	250	X	1.0188	-75.871
Summer NOx Emissions	-0.133	250	X	1.0188	-33.789
Winter CO Emissions	-3.655	250	X	0.9812	-896.664
Summer CO2 Emissions	-103.995	250	X	0.9812	-25,509.886
Calculate cost effectiveness (first year cost per kg of emissions reduced)					
Emission	Project Cost	Adj. net change in kg per year	=	First year cost per kilogram	
Summer VOC	\$6,837,466	-75.871	=	\$90,120	
Summer NOx	\$6,837,466	-33.789	=	\$202,357	
Winter CO	\$6,837,466	-896.664	=	\$7,625	
Summer CO2	\$6,837,466	-25,509.886	=	\$268	

River St at Main Street (Route 13) Intersection

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)					
	Net change per day (kg)	Avg. weekdays X per year	X	Seasonal adj. factor	Adj. net change in kg per year
Summer VOC Emissions	0.241	250	X	1.0188	61.450
Summer NOx Emissions	0.107	250	X	1.0188	27.367
Winter CO Emissions	2.961	250	X	0.9812	726.231
Summer CO2 Emissions	84.228	250	X	0.9812	20,661.121
Calculate cost effectiveness (first year cost per kg of emissions reduced)					
Emission	Project Cost	Adj. net change in kg per year	=	First year cost per kilogram	
Summer VOC	\$6,837,466	61.450	=	\$111,269	
Summer NOx	\$6,837,466	27.367	=	\$249,847	
Winter CO	\$6,837,466	726.231	=	\$9,415	
Summer CO2	\$6,837,466	20,661.121	=	\$331	

Hamilton St at Main Street (Route 13) Intersection

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)					
	Net change per day (kg)	Avg. weekdays X per year	X	Seasonal adj. factor	Adj. net change in kg per year
Summer VOC Emissions	-1.795	250	X	1.0188	-457.221
Summer NOx Emissions	-0.799	250	X	1.0188	-203.623
Winter CO Emissions	-22.028	250	X	0.9812	-5,403.563
Summer CO2 Emissions	-626.703	250	X	0.9812	-153,730.205
Calculate cost effectiveness (first year cost per kg of emissions reduced)					
Emission	Project Cost	Adj. net change in kg per year	=	First year cost per kilogram	
Summer VOC	\$6,837,466	-457.221	=	\$14,954	
Summer NOx	\$6,837,466	-203.623	=	\$33,579	
Winter CO	\$6,837,466	-5,403.563	=	\$1,265	
Summer CO2	\$6,837,466	-153,730.205	=	\$44	

Prospect St at Main Street (Route 13) Intersection

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)					
	Net change per day (kg)	Avg. weekdays X per year	X	Seasonal adj. factor	Adj. net change in kg per year
Summer VOC Emissions	-0.339	250	X	1.0188	-86.278
Summer NOx Emissions	-0.151	250	X	1.0188	-38.424
Winter CO Emissions	-4.157	250	X	0.9812	-1,019.657
Summer CO2 Emissions	-118.259	250	X	0.9812	-29,009.031
Calculate cost effectiveness (first year cost per kg of emissions reduced)					
Emission	Project Cost	Adj. net change in kg per year	=	First year cost per kilogram	
Summer VOC	\$6,837,466	-86.278	=	\$79,249	
Summer NOx	\$6,837,466	-38.424	=	\$177,949	
Winter CO	\$6,837,466	-1,019.657	=	\$6,706	
Summer CO2	\$6,837,466	-29,009.031	=	\$236	

PROJECT TOTALS

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)					
	Net change per day (kg)	Avg. weekdays X per year	X	Seasonal adj. factor	Adj. net change in kg per year
Summer VOC Emissions	-1.617	250	X	1.0188	-411.769
Summer NOx Emissions	-0.720	250	X	1.0188	-183.381
Winter CO Emissions	-19.839	250	X	0.9812	-4,866.395
Summer CO2 Emissions	-564.402	250	X	0.9812	-138,447.898
Calculate cost effectiveness (first year cost per kg of emissions reduced)					
Emission	Project Cost	Adj. net change in kg per year	=	First year cost per kilogram	
Summer VOC	\$6,837,466	-411.769	=	\$16,605	
Summer NOx	\$6,837,466	-183.381	=	\$37,286	
Winter CO	\$6,837,466	-4,866.395	=	\$1,405	
Summer CO2	\$6,837,466	-138,447.898	=	\$49	

CMAQ Air Quality Analysis Worksheet for Bicycle and Pedestrian Project

FILL IN SHADED BOXES ONLY

TIP YEAR: 2019/2020

MPO: Montachusett

Municipality:

Fitchburg/Leominster

Project: FITCHBURG- LEOMINSTER- RAIL TRAIL CONSTRUCTION (TWIN CITIES RAIL TRAIL)

Step 1: Calculate Estimated Reduction in Vehicle Miles Traveled (VMT):

If VMT reduction per year is known then go to Step 2B, if not proceed with Step 1 :

A. Facility Length (L):	4.5	Miles		
B. Service Area Radius (R):	1.0	Miles	(Default = 1 Mile)	
C. Service Area of Community(ies) (SA): $L * 2R = SA$	9	Sq. Miles		
D. Total Land Area of Community(ies) (T):	56.7	Sq. Miles	Leominster	28.90
E. Service Area % of Community(ies) Land Area (LA): $SA / T = LA$	15.9%		Fitchburg	27.80
F. Total Population of Community(ies) (TP):	81,077	Persons	Leominster	40,759
G. Population Served by Facility (P): $LA * TP = P$	12,869	Persons	Fitchburg	40,318
H. Total Number of Households in Community(ies) (HH):	31,932	HH	Leominster	16,767
I. Number of Households Served by Facility (HS): $LA * HH = HS$	5,069	HH	Fitchburg	15,165
J. Total Number of Workers Residing in Community(ies) (W):	64,805	Persons	Leominster	32,610
K. Workers Per household (WPHH): $W / HH = WPHH$	2.03	Persons	Fitchburg	32,195
L. Workers in Service Area (WSA): $HS * WPHH = WSA$	10,287	Persons		
M. Population Density of the Service area (PD): $P / SA = PD$				1,430 Persons Per Sq. Mile
N. If the bicycle and pedestrian commuter mode share is known, enter the percentage at the right.			(BMS) 4.3%	
If not, use US Census - American Community Survey data to determine the mode share and enter the percentage.				
http://www.census.gov/programs-surveys/acs/guidance/estimates.html				
			Leominster	2.84%
O. Bike and Ped. Work Utilitarian Trips (BWT): $WSA * BMS = BWT$	443	One-Way Trips	Fitchburg	5.78%
P. Bike and Ped. Non-Work Utilitarian Trips (BNWT): $BWT * 1.7 = BNWT$	754	One-Way Trips		
(Latest planning assumptions estimate non-work utilitarian trips to be 1.7 times the work utilitarian.)				

Step 2: Calculate the VMT Reduction Per Day:

A. $((2 * BWT) + (2 * BNWT)) * (0.5 * L) = VMTR$	5386.7	VMTR Per Day
B. $VMTR * Operating Days Per Year$	$5,386.7 * 200 =$	1,077,337 VMTR Per Year
If the Vehicle Miles Traveled Reduction is known enter in the box to the right.		
		VMTR Per Year

Step 3: MOVES 2014a Emission Factors for Unrestricted PM:

Note: Use 35 MPH as a default if average speed is not known. Speed Used: 35 MPH Eastern or Western Eastern

2016 Passenger Summer VOC Factor grams/mile	2016 Passenger Summer NOx Factor grams/mile	2016 Passenger Summer CO Factor grams/mile	2016 Passenger Summer CO2 Factor grams/mile
0.047	0.163	2.460	378.555

Step 4: Calculate emissions reductions in kilograms per year (Seasonally Adjusted):

Summer VOC	Summer NOx	Summer CO	Summer CO2
51.4	178.4	2,700.2	407,831.4

Step 5: Calculate cost effectiveness (first year cost per kg of emissions reduced)

Emission	Project Cost	Emission Reduction in kg per year	First year cost per kilogram
Summer VOC	\$18,030,889	/ 51.4 =	\$351,019
Summer NOx	\$18,030,889	/ 178.4 =	\$101,094
Summer CO	\$18,030,889	/ 2,700.2 =	\$6,678
Summer CO2	\$18,030,889	/ 407,831.4 =	\$44

CMAQ Air Quality Analysis Worksheet for Traffic Flow and Intersection Improvements

FILL IN SHADED BOXES ONLY

TIP YEAR: **2019**

MPO: **Montachusett**

Municipality: **Westminster**

Project: **#607446 Intersection Improvements, Route 2A at Route 140**

Step 1: Calculate Existing AM Peak Hour Total Intersection Delay in Seconds:

Street Name	Dir	Left-Turns			=	Total move. delay	+	Thru			=	Total move. delay	+	Right-Turns			=	Total move. delay	=	Total approach delay
		(Vol /	PHF)	X delay per veh				(Vol /	PHF)	X delay per veh				(Vol /	PHF)	X delay per veh				
Hagar Park (14)	NB	123	0.95	15.7	=	2,033	+	187	0.95	15.7	=	3,090	+	46	0.95	0.1	=	5	=	5,128
State Road Eas	SB	66	0.95	13.5	=	938	+	63	0.95	13.5	=	895	+	242	0.95	0.1	=	25	=	1,859
East Main (2A)	EB	222	0.95	6.8	=	1,589	+	393	0.95	7.7	=	3,185	+	223	0.95	0.1	=	23	=	4,798
Rte. 2 EB Ramp	WB	262	0.95	14.4	=	3,971	+	4	0.95	14.4	=	61	+	364	0.95	0.1	=	38	=	4,070
Total Intersection Delay/Seconds =																		15,855		

Step 2: Calculate Existing PM Peak Hour Total Intersection Delay in Seconds:

Street Name	Dir	Left-Turns			=	Total move. delay	+	Thru			=	Total move. delay	+	Right-Turns			=	Total move. delay	=	Total approach delay
		(Vol /	PHF)	X delay per veh				(Vol /	PHF)	X delay per veh				(Vol /	PHF)	X delay per veh				
Hagar Park (14)	NB	282	0.95	12.9	=	3,829	+	353	0.95	12.9	=	4,793	+	22	0.95	0.1	=	2	=	8,625
State Road Eas	SB	49	0.95	6.7	=	346	+	121	0.95	6.7	=	853	+	636	0.95	0.1	=	67	=	1,266
East Main (2A)	EB	177	0.95	26.7	=	4,975	+	195	0.95	26.9	=	5,522	+	183	0.95	0.1	=	19	=	10,515
Rte. 2 EB Ramp	WB	121	0.95	34.4	=	4,381	+	7	0.95	34.4	=	253	+	101	0.95	0.1	=	11	=	4,646
Total Intersection Delay/Seconds =																		25,052		

Step 3: The spreadsheet automatically chooses the peak hour with the longer total intersection delay for the next step in the analysis.

