Montachusett Regional Transportation Plan 2024

Montachusett Regional Planning Commission
established 1968
Commonwealth of Massachusetts

Journey to 2050

MPO ENDORSED AUGUST 16, 2023

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.

4.5 Economic Vitality

4.6 Congestion

4.7 Transit

4.8 Environment

10 Financial

NOTICE OF NONDISCRIMINATION RIGHTS AND PROTECTIONS TO BENEFICIARIES

Federal "Title VI/Nondiscrimination" Protections

The Montachusett Regional Planning Commission (MRPC) operates its programs, services, and activities in compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (Title VI), the Civil Rights Restoration Act of 1987, and related statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of race, color, or national origin (including limited English proficiency), be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal assistance. Related federal nondiscrimination laws administrated by the Federal Highway Administration, the Federal Transit Administration, or both prohibit discrimination on the basis of age, sex, and disability. These protected categories are contemplated within MRPC's Title VI Programs consistent with federal interpretation and administration. Additionally, MRPC provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with US Department of Transportation policy and guidance on federal Executive Order 13166.

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MRPC also complies with the Massachusetts Public Accommodation Law, M.G.L. c 272 §§ 92a, 98, 98a, prohibiting making any distinction, discrimination, or restriction in admission to or treatment in a place of public accommodation based on race, color, religious creed, national origin, sex, sexual orientation, disability, or ancestry. Likewise, MRPC complies with the Governor's Executive Order 526, section 4 requiring all programs, activities, and services provided, performed, licensed, chartered, funded, regulated, or contracted for by the state shall be conducted without unlawful discrimination based on race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status (including Vietnam-era veterans), or background.

Additional Information

To request additional information regarding Title VI and related federal and state nondiscrimination obligations, please contact:

Montachusett Metropolitan Planning Organization (MMPO)
and Montachusett Regional Planning Commission (MRPC)
Title VI Coordinator
464 Abbott Ave.
Leominster, MA 01453
(978) 345-7376
geaton@mrpc.org

Complaint Filing

To file a complaint alleging a violation of Title VI or related federal nondiscrimination law, contact the Title VI Specialist (above) within 180 days of the alleged discriminatory conduct.

To file a complaint alleging a violation of the state's Public Accommodation Law, contact the Massachusetts Commission Against Discrimination within 300 days of the alleged discriminatory conduct at:

Massachusetts Commission Against Discrimination (MCAD)
One Ashburton Place, 6th Floor
Boston, MA 02109
617-994-6000 ~~ TTY: 617-994-6196

Language Assistance

English: If this information is needed in another language, please contact the MRPC Title VI Coordinator at 978-345-7376.

Spanish: Si necesita esta información en otro idioma, por favor contacte el coordenador del MRPC del Título VI al 978-345-7376.

Portuguese: Caso esta informação seja necessária em outro idioma, favor contar o Coordenador em Título VI do MRPC pelo telefone 978-345-7376.

French: Si cette information est nécessaire dans une autre langue, s'il vous plaît communiquer avec le coordonnateur MRPC Titre VI au 978-345-7376.

MONTACHUSETT
REGIONAL PLANNING COMMISSION
Offices: 464 Abbott Ave., Leominster, Massachusetts 01453
(978) 345-7376 Fax: (978) 348-2490

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MONTACHUSETT METROPOLITAN PLANNING ORGANIZATION ENDORSEMENT OF THE 2024 REGIONAL TRANPORTATION PLAN

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 hereby certifies that the 2024 Regional Transportation Plan is financially constrained. Based on the results of the review and analyses, the Montachusett 2024 Regional Transportation Plan is 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 2024 Regional Transportation Plan for the Montachusett MPO with the chair signing on behalf of all members.

for

Gina Fiandaca, Secretary and CEO
Massachusetts Department of Transportation

August 16, 2023
Date

MONTACHUSETT
REGIONAL PLANNING COMMISSION
Offices: 464 Abbott Ave., Leominster, Massachusetts 01453
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Certification of the Montachusett Region MPO 3C Transportation Planning Process

Concurrent with the submittal of the proposed Regional Transportation Plan to the FHWA and FTA, The Montachusett Region Metropolitan Planning Organization (MPO) certifies that its conduct of the metropolitan transportation planning process complies with all applicable requirements, which are listed below, and that this process includes activities to support the development and implementation of the Regional Long-Range Transportation Plan and Air Quality Conformity Determination, the Transportation Improvement Program and Air Quality Conformity Determination, and the Unified Planning Work Program.

1. 23 USC 134, 49 USC 5303, and this subpart;
2. Sections 174 and 176 (c) and (d) of the Clean Air Act, as amended (42 USC 7504, 7506 (c) and (d) and for applicable State Implementation Plan projects;
3. Title VI of the Civil Rights Act of 1964, as amended (42 USC 2000d-1) and 49 CFR Part 21;
4. 49 USC 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 Fast Act (Pub. L. 114-94) and 49 CFR Part 26 regarding the involvement of disadvantaged business enterprises in U.S. DOT-funded projects;
6. 23 CFR part 230, regarding implementation of an equal employment opportunity program on Federal and Federal-aid highway construction contracts;
7. The provisions of US DOT and the Americans with Disabilities Act of 1990 (42 USC 12101 et seq.) and 49 CFR Parts 27, 37, and 38;
8. The Older Americans Act, as amended (42 USC 6101), prohibiting discrimination on the basis of age in programs or activities receiving federal financial assistance;
9. Section 324 of Title 23 USC regarding the prohibition of discrimination based on gender;
10. Section 504 of the Rehabilitation Act of 1973 (29 USC 794) and 49 CFR Part 27 regarding discrimination against individuals with disabilities;
11. Anti-lobbying restrictions found in 49 USC Part 20. No appropriated funds may be expended by a recipient to influence or attempt to influence an officer or employee of any agency, or 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 with the chair signing on behalf of all members.

for

Gina Fiandaca, Secretary and CEO
Massachusetts Department of Transportation

August 16, 2023
Date

MONTACHUSETT

REGIONAL PLANNING COMMISSION

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Certification of the Montachusett Region MPO Transportation Planning Process 310 CMR 60.05: Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation

This will certify that the Air Quality Conformity Determination for the 2024 Long Range Transportation Plan 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, 5(a)(1): Evaluate and report the aggregate transportation GHG emissions and impacts of RTPs and TIPs;
2. 310 CMR 60.05, 5(a)(2): In consultation with MassDOT, develop and utilize procedures to prioritize and select projects in RTPs and TIPs based on factors that include aggregate transportation GHG emissions impacts;
3. 310 CMR 60.05, 5(a)(3): Quantify net transportation GHG emissions impacts resulting from the projects in RTPs and TIPs and certify in a statement included with RTPs and TIPs pursuant to 23 CFR Part 450 that the MPO has made efforts to minimize aggregate transportation GHG emissions impacts;
4. 310 CMR 60.05, 5(a)(4): Determine in consultation with the RPA that the appropriate planning assumptions used for transportation 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, 8(a)(2)(a): Develop RTPs and TIPs;
6. 310 CMR 60.05, 8(a)(2)(b): Ensure that RPAs are using appropriate planning assumptions;
7. 310 CMR 60.05, 8(a)(2)(c): Perform regional aggregate transportation GHG emissions analysis of RTPs and TIPs;
8. 310 CMR 60.05, 8(a)(2)(d): Calculate aggregate transportation GHG emissions for RTPs and TIPs;
9. 310 CMR 60.05, 8(a)(2)(e): Develop public consultation procedures for aggregate transportation GHG reporting and related GWSA requirements consistent with current and approved regional public participation plans;
10. 310 CMR 60.05, 8(c): Prior to making final endorsements on the RTPs, TIPs, STIPs, and projects included in these plans, MassDOT and the MPOs shall include the aggregate transportation GHG emission impact assessment in RTPs, TIPs, and STIPs and provide an opportunity for public review and comment on the RTPs, TIPs, and STIPs.
11. 310 CMR 60.05, 8(a)(1)(c): After a final GHG assessment has been made by MassDOT and the MPOs, MassDOT and the MPOs shall submit MPO-endorsed RTPs, TIPs or projects within 30 days of endorsement to the Department for review of the GHG assessment.

The Committee of Signatories representing the Montachusett Metropolitan Planning Organization (MMPO) by a majority vote hereby endorses the GWSA Statement for the Montachusett MPO with the chair signing on behalf of all members.

Dan Grunt for

Gina Fiandaca, Secretary and CEO
Massachusetts Department of Transportation

August 16, 2023
Date

MONTACHUSETT METROPOLITAN PLANNING ORGANIZATION SIGNATORIES

Massachusetts Department of Transportation (MassDOT) Secretary & CEO	Gina Fiandaca
MassDOT Highway Division Administrator	Jonathan L. Gulliver
Montachusett Regional Planning Commission (MRPC) Chairman	Laura Shifrin
Montachusett Regional Transit Authority (MART) Chairman/Mayor City of Gardner	Mayor Michael J. Nicholson
Mayor City of Fitchburg	Mayor Stephen DiNatale
Mayor City of Leominster	Mayor Dean Mazzarella
Winchendon Board of Selectmen *Subregion 1*	Barbara Anderson
Ashburnham Board of Selectmen *Subregion 2*	Rosemarie Meissner
Lunenburg Board of Selectmen *Subregion 3*	Michael-Ray Jeffreys
Lancaster Board of Selectmen *Subregion 4*	Jason Allison

MPO SUB-SIGNATORY COMMITTEE MEMBERS

David Mohler, Director OTP, MassDOT, for Secretary& CEO Gina Fiandaca
Ann Sullivan, Assistant Project Development Engineer for Administrator Jonathan L. Gulliver
Glenn Eaton, Executive Director, MRPC, for Chairman Laura Shifrin
Bruno Fisher, Administrator, MART, for Chairman Mayor Michael J. Nicholson

EXOFFICIO MEMBERS

Joi Singh, Division Administrator	Federal Highway Administration
Peter Butler, Region 1 Administrator	Federal Transit Administration

MONTACHUSETT REGIONAL PLANNING COMMISSION (MRPC) OFFICERS

Laura Shifrin, Chairman	Townsend
Roger Hoyt, Vice Chairman	Ashburnham
Robert Swartz, Treasurer	Gardner
Kristofer Munroe, Vice Treasurer	Hubbardston
Kyle Nartowicz, Secretary	Royalston

MONTACHUSETT JOINT TRANSPORTATION COMMITTEE (MJTC) OFFICERS

Dick Kilhart., Chairman	Athol
Travis Condon, Vice Chairman	North Central MA Chamber of Commerce
Robert Swartz, Secretary	Gardner

MONTACHUSETT REGIONAL PLANNING COMMISSION STAFF

Glenn Eaton, Executive Director
Holly Ford, Administrative Manager
Linda Quinlivan, Fiscal Director
Christopher McNamara, Fiscal Assistant
Brad Harris, Transportation Project Director
George Snow, Principal Transportation Planner
Sheri Bean, Principal Transportation Planner
Brian Doherty, AICP, Principal Transportation Planner
Tyler Godin, Regional Transportation Planner
Karen Chapman, Planning and Development Director
Jeffrey Legros, Principal Planner
Jonathan Vos, Regional Planner
Ryan Doherty, Regional Planner
Tracy Murphy, Principal Planner
Jason Stanton, GIS & IT Director
Kayla Kress, GIS & IT Analyst

2023 APPOINTMENT LIST

MONTACHUSETT JOINT TRANSPORTATION COMMITTEE

COMMUNITY	APPOINTED BY SELECTMEN/MAYOR	APPOINTED BY PLANNING BOARD
Ashburnham	Randy Williams	Roger Hoyt
Ashby		Alan Pease
Athol	Dick Kilhart	Jacqueline Doherty
Ayer	Shaun Copeland	
Clinton	Phil Duffy	
Fitchburg	Nicolas Erickson	Paula Caron
Gardner	Trevor Beauregard	Robert Swartz
Groton		Russell Burke
Harvard	Tim Kilhart	Stacia Donahue
Hubbardston	Travis Brown	Alice Livdahl
Lancaster	Alexandra Turner	Roy Mirabito
Leominster	David DiGiovanni	Elizabeth Wood
Lunenburg	Todd Dwyer	Matthew Brenner
Petersham	Nancy Allen	
Phillipston	Gordon Robertson	
Royalston	Roland Hamel	
Shirley		Janet Tice
Sterling	Richard Maki	Carl Corrinne
Templeton	Tim Toth	Charles Carroll II
Townsend	Charles Sexton-Diranian	Beth Faxon
Westminster		Marie Auger
Winchendon	Brian Croteau	Guy Corbosiero

EXOFFICIO MEMBERS

Derek Krevat	Office of Transportation Planning (OTP), Massachusetts Department of Transportation (MassDOT)
Jeffrey H. McEwen	Federal Highway Administration (FHWA), Administrator
Peter Butler	Federal Transit Administration (FTA), Acting Administrator
	Department of Environmental Protection (DEP)
Paula Simmons	MassDOT Highway Division - District 2
Ann Sullivan	MassDOT Highway Division - District 3
	Montachusett Regional Planning Commission (MRPC)
Bruno Fisher	Montachusett Regional Transit Authority (MART)

ORGANIZATION MEMBERS

Al Futterman	Nashua River Watershed Association (NRWA)
	Amalgamated Transit Union #690 (ATU 690)
Richard Liberatore	Fitchburg Airport Commission
Travis Condon	North Central MA Chamber of Commerce
Jennifer Brennan	Fitchburg Council on Aging
	Mass Development
Neil Angus/Beth Suedmeyer	Devens Enterprise Commission (DEC)
	Montachusett Opportunity Council, Inc.
David Kline	The ARC of Opportunity

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Executive Summary

Executive Summary

Introduction

Transportation in the Montachusett Region (Region) ranges from rural highways connecting small towns, to urban streetscapes and cities connected by major highways and arterials. Public transit on local, regional and statewide scales exists, as do major corridors where freight travels within and across our Region to areas nationwide. Inhabitants of the Region rely on this vast network to access jobs and recreation in the Region and beyond. The infrastructure that exists today and the needs for our future create a vision for transportation in the Region in the Region's ***"Journey to 2050"*** Regional Transportation Plan (RTP).

What is the RTP?

The 2024 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 a basis for any federally financed transportation and transit project, program or study.