Peak Hour (AM/PM) Total Intersection Delay:

Step 4: Calculate the existing PM Peak Hour Total Intersection Delay with Improvements:

Street Name	Dir	Left-Turns			=	Total move. delay	+	Thru			=	Total move. delay	+	Right-Turns			=	Total move. delay	=	Total approach delay
		(Vol /	PHF)	X delay per veh				(Vol /	PHF)	X delay per veh				(Vol /	PHF)	X delay per veh				
Hagar Park (14)	NB	282	0.95	33.5	=	9,944	+	353	0.95	18.6	=	6,911	+	22	0.95	0.1	=	2	=	16,858
State Road Eas	SB	49	0.95	31.0	=	1,599	+	121	0.95	22.7	=	2,891	+	636	0.95	0.1	=	67	=	4,557
East Main (2A)	EB	177	0.95	35.8	=	6,670	+	195	0.95	28.3	=	5,809	+	183	0.95	14.8	=	2,851	=	15,330
Rte. 2 EB Ramp	WB	121	0.95	37.4	=	4,764	+	7	0.95	24.4	=	180	+	101	0.95	22.6	=	2,403	=	7,346
Total Intersection Delay/Seconds =																		44,091		

Step 5: Calculate vehicle delay in hours per day:

	(	Delay in seconds	X	Hours per day	)	/	Seconds per hour	=	Delay in hours / day
Existing peak hour intersection delay	(	25,052	X	10	)	/	3600	=	69.6
Peak hour intersection delay w/ improvements	(	44,091	X	10	)	/	3600	=	122.5

Step 6: MOVES 2014a emission factors for idling speed:

	2016	2016	2016	AM or PM	PM
	Summer VOC Factor	Summer NOx Factor	Winter CO Factor	2016	
	grams/hour	grams/hour	grams/hour	grams/hour	
	0.519	1.383	6.363	3945.160	

Step 7: Calculate net emissions change in kilograms per day:

	Delay in Hours per Day	Summer VOC Emissions kilograms/day	Summer NOx Emissions kilograms/day	Winter CO Emissions kilograms/day	Summer CO2 Emissions kilograms/day
Existing Conditions	69.6	0.036	0.096	0.443	274.538
With Improvements	122.5	0.064	0.169	0.779	483.185
Net Change		0.027	0.073	0.336	208.647

Step 8: Calculate net emissions change in kilograms per year (seasonally adjusted)

	Net change per day (kg) X	Avg. weekdays per year	Seasonal adj. X factor	=	Adj. net change in kg per year
Summer VOC Emissions	0.027 X	250	X 1.0188	=	6.990
Summer NOx Emissions	0.073 X	250	X 1.0188	=	18.625
Winter CO Emissions	0.336 X	250	X 0.9812	=	82.543
Summer CO2 Emissions	208.647 X	250	X 1.0000	=	52,161.764

Calculate cost effectiveness (first year cost per kg of emissions reduced)

Emission	Project Cost	/	Adj. net change in kg per year	=	First year cost per kilogram
Summer VOC	\$2,176,454	/	6.990	=	\$311,360
Summer NOx	\$2,176,454	/	18.625	=	\$116,858
Winter CO	\$2,176,454	/	82.543	=	\$26,368
Summer CO2	\$2,176,454	/	52,161.764	=	\$42

CMAQ Bus Replacement Air Quality Analysis Worksheet

FILL IN SHADED BOXES ONLY

TIP YEAR: 2018 **Bus Replacements**

MPO: Montachusett

RTA: MART

Project 1 - Replace 5 (2006) Vans with 5 (2018) Vans

Emission Rates in grams/mile at assumed operating speed bin of : 30 MPH

Scenario Comparison		Summer VOC (grams/mile)	Summer NOx (grams/mile)	Winter CO (grams/mile)	Summer CO2 (grams/mile)
	Model Year				
Existing Model*	= 2006	0.712	3.064	4.940	495.994
New Bus Purchase**	= 2018	0.003	0.032	0.667	445.196

* Please contact OTP for assistance on Existing Model emission factors

** MOVES 2014a Commercial Emission Factors - Please Specify the Following:

AM or PM: AM Restricted or Unrestricted: Restricted

Change (Buy-Base)	-0.709	-3.032	-4.273	-50.798
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Calculate fleet vehicle miles per day:

Revenue miles per year	X Deadhead factor	= fleet miles per year	/ operating days per year	= fleet miles per day
125,000	1.15	143,750	301	478

Calculate emissions change in kilograms per summer day

Change	rate change grams/mile	/ 1000 g/kg	X fleet miles per day	X seasonal adj factor	= change/day in kg
Change in Summer VOC	-0.709	1,000	478	1.0188	-0.345
Change in Summer NOx	-3.032	1,000	478	1.0188	-1.475
Change in Winter CO	-4.273	1,000	478	0.9812	-2.002
Change in Summer CO2	-50.798	1,000	478	1.0000	-24.260

Calculate emissions change in kilograms per year

Pollutant	= change/day in kg	X op.days per year	= change per year in kg
Summer VOC	-0.345	301	-103.835
Summer NOx	-1.475	301	-444.044
Winter CO	-2.002	301	-602.696
Summer CO2	-24.260	301	-7302.213

Calculate cost effectiveness (cost per kg of emissions reduced)

Pollutant	Total Project Cost	/ Project Life in years	/ reduction per year in kg	= annual cost per kg
Summer VOC	\$306,250	12	103.835	\$246
Summer NOx	\$306,250	12	444.044	\$57
Winter CO	\$306,250	12	602.696	\$42
Summer CO2	\$306,250	12	7302.213	\$3

CMAQ Bus Replacement Air Quality Analysis Worksheet						
FILL IN SHADED BOXES ONLY						
TIP YEAR:		2019	Bus Replacements			
MPO:		Montachusett				
RTA:		MART				
Project 3 - Replace 5 (2007) Gas Vans with 5 (2019) Gas Vans						
Emission Rates in grams/mile at assumed operating speed bin of :						30 MPH
Scenario Comparison		Summer VOC (grams/mile)	Summer NOx (grams/mile)	Winter CO (grams/mile)	Summer CO2 (grams/mile)	
	Model Year					
Existing Model*	= 2007	0.066	0.185	3.538	686.433	
New Bus Purchase**	= 2019	0.003	0.032	0.667	455.169	
* Please contact OTP for assistance on Existing Model emission factors						
** MOVES 2014a Commercial Emission Factors - Please Specify the Following:						
AM or PM:	AM	Restricted or Unrestricted	Restricted			
Change (Buy-Base)		-0.063	-0.153	-2.871	-231.264	
Calculate fleet vehicle miles per day:						
Revenue miles per year	X Deadhead factor	= fleet miles per year	/ operating days per year	= fleet miles per day		
125,000	1.15	143,750	301	478		
Calculate emissions change in kilograms per summer day						
Change	rate change grams/mile	/ 1000 g/kg	X fleet miles per day	X seasonal adj factor	= change/day in kg	
Change in Summer VOC	-0.063	1,000	478	1.0188	-0.031	
Change in Summer NOx	-0.153	1,000	478	1.0188	-0.074	
Change in Winter CO	-2.871	1,000	478	0.9812	-1.345	
Change in Summer CO2	-231.264	1,000	478	1.0000	-110.446	
Calculate emissions change in kilograms per year						
Pollutant			= change/day in kg	X op.days per year	= change per year in kg	
Summer VOC			-0.031	301	-9.227	
Summer NOx			-0.074	301	-22.407	
Winter CO			-1.345	301	-404.947	
Summer CO2			-110.446	301	-33244.200	
Calculate cost effectiveness (cost per kg of emissions reduced)						
Pollutant		Total Project Cost	/ Project Life in years	/ reduction per year in kg	= annual cost per kg	
Summer VOC		\$330,000	12	9.227	\$2,981	
Summer NOx		\$330,000	12	22.407	\$1,227	
Winter CO		\$330,000	12	404.947	\$68	
Summer CO2		\$330,000	12	33244.200	\$1	

CMAQ Bus Replacement Air Quality Analysis Worksheet						
FILL IN SHADED BOXES ONLY						
TIP YEAR:		2019	Bus Replacements			
MPO:		Montachusett				
RTA:		MART				
Project 2 - Replace 3 (2004) Buses with 3 (2019) Buses						
Emission Rates in grams/mile at assumed operating speed bin of :			30 MPH			
Scenario Comparison		Summer VOC (grams/mile)	Summer NOx (grams/mile)	Winter CO (grams/mile)	Summer CO2 (grams/mile)	
	Model Year					
Existing Model*	= 2004	1.150	7.542	3.180	1,200.600	
New Bus Purchase**	= 2019	0.048	0.764	0.275	1133.23	
* Please contact OTP for assistance on Existing Model emission factors						
** MOVES 2014a Commercial Emission Factors - Please Specify the Following:						
AM or PM:	AM	Restricted or Unrestricted	Restricted			
Change (Buy-Base)		-1.102	-6.778	-2.905	-67.370	
Calculate fleet vehicle miles per day:						
Revenue miles per year	X Deadhead factor	= fleet miles per year	/ operating days per year	= fleet miles per day		
105,000	1.15	120,750	301	401		
Calculate emissions change in kilograms per summer day						
Change	rate change grams/mile	/ 1000 g/kg	X fleet miles per day	X seasonal adj factor	= change/day in kg	
Change in Summer VOC	-1.102	1,000	401	1.0188	-0.450	
Change in Summer NOx	-6.778	1,000	401	1.0188	-2.770	
Change in Winter CO	-2.905	1,000	401	0.9812	-1.143	
Change in Summer CO2	-67.370	1,000	401	1.0000	-27.026	
Calculate emissions change in kilograms per year						
Pollutant			= change/day in kg	X op.days per year	= change per year in kg	
Summer VOC			-0.450	301	-135.568	
Summer NOx			-2.770	301	-833.830	
Winter CO			-1.143	301	-344.184	
Summer CO2			-27.026	301	-8134.927	
Calculate cost effectiveness (cost per kg of emissions reduced)						
Pollutant		Total Project Cost	/ Project Life in years	/ reduction per year in kg	= annual cost per kg	
Summer VOC		\$450,000	12	135.568	\$277	
Summer NOx		\$450,000	12	833.830	\$45	
Winter CO		\$450,000	12	344.184	\$109	
Summer CO2		\$450,000	12	8134.927	\$5	

CMAQ Bus Replacement Air Quality Analysis Worksheet						
FILL IN SHADED BOXES ONLY						
TIP YEAR:	2020	Bus Replacements				
MPO:	Montachusett					
RTA:	MART					
Project 4 - Replace 5 (2008) Vans with 5 (2020) Vans						
Emission Rates in grams/mile at assumed operating speed bin of :		30 MPH				
Scenario Comparison		Summer VOC	Summer NOx	Winter CO	Summer CO2	
		(grams/mile)	(grams/mile)	(grams/mile)	(grams/mile)	
	Model Year					
Existing Model*	= 2008	0.066	0.185	3.538	686.433	
New Bus Purchase**	= 2020	0.003	0.032	0.667	455.169	
* Please contact OTP for assistance on Existing Model emission factors						
** MOVES 2014a Commercial Emission Factors - Please Specify the Following:						
AM or PM:	AM	Restricted or Unrestricted	Restricted			
Change (Buy-Base)		-0.063	-0.153	-2.871	-231.264	
Calculate fleet vehicle miles per day:						
Revenue miles per year	X Deadhead factor	= fleet miles per year	/ operating days per year	= fleet miles per day		
125,000	1.15	143,750	301	478		
Calculate emissions change in kilograms per summer day						
Change	rate change grams/mile	/ 1000 g/kg	X fleet miles per day	X seasonal adj factor	= change/day in kg	
Change in Summer VOC	-0.063	1,000	478	1.0188	-0.031	
Change in Summer NOx	-0.153	1,000	478	1.0188	-0.074	
Change in Winter CO	-2.871	1,000	478	0.9812	-1.345	
Change in Summer CO2	-231.264	1,000	478	1.0000	-110.446	
Calculate emissions change in kilograms per year						
Pollutant			= change/day in kg	X op.days per year	= change per year in kg	
Summer VOC			-0.031	301	-9.227	
Summer NOx			-0.074	301	-22.407	
Winter CO			-1.345	301	-404.947	
Summer CO2			-110.446	301	-33244.200	
Calculate cost effectiveness (cost per kg of emissions reduced)						
Pollutant		Total Project Cost	/ Project Life in years	/ reduction per year in kg	= annual cost per kg	
Summer VOC		\$335,000	12	9.227	\$3,026	
Summer NOx		\$335,000	12	22.407	\$1,246	
Winter CO		\$335,000	12	404.947	\$69	
Summer CO2		\$335,000	12	33244.200	\$1	

CMAQ Bus Replacement Air Quality Analysis Worksheet						
FILL IN SHADED BOXES ONLY						
TIP YEAR:	2020	Bus Replacements				
MPO:	Montachusett					
RTA:	MART					
Project 5 - Replace 1 (1984) Trolley with 1 (2020) Trolley						
Emission Rates in grams/mile at assumed operating speed bin of :						30 MPH
Scenario Comparison		Summer VOC (grams/mile)	Summer NOx (grams/mile)	Winter CO (grams/mile)	Summer CO2 (grams/mile)	
	Model Year					
Existing Model*	= 1984	1.622	19.571	7.675	1,193.840	
New Bus Purchase**	= 2020	0.048	0.764	0.274902	1133.23	
* Please contact OTP for assistance on Existing Model emission factors						
** MOVES 2014a Commercial Emission Factors - Please Specify the Following:						
AM or PM:	AM	Restricted or Unrestricted	Restricted			
Change (Buy-Base)		-1.573	-18.808	-7.400	-60.610	
Calculate fleet vehicle miles per day:						
Revenue miles per year	X	Deadhead factor	= fleet miles per year	/ operating days per year	= fleet miles per day	
15,000		1.15	17,250	150	115	
Calculate emissions change in kilograms per summer day						
Change	rate change grams/mile	/ 1000 g/kg	X fleet miles per day	X seasonal adj factor	= change/day in kg	
Change in Summer VOC	-1.573	1,000	115	1.0188	-0.184	
Change in Summer NOx	-18.808	1,000	115	1.0188	-2.204	
Change in Winter CO	-7.400	1,000	115	0.9812	-0.835	
Change in Summer CO2	-60.610	1,000	115	1.0000	-6.970	
Calculate emissions change in kilograms per year						
Pollutant			= change/day in kg	X op.days per year	= change per year in kg	
Summer VOC			-0.184	150	-27.653	
Summer NOx			-2.204	150	-330.532	
Winter CO			-0.835	150	-125.256	
Summer CO2			-6.970	150	-1045.523	
Calculate cost effectiveness (cost per kg of emissions reduced)						
Pollutant		Total Project Cost	/ Project Life in years	/ reduction per year in kg	= annual cost per kg	
Summer VOC		\$450,000	12	27.653	\$1,356	
Summer NOx		\$450,000	12	330.532	\$113	
Winter CO		\$450,000	12	125.256	\$299	
Summer CO2		\$450,000	12	1045.523	\$36	

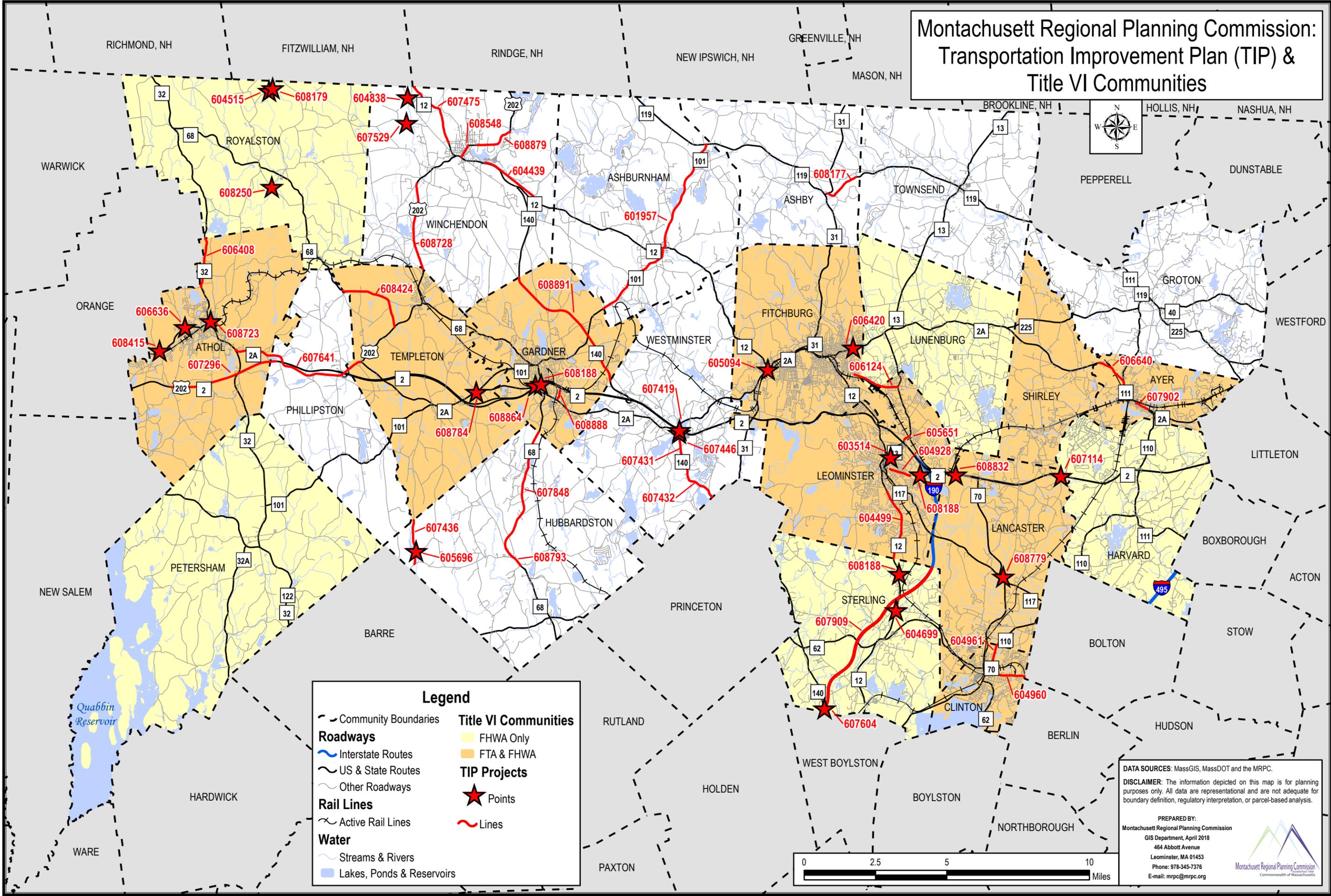
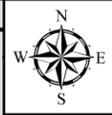
CMAQ Bus Replacement Air Quality Analysis Worksheet						
FILL IN SHADED BOXES ONLY						
TIP YEAR:		2021	Bus Replacements			
MPO:		Montachusett				
RTA:		MART				
Project 6 - Replace 2 (2005) Buses with 2 (2021) Buses						
Emission Rates in grams/mile at assumed operating speed bin of :						30 MPH
Scenario Comparison		Summer VOC (grams/mile)	Summer NOx (grams/mile)	Winter CO (grams/mile)	Summer CO2 (grams/mile)	
	Model Year					
Existing Model*	= 2005	1.150	7.542	3.180	1,200.600	
New Bus Purchase**	= 2021	0.048	0.764	0.275	1133.23	
* Please contact OTP for assistance on Existing Model emission factors						
** MOVES 2014a Commercial Emission Factors - Please Specify the Following:						
AM or PM:	AM	Restricted or Unrestricted	Restricted			
Change (Buy-Base)		-1.102	-6.778	-2.905	-67.370	
Calculate fleet vehicle miles per day:						
Revenue miles per year	X Deadhead factor	= fleet miles per year	/ operating days per year	= fleet miles per day		
70,000	1.15	80,500	301	267		
Calculate emissions change in kilograms per summer day						
Change	rate change grams/mile	/ 1000 g/kg	X fleet miles per day	X seasonal adj factor	= change/day in kg	
Change in Summer VOC	-1.102	1,000	267	1.0188	-0.300	
Change in Summer NOx	-6.778	1,000	267	1.0188	-1.847	
Change in Winter CO	-2.905	1,000	267	0.9812	-0.762	
Change in Summer CO2	-67.370	1,000	267	1.0000	-18.018	
Calculate emissions change in kilograms per year						
Pollutant			= change/day in kg	X op.days per year	= change per year in kg	
Summer VOC			-0.300	301	-90.379	
Summer NOx			-1.847	301	-555.887	
Winter CO			-0.762	301	-229.456	
Summer CO2			-18.018	301	-5423.285	
Calculate cost effectiveness (cost per kg of emissions reduced)						
Pollutant		Total Project Cost	/ Project Life in years	/ reduction per year in kg	= annual cost per kg	
Summer VOC		\$850,000	12	90.379	\$784	
Summer NOx		\$850,000	12	555.887	\$127	
Winter CO		\$850,000	12	229.456	\$309	
Summer CO2		\$850,000	12	5423.285	\$13	