Background

The region was first settled by Indigenous Americans approximately 10,000 to 12,000 years ago. At the time of the English settlers in the 17th Century, the Abenaki and Wabanaki Confederacy lived in the region. The Confederacy set up the original trail connections of which many remain in use through todays modern transportation network and also provided many of the place names that are still used. The Region was settled by Europeans as early as the 17th Century and began as small settlements that moved from an era of agrarianism into the age of industrialization and now into the era of information and communications. The Region's

landscape varies from urban centers with a strong presence of mixed-uses (commercial, housing and in some cases industry) with well-established neighborhoods to small, sparsely populated rural communities containing "town commons".

Demographics

This chapter attempts to paint an overall picture of the Region and its inhabitants. Various demographic data is compiled and trends are examined to see how the Region is developing. From this analysis, the needs or impacts to the transportation systems are considered and certain trends and recommendations and/or policies are put forward.

Also included in this chapter are projections for the Region in terms of population, employment and housing. These projections were developed by MassDOT in coordination with the MPO and MRPC. Population and population projections are presented in **Table 2.1** below.

Table 2.1
Population & Projections for the Region

TOWN	Census 2000	Census 2010	Census 2020	Population 2030	Population 2040	Population 2050
Ashburnham	5,546	6,081	6,315	6,195	5,931	5,582
Ashby	2,845	3,074	3,193	3,554	3,732	3,760
Athol	11,299	11,584	11,945	11,706	11,195	10,581
TOTAL	7,287	7,427	8,479	9,128	9,424	9,353
Clinton	13,435	13,606	15,428	14,974	14,248	13,471
Fitchburg	39,102	40,318	41,946	41,614	41,193	40,305
Gardner	20,770	20,228	21,287	19,625	17,655	15,604
Groton	9,547	10,646	11,315	12,494	13,622	13,955
Harvard	5,981	6,520	6,851	6,964	7,144	6,945
Hubbardston	3,909	4,382	4,328	4,615	4,570	4,283
Lancaster	7,380	8,055	8,441	8,277	7,922	7,305
Leominster	41,303	40,759	43,782	41,404	38,098	34,581
Lunenburg	9,401	10,086	11,782	11,756	11,370	10,839
Petersham	1,180	1,234	1,194	1,108	963	839
Phillipston	1,621	1,682	1,726	1,674	1,540	1,346
Royalston	1,254	1,258	1,250	1,206	1,080	911
Shirley	6,373	7,211	7,431	8,476	9,258	9,803
Sterling	7,257	7,808	7,985	7,678	7,302	6,556
Templeton	6,799	8,013	8,149	8,926	9,511	9,915
Townsend	9,198	8,926	9,127	8,856	8,116	7,118
Westminster	6,907	7,277	8,213	7,932	7,541	7,019
Winchendon	9,611	10,300	10,364	10,285	9,824	9,135
TOTAL	228,005	236,475	250,531	248,447	241,239	229,206
Statewide	**6,349,097**	**6,547,629**	**7,029,917**	**7,195,346**	**7,263,082**	**7,267,961**

Goals, Objectives & Strategies, and Performance Measures

The Vision Statement, Goals, Objectives and Strategies (GO&S) inform, guide and improve the MPO decision making process. For this RTP, an update of the Vision Statement and the GO&S was undertaken. These updated statements are based on the prior RTP that were refined over a series of meetings and discussions with the MPO, members of the Montachusett Joint Transportation Committee (MJTC), and the general public. The establishment of these GO&S help to define and guide the scenarios, analysis and recommendations that encompass this RTP. The Vision Statement and Goals are presented below.

Moving Ahead for Progress in the 21st Century (MAP-21) required Performance Measures (PMs) to inform and improve the MPO decision making process. PMs are set to achieve a desired set of performance outcomes for a multimodal transportation network. After an MPO develops their set of performance outcomes, the PMs are used to track the performance of the outcomes over time to determine the progress in meeting them. This tracking occurs through the ongoing data collection and planning activities of the MRPC. The development and tracking of PMs allow the MRPC to identify the areas that additional emphasis through TIP projects may be necessary to achieve a safe and dependable regional multimodal transportation network.

Vision Statement: Aspirational view of the regional transportation system in 2050

" The Montachusett Metropolitan Planning Organization seeks to provide a multimodal and inclusionary transportation system that is safe, secure, efficient and affordable to all individuals while supporting and encouraging environmentally- sustainable economic development, growth, and revitalization in the Montachusett Region."

Goals: General statements of what we wish to accomplish

The RTP is built on a performance-based planning approach with a vision statement, goals, objectives, and performance measures. Goals were made and specific objectives were identified in the areas of:

- Goal 1 – Improve and Maintain Safety and Security
- Goal 2 – Reduce Congestion and Improve Mobility
- Goal 3 – Promote and Seek Equitable Transportation for All
- Goal 4 – Improve System Preservation and Maintenance of All Modes
- Goal 5 – Improve Economic Vitality
- Goal 6 – Improve and Promote Healthy Modes and Transportation Options
- Goal 7 – Reduce Green House Gas and Promote Environmental Practices and Sustainability

Infrastructure and Congestion

The Infrastructure chapter reports existing conditions on pavement and bridge infrastructure in the Region. Comparisons are made to the condition of infrastructure from the previous RTP and recommendations are made going forward.

The Congestion chapter focuses on what are considered the most congested roadways and corridors in the Region as well as congestion related projects and studies done since the last RTP.

Safety

This chapter presents the MRPC's ongoing commitment to the goal of improving roadway safety in the Region for all transportation modes. The Vision Zero, Safe System Approach, Equity, and Collaboration efforts found in the 2023 Massachusetts Strategic Highway Safety Plan are presented. The impact of COVID on fatalities and serious injuries is examined. The traditional method of recommending existing dangerous locations for safety improvements employed. Also, at-risk road segments that are susceptible to fatalities and serious injuries

related to speeding due to a number of roadway and societal risk factors are recommended for safety improvement projects.

Bicycle & Pedestrian

Increasing concern for air quality, energy conservation, rising fuel costs, and the health benefits of getting outdoors is leading to renewed interest in multi-modal transportation in the Region and throughout the state. The MRPC has been working toward a more sustainable transportation system by educating and promoting transportation mode choice throughout the Region. This chapter examines and reviews existing and proposed Bicycle and Pedestrian transportation options while focusing on the importance of mode shift.

Economic Vitality

The MRPC is committed to the goal of improving economic vitality in the Region by focusing on improving the transportation infrastructure that services the diverse economic drivers within the Region. The Economic Vitality Needs dialog provides a snapshot of the existing transportation infrastructure critical to the economic vitality of the Region that should be the focus of future improvement.

Transit

This chapter presents a review of the state of the current transit network operating in the Region from bus to commuter rail. Public outreach comments were significant and plentiful when related to transit. The negative impact of COVID on transit is examined. Many opportunities exist to expand and improve the system. Several recommendations are included to try to meet the various challenges identified but as is often the case funding plays a major role in what can be implemented. MART remains open to expanding services wherever possible to meet unmet regional needs and increase accessibility.

Environment

This chapter seeks explains the effect of the environment and possible effects of climate change have as applied to the transportation system in the Region. Environment and climate change related programs, studies and initiatives are highlighted that can help the state meet its Green House Gas reduction goals.

Public Outreach, Input, and Participation

An important element of the development process for the RTP is public outreach and involvement. Towards this end, the MRPC utilized several methods in an attempt to bring as many individuals as possible into the RTP development. This included updates at subregional workshops, meetings, targeted emails, an online survey, and hard copy survey distribution. The survey was completed by 303 individuals. Additionally, during the development of other planning documents, notice of applicability and linkage to the RTP were identified and incorporated.

Subregional workshops were held as follows:

Montachusett Regional Planning Commission
Commonwealth of Massachusetts

REGIONAL TRANSPORTATION PLAN

JOURNEY TO 2050

PUBLIC OUTREACH WORKSHOPS

The Montachusett Regional Planning Commission (MRPC) would like to announce a series of meetings that will focus on the 2024 update of the Regional Transportation Plan (RTP). The Regional Transportation Plan provides guidance to local and state officials in deciding how to spend federal and state transportation funds as well as outlines the transportation priority needs for the region. The plan is a long-range document for the maintenance and improvement for the road, highway, bicycle and pedestrian, bridge, rail, transit, freight and airport systems of the Montachusett Region over the next 20 years. The RTP is a federally mandated document that is developed through studies, discussions with local officials, boards and commissions and public comment/outreach. While the RTP may cover a 20-year period, it is updated every four years so it can be adapted to emerging needs and trends.

The Plan must examine and address all modes of transportation that exist in the region through an inventory of current conditions and then identify various needs and recommendations that can range from specific projects to general goals or policies. Additionally, in order for projects to be eligible for Federal Aid funds through the Transportation Improvement Program (TIP), they must be reflected within the RTP.

Subregion 1
November 14
10:00 – 11:00 am
Athol, Hubbardston, Petersham, Phillipston, Royalston, Templeton, Winchendon

Subregion 2
November 14
1:00 – 2:00 pm
Ashburnham, Ashby, Groton, Townsend, Westminster

Subregion 3
November 15
10:00 – 11:00 am
Ayer, Harvard, Lunenburg, Shirley

Subregion 4
November 15
1:00 – 2:00 pm
Clinton, Lancaster, Sterling

Cities
November 17
10:00 – 11:00 am
Fitchburg, Gardner, Leominster

Transit / MART
November 29 5:30 – 6:30 pm
***** In person *****

MART Admin Bldg.
1427R Water Street
Fitchburg, MA 01420
Pizza will be provided.

Directions to MART Facility

All interested individuals are encouraged to participate in the plan development process through attendance at various outreach events, completion of various surveys, feedback and comments on the draft documents as they are prepared and by contacting the MRPC. All meetings are virtual except where noted.

Register through the QR Codes located next to each listed session above.
Registration can also be done through the MRPC website at www.mrpc.org.

Please take the RTP Survey - https://www.surveymonkey.com/r/JGK7WYR

Equity

Complying with Title VI and Environmental Justice regulations is important to the MPO as well as to the overall transportation planning process. It ensures participation from all populations in order to address individual needs and requirements. Equity is a civil and human rights priority and major goal for the Region. It requires making investments that provide all residents regardless of age, race, color, national origin, income or physical agility with opportunities to work, shop, be healthy, and play.

Towards that end, this RTP conducted a review and analysis of the identified populations within the Region versus the implementation of past projects and future projects or recommendations in order to assess any undo benefit or burden. The conclusion of the review indicated that these populations were not subject to underfunding in terms of projects or recommendations in the Region.

Planning Scenarios

Based off of the work that the Commission on the Future of Transportation, staff developed scenarios based on the general concepts put forward by the Commission but more applicable to the Region's trends and communities. These scenarios include Gridlock, Vibrant Core, Multiple Hubs, and Statewide Spread. These scenarios were established to assist communities with how to meet their future demands. A past trend comparison attempt to identify successes or shortcomings since the prior RTP.

Financial

A major requirement of the RTP is that it be fiscally constrained over its life span. To achieve this, funding estimates are provided by MassDOT and the MPO estimates the fiscal impact of the project needs and recommendations identified in the RTP. Transit and Highway estimates are compared to anticipated funding levels to establish this fiscal constraint. Within this RTP, fiscal constraint was achieved. However, it should be noted that the potential readily exists for

the needs to outstrip the funding available if continued monitoring of the various systems is not maintained.

Conclusion

Journey to 2050 attempts to be a blueprint for the Region to achieve a multi-modal transportation system that balances the varying needs of its population within the fiscal projections provided.

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Vision, Goals, Objectives & Strategies

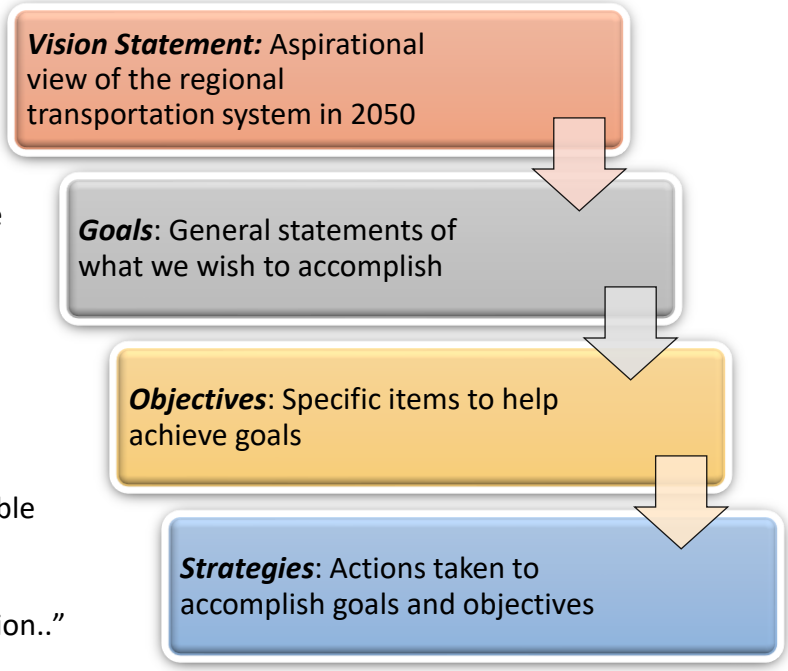
Goals, Objectives and Strategies

Introduction

To inform, guide and improve the MPO decision making process, the development of a Vision Statement and a series of Goals, Objectives and Strategies (GO&S) was undertaken. These updated statements were based on the prior Regional Transportation Plan and refined over a series of meetings and discussions with the MPO, members of the Montachusett Joint Transportation Committee (MJTC) and the general public. The establishment of these GO&S help to define and guide the scenarios, analysis and recommendations that encompass this RTP.

Vision Statement

" The Montachusett Metropolitan Planning Organization seeks to provide a multimodal and inclusionary transportation system that is safe, secure, efficient and affordable to all individuals while supporting and encouraging environmentally-sustainable economic development, growth, and revitalization in the Montachusett Region.."



Goals, Objectives and Strategies

Goal 1 - Improve and Maintain Safety and Security
Objectives
i. Reduce the number and severity of vehicular crashes within the region across all modes. **Strategies** * Promote and identify projects that are designed to address high crash locations and prioritize their implementation. * Promote and encourage education outreach programs to drivers, pedestrians and bicyclists regarding rules and responsibilities. * Encourage community involvement with federal and state programs and education initiatives. * Specifically, seek funding through the Safe Streets for All (SS4A) program through the BIL to develop a Safety Action Plan for the regions and eventual funding for the implementation of projects. * Seek to improve user awareness along all transportation networks through better identification, pavement markings and signage with an emphasis on bicycle and pedestrian routes. * Seek to expand the number and use of Intelligent Transportation System (ITS) technologies such as variable message signs along major roads such as Route 2 and I-190 to inform drivers of potential unsafe conditions and important alerts.
ii. Improve access and mobility along identified emergency and evacuation routes in the Region. **Strategies** * Promote projects that address key identified emergency and evacuation routes in order to maintain effectiveness.
iii. Promote traffic calming and safety measures where appropriate for all modes. **Strategies** * Offer truck exclusion studies and advice for communities in the region, where appropriate. * Consider specific improvements encouraging safe use of local roadways by heavy vehicles.