CMAQ Bus Replacement Air Quality Analysis Worksheet						
FILL IN SHADED BOXES ONLY						
TIP YEAR:		2021	Bus Replacements			
MPO:		Montachusett				
RTA:		MART				
Project 7 - Replace 5 (2010) Gas Vans with 5 (2021) Gas Vans						
Emission Rates in grams/mile at assumed operating speed bin of :						30 MPH
Scenario Comparison		Summer VOC (grams/mile)	Summer NOx (grams/mile)	Winter CO (grams/mile)	Summer CO2 (grams/mile)	
	Model Year					
Existing Model*	= 2010	0.022	0.097	3.380	620.121	
New Bus Purchase**	= 2021	0.003	0.032	0.667	455.169	
* Please contact OTP for assistance on Existing Model emission factors						
** MOVES 2014a Commercial Emission Factors - Please Specify the Following:						
AM or PM:	AM	Restricted or Unrestricted	Restricted			
Change (Buy-Base)		-0.019	-0.065	-2.713	-164.952	
Calculate fleet vehicle miles per day:						
Revenue miles per year	X Deadhead factor	= fleet miles per year	/ operating days per year	= fleet miles per day		
125,000	1.15	143,750	301	478		
Calculate emissions change in kilograms per summer day						
Change	rate change grams/mile	/ 1000 g/kg	X fleet miles per day	X seasonal adj factor	= change/day in kg	
Change in Summer VOC	-0.019	1,000	478	1.0188	-0.009	
Change in Summer NOx	-0.065	1,000	478	1.0188	-0.032	
Change in Winter CO	-2.713	1,000	478	0.9812	-1.271	
Change in Summer CO2	-164.952	1,000	478	1.0000	-78.777	
Calculate emissions change in kilograms per year						
Pollutant			= change/day in kg	X op.days per year	= change per year in kg	
Summer VOC			-0.009	301	-2.783	
Summer NOx			-0.032	301	-9.519	
Winter CO			-1.271	301	-382.662	
Summer CO2			-78.777	301	-23711.850	
Calculate cost effectiveness (cost per kg of emissions reduced)						
Pollutant		Total Project Cost	/ Project Life in years	/ reduction per year in kg	= annual cost per kg	
Summer VOC		\$340,000	12	2.783	\$10,182	
Summer NOx		\$340,000	12	9.519	\$2,976	
Winter CO		\$340,000	12	382.662	\$74	
Summer CO2		\$340,000	12	23711.850	\$1	

CMAQ Bus Replacement Air Quality Analysis Worksheet						
FILL IN SHADED BOXES ONLY						
TIP YEAR:	2022	Bus Replacements				
MPO:	Montachusett					
RTA:	MART					
Project 8 - Replace 1 (2010) Van with 1 (2022) Van						
Emission Rates in grams/mile at assumed operating speed bin of :						30 MPH
Scenario Comparison		Summer VOC (grams/mile)	Summer NOx (grams/mile)	Winter CO (grams/mile)	Summer CO2 (grams/mile)	
	Model Year					
Existing Model*	= 2010	0.022	0.097	3.380	620.121	
New Bus Purchase**	= 2022	0.003	0.032	0.667	455.169	
* Please contact OTP for assistance on Existing Model emission factors						
** MOVES 2014a Commercial Emission Factors - Please Specify the Following:						
AM or PM:	AM	Restricted or Unrestricted	Restricted			
Change (Buy-Base)		-0.019	-0.065	-2.713	-164.952	
Calculate fleet vehicle miles per day:						
Revenue miles per year	X Deadhead factor	= fleet miles per year	/ operating days per year	= fleet miles per day		
25,000	1.15	28,750	301	96		
Calculate emissions change in kilograms per summer day						
Change	rate change grams/mile	/ 1000 g/kg	X fleet miles per day	X seasonal adj factor	= change/day in kg	
Change in Summer VOC	-0.019	1,000	96	1.0188	-0.002	
Change in Summer NOx	-0.065	1,000	96	1.0188	-0.006	
Change in Winter CO	-2.713	1,000	96	0.9812	-0.254	
Change in Summer CO2	-164.952	1,000	96	1.0000	-15.755	
Calculate emissions change in kilograms per year						
Pollutant			= change/day in kg	X op.days per year	= change per year in kg	
Summer VOC			-0.002	301	-0.557	
Summer NOx			-0.006	301	-1.904	
Winter CO			-0.254	301	-76.532	
Summer CO2			-15.755	301	-4742.370	
Calculate cost effectiveness (cost per kg of emissions reduced)						
Pollutant		Total Project Cost	/ Project Life in years	/ reduction per year in kg	= annual cost per kg	
Summer VOC		\$345,000	12	0.557	\$51,660	
Summer NOx		\$345,000	12	1.904	\$15,101	
Winter CO		\$345,000	12	76.532	\$376	
Summer CO2		\$345,000	12	4742.370	\$6	

CMAQ Bus Replacement Air Quality Analysis Worksheet						
FILL IN SHADED BOXES ONLY						
TIP YEAR:	2022	Bus Replacements				
MPO:	Montachusett					
RTA:	MART					
Project 9 - Replace 2 (2007) Buses with 2 (2022) Buses						
Emission Rates in grams/mile at assumed operating speed bin of :		30 MPH				
Scenario Comparison		Summer VOC	Summer NOx	Winter CO	Summer CO2	
		(grams/mile)	(grams/mile)	(grams/mile)	(grams/mile)	
	Model Year					
Existing Model*	=	2007	1.150	7.542	3.180	1,200.600
New Bus Purchase**	=	2022	0.048	0.764	0.275	1133.23
* Please contact OTP for assistance on Existing Model emission factors						
** MOVES 2014a Commercial Emission Factors - Please Specify the Following:						
AM or PM:	AM	Restricted or Unrestricted	Restricted			
Change (Buy-Base)		-1.102	-6.778	-2.905	-67.370	
Calculate fleet vehicle miles per day:						
Revenue miles per year	X Deadhead factor	= fleet miles per year	/ operating days per year	= fleet miles per day		
70,000	1.15	80,500	301	267		
Calculate emissions change in kilograms per summer day						
Change	rate change grams/mile	/ 1000 g/kg	X fleet miles per day	X seasonal adj factor	= change/day in kg	
Change in Summer VOC	-1.102	1,000	267	1.0188	-0.300	
Change in Summer NOx	-6.778	1,000	267	1.0188	-1.847	
Change in Winter CO	-2.905	1,000	267	0.9812	-0.762	
Change in Summer CO2	-67.370	1,000	267	1.0000	-18.018	
Calculate emissions change in kilograms per year						
Pollutant			= change/day in kg	X op.days per year	= change per year in kg	
Summer VOC			-0.300	301	-90.379	
Summer NOx			-1.847	301	-555.887	
Winter CO			-0.762	301	-229.456	
Summer CO2			-18.018	301	-5423.285	
Calculate cost effectiveness (cost per kg of emissions reduced)						
Pollutant		Total Project Cost	/ Project Life in years	/ reduction per year in kg	= annual cost per kg	
Summer VOC		\$300,000	12	90.379	\$277	
Summer NOx		\$300,000	12	555.887	\$45	
Winter CO		\$300,000	12	229.456	\$109	
Summer CO2		\$300,000	12	5423.285	\$5	

Montachusett Regional Planning Commission: Transportation Improvement Plan (TIP) & Title VI Communities



Legend

Community Boundaries	Title VI Communities
Roadways	FHWA Only
Interstate Routes	FTA & FHWA
US & State Routes	TIP Projects
Other Roadways	Points
Rail Lines	Lines
Active Rail Lines	
Water	
Streams & Rivers	
Lakes, Ponds & Reservoirs	

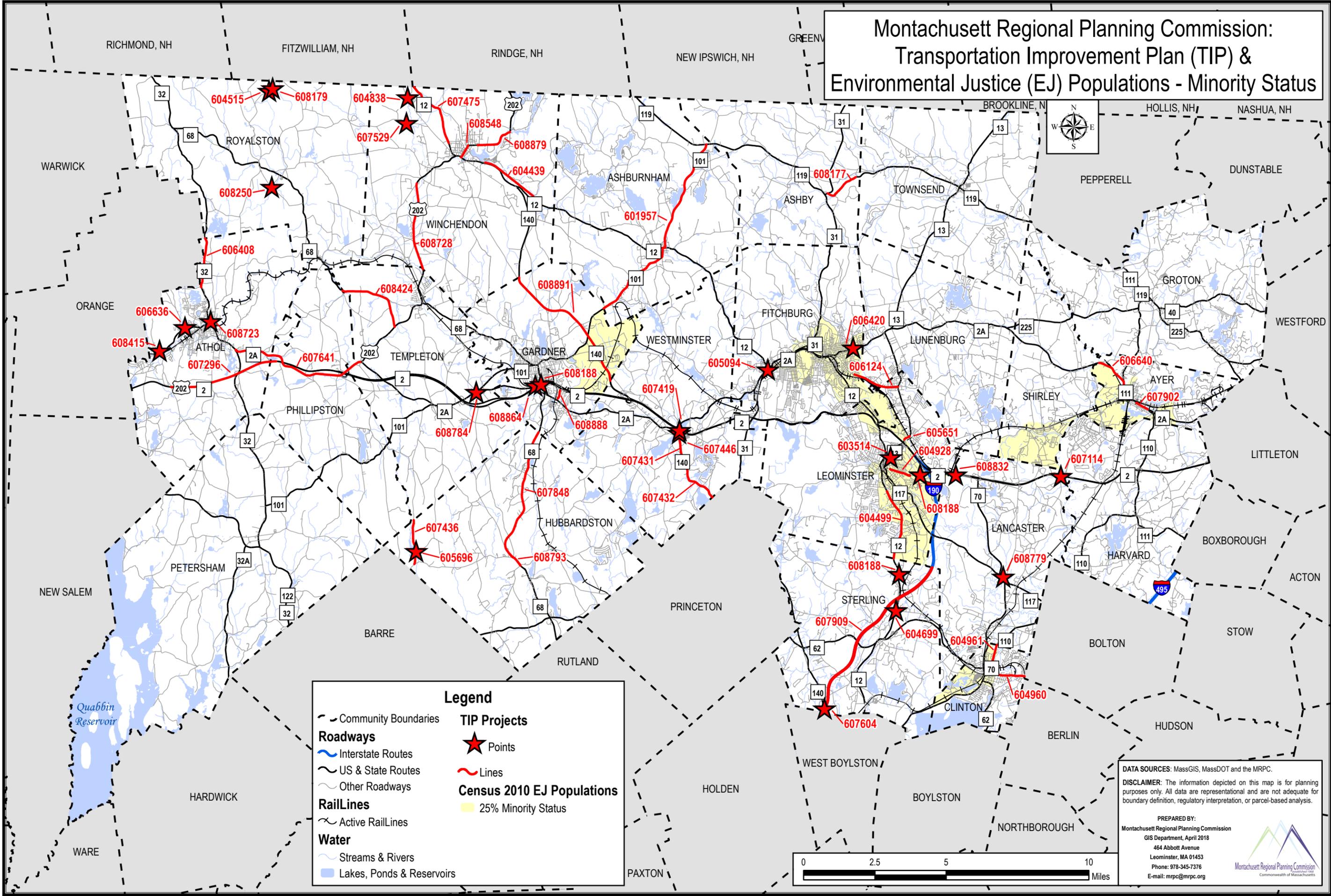
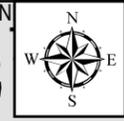


DATA SOURCES: MassGIS, MassDOT and the MRPC.

DISCLAIMER: The information depicted on this map is for planning purposes only. All data are representational and are not adequate for boundary definition, regulatory interpretation, or parcel-based analysis.

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Montachusett Regional Planning Commission: Transportation Improvement Plan (TIP) & Environmental Justice (EJ) Populations - Minority Status



Legend

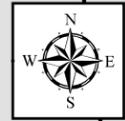
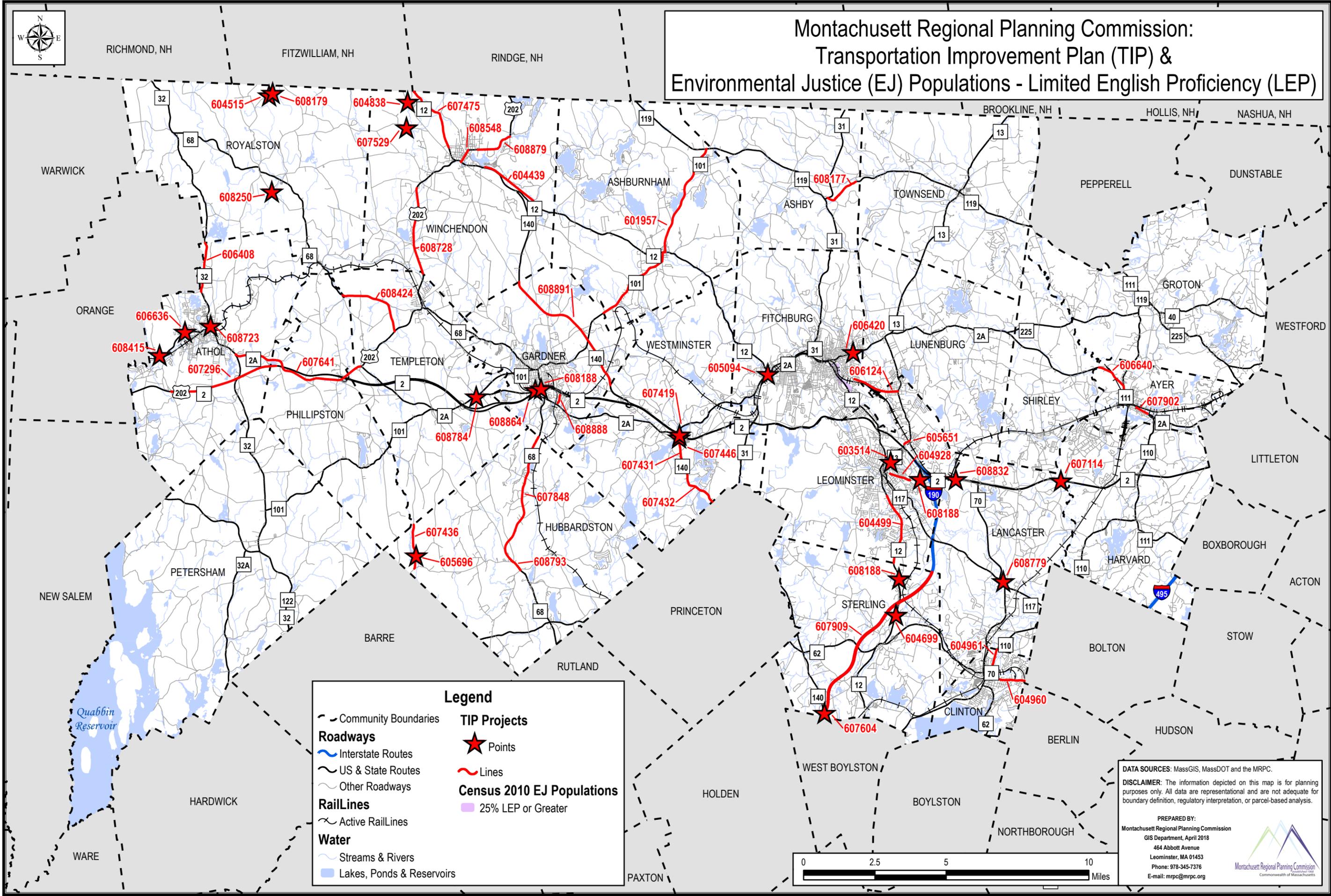
- Community Boundaries
- Roadways**
 - Interstate Routes
 - US & State Routes
 - Other Roadways
- RailLines**
 - Active RailLines
- Water**
 - Streams & Rivers
 - Lakes, Ponds & Reservoirs
- TIP Projects**
 - Points
 - Lines
- Census 2010 EJ Populations**
 - 25% Minority Status

DATA SOURCES: MassGIS, MassDOT and the MRPC.

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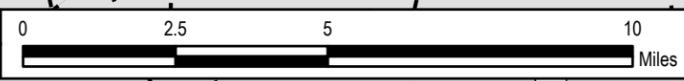
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E-mail: mrpc@mrpc.org

Montachusett Regional Planning Commission: Transportation Improvement Plan (TIP) & Environmental Justice (EJ) Populations - Limited English Proficiency (LEP)



Legend

- Community Boundaries
- Roadways**
 - Interstate Routes
 - US & State Routes
 - Other Roadways
- RailLines**
 - Active RailLines
- Water**
 - Streams & Rivers
 - Lakes, Ponds & Reservoirs
- TIP Projects**
 - Points
 - Lines
- Census 2010 EJ Populations**
 - 25% LEP or Greater



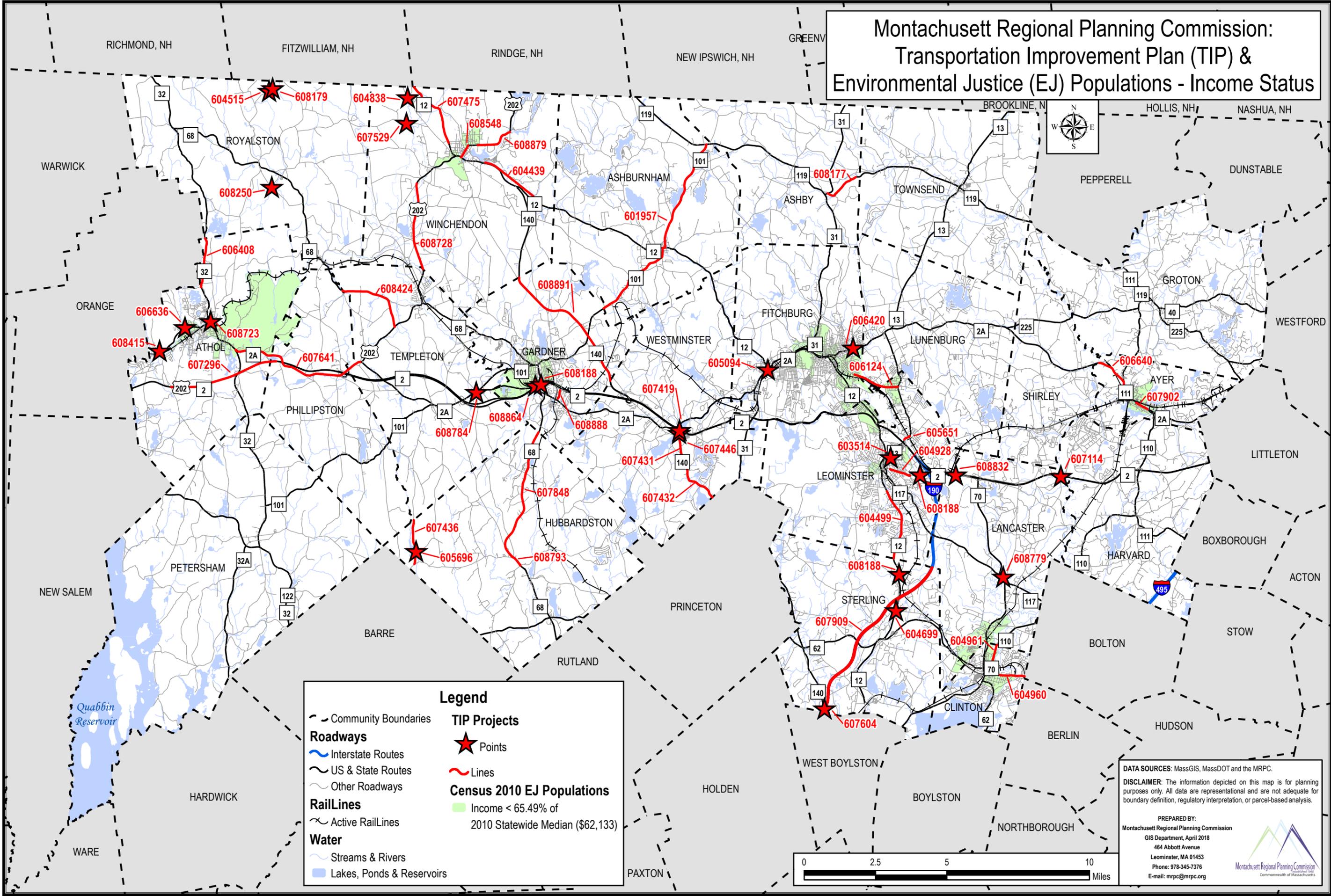
DATA SOURCES: MassGIS, MassDOT and the MRPC.