Goal 2 - Reduce Congestion and Improve Mobility
Objectives
i. Monitor and promote and identify projects that address congested roadways within the Region. **Strategies** * Support programs that efficiently address deficiencies across all modes including freight, heavy vehicle and rail crossings. * Expand and improve analysis on freight, heavy vehicle and rail activities, including remaining active in state led data and analysis initiatives.
ii. Increase travel options within the region through the promotion of trails, Complete Streets, transit, land use and their interactions. **Strategies** * Encourage communities to address local mobility issues in order to promote mode shift options in congested areas.

Goal 3 – Promote and Seek Equitable Transportation for All
Objectives
Increase access to transit options through improved dissemination of available service information. **Strategies** * Improve outreach and partnerships between RTA's and social service agencies, schools, health centers, neighborhood organizations, major employers etc. * 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.
ii. Improve transit service operations for all trip destinations/ purposes and users. **Strategies** * Promote the development of improvements and options across all modes for areas that serve Title VI and Environmental Justice populations. * Monitor fee options in order to maintain equitability for all users. * Conduct benefits/burdens review of federal aid projects identified through the TIP process on an annual basis. * Actively examine options such as microtransit, Transportation Management Associations, etc. that can expand services to more remote areas.

Goal 4 – Improve System Preservation and Maintenance for All Modes
Objectives
i. Support and prioritize preservation projects in order to maintain a state of good repair for all modes. **Strategies** * Continue to monitor, and revise as needed, the Transportation Evaluation Criteria (TEC) to promote those projects that help to maintain a state of good repair. * Monitor overall conditions of infrastructure elements including pavement, sidewalks, drainage, stormwater, culverts, bridges and others in the region and support improvement efforts. * Encourage communities to maintain trails that provide transportation options throughout the year. * Support continued operation, maintenance, state of good repair and improvement of the transit system.
ii. Encourage communities to seek funding and implementation of projects through the Transportation Improvement Program (TIP) process as well as other applicable federal and state programs. **Strategies** * Encourage additional funds for the maintenance and preservation of all aspects of the transportation network in the region.

Goal 5 – Improve Economic Vitality
Objectives
i. Promote the economic advantages of the region across all modes. **Strategies** * Establish and prioritize major trail connections for commuter and recreational purposes throughout the region and beyond. * Promote transit and commuter rail options. * Improve freight, heavy vehicle and rail mobility for both rail and highways, where appropriate. * Improve access to job clusters and employment centers and economic development priority areas. * Assist communities in identifying preferred frieght traffic routing.

Goal 6 – Improve and Promote Heathy Modes and Transportation Options
Objectives
i. Expand travel options and modes across the region through improved connections and services. **Strategies** * Improve and maintain infrastructure and bicycle/pedestrian facilities for transit centers and transit vehicles, as well as at other applicable public and commercial facilities/locations. * Promote state and federal programs related to Complete Streets, Safe Routes to School (SRTS), trail development, sidewalks and ADA mobility improvements. * Promote and encourage a shift from single occupant vehicles to transit, bicycle and pedestrian modes through improved transit, van/car pool and trail options. * Promote and encourage small communities to examine and implement applicable programs such as ride share, sidewalk development and connections, etc. that would improve healthy travel options locally.

Goal 7 – Reduce Green House Gas and Promote Environmental Practices and Sustainability
Objectives
i. Reduce Greenhouse Gas emissions through support and implementation of all applicable state and federal programs and projects. **Strategies** * Prioritize vehicle replacement in the transit fleet with applicable and cost-effective alternative fuel vehicles. * Encourage and support the use of alternative fuel vehicles by the public with infrastructure support services, such as the development of electric vehicle charging stations. * Promote programs and projects that support the reduction of single occupant vehicles. * Promote stormwater drainage improvements in order to meet state and federal guidelines.

3

Performance Measures

PERFORMANCE MEASURES

Introduction

"On November 15, 2021, President Biden signed the Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58, also known as the "Bipartisan Infrastructure Law") into law. The Bipartisan Infrastructure Law (BIL) is the largest long-term investment in our infrastructure and economy in our Nation's history. It provides $550 billion over fiscal years 2022 through 2026 in new Federal investment in infrastructure, including in roads, bridges, and mass transit, water infrastructure, resilience, and broadband." (FHWA) The BIL provides approximately $350 billion for Federal highway programs over a five-year period (fiscal years 2022 through 2026). Most of this funding is apportioned (distributed) to States based on formulas specified in Federal law. However, the BIL Infrastructure Law also provides funding through a wide range of competitive grant programs.

2021 Planning Emphasis Areas:

Tackling the Climate Crisis

Transition to a Clean Energy, Resilient Future Federal Highway Administration (FHWA) divisions and Federal Transit Administration (FTA) regional offices should work with State departments of transportation (State DOT), metropolitan planning organizations (MPO), and providers of public transportation to ensure that our transportation plans and infrastructure investments help achieve the national greenhouse gas reduction goals of 50-52 percent below 2005 levels by 2030, and net-zero emissions by 2050, and increase resilience to extreme weather events and other disasters resulting from the increasing effects of climate change. Field offices should encourage State DOTs and MPOs to use the transportation planning process to accelerate the transition toward electric and other alternative fueled vehicles, plan for a sustainable infrastructure system that works for all users, and undertake actions to prepare for and adapt to the impacts of climate change. Appropriate Unified Planning Work Program work tasks could include identifying the barriers to and opportunities for deployment of fueling and charging infrastructure; evaluating opportunities to reduce greenhouse gas emissions by reducing single-occupancy vehicle trips and increasing access to public transportation, shift to lower emission modes of transportation ; and

identifying transportation system vulnerabilities to climate change impacts and evaluating potential solutions. We encourage you to visit FHWA's Sustainable Transportation or FTA's Transit and Sustainability Webpages for more information. (See EO 14008 on "Tackling the Climate Crisis at Home and Abroad," EO 13990 on "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis." EO 14030 on "Climate-Related Financial Risk," See also FHWA Order 5520 "Transportation System Preparedness and Resilience to Extreme Weather Events," FTA's "Hazard Mitigation Cost Effectiveness Tool," FTA's "Emergency Relief Manual," and "TCRP Document 70: Improving the Resilience of Transit Systems Threatened by Natural Disasters")

Equity and Justice40 in Transportation Planning

FHWA Division and FTA regional offices should work with State DOTs, MPOs, and providers of public transportation to advance racial equity and support for underserved and disadvantaged communities. This will help ensure public involvement in the planning process and that plans and strategies reflect various perspectives, concerns, and priorities from impacted areas. We encourage the use of strategies that: (1) improve infrastructure for non-motorized travel, public transportation access, and increased public transportation service in underserved communities; (2) plan for the safety of all road users, particularly those on arterials, through infrastructure improvements and advanced speed management; (3) reduce single-occupancy vehicle travel and associated air pollution in communities near high-volume corridors; (4) offer reduced public transportation fares as appropriate; (5) target demand-response service towards communities with higher concentrations of older adults and those with poor access to essential services; and (6) consider equitable and sustainable practices while developing transit-oriented development including affordable housing strategies and consideration of environmental justice populations. Executive Order 13985 (Advancing Racial Equity and Support for Underserved Communities) defines the term "equity" as the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian

3 Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. The term "underserved communities" refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of "equity." In addition, Executive Order 14008 and M-21-28 provides a whole-of-government approach to advancing environmental justice by stating that 40 percent of Federal investments flow to disadvantaged communities. FHWA Division and FTA regional offices should work with State DOTs, MPOs, and providers of public transportation to review current and new metropolitan transportation plans to advance Federal investments to disadvantaged communities. To accomplish both initiatives, our joint planning processes should support State and MPO goals for economic opportunity in disadvantaged communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, recreation, and health care.

Complete Streets

FHWA Division and FTA regional offices should work with State DOTs, MPOs and providers of public transportation to review current policies, rules, and procedures to determine their impact on safety for all road users. This effort should work to include provisions for safety in future transportation infrastructure, particularly those outside automobiles. A complete street is safe, and feels safe, for everyone using the street. FHWA and FTA seek to help Federal aid recipients plan, develop, and operate streets and networks that prioritize safety, comfort, and access to destinations for people who use the street network, including pedestrians, bicyclists, transit riders, micro-mobility users, freight delivery services, and motorists. The goal is to provide an equitable and safe transportation network for travelers of all ages and abilities, including those from marginalized communities facing historic disinvestment. This vision is not achieved through a one-size-fits-all solution – each complete street is unique and developed to best serve its

community context and its primary role in the network. Per the National Highway Traffic Safety Administration's 2019 data, 62 percent of the motor vehicle crashes that resulted in pedestrian fatalities took place on arterials. Arterials tend to be designed for vehicle movement rather than mobility for non-motorized users and often lack convenient and safe crossing opportunities. They can function as barriers to a safe travel network for road users outside of vehicles. To be considered complete, these roads should include safe pedestrian facilities, safe transit stops (if present), and safe crossing opportunities on an interval necessary for accessing destinations. A safe and complete network for bicycles can also be achieved through a safe and comfortable bicycle facility located on the roadway, adjacent to the road, or on a nearby parallel corridor. Jurisdictions will be encouraged to prioritize safety improvements and speed management on arterials that are essential to creating complete travel networks for those without access to single-occupancy vehicles.

Public Involvement

Early, effective, and continuous public involvement brings diverse viewpoints into the decisionmaking process. FHWA Division and FTA regional offices should encourage MPOs, State DOTs, and providers of public transportation to increase meaningful public involvement in transportation planning by integrating Virtual Public Involvement (VPI) tools into the overall public involvement approach while ensuring continued public participation by individuals without access to computers and mobile devices. The use of VPI broadens the reach of information to the public and makes participation more convenient and affordable to greater numbers of people. Virtual tools provide increased transparency and access to transportation planning activities and decisionmaking processes. Many virtual tools also provide information in visual and interactive formats that enhance public and stakeholder understanding of proposed plans, programs, and projects. Increasing participation earlier in the process can reduce project delays and lower staff time and costs. More information on VPI is available here.

Strategic Highway Network (STRAHNET)/U.S. Department of Defense (DOD)

Coordination FHWA Division and FTA regional offices should encourage MPOs and State DOTs to coordinate with representatives from DOD in the transportation planning and project programming process on infrastructure and connectivity needs for STRAHNET routes and other public roads that connect to DOD facilities. According to the Declaration of Policy in 23 U.S.C. 101(b)(1), it is in the national interest to accelerate construction of the Federal-aid highway system, including the Dwight D. Eisenhower National System of Interstate and Defense Highways, because many of the highways (or portions of the highways) are inadequate to meet the needs of national and civil defense. The DOD's facilities include military bases, ports, and depots. The road networks that provide access and connections to these facilities are essential to national security. The 64,200-mile STRAHNET system consists of public highways that provide access, continuity, and emergency transportation of personnel and equipment in times of peace and war. It includes the entire 48,482 miles of the Dwight D. Eisenhower National System of Interstate and Defense Highways and 14,000 miles of other non-Interstate public highways on the National Highway System. The STRAHNET also contains approximately 1,800 miles of connector routes linking more than 200 military installations and ports to the primary highway system. The DOD's facilities are also often major employers in a region, generating substantial volumes of commuter and freight traffic on the transportation network and around entry points to the military facilities. Stakeholders are encouraged to review the STRAHNET maps and recent Power Project Platform (PPP) studies. These can be a useful resource in the State and MPO areas covered by these route analyses.

Federal Land Management Agency (FLMA)

Coordination FHWA Division and FTA regional offices should encourage MPOs and State DOTs to coordinate with FLMAs in the transportation planning and project programming process on infrastructure and connectivity needs related to access routes and other public roads and transportation services that connect to Federal lands. Through joint coordination, the State DOTs, MPOs, Tribal Governments, FLMAs, and local agencies should focus on integration of their

transportation planning activities and develop cross-cutting State and MPO long range transportation plans, programs, and corridor studies, as well as the Office of Federal Lands 5 Highway's developed transportation plans and programs. Agencies should explore opportunities to leverage transportation funding to support access and transportation needs of FLMAs before transportation projects are programmed in the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP). Each State must consider the concerns of FLMAs that have jurisdiction over land within the boundaries of the State (23 CFR 450.208(a)(3)). MPOs must appropriately involve FLMAs in the development of the metropolitan transportation plan and the TIP (23 CFR 450.316(d)). Additionally, the Tribal Transportation Program, Federal Lands Transportation Program, and the Federal Lands Access Program TIPs must be included in the STIP, directly or by reference, after FHWA approval in accordance with 23 U.S.C. 201(c) (23 CFR 450.218(e)).

Planning and Environment Linkages (PEL)

FHWA Division and FTA regional offices should encourage State DOTs, MPOs and Public Transportation Agencies to implement PEL as part of the transportation planning and environmental review processes. The use of PEL is a collaborative and integrated approach to transportation decisionmaking that considers environmental, community, and economic goals early in the transportation planning process, and uses the information, analysis, and products developed during planning to inform the environmental review process. PEL leads to interagency relationship building among planning, resource, and regulatory agencies in the early stages of planning to inform and improve project delivery timeframes, including minimizing duplication and creating one cohesive flow of information. This results in transportation programs and projects that serve the community's transportation needs more effectively while avoiding and minimizing the impacts on human and natural resources. More information on PEL is available here.

Data in Transportation Planning

To address the emerging topic areas of data sharing, needs, and analytics, FHWA Division and FTA regional offices should encourage State DOTs, MPOs, and providers of public transportation to incorporate data sharing and consideration into the transportation planning process, because data assets have value across multiple programs. Data sharing principles and data management can be used for a variety of issues, such as freight, bike and pedestrian planning, equity analyses, managing curb space, performance management, travel time reliability, connected and autonomous vehicles, mobility services, and safety. Developing and advancing data sharing principles allows for efficient use of resources and improved policy and decisionmaking at the State, MPO, regional, and local levels for all parties.

Metropolitan Planning

The BIL continues the Metropolitan Planning Program, which establishes a cooperative, continuous, and comprehensive (3C) framework for making transportation investment decisions in metropolitan areas. Program oversight remains a joint Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) responsibility. Except as specified within the BIL legislation, the BIL continues all funding features that applied to Metropolitan Planning (PL) funding under the FAST Act.