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Montachusett Regional Planning Commission: Transportation Improvement Plan (TIP) & Environmental Justice (EJ) Populations - Income Status



Legend

Community Boundaries
--- Community Boundaries

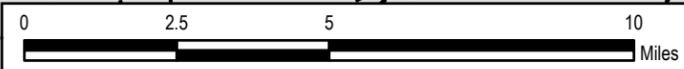
Roadways
 Interstate Routes
 US & State Routes
 Other Roadways

RailLines
 Active RailLines

Water
 Streams & Rivers
 Lakes, Ponds & Reservoirs

TIP Projects
 Points
 Lines

Census 2010 EJ Populations
 Income < 65.49% of 2010 Statewide Median (\$62,133)



DATA SOURCES: MassGIS, MassDOT and the MRPC.

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**FFY 2019-2023 STIP
2019 BUDGET**

	Obligation authority <i>(federal aid only)</i>	Matching funds	FFY 2019 (Proposed) <i>(federal aid + match)</i>
Base obligation authority	\$ 611,680,644		
Planned redistribution request	\$ 50,000,000		
Total Estimated Funding Available	\$ 661,680,644		
ABP GANS Repayment	\$ (66,015,000)		
Total non-earmarked funding available	\$ 595,665,644	\$ 138,437,429	\$ 734,103,074
Planning / Adjustments / Pass-throughs			
Award adjustments, change orders, etc.	\$ 21,645,935	\$ 5,411,484	\$ 27,057,419
Metropolitan planning	\$ 8,670,263	\$ 2,167,566	\$ 10,837,829
State planning and research	\$ 14,026,697	\$ 3,506,674	\$ 17,533,371
Freight Plan flex to Rail and Transit	\$ 2,021,285	\$ 505,321	\$ 2,526,606
Recreational trails	\$ 2,519,509	\$ 629,877	\$ 3,149,386
Railroad grade crossings	\$ 3,800,000	\$ 422,222	\$ 4,222,222
MassRides program	\$ 2,660,000	\$ 665,000	\$ 3,325,000
<i>subtotal of planning / adjustments / pass-throughs</i>	\$ 55,343,689	\$ 13,308,145	\$ 68,651,834
Funding for regional priorities	regional share % MPO	Total federal aid	Matching funds Total funding (proposed)
	3.5596% Berkshire	\$ 6,583,267	\$ 1,601,423 \$ 8,184,689
	42.9671% Boston	\$ 79,465,073	\$ 19,329,188 \$ 98,794,261
	4.5851% Cape Cod	\$ 8,479,867	\$ 2,062,749 \$ 10,542,616
	8.6901% Central Mass	\$ 16,071,819	\$ 3,909,400 \$ 19,981,218
	2.5397% Franklin	\$ 4,697,023	\$ 1,142,615 \$ 5,839,638
	0.3100% Martha's Vineyard	\$ 573,326	\$ 139,385 \$ 712,712
	4.4296% Merrimack Valley	\$ 8,192,279	\$ 1,992,601 \$ 10,184,880
	4.4596% Montachusett	\$ 8,247,763	\$ 2,006,090 \$ 10,253,853
	0.2200% Nantucket	\$ 406,877	\$ 98,919 \$ 505,795
	3.9096% Northern Middlesex	\$ 7,230,571	\$ 1,758,793 \$ 8,989,364
	4.5595% Old Colony	\$ 8,432,522	\$ 2,051,238 \$ 10,483,760
	10.8099% Pioneer Valley	\$ 19,992,261	\$ 4,862,985 \$ 24,855,247
	8.9601% Southeastern Mass	\$ 16,571,167	\$ 4,030,800 \$ 20,601,967
	<i>Total funding of regional priorities</i>	\$ 184,944,000	\$ 44,986,185 \$ 229,930,000
Highway Division programs		\$ 355,377,955	\$ 80,143,100 \$ 435,521,055
Reliability programs		\$ 277,657,955	\$ 62,379,767 \$ 340,037,722
Bridge program		\$ 147,807,955	\$ 36,951,989 \$ 184,759,944
	<i>Inspections</i>	\$ -	\$ - \$ -
	<i>Systematic maintenance</i>	\$ 8,000,000	\$ 2,000,000 \$ 10,000,000
	<i>On-system NHS (minimum)</i>	\$ 96,000,000	\$ 24,000,000 \$ 120,000,000
	<i>On-System Non-NHS</i>	\$ 15,307,955	\$ 3,826,989 \$ 19,134,944
	<i>Off-system</i>	\$ 28,500,000	\$ 7,125,000 \$ 35,625,000
Interstate pavement program		\$ 27,650,000	\$ 3,072,222 \$ 30,722,222
Non-interstate DOT pavement program		\$ 69,200,000	\$ 17,300,000 \$ 86,500,000
Roadway improvements program		\$ 2,000,000	\$ 500,000 \$ 2,500,000
Safety improvements program		\$ 31,000,000	\$ 4,555,556 \$ 35,555,556
Modernization programs		\$ 41,400,000	\$ 8,683,333 \$ 50,083,333
ADA retrofits program		\$ 2,400,000	\$ 600,000 \$ 3,000,000
Intersection improvements program		\$ 19,000,000	\$ 3,083,333 \$ 22,083,333
Intelligent Transportation Systems program		\$ 11,000,000	\$ 2,750,000 \$ 13,750,000
Roadway reconstruction program		\$ 9,000,000	\$ 2,250,000 \$ 11,250,000
Expansion programs		\$ 36,320,000	\$ 9,080,000 \$ 45,400,000
Bicycles and pedestrians program		\$ 36,320,000	\$ 9,080,000 \$ 45,400,000
Capacity program		\$ -	\$ - \$ -

**FFY 2019-2023 STIP
2020 BUDGET**

	Obligation authority <i>(federal aid only)</i>	Matching funds	FFY 2020 (Proposed) <i>(federal aid + match)</i>		
Base obligation authority	\$ 626,330,019				
Planned redistribution request	\$ 50,000,000				
Total Estimated Funding Available	\$ 676,330,019				
ABP GANS Repayment	\$ (81,570,000)				
Total non-earmarked funding available	\$ 594,760,019	\$ 139,025,281	\$ 733,785,300		
Planning / Adjustments / Pass-throughs					
Award adjustments, change orders, etc.	\$ 38,175,176	\$ 9,543,794	\$ 47,718,969		
Metropolitan planning	\$ 8,670,263	\$ 2,167,566	\$ 10,837,829		
State planning and research	\$ 14,026,697	\$ 3,506,674	\$ 17,533,371		
Freight Plan flex to Rail and Transit	\$ 2,245,872	\$ 561,468	\$ 2,807,340		
Recreational trails	\$ 1,186,729	\$ 296,682	\$ 1,483,411		
Railroad grade crossings	\$ 2,000,000	\$ 222,222	\$ 2,222,222		
MassRides program	\$ 2,660,000	\$ 665,000	\$ 3,325,000		
<i>subtotal of planning / adjustments / pass-throughs</i>	\$ 68,964,737	\$ 16,963,406	\$ 85,928,143		
Funding for regional priorities	regional share %	MPO	Total federal aid		
			Matching funds		
			Total funding (proposed)		
	3.5596%	Berkshire	\$ 6,791,857	\$ 1,697,964	\$ 8,489,822
	42.9671%	Boston	\$ 81,982,925	\$ 20,495,731	\$ 102,478,656
	4.5851%	Cape Cod	\$ 8,748,552	\$ 2,187,138	\$ 10,935,690
	8.6901%	Central Mass	\$ 16,581,054	\$ 4,145,264	\$ 20,726,318
	2.5397%	Franklin	\$ 4,845,848	\$ 1,211,462	\$ 6,057,310
	0.3100%	Martha's Vineyard	\$ 591,492	\$ 147,873	\$ 739,365
	4.4296%	Merrimack Valley	\$ 8,451,852	\$ 2,112,963	\$ 10,564,815
	4.4596%	Montachusett	\$ 8,509,093	\$ 2,127,273	\$ 10,636,366
	0.2200%	Nantucket	\$ 419,769	\$ 104,942	\$ 524,711
	3.9096%	Northern Middlesex	\$ 7,459,671	\$ 1,864,918	\$ 9,324,589
	4.5595%	Old Colony	\$ 8,699,706	\$ 2,174,927	\$ 10,874,633
	10.8099%	Pioneer Valley	\$ 20,625,716	\$ 5,156,429	\$ 25,782,146
	8.9601%	Southeastern Mass	\$ 17,096,225	\$ 4,274,056	\$ 21,370,281
		<i>Total funding of regional priorities</i>	\$ 190,803,952	\$ 47,700,940	\$ 238,504,702
Highway Division programs			\$ 334,991,330	\$ 74,360,935	\$ 409,352,265
Reliability programs			\$ 280,591,330	\$ 62,844,268	\$ 343,435,598
Bridge program			\$ 154,820,000	\$ 38,705,000	\$ 193,525,000
		<i>Inspections</i>	\$ 14,320,000	\$ 3,580,000	\$ 17,900,000
		<i>Systematic maintenance</i>	\$ 8,000,000	\$ 2,000,000	\$ 10,000,000
		<i>On-system NHS (minimum)</i>	\$ 94,900,000	\$ 23,725,000	\$ 118,625,000
		<i>On-System Non-NHS</i>	\$ 9,100,000	\$ 2,275,000	\$ 11,375,000
		<i>Off-system</i>	\$ 28,500,000	\$ 7,125,000	\$ 35,625,000
Interstate pavement program			\$ 37,585,665	\$ 4,176,185	\$ 41,761,850
Non-interstate DOT pavement program			\$ 65,185,665	\$ 16,296,416	\$ 81,482,081
Roadway improvements program			\$ 3,000,000	\$ 750,000	\$ 3,750,000
Safety improvements program			\$ 20,000,000	\$ 2,916,667	\$ 22,916,667
Modernization programs			\$ 34,400,000	\$ 6,516,667	\$ 40,916,667
ADA retrofits program			\$ -	\$ -	\$ -
Intersection improvements program			\$ 17,000,000	\$ 2,166,667	\$ 19,166,667
Intelligent Transportation Systems program			\$ 10,000,000	\$ 2,500,000	\$ 12,500,000
Roadway reconstruction program			\$ 7,400,000	\$ 1,850,000	\$ 9,250,000
Expansion programs			\$ 20,000,000	\$ 5,000,000	\$ 25,000,000
Bicycles and pedestrians program			\$ 20,000,000	\$ 5,000,000	\$ 25,000,000
Capacity program			\$ -	\$ -	\$ -