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. Data for the regional performance measures are derived from a combination of agency data collection efforts, studies, and statewide databases made available to the MRPC.

Since the endorsement of the 2020 Montachusett Regional Transportation Plan ("Working Toward the Future"), in July 2019, MassDOT has suggested and the MPO has agreed to amend the regions performance measures to better reflect the purpose of such measures and allow for realistic measurement of achieving the regions goals. Also, since endorsement of the 2020 RTP, the MPO has adopted a number of federal performance targets which are outlined in this chapter. The following tables state the performance measures adopted by the Montachusett MPO during the development of this 2024 RTP.

Regional Transportation Plan Goals and Performance Measures Summary

Goal 1 - Improve and Maintain Safety and Security
Performance Measures
Identify and/or implement 4 to 5 corrective projects at identified top 10 high incident locations over a 10-year period, or at least 10% of target funding utilized in projects at these locations over a 10- year period ending in 2026.
Increase the number of communities involved in the Safe Routes to School program.
Maintain the average number of preventable fixed route crashes under 1+ per 33,000 vehicle revenue miles and demand responsive crashes under 1+ per 100,000 vehicle revenue miles.

Goal 2 - Reduce Congestion and Improve Mobility
Performance Measures
Increase the number of Complete Street certified communities within the region. Seek to have a majority of communities formally certified within by 2026.

Goal 3 – Promote and Seek Equitable Transportation for All
Performance Measures
Increase formal membership and public outreach within Montachusett Joint Transportation Committee (MJTC) of Title VI and Environmental Justice groups.

Goal 4 – Improve System Preservation and Maintenance for All Modes
Performance Measures
Increase the percentage of categorized “Good” to “Excellent” federal aid eligible roadway miles within the region over a 10-year period dating back to 2016.
Decrease the number of identified “Structurally Deficient” bridges within the region compared to what was reported in the 2024 RTP.
Maintain the number of road service calls due to mechanical failures on the fixed route and demand responsive systems under 10 per month.
Maintain a percentage of operated scheduled trips per month at 90% or better.
Achieve an average on time ranking on the fixed route system of 95% by 2040.

Goal 5 – Improve Economic Vitality
Performance Measures
Review and analyze 1 to 2 freight corridors through development of a Unified Planning Work Program (UPWP) task by 2029.

Goal 6 – Improve and Promote Heathy Modes and Transportation Options
Performance Measures
Conduct 3 to 4 walk audits by 2029 in interested communities.
Establish a top 5 list of prioritized trail connections, within and across communities, by 2029 with updates in each subsequent RTP.

Goal 7 – Reduce Green House Gas and Promote Environmental Practices and Sustainability
Performance Measures
Increase percentage of alternative fuel vehicles within the overall transit fleet by 2025.
Increase number of electric vehicle charging stations in the region year over year, through 2025.

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.

Statewide and Regional 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 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.

On a regional level, MRPC relies on it's regional Performance Measures (systems information) to inform the TEC process (investment and policy decisions) to achieve regional performance goals. On the national level, FHWA has established its own Performance Measures to inform decision making.

Effective on April 14, 2016 FHWA established a final rule on the first of its Performance Measures, Safety Measures (PM1). For Calendar Year (CY) 2022, targets related to PM1 were set by MassDOT and adopted by the Montachusett MPO on January 19, 2022. Subsequently, FHWA established two additional performance measures that state Departments of Transportation and MPOs needed to adopt and track. The National Highway System Bridge and Pavement Condition Performance Measure (PM 2) and the Systems Performance Measures, Reliability, Congestion and Emissions (PM 3) were required to be established by the end of 2018. MassDOT then provided statewide target information for PM 2 and PM 3 to the Montachusett MPO for their review and either their adoption by the MPO or the establishment of their own regional PM 2 and PM 3. After review and discussion, the Montachusett MPO formally adopted the statewide PM 2 targets on October 17, 2018 and PM 3 targets on September 19, 2019.

Safety Performance Measures (PM1)

Montachusett MPO has chosen to adopt the statewide safety performance measure targets set by MassDOT for Calendar Year (CY) 2023. 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 trend lines for all FHWA-defined safety measures.

For the CY 2023 Total Number of Fatalities Target[1], due to the higher rates of speeding that was caused by decreased vehicle miles traveled (VMT) during the pandemic shutdowns in 2020 and the ongoing impacts in 2021, the total number of fatalities increased in 2020 and 2021 relative to previous years. MassDOT cannot use a pure trendline approach to set the CY 2023 targets since the Investment and Jobs Act (IIJA) requires "performance targets to demonstrate constant or improved performance". In light of this, MassDOT developed the CY 2023 targets "… by projecting 2022 fatalities to be equal to 3% higher than the state's lowest year in recent history (2019), and projecting 2023 fatalities to be equal to 3% lower than 2019." The result is a

[1] Source for all data and Targets: MassDOT CY23 Safety Performance Targets (PM1)

projected future downward trend. The five-year average fatalities are projected to decrease from 360 (2017-2021) to 355 (2019-2023) which is a 1.69% decrease. The Rate of Fatalities per 100 million vehicle miles traveled represents five-year average fatalities divided by five-year average VMTs. The pandemic severely impacted VMT causing the fatality rates to rise in 2020 with significantly lower VMT and a slightly higher number of fatalities, along with the ongoing impacts in 2021. The CY 2023 projection is 0.59 fatalities per 100 million VMT for the five-year average of 2019-2023.

For the CY 2023 Total Serious Injury Target, the 2020-2022 serious injury data were not finalized in the IMPACT crash data portal at the time of the CY 2023 target setting. MassDOT used the total serious injury data that was available as of April 2022. Due to the higher speeding rates caused by the decreased VMT during the pandemic shutdowns in 2020 and the ongoing impacts in 2021, the total serious injuries increased in 2020 and 2021 relative to previous years. In light of this, MassDOT developed the CY 2023 targets by projecting the 2022 annual total serious injuries to be equal to the lowest year in recent history and the 2023 annual total serious injuries to continue a downward trend at roughly 10% annual decrease, that reflects the average decreases in the years in which the state experienced reductions in total serious injuries. This resulted in a projected five-year average number of total serious injuries dropping from 2,626 (2017-2021) to 2,569 (2019-2023) for a reduction of 1.99%. The Rate of Total Serious Injuries per 100 million vehicle miles traveled represents five-year average divided by five-year average VMTs. The pandemic severely impacted the total serious injury rate. Following the methods used for the Rate of Fatalities above, the projection is expected to be 4.25 total serious injuries per 100 million VMT (2019-2023) which is down from 4.30 total serious injuries per 100 million VMT (2017-2021) for a reduction of 1.57%.

For the CY 2023 Total Number of Non-Motorized Fatalities and Serious Injury Target, the total number of non-motorist fatalities and serious injuries decreased significantly during the beginning of the pandemic in 2020, followed by an increase in 2021 and further increase to start 2022 which made tracking the trend difficult. In light of this, total non-motorized fatalities and serious injuries for 2022 were set to be equal to 3% higher than the most recent lowest year, and 2023 were set to be 3% lower than the most recent lowest year. This resulted in a five-year

average of total non-motorist fatalities and serious injuries reducing from 467 (2017-2021) to 437 (2019-2023) for a reduction of 6.86%.

Fatalities and serious injuries are expected to decrease based on MassDOT efforts in the areas of speed management and safe systems, among other safety strategies. 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 to establish their own each year.

The safety measures MassDOT has established for CY 2023, and that Montachusett MPO has adopted, are as follows:

1) Fatalities: The target number of fatalities for years CY 2023 is 355 (2019-2023), down from an average of 360 fatalities for the years 2017-2021. [See 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 2023 is 0.59 (2019-2023), which is equal to the average for years 2017–2021. [See 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 CY 2023 is 2,569 (2019-2023), down from the average of 2,626 for years 2017–2021. [See 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 serious injury rate target for CY2023 is 4.25 (2019-2023), down from the 4.30 average for years 2017–2021. [See Figure 2 for Montachusett MPO vs. statewide comparison of the trend for this performance measure]
5) Total Number of Combined Incapacitating Injuries and Fatalities for Non-Motorized Modes: The CY 2023 target number of fatalities and incapacitating injuries for non-motorists is 437 (2019-2023), down from the average of 467 for years 2017–2021. [See Figure 3 for Montachusett MPO vs. statewide comparison of the trend for this performance measure]