**FFY 2019-2023 STIP
2021 BUDGET**

	Obligation authority <i>(federal aid only)</i>	Matching funds	FFY 2021 (Proposed) <i>(federal aid + match)</i>	
Base obligation authority	\$ 641,988,270			
Planned redistribution request	\$ 50,000,000			
Total Estimated Funding Available	\$ 691,988,270			
ABP GANS Repayment	\$ (85,190,000)			
Total non-earmarked funding available	\$ 606,798,270	\$ 144,651,660	\$ 751,449,930	
Planning / Adjustments / Pass-throughs				
Award adjustments, change orders, etc.	\$ 33,342,205	\$ 8,335,551	\$ 41,677,756	
Metropolitan planning	\$ 8,670,263	\$ 2,167,566	\$ 10,837,829	
State planning and research	\$ 14,026,697	\$ 3,506,674	\$ 17,533,371	
Freight Plan flex to Rail and Transit	\$ 2,245,872	\$ 561,468	\$ 2,807,340	
Recreational trails	\$ 1,186,729	\$ 296,682	\$ 1,483,411	
Railroad grade crossings	\$ 2,000,000	\$ 222,222	\$ 2,222,222	
MassRides program	\$ 2,660,000	\$ 665,000	\$ 3,325,000	
<i>subtotal of planning / adjustments / pass-throughs</i>	\$ 64,131,766	\$ 15,755,164	\$ 79,886,929	
Funding for regional priorities	regional share %	MPO	Total federal aid	
			Matching funds	
			Total funding (proposed)	
3.5596%	Berkshire	\$ 6,929,328	\$ 1,732,332	\$ 8,661,660
42.9671%	Boston	\$ 83,642,302	\$ 20,910,575	\$ 104,552,877
4.5851%	Cape Cod	\$ 8,925,627	\$ 2,231,407	\$ 11,157,034
8.6901%	Central Mass	\$ 16,916,663	\$ 4,229,166	\$ 21,145,829
2.5397%	Franklin	\$ 4,943,930	\$ 1,235,983	\$ 6,179,913
0.3100%	Martha's Vineyard	\$ 603,464	\$ 150,866	\$ 754,330
4.4296%	Merrimack Valley	\$ 8,622,922	\$ 2,155,730	\$ 10,778,652
4.4596%	Montachusett	\$ 8,681,322	\$ 2,170,330	\$ 10,851,652
0.2200%	Nantucket	\$ 428,265	\$ 107,066	\$ 535,331
3.9096%	Northern Middlesex	\$ 7,610,659	\$ 1,902,665	\$ 9,513,324
4.5595%	Old Colony	\$ 8,875,793	\$ 2,218,948	\$ 11,094,741
10.8099%	Pioneer Valley	\$ 21,043,192	\$ 5,260,798	\$ 26,303,990
8.9601%	Southeastern Mass	\$ 17,442,261	\$ 4,360,565	\$ 21,802,827
	<i>Total funding of regional priorities</i>	\$ 194,665,923	\$ 48,666,432	\$ 243,332,161
Highway Division programs		\$ 348,000,581	\$ 80,230,065	\$ 428,230,646
Reliability programs		\$ 239,280,581	\$ 54,577,842	\$ 293,858,423
Bridge program		\$ 140,500,000	\$ 35,125,000	\$ 175,625,000
	<i>Inspections</i>	\$ -	\$ -	\$ -
	<i>Systematic maintenance</i>	\$ 8,000,000	\$ 2,000,000	\$ 10,000,000
	<i>On-system NHS (minimum)</i>	\$ 94,900,000	\$ 23,725,000	\$ 118,625,000
	<i>On-System Non-NHS</i>	\$ 9,100,000	\$ 2,275,000	\$ 11,375,000
	<i>Off-system</i>	\$ 28,500,000	\$ 7,125,000	\$ 35,625,000
Interstate pavement program		\$ 24,744,581	\$ 2,749,398	\$ 27,493,979
Non-interstate DOT pavement program		\$ 54,036,000	\$ 13,509,000	\$ 67,545,000
Roadway improvements program		\$ 3,000,000	\$ 750,000	\$ 3,750,000
Safety improvements program		\$ 17,000,000	\$ 2,444,444	\$ 19,444,444
Modernization programs		\$ 80,720,000	\$ 18,652,222	\$ 99,372,222
ADA retrofits program		\$ 1,400,000	\$ 350,000	\$ 1,750,000
Intersection improvements program		\$ 16,000,000	\$ 2,472,222	\$ 18,472,222
Intelligent Transportation Systems program		\$ 8,000,000	\$ 2,000,000	\$ 10,000,000
Roadway reconstruction program		\$ 55,320,000	\$ 13,830,000	\$ 69,150,000
Expansion programs		\$ 28,000,000	\$ 7,000,000	\$ 35,000,000
Bicycles and pedestrians program		\$ 28,000,000	\$ 7,000,000	\$ 35,000,000
Capacity program		\$ -	\$ -	\$ -

**FFY 2019-2023 STIP
2022 BUDGET**

	Obligation authority <i>(federal aid only)</i>	Matching funds	FFY 2022 (Proposed) <i>(federal aid + match)</i>
Base obligation authority	\$ 658,744,163		
Planned redistribution request	\$ 50,000,000		
Total Estimated Funding Available	\$ 708,744,163		
ABP GANS Repayment	\$ (89,590,000)		
Total non-earmarked funding available	\$ 619,154,163	\$ 147,301,057	\$ 766,455,220
Planning / Adjustments / Pass-throughs			
Award adjustments, change orders, etc.	\$ 36,361,281	\$ 9,090,320	\$ 45,451,601
Metropolitan planning	\$ 8,670,263	\$ 2,167,566	\$ 10,837,829
State planning and research	\$ 14,026,697	\$ 3,506,674	\$ 17,533,371
Freight Plan flex to Rail and Transit	\$ 2,245,872	\$ 561,468	\$ 2,807,340
Recreational trails	\$ 1,186,729	\$ 296,682	\$ 1,483,411
Railroad grade crossings	\$ 2,000,000	\$ 222,222	\$ 2,222,222
MassRides program	\$ 2,660,000	\$ 665,000	\$ 3,325,000
<i>subtotal of planning / adjustments / pass-throughs</i>	\$ 67,150,842	\$ 16,509,933	\$ 83,660,774
Funding for regional priorities	regional share % MPO	Total federal aid	Matching funds Total funding (proposed)
	3.5596% Berkshire	\$ 7,070,426	\$ 1,767,607 \$ 8,838,033
	42.9671% Boston	\$ 85,345,463	\$ 21,336,366 \$ 106,681,829
	4.5851% Cape Cod	\$ 9,107,375	\$ 2,276,844 \$ 11,384,218
	8.6901% Central Mass	\$ 17,261,128	\$ 4,315,282 \$ 21,576,410
	2.5397% Franklin	\$ 5,044,601	\$ 1,261,150 \$ 6,305,751
	0.3100% Martha's Vineyard	\$ 615,752	\$ 153,938 \$ 769,690
	4.4296% Merrimack Valley	\$ 8,798,505	\$ 2,199,626 \$ 10,998,132
	4.4596% Montachusett	\$ 8,858,094	\$ 2,214,524 \$ 11,072,618
	0.2200% Nantucket	\$ 436,986	\$ 109,246 \$ 546,232
	3.9096% Northern Middlesex	\$ 7,765,631	\$ 1,941,408 \$ 9,707,038
	4.5595% Old Colony	\$ 9,056,526	\$ 2,264,131 \$ 11,320,657
	10.8099% Pioneer Valley	\$ 21,471,682	\$ 5,367,921 \$ 26,839,603
	8.9601% Southeastern Mass	\$ 17,797,428	\$ 4,449,357 \$ 22,246,785
	<i>Total funding of regional priorities</i>	\$ 198,629,796	\$ 49,657,399 \$ 248,286,997
Highway Division programs		\$ 353,373,525	\$ 81,133,725 \$ 434,507,250
Reliability programs		\$ 246,873,525	\$ 56,592,058 \$ 303,465,583
Bridge program		\$ 154,820,000	\$ 38,705,000 \$ 193,525,000
	Inspections	\$ 14,320,000	\$ 3,580,000 \$ 17,900,000
	Systematic maintenance	\$ 8,000,000	\$ 2,000,000 \$ 10,000,000
	On-system NHS (minimum)	\$ 94,900,000	\$ 23,725,000 \$ 118,625,000
	On-System Non-NHS	\$ 9,100,000	\$ 2,275,000 \$ 11,375,000
	Off-system	\$ 28,500,000	\$ 7,125,000 \$ 35,625,000
Interstate pavement program		\$ 22,909,525	\$ 2,545,503 \$ 25,455,028
Non-interstate DOT pavement program		\$ 51,144,000	\$ 12,786,000 \$ 63,930,000
Roadway improvements program		\$ 1,000,000	\$ 250,000 \$ 1,250,000
Safety improvements program		\$ 17,000,000	\$ 2,305,556 \$ 19,305,556
Modernization programs		\$ 78,500,000	\$ 17,541,667 \$ 96,041,667
ADA retrofits program		\$ -	\$ - \$ -
Intersection improvements program		\$ 15,000,000	\$ 1,666,667 \$ 16,666,667
Intelligent Transportation Systems program		\$ 8,000,000	\$ 2,000,000 \$ 10,000,000
Roadway reconstruction program		\$ 55,500,000	\$ 13,875,000 \$ 69,375,000
Expansion programs		\$ 28,000,000	\$ 7,000,000 \$ 35,000,000
Bicycles and pedestrians program		\$ 28,000,000	\$ 7,000,000 \$ 35,000,000
Capacity program		\$ -	\$ - \$ -

**FFY 2019-2023 STIP
2023 BUDGET**

	Obligation authority (federal aid only)	Matching funds	FFY 2023 (Proposed) (federal aid + match)		
Base obligation authority	\$ 676,662,005				
Planned redistribution request	\$ 50,000,000				
Total Estimated Funding Available	\$ 726,662,005				
ABP GANS Repayment	\$ (93,985,000)				
Total non-earmarked funding available	\$ 632,677,005	\$ 150,023,500	\$ 782,700,504		
Planning / Adjustments / Pass-throughs					
Award adjustments, change orders, etc.	\$ 20,000,000	\$ 5,000,000	\$ 25,000,000		
Metropolitan planning	\$ 8,670,263	\$ 2,167,566	\$ 10,837,829		
State planning and research	\$ 14,026,697	\$ 3,506,674	\$ 17,533,371		
Recreational trails	\$ 1,186,729	\$ 296,682	\$ 1,483,411		
Railroad grade crossings	\$ 2,000,000	\$ 222,222	\$ 2,222,222		
MassRides program	\$ 2,660,000	\$ 665,000	\$ 3,325,000		
<i>subtotal of planning / adjustments / pass-throughs</i>	\$ 48,543,689	\$ 11,858,144	\$ 60,401,833		
Funding for regional priorities					
	regional share %	MPO	Total federal aid	Matching funds	Total funding (proposed)
	3.5596%	Berkshire	\$ 7,224,850	\$ 1,806,213	\$ 9,031,063
	42.9671%	Boston	\$ 87,209,479	\$ 21,802,370	\$ 109,011,849
	4.5851%	Cape Cod	\$ 9,306,287	\$ 2,326,572	\$ 11,632,859
	8.6901%	Central Mass	\$ 17,638,125	\$ 4,409,531	\$ 22,047,657
	2.5397%	Franklin	\$ 5,154,779	\$ 1,288,695	\$ 6,443,474
	0.3100%	Martha's Vineyard	\$ 629,201	\$ 157,300	\$ 786,501
	4.4296%	Merrimack Valley	\$ 8,990,672	\$ 2,247,668	\$ 11,238,340
	4.4596%	Montachusett	\$ 9,051,563	\$ 2,262,891	\$ 11,314,453
	0.2200%	Nantucket	\$ 446,530	\$ 111,632	\$ 558,162
	3.9096%	Northern Middlesex	\$ 7,935,238	\$ 1,983,810	\$ 9,919,048
	4.5595%	Old Colony	\$ 9,254,328	\$ 2,313,582	\$ 11,567,910
	10.8099%	Pioneer Valley	\$ 21,940,642	\$ 5,485,160	\$ 27,425,802
	8.9601%	Southeastern Mass	\$ 18,186,139	\$ 4,546,535	\$ 22,732,674
	<i>Total funding of regional priorities</i>		\$ 202,968,036	\$ 50,741,958	\$ 253,709,992
Highway Division programs			\$ 381,165,279	\$ 87,423,397	\$ 468,588,676
Reliability programs			\$ 267,601,252	\$ 61,384,440	\$ 326,834,487
Bridge program			\$ 166,996,123	\$ 41,749,031	\$ 207,515,202
		<i>Inspections</i>		\$ -	\$ -
		<i>Systematic maintenance</i>	\$ 8,629,176	\$ 2,157,294	\$ 10,722,914
		<i>On-system NHS</i>	\$ 94,900,000	\$ 23,725,000	\$ 118,625,000
		<i>On-System Non-NHS</i>	\$ 9,815,687	\$ 2,453,922	\$ 12,197,315
		<i>Off-system</i>	\$ 28,500,000	\$ 7,125,000	\$ 35,625,000
Interstate pavement program			\$ 24,711,290	\$ 2,745,699	\$ 27,456,989
Non-interstate DOT pavement program			\$ 56,414,722	\$ 14,103,681	\$ 70,518,403
Roadway improvements program			\$ 1,142,119	\$ 285,530	\$ 1,427,648
Safety improvements program			\$ 18,336,998	\$ 2,500,500	\$ 20,837,498
Modernization programs			\$ 84,673,787	\$ 18,816,397	\$ 102,880,407
ADA retrofits program			\$ 1,400,000	\$ 350,000	\$ 1,750,000
Intersection improvements program			\$ 16,934,757	\$ 1,881,640	\$ 18,705,529
Intelligent Transportation Systems program			\$ 8,000,000	\$ 2,000,000	\$ 10,000,000
Roadway reconstruction program			\$ 58,339,029	\$ 14,584,757	\$ 72,424,878
Expansion programs			\$ 28,890,241	\$ 7,222,560	\$ 36,112,801
Bicycles and pedestrians program			\$ 28,890,241	\$ 7,222,560	\$ 36,112,801
Capacity program			\$ -	\$ -	\$ -

COMMENTS AND RESPONSES

<p>Comment 1.</p>	<p>MassDOT OTP Letter - comments in regards to narrative</p> <p>Please ensure that all tables are titled throughout the document.</p> <p>Page 13: On the second table, please correct the total for "TIP Project Investment"</p> <p>The narrative on federally required performance measures should include references to both the FTA required Transit Asset Management (TAM) Plan that will be completed by the RTAs by October 2018 and from which targets will be adopted by each MPO, and the FHWA required Transportation Asset Management Plan (TAMP) which is being developed by MassDOT to address pavement and bridge conditions on the NHS system</p> <p>Pages 24-27: Please specify that the data displayed on the tables corresponds to each of the graphs for the safety performance measures</p> <p>Page 25: Please revise the legend for the graphical version of Figure 1 to ensure that it matches the data and is consistent with Figure 2</p> <p>Page 27: Please specify the data source used for non-motorized serious injuries and fatalities on the regional level</p> <p>Page 30: Please move the descriptions on federal transportation funding sources up to be in the same section as the bulleted list that enumerates these sources.</p> <p>Page 34: The links you have included for WeMoveMassachusetts and GreenDOT are no longer available. Please Update</p> <p>Pages 39 - 43: On each of the tables, please edit the typo for the line that should read "Total HSIP/CMAQ/TAP/STP."</p> <p>Page 36: Please adjust the alignment of the non-CMAQ/HSIP/TAP line.</p>
<p>Response 1.</p>	<p>Noted, changes and updates have been made throughout the narrative portion of the TIP</p>

<p>Comment 2.</p>	<p>MassDOT OTP Letter - Federal Highway Project Listing comments</p> <p>FFY 2019</p> <p>607848 - This project should be programmed at \$4,044,376</p> <p>604691 (Clinton) - Please revise the project number to 604961. Additionally, the Year of Expenditure Total Cost should be revised to \$2,436,388</p> <p>FFY 2021</p> <p>608784 - Please increase the total programmed cost of this project to be \$2,409,474 with \$1,927,579 as federal funds and \$481,894 as non-federal funds. The current total programmed cost is based on a pre-25% project initiation cost.</p> <p>FFY 2022</p> <p>Please add project 608850 (PETERSHAM- BRIDGE REPLACEMENT, P-08-002, GLEN VALLEY ROAD OVER EAST BRANCH OF SWIFT RIVER) to Section 2A under the Off-System Bridge Program. The total programmed funds should be \$4,569,936 with \$3,655,949 as federal funds and \$913,849 as non-federal funds.</p> <p>609108 - The project number and title in the TIP are incorrect. Please revise to #609108 GARDNER- BIKE PATH BRIDGE CONSTRUCTION, NORTH CENTRAL PATHWAY OVER ROUTE 140</p>
<p>Response 2.</p>	<p>Corrections and additions made to projects listed above.</p>

Comment 3.	<p>MassDOT OTP Letter - Greenhouse Gas Analysis comments</p> <p>FFY 2019 Highway Project 607446 should be quantified.</p> <p>FFY 2020 Highway Project 607431 should be a qualitative decrease.</p> <p>FFY 2021 Highway Project 608548 should be a qualitative decrease.</p> <p>FFY 2022 Highway Project 608891 should be a qualitative decrease.</p> <p>FFY 2023 Highway Project 601957 should be a qualitative decrease Project 608832 should be a quantified when enough information Project 609107 should be a qualitative decrease</p> <p>Completed Highway Projects It is only necessary to include completed projects with quantified impacts.</p>
Response 3.	Appropriate changes made and analysis provided for the projects listed above

Comment 4.	<p>Comment from the Town of Ashburnham via Email</p> <p>Project 601957 ASHBURNHAM - RESURFACING AND RELATED WORK ON ROUTE 101</p> <p>In reviewing the Transportation Improvement Program the Town of Ashburnham would like the MRPC and MassDOT to strongly consider moving this project MA DOT # 601957 from out of the TIP year 2023. This has been an ongoing project since 2009 and the town has now committed by contract in the amount of \$ 330,000 for the engineering portion with Weston & Sampson. Based on MASS DOT schedule and the time frame for this project the construction phase can begin in the Fall for 2020.</p>
Response 4.	Comment is noted. Monitoring of the progress of project #601957 will be ongoing and reconsidered during the development of future TIPs.