Figure 3-1 Total Fatalities Per 5-Yr Rolling Average

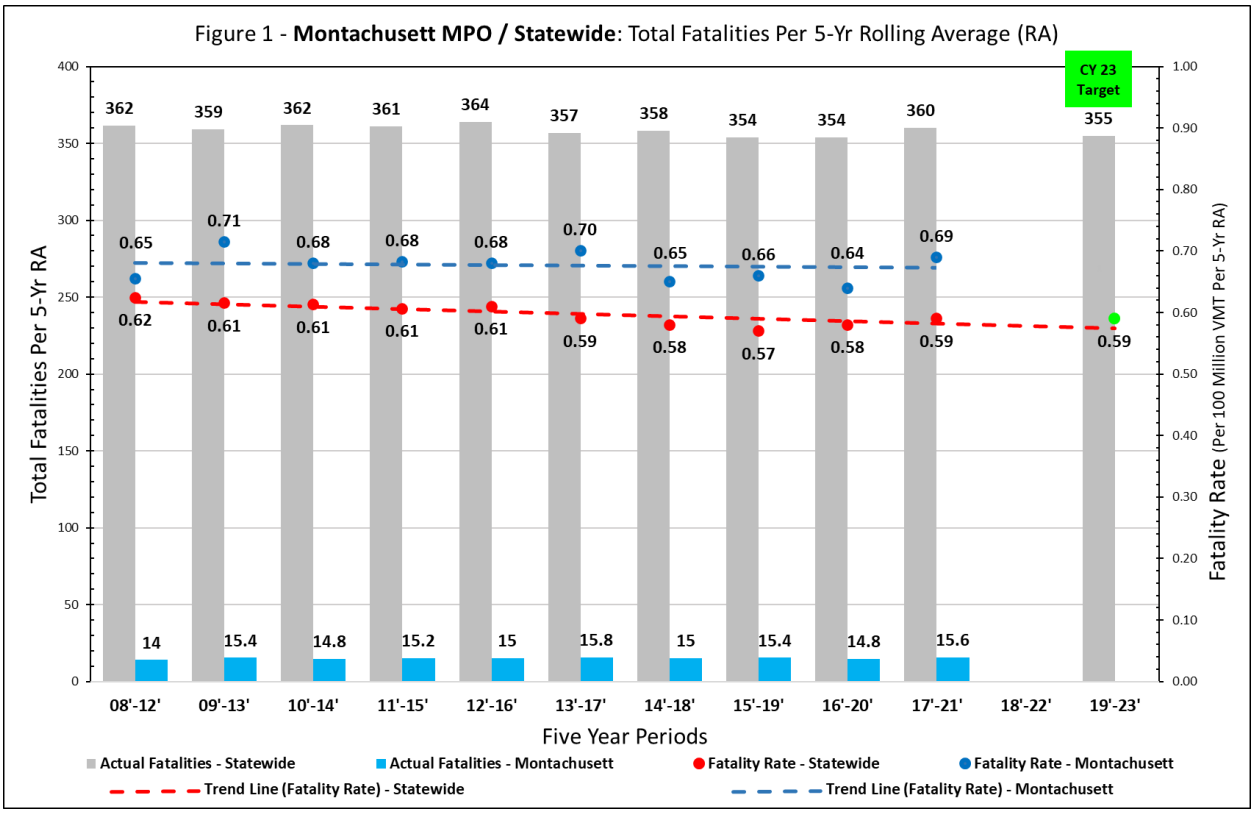


Figure 3-2 Total Serious Injury Per 5-Yr Rolling Average

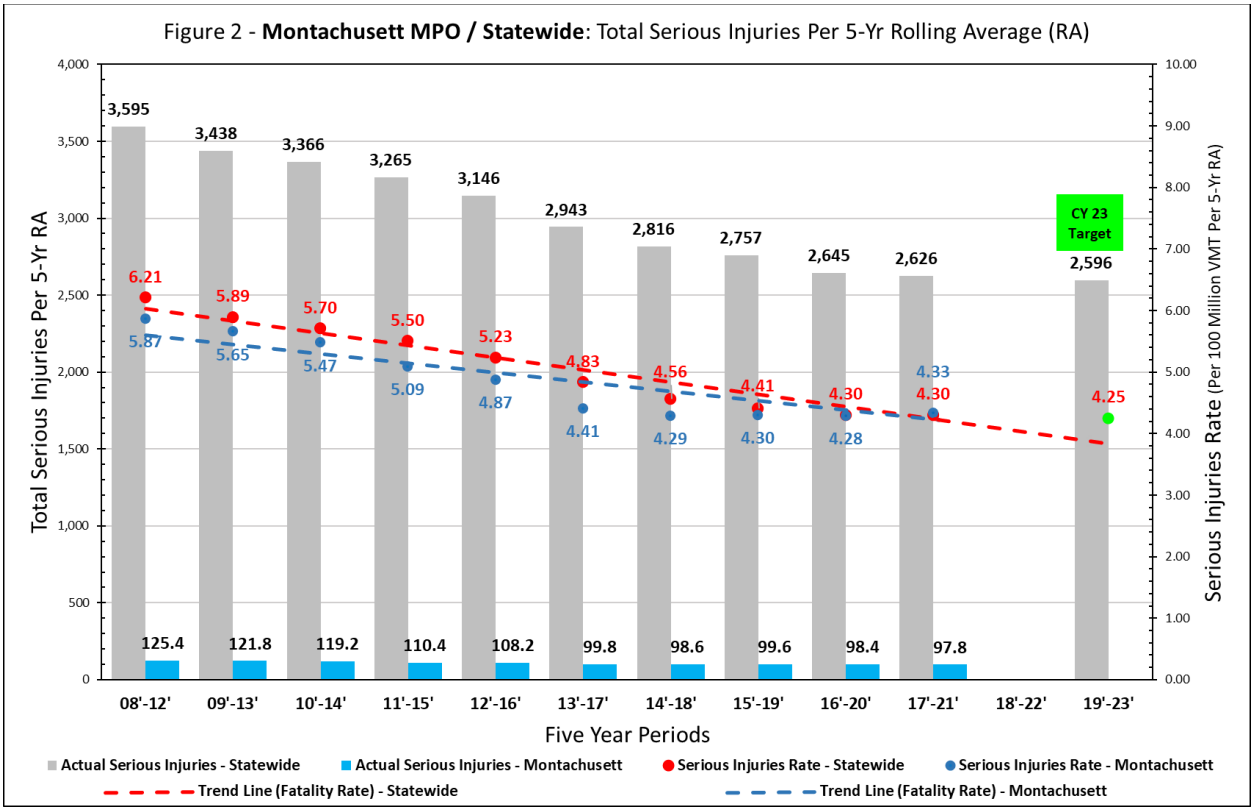
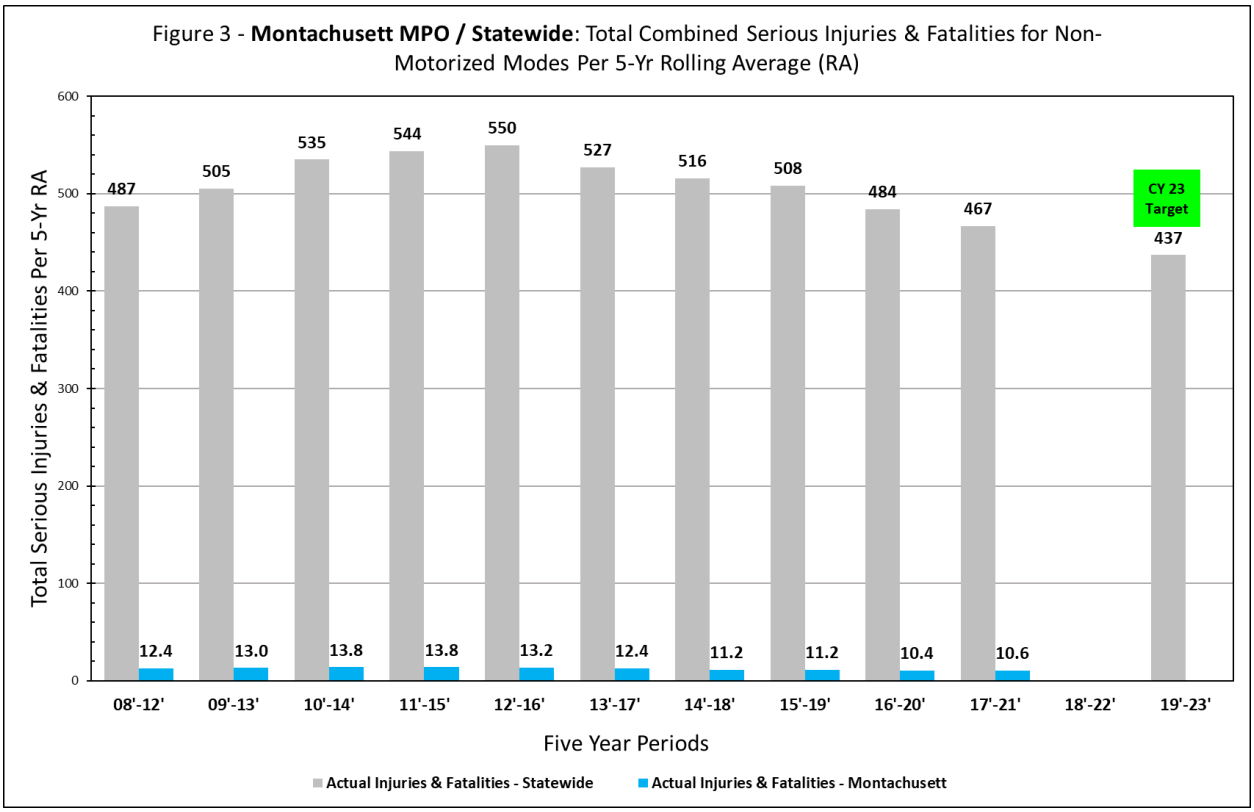


Figure 3-3 Total Combined Serious Injuries & Fatalities for Non-Motorized Modes Per 5-Yr Rolling Average



Source of Data: MassDOT, Office of Transportation Planning

Bridge & Pavement Performance Measures (PM2)

Montachusett MPO has chosen to adopt the 2-year (2024) and 4-year (2026) statewide bridge and pavement performance measure targets set by MassDOT. MassDOT was required to adopt a statewide target by December 16th, 2022. In setting these targets, MassDOT has followed FHWA guidelines by measuring bridges and pavement condition using the 9-point National Bridge Inventory Standards (NBIS); the International Roughness Index (IRI); the presence of pavement rutting; and the presence of pavement cracking. 2-year and 4-year targets were set for six individual performance measures: percent of bridges in good condition; percent of bridges in poor condition; percent of Interstate pavement in good condition; percent of Interstate pavement in poor condition; percent of non-Interstate pavement in good condition; and percent of non-Interstate pavement in poor condition. All of the above performance measures are tracked in greater detail in MassDOT's 2022 Transportation Asset Management Plan (TAMP).

Targets for bridge-related performance measures were determined by identifying which bridge projects are programmed and projecting at what rate bridge conditions deteriorate. The bridge-related performance measures quantify the percentage of deck area, rather than the total number of bridges.

Performance targets for pavement-related performance measures were based on a single year of data collection, and thus were set to remain steady under the guidance of FHWA. These measures are to be revisited at the 2-year mark (2024), once three years of data are available, for more informed target setting.

MassDOT continues to measure pavement quality and to set statewide short-term and long-term targets in the MassDOT Performance Management Tracker using the Pavement Serviceability Index (PSI), which differs from IRI. These measures and targets are used in conjunction with federal measures to inform program sizing and project selection.

Table 3-1: Bridge Conditions

Performance Measure	Current (2021)	2-year target (2024)	4-year target (2026)
Bridges in good condition	16%	16%	16%
Bridges in poor condition	12.2%	12%	12%
Interstate Pavement in good condition	71.8%	70%	70%
Interstate Pavement in poor condition	0.0%	2%	2%
Non-Interstate Pavement in good condition		30%	30%
Non-Interstate Pavement in poor condition		5%	5%

Reliability, Congestion, & Emissions Performance Measures (PM3)

Montachusett MPO has chosen to adopt the 2-year (2024) and 4-year (2026) statewide reliability, congestion, and emissions performance measure targets set by MassDOT. MassDOT was required to adopt a statewide target by December 16, 2022, with MPOs either adopting the statewide target or establishing their own by June 2023.

MassDOT followed FHWA regulation in measuring Level of Travel Time Reliability (LOTTR) on both the Interstate and non-Interstate NHS as well as Truck Travel Time Reliability (TTTR) on the Interstate system using the National Performance Management Research Dataset (NPMRDS) provided by FHWA. These performance measures aim to identify the predictability of travel times on the roadway network by comparing the average travel time along a given segment against longer travel times. For LOTTR, the performance of all segments of the Interstate and of the non-Interstate NHS are defined as either reliable or unreliable based on a comparison between the 50th percentile travel time and the 80th percentile travel time, and the proportion of reliable segments is reported. For TTTR, the ratio between the 50th percentile travel time and the 90th percentile travel time for trucks only along the Interstate system is reported as a statewide measure.

Emissions reduction targets are measured as the sum total of all emissions reductions anticipated through CMAQ-funded projects in non-attainment or air quality maintenance areas (currently the cities of Lowell, Springfield, Waltham, and Worcester, and the town of Oak Bluffs) identified in the Statewide Transportation Improvement Program (STIP). This anticipated emissions reduction is calculated using the existing CMAQ processes.

Table 3-2: Travel Time Reliability

Measure	Current (2021)	2-year (2023)	4-year (2025)
Interstate LOTTR	84.2%	74.0%	76.0%
Non-Interstate LOTTR	87.2%	85.0%	87.0%
TTTR	1.61	1.80	1.75
PHED (Boston UZA)	18.0	24.0	22.0
PHED (Springfield UZA)	6.2	6.5	6.0
PHED (Worcester UZA)	6.8	7.0	5.0
% non-SOV (Boston UZA)	36.9%	38.8%	39.8%
% non-SOV (Springfield UZA)	21.5%	22.2%	22.2%
% non-SOV (Worcester UZA)	23.4%	25.4%	26.1%
Emissions Reductions: PM2.5			
Emissions Reductions: NOx	0.490	0.000	0.000
Emissions Reductions: VOC	0.534	0.000	0.000
Emissions Reductions: PM10			
Emissions Reductions: CO	6.637	0.354	0.354

Transit Asset Management

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 (TAM) 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

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.

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) completed a TAM plan in September of 2018 and presented it to the Montachusett MPO. The Montachusett MPO adopted targets in the following categories in the spring of 2019

- Rolling Stock
- Equipment
- Facilities

MART sets new TAM target goals and certifies their plan annually. The TAM Plan was last self-certified by MART on February 4, 2022. The TAM Plan is required to be updated every four years. The next update is due prior to October 1, 2022 in timing with the TIP process.

As dictated by the Final Rule, a Tier I TAM Plan must include the following nine elements:

1) Inventory of Capital Assets – An inventory of the number and type of capital assets. The inventory must include all capital assets that a provider owns, except equipment with an acquisition value under $50,000 that is not a service vehicle.
2) Condition Assessment – A condition assessment of those inventoried assets for which a provider owns or has direct capital responsibility.
3) Identification of Decision Support Tool or Processes – A description of analytical processes or decision-support tools that a provider uses to estimate capital investment needs over time and develop its investment prioritization.
4) Investment Prioritization – A project-based prioritization of investments.
5) TAM policy – A TAM policy is the executive-level direction regarding expectations for transit asset management; a TAM strategy consists of the actions that support the implementation of the TAM policy.
6) Implementation strategy – The operational actions that a transit provider decides to conduct, in order to achieve its TAM goals and policies.
7) List of key annual activities – The actions needed to implement a TAM plan for each year of the plan's horizon.
8) Identification of resources – A summary or list of the resources, including personnel, that a provider needs to develop and carry out the TAM plan.
9) Evaluation plan – An outline of how a provider will monitor, update, and evaluate, as needed, its TAM plan and related business practices to ensure the continuous improvement.

Table 3-3: TAM Performance Measures and Targets

Asset Category - Performance Measure	Asset Class	2022 Target	2023 Target	2024 Target	2025 Target	2026 Target	2027 Target
REVENUE VEHICLES							
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	*BU - Bus*	10%	10%	5%	0%	0%	50%
	CU - Cutaway Bus	20%	20%	20%	15%	15%	10%
	MB - Mini-bus	0%	0%	0%	0%	0%	0%
	MV - Mini-van	N/A					
	VN - Van	0%	0%	0%	90%	90%	0%
EQUIPMENT							
Age - % of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	*Non Revenue/Service Automobile*	0%	0%	0%	0%	0%	0%
	Steel Wheel Vehicles	N/A					
	Trucks and other Rubber Tire Vehicles	17%	12%	10%	10%	5%	5%
	Generators	0%	0%	0%	0%	0%	0%
	Solar Panel Arrays	0%	0%	0%	0%	0%	0%
FACILITIES							
Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	*Administration*	0%	0%	0%	0%	0%	0%
	Maintenance	0%	0%	0%	0%	0%	0%
	Parking Structures	0%	0%	0%	0%	0%	0%
	Passenger Facilities	0%	0%	0%	0%	0%	0%
	Operations/Vehicle Storage	0%	0%	0%	0%	0%	0%

Public Transit Agency Safety Plan (PTASP)

On November 15, 2021, President Biden signed into law the Bipartisan Infrastructure Law (BIL), which authorizes $108 billion over the next five years for public transportation – the most significant federal investment in transit in the nation's history. The BIL amends FTA's safety program at 49 U.S.C. Section 5329(d) (Section 5329(d)) by adding to the public transportation agency safety plan (PTASP) requirements. The requirements under the BIL apply to those transit agencies that must have an Agency Safety Plan in place under the PTASP regulation (49 CFR Part 673). The BIL establishes additional PTASP requirements. Most of these requirements are based on the size of the Urbanized Areas (UZA) that the transit agencies serve.

MART is currently classified as a Small Urban UZA. However new UZA boundaries are being developed with data from the 2020 Census which will affect MART's UZA. New UZA Maps will be released in the summer of 2022. The population will change and there are four possible outcomes which will affect MART's PTASP.

1. The Leominster-Fitchburg UZA will remain a Small Urbanized Zone Area with a total population of less than 200,000.
2. The Leominster-Fitchburg UZA will change from a Small Urban to a Large Urban with a total population above 200,000.
3. The Leominster-Fitchburg UZA will be split into new Urbanized Zones with some municipalities brought into the Boston UZA and some creating a new Small Urban UZA. If Fitchburg and Leominster are brought into the Boston UZA our plan must abide by the Large Urban rules.
4. The Leominster-Fitchburg UZA will be absorbed into the Boston UZA completely, also changing to a Large Urban UZA.

New Requirements:

- §(1) Each recipient or State shall certify that the recipient or State has established a comprehensive agency safety plan (ASP) that includes:

  (A) For each recipient serving an urbanized area with a population of <u>fewer than 200,000</u>, a requirement that the ASP be developed in cooperation with frontline employee

representatives, followed by the board of directors (or equivalent entity) of the recipient approve, the agency safety plan and any updates to the ASP. If the transit agency is not already compliant with the new PTASP requirements, an update to the agency's ASP must be updated to incorporate these new requirements by December 31, 2022.

(B) OR, in the case of a recipient receiving assistance under section 5307 that is serving an urbanized area with a population of 200,000 or more, the safety committee of the entity established under paragraph (5), followed by the board of directors (or equivalent entity) of the recipient approve, the ASP and any updates to the ASP;

(C) Strategies to minimize the exposure of the public, personnel, and property to hazards and unsafe conditions, and consistent with guidelines of the Centers for Disease Control and Prevention or a State health authority, minimize exposure to infectious diseases. Each transit agency should consider identifying mitigations or strategies related to exposure to infectious diseases through the safety risk management process described in the agency's ASP.

(D) In the case of a recipient receiving assistance under section 5307 that is serving an urbanized area with a population of 200,000 or more, a risk reduction program for transit operations to improve safety by reducing the number and rates of accidents, injuries, and assaults on transit workers based on data submitted to the National Transit Database.

(i) A reduction of vehicular and pedestrian accidents involving buses that includes measures to reduce visibility impairments for bus operators that contribute to accidents, including retrofits to buses in revenue service and specifications for future procurements that reduce visibility impairments; and

(ii) The mitigation of assaults on transit workers, including the deployment of assault mitigation infrastructure and technology on buses, including barriers to

restrict the unwanted entry of individuals and objects into the workstations of bus operators when a risk analysis performed by the transit agency determines that such barriers or other measures would reduce assaults on transit workers and injuries to transit workers.

- § No updates to sections 2 and 3.
- § (4) In general, the transit agency (in a large urban area) shall establish performance targets for the risk reduction program using a 3-year rolling average of the data submitted by the recipient to the national transit database under section 5335. Performance targets for a risk reduction program are not required to be in place until FTA has updated the National Public Transportation Safety Plan to include applicable performance measures by December 31, 2022. Find additional guidance on planning and target setting on FTA's Performance-Based Planning pages. Transit operators also must certify they have a safety plan in place meeting the new additional requirements of the rule by December 31, 2022. The plan must be updated and certified by the transit agency annually.
- § (5) In general. —For purposes of this subsection, the safety committee of a recipient (in a large urban area) shall—

  (i) be convened by a joint labor-management process;

  (ii) consist of an equal number of—

    a. frontline employee representatives, selected by a labor organization representing the plurality of the frontline workforce employed by the recipient or, if applicable, a contractor to the recipient, to the extent frontline employees are represented by labor organizations; and

    b. management representatives; and

  (iii) have, at a minimum, responsibility for—

    a. identifying and recommending risk-based mitigations or strategies necessary to reduce the likelihood and severity of consequences identified through the agency's safety risk assessment;

b. identifying mitigations or strategies that may be ineffective, inappropriate, or were not implemented as intended; and
c. identifying safety deficiencies for purposes of continuous improvement

Table 3-4 PTASP Performance Targets

Risk Reduction Performance Targets

Specify performance targets developed for the risk reduction program

The targets below are based on the review of the previous three years of MART's safety performance data.

Mode of Transit Service	Fatalities (Total)	Fatalities (3 Yr Avg)	Injuries (Total)	Injuries (Avg)	Safety Events (Total)	Safety Events (Avg)	Driver Assaults (Total)	System Reliability (Miles between Failures)
Fixed Route	0	0	5	2	2	1	0	33,000
Demand Response	0	0	4	2	2	1	0	100,000

*Rates are per 1,000,000 vehicle revenue miles

OSONOC Events & Injuries: (Other Safety Occurrence Not Otherwise Classified)

Mode of Transit Service	Injuries* (Total)	Injuries (Rate)	Safety Events (Total)	Safety Events (Rate)
Fixed Route	4	1.33	4	1.33
Demand Response	8	2.66	8	2.66

* Indicate that customer was transported by ambulance

Risk Reduction Performance Target Coordination

Describe the coordination with the State and Metropolitan Planning Organization(s) (MPO) in the selection of State and MPO safety performance targets.

The Accountable Executive shares our ASP, including safety performance targets, with the Metropolitan Planning Organization (MPO) in our service area each year after its formal adoption by the Advisory Board. MART's Accountable Executive also provides a copy of our formally adopted plan to the Massachusetts Department of Transportation (MassDOT). MART staff are available to coordinate with MassDOT and the MPO in the selection of MassDOT and MPO safety performance targets upon request.

Targets Transmitted to the State	**State Entity Name**	**Date Targets Transmitted**
	MassDOT	11/16/22
Targets Transmitted to the MPOs	**MPO Name**	**Date Targets Transmitted**
	Montachusett Metropolitan Planning Organization	11/16/22

4

Regional Profile

Demographics

Introduction

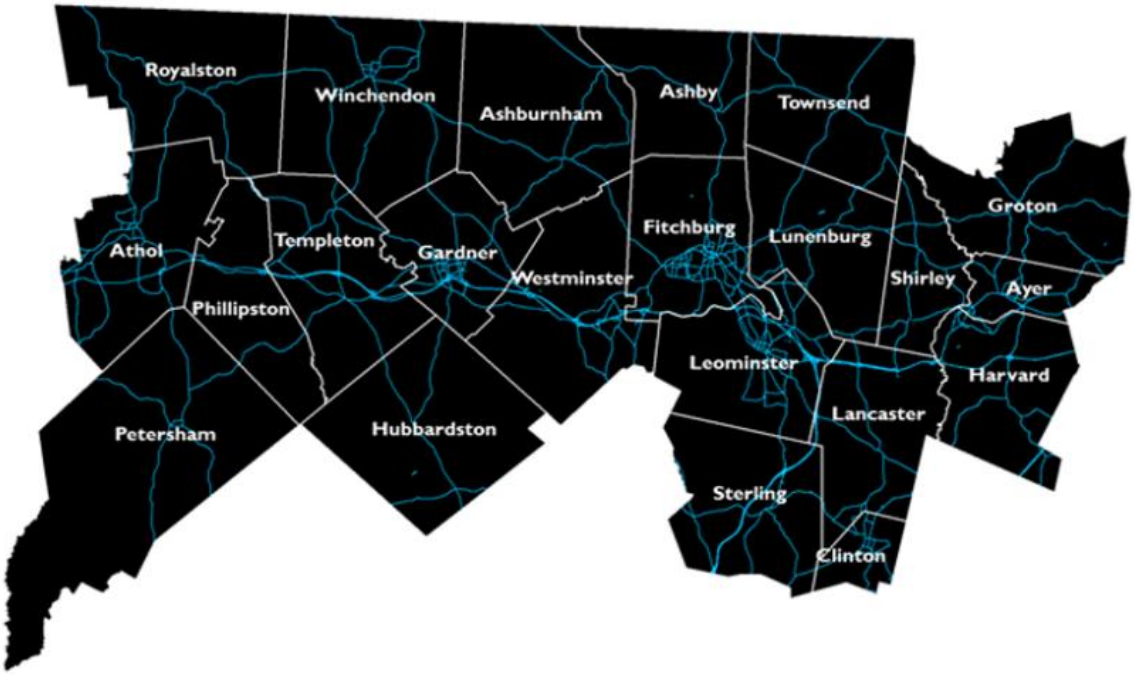
This following provides a profile of the Montachusett region through various sets of data, i.e., the U.S. Census and the American Community Surveys (ACS), as well as various MRPC reports developed in accordance with local studies and contracts.

Through the tables, charts and analyses presented, an understanding of the population that comprises the Montachusett region and its unique features and characteristics can be gained. The various data sets presented highlight the continued changing face of the region and help provide some background to the relationship that exists between the communities and their needs.

It should also be noted that between the last RTP completed in July of 2019 and this update, the Region, Commonwealth, the nation, and the world experienced an unprecedented situation in the form of the COVID19 pandemic. In an attempt to limit the spread and effectiveness of the virus, many policies, restrictions, and mandates were implemented by all levels of government. From mid-2020 to late 2022/early 2023, the most heavily impacted COVID years, these mandates had a significant effect on every business and employment sector and individual in the Region. These impacts may be reflected in some of the demographic data presented.

Background and History

Comprised of 22 communities located in north central Massachusetts, the region measures approximately 685 square miles in size. Of this area, approximately 654 square miles (or approximately 95%) is land.



The Montachusett Region's earliest settlements were founded as trading outposts. By the second half of the eighteenth century, most communities in the region were settled. Originally, local economies focused on agriculture but, since farming provided a poor return, manufacturing quickly became the dominant economic force in the region.

Montachusett communities harnessed streams and rivers for water-powered manufacturing originally allied with agricultural production. By the mid-nineteenth century, the production of lumber and wood products became the region's largest industry, and the City of Gardner was known internationally as a major center of chair manufacturing.

Growth in the region was accelerated by railroad connections enabling the easy transport of materials, goods and people. Communities with an industrial base prospered and expanded with the influx of migrants both foreign and US born. Smaller towns did not see the same widespread growth.

The 20th Century saw a period of economic decline caused by the migration of industries to southern states and the Great Depression. The smaller industrialized communities suffered severely and recovered slowly. Local economies, recognizing the instability of the region's industrial base, are undergoing a transition away from specialization in manufacturing industries. One successful foray has proven to be tourism with the creation of Johnny Appleseed theme marketing and the Johnny Appleseed Trail Association, Inc. (JATA) especially visible in Phillipston and Leominster.

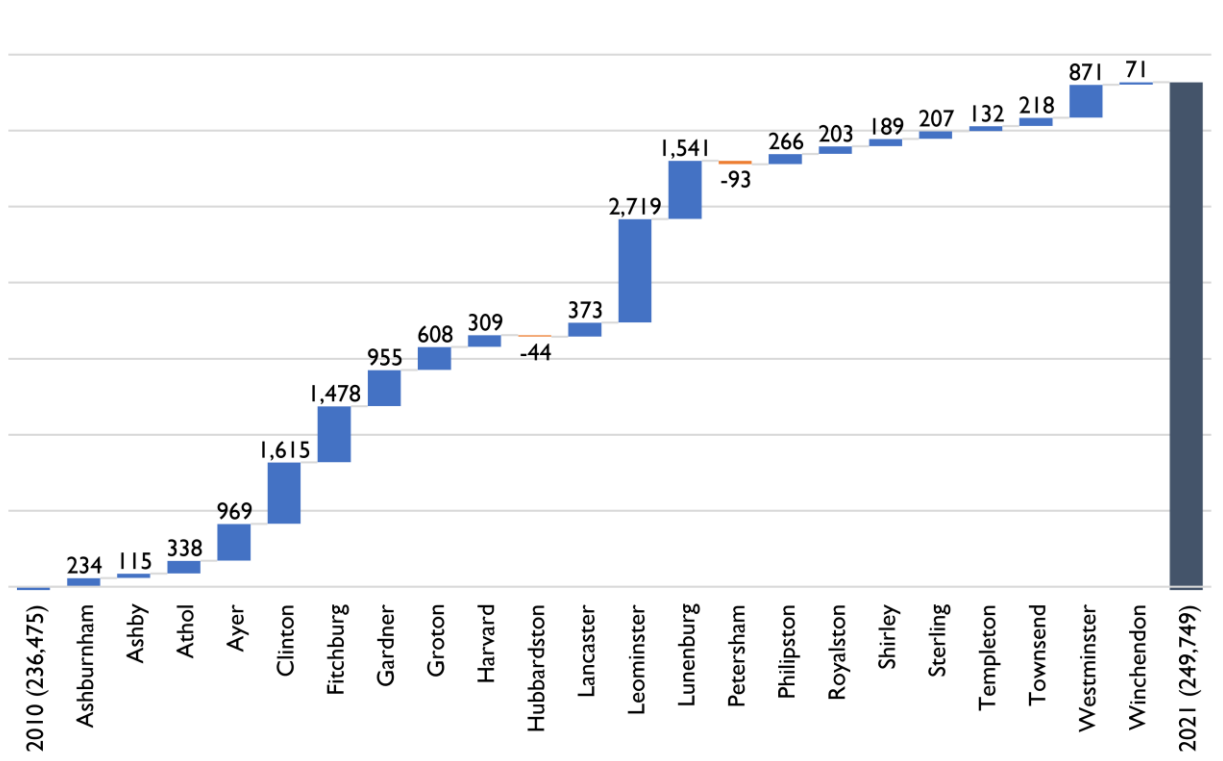
Regional Analysis

The following section identifies and highlights several key demographics for the Montachusett Region. From a review of this information, a series of regional trends and developments are identified. These trends, combined with input from the general public and local officials, will help to establish the future growth of the Montachusett Region. Again, it must be noted that the COVID pandemic years of 2020 to 2022 impacted a lot of the happenings in the Region and consequentially will have affected the trends and developments identified when compared to where the Region stood in 2019 at the development of the last RTP.

A. Population

The Montachusett Region witnessed a 5.6% increase in its population from 2010 to 2021, welcoming an estimated 13,274 new residents during this time (see Figure 4 -1). As of 2021, the Region boasts a population of 249,749 residents across its 22 communities.

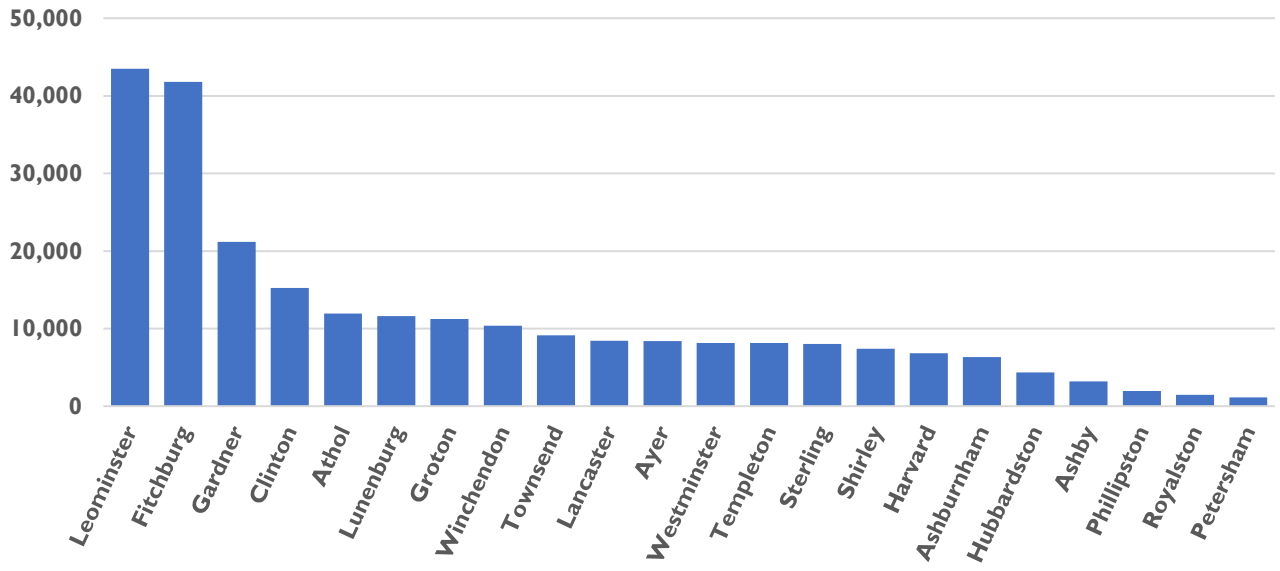
Figure 4.1-1: Population Change in the Montachusett Region (2010 to 2021)



Source: US Census, American Community Survey (2017-2021) 5-Year Estimates

Leominster saw the largest population increase in recent years with approximately 2,719 new residents (a 6.6% increase from 2010). The majority of communities saw more modest population increases, while two communities – Hubbardston and Petersham – experienced a slight decline in population (-1% and -7.5% respectively).

Figure 4.1-2: Population by Community

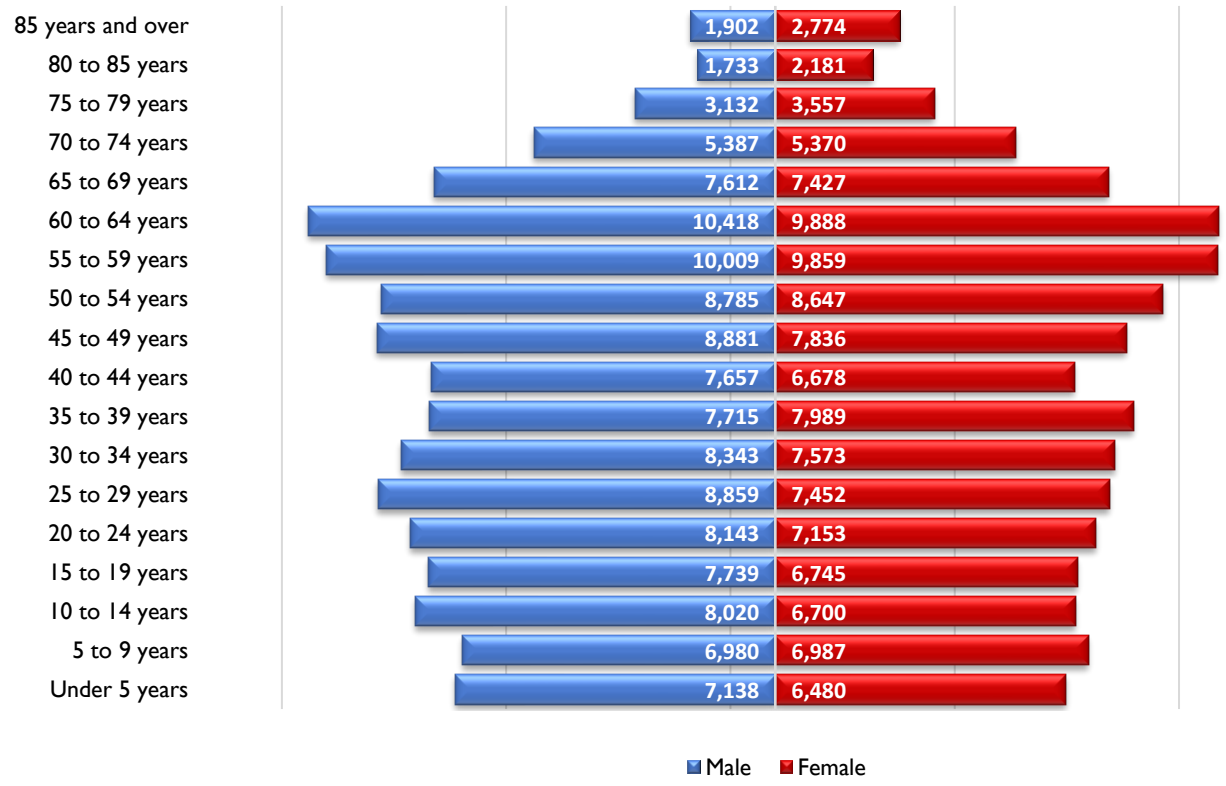


Source: American Community Survey (2017-2021) 5-Year Estimates

B. Age

The Montachusett Region is considerably older than the state or nation as a whole (see Figure 4 - 3), a trend that has been steadily rising in recent decades. In 2021, 19 of the Region's 22 communities had a higher median age than Massachusetts, up from just eight in 1990. According to the most recent data from the American Community Survey (ACS), slightly under one-quarter (22.7%) of Montachusett residents are between the ages of 45 and 59 years old.

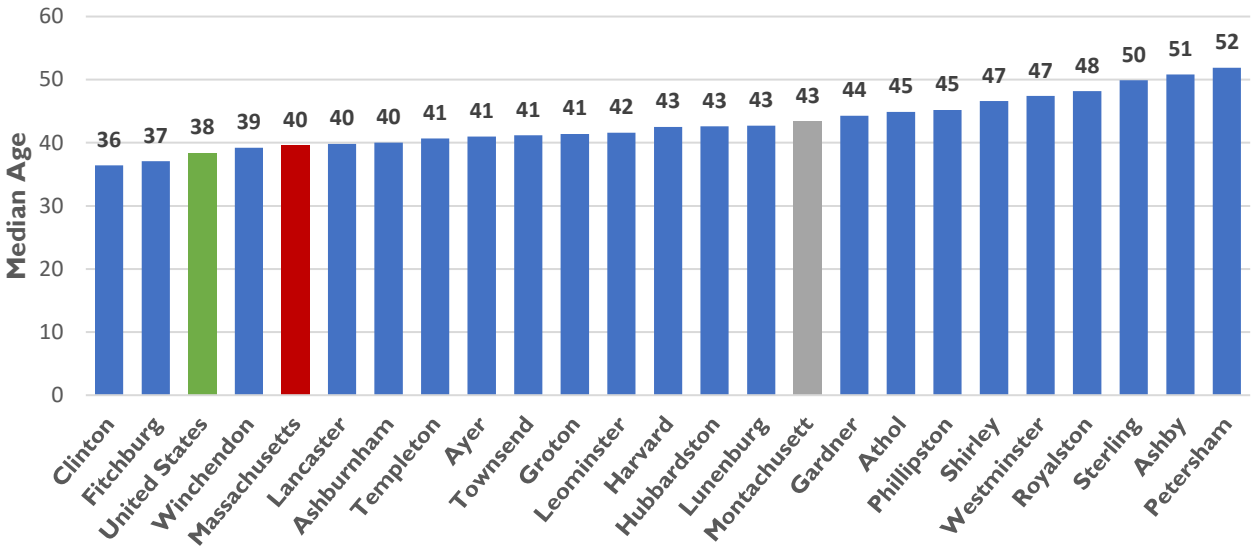
Figure 4.1-3: Age Distribution by Gender, Montachusett Region



Source: American Community Survey (2017-2021) 5-Year Estimates

The large proportion of residents nearing retirement age poses a number of planning challenges for the Region, including ensuring accessibility to health care services, public transportation, senior housing, as well as generational shifts in employment and succession in the workforce.

Figure 4.1-4: Median Age in Montachusett Communities Compared to Massachusetts and the US

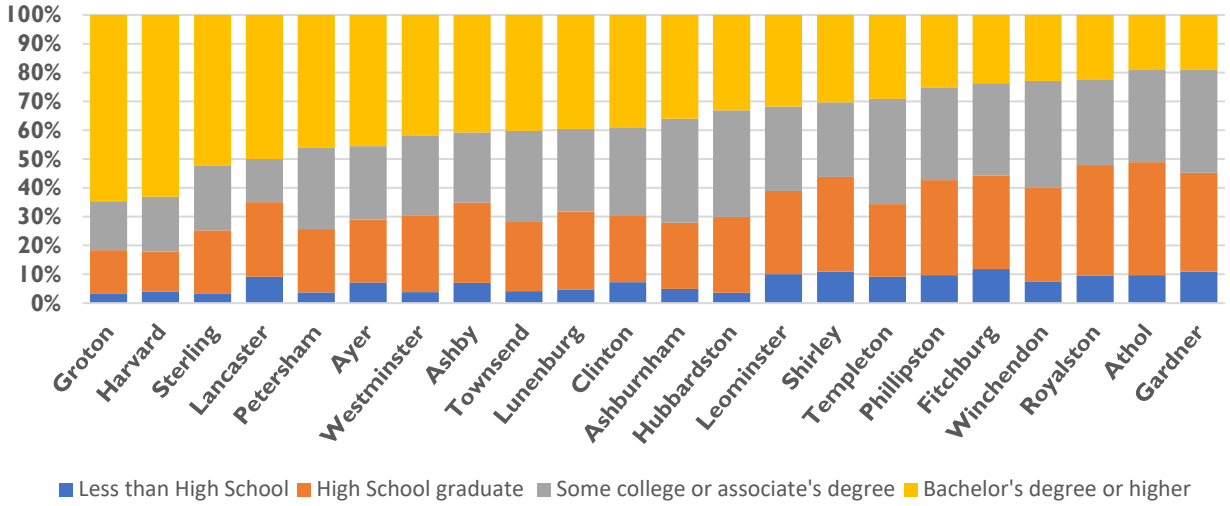


Source: American Community Survey (2017-2021) 5-Year Estimates

C. Educational Attainment

Montachusett communities range considerably in terms of highest level of educational attainment (see Figure 4.1-5).

Figure 4.1-5: Highest Level of Educational Attainment, Montachusett Region



Source: American Community Survey (2017-2021) 5-Year Estimates

Groton boasts the highest percentage of residents with a bachelor's degree or higher with 64.6% of residents holding a bachelor's or post-graduate degree (nearly 3.5 times that of Gardner).

In Table 4 - 1, we see flatlining levels of educational attainment across the board for those aged 25 to 34 years old. Graduation rates between 2000 and 2021 grew for both males and females for both high school and bachelor's degrees and higher. Most significantly, we witnessed a 25% increase in the proportion of women aged 25 to 34 years old with a bachelor's degree or higher.

Table 4-1.1: Highest Level of Educational Attainment (Aged 25 to 34 years)

Highest Level of Educational Attainment	Male		Female	
	2000	2021	2000	2021
High school degree or higher	85.3%	90.1%	90.7%	93.3%
Bachelor's degree or higher	21.2%	23.3%	27.3%	32.0%

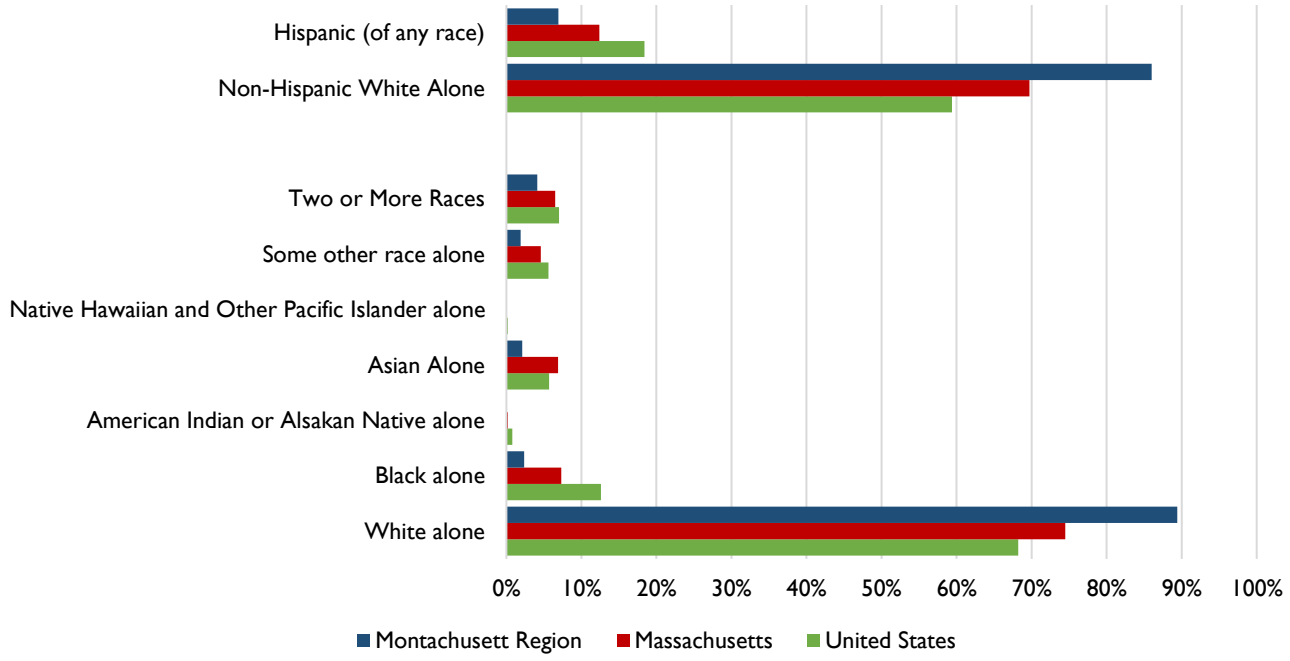
Source: US Census, American Community Survey (2017-2021) 5-Year Estimates

Still, educational attainment in the region remains lower than the state as a whole. In 2021, it was estimated than 92.1% of men and 94.4% of women aged 25 to 34 in Massachusetts received a high school degree or higher, while 46% and 55.8% received a bachelor's degree or higher. The trend toward having a more educated population is valuable as the economic sustainability of the region depends on ensuring a robust workforce that includes young professionals and careers to support their success.

D. Race

The Montachusett Region remains a predominantly white region but is trending toward increased diversity. The Region currently has a higher proportion of residents who identify as "white alone" when compared respectively to the state and nation as whole (see Figure 4.1-6).

Figure 4.1-6 Race in the Montachusett Region Compared to Massachusetts and the United States

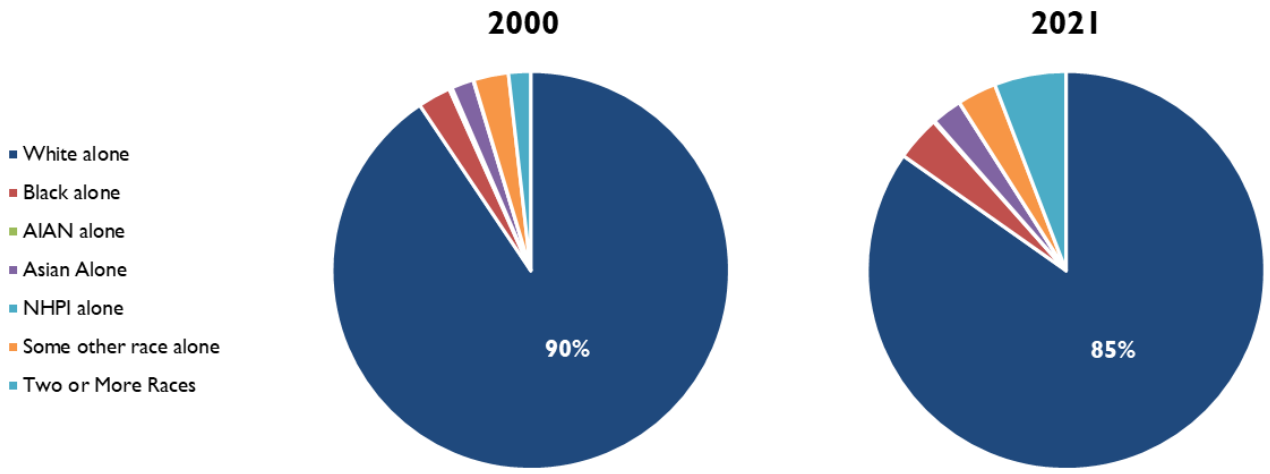


Source: American Community Survey (2017-2021) 5-Year Estimates

However, in the period between 2000 and 2021, we observed the following demographic changes as they pertain to race:

1. The number of Hispanic residents grew from 15,672 to 30,156 (+92.4%)
2. The number of residents who self-identified as Black or African American alone grew from 6,127 to 13,082 (+113.5%)
3. The number of Asian residents grew from 4,098 to 8.368 (+40.1%)
4. The number of residents who identified as two or more races increased from 4,127 to 14,575 (+65.4%)

Figure 4.1-7 Race in the Montachusett Region (2000 to 2021)



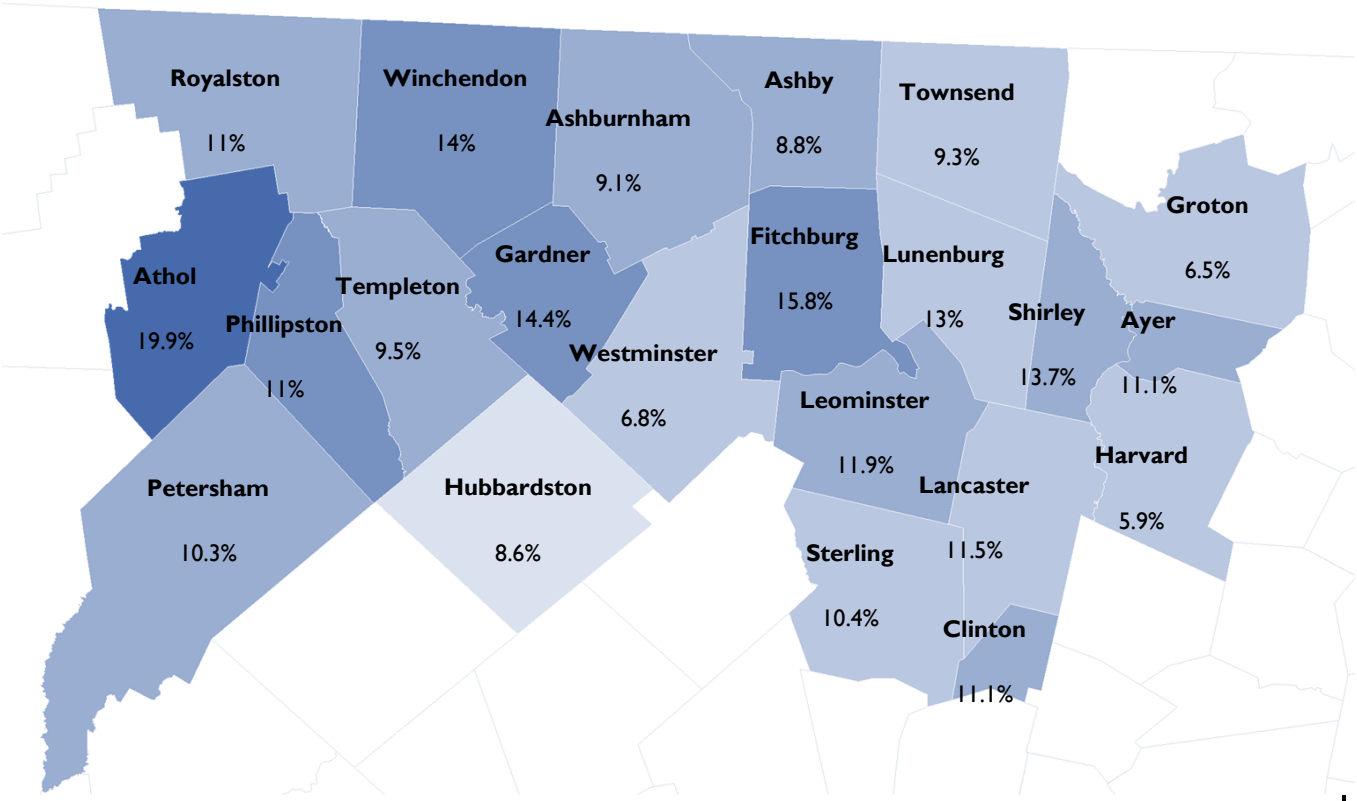
Source: US Census, American Community Survey (2017-2021) 5-Year Estimates

E. Disability

In Massachusetts, 11.6% of total individuals report having a disability (ACS 2021). A disability refers to difficulty hearing, vision, cognitive, ambulatory, self-care, and/or living independently.

Seven Montachusett communities have a higher proportion of residents managing a disability than the state as a whole (Figure 4 - 8), with Athol, Fitchburg, and Gardner topping the list. Among other important planning considerations, the comparatively high percentages of residents with disabilities, and a steadily aging population, emphasizes the importance of multimodal transportation access. Access to transportation services through the Montachusett Regional Transit Authority (MART) offers a vital lifeline for many to ensure equitable access to employment, education, as well as social and healthcare services.

Figure 4.1-8: Individuals with a Disability, Montachusett Region



Source: American Community Survey (2017-2021) 5-Year Estimates

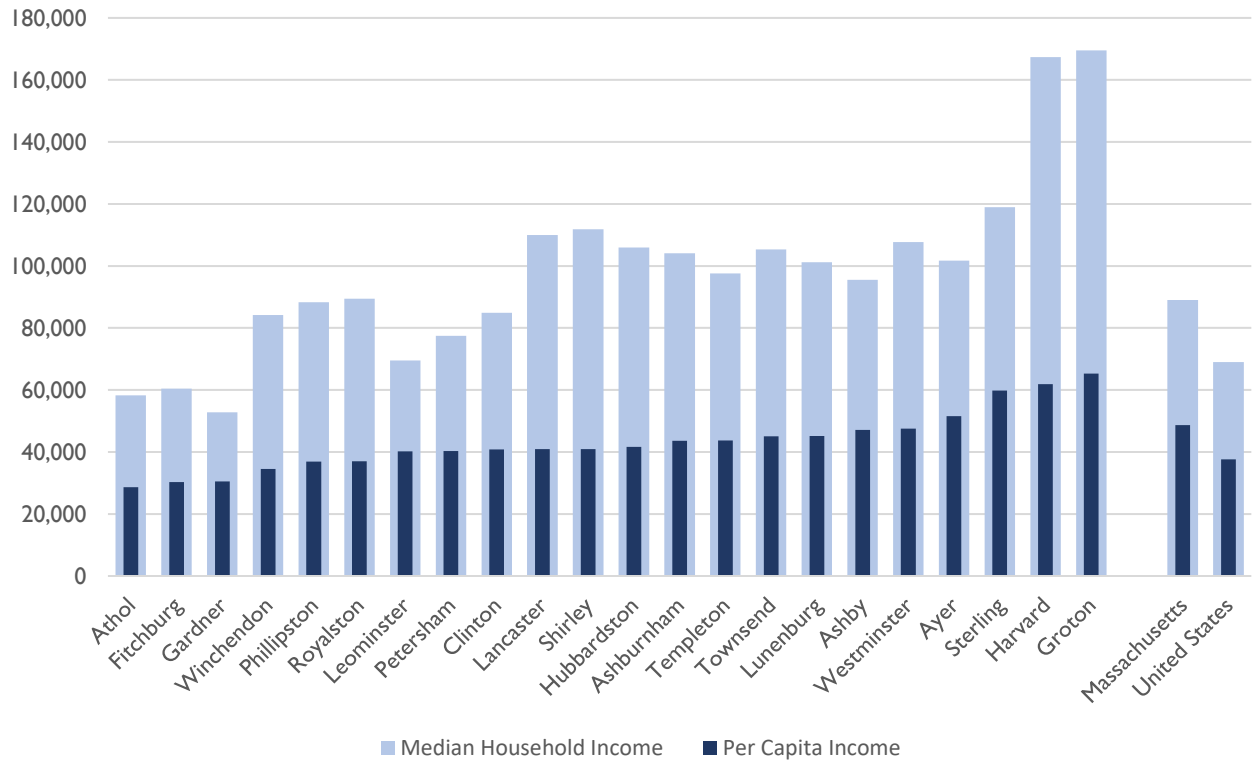
MART currently offers ADA Eligible Paratransit Service to transportation-disabled individuals. Service is provided by lift-equipped vans and is available in the areas that MART provides fixed route bus service. Under the ADA regulations, there are three categories of persons who are eligible for ADA Paratransit Service:

1. Is unable as a result of physical or mental impairment, to get on, ride, or get off an accessible vehicle on the public transit system: or
2. Needs the assistance of a wheelchair lift or other boarding assistance device and is able, with such assistance to get on, ride and get off an accessible vehicle, but such vehicle is not available on the route when the individual wants to travel; or
3. Has specific impairment-related condition including vision, hearing or impairments causing disorientation which prevents travel to or from a station or stop on the system.

F. Income

The ACS collects income and poverty data, and presents both across a range of different categories, including age, gender, race, family structure, occupation, etc. The ACS defines per capita income as the mean money income received in the past 12 months computed for every man, woman, and child in a geographic area. It is derived by dividing the total income of all people 15 years old and over in a geographic area by the total population in that area. (Note: income is not collected for people under 15 years old, even though those people are included in the denominator of per capita income. This measure is rounded to the nearest whole dollar.). In addition to per capita income, median household income is presented here in Figure 4 - 9 for each Montachusett community, as well as the state and nation.

Figure 4.1-9: Per Capita Income and Median Household Income



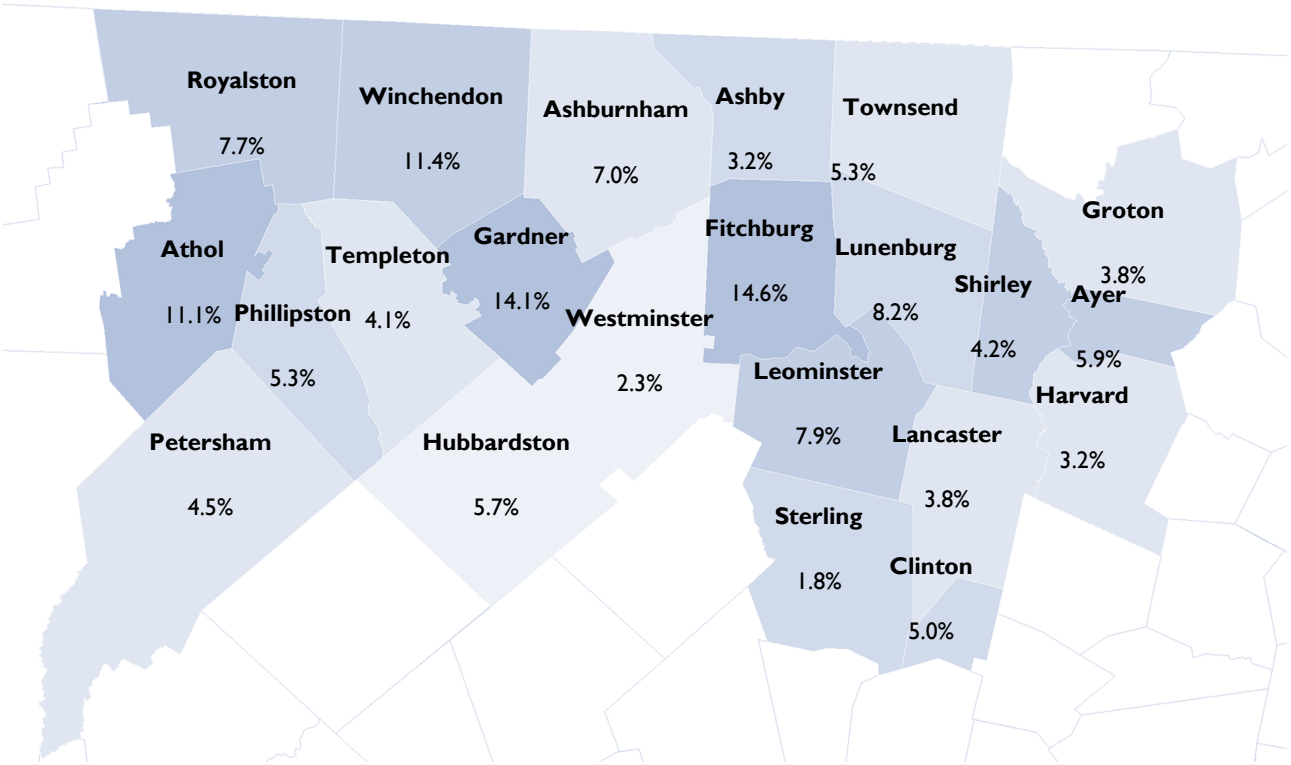
Source: American Community Survey (2017-2021) 5-Year Estimates

Eighteen (18) of the region's 22 communities have a lower per capita income than the state ($48,617), while eight rank below the state when examining median household income (Figure 4 - 9).

G. Poverty

Poverty is calculated as a percentage of the population below the poverty threshold. The Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, that family and every individual in it is considered to be in poverty. The official poverty thresholds do not vary geographically, but they are updated for inflation using the Consumer Price Index (CPI-U). The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps).

Figure 4.1-10: Individuals Living in Poverty, Montachusett Region



Source: American Community Survey (2017-2021) 5-Year Estimates

An estimated 9.9% of individuals are living in poverty within the Commonwealth of Massachusetts. Six Montachusett communities have a higher concentration of poverty than the state as a whole, with Fitchburg (14.6%) and Gardner (14.1%) also exceeding the national poverty rate of 11.3% (Figure 4 - 10).

Between 2020 and 2021, poverty rates in both the region and the state showed a marginal increase, while the nation demonstrated a nominal decrease (Table 4 - 2).

Table 4.1-2: Poverty Rates

Area	2020	2021	1-Year Change
Montachusett Region	5.9%	6.4%	.5%
Massachusetts	9.8%	9.9%	0.1%
United States	12.8%	12.6%	-0.2%

Source: American Community Survey 5-Year Estimates

H. Title VI and Environmental Justice (EJ)

Transportation and social equity through Title VI and Environmental Justice (EJ) all play a key role in the quality of life in the region by shaping access to jobs, housing, services and recreational opportunities and is essential to addressing poverty, unemployment and other equal opportunity goals. It is based on the principle that all people have a right to be protected from harmful or burdensome investments/projects, to live in and enjoy a clean and healthful environment and ensure that these identified communities do not bear a disproportionate burden of obtrusive projects and also share in positive and beneficial investments.

Annually, during the development of the Transportation Improvement Program (TIP) and the Unified Planning Work Program (UPWP), an analysis is conducted on projects and work tasks to assess burdens and benefits on identified Title VI and EJ communities. For these analyses, the 2017-2021 American Community Survey 5-year estimates were utilized. For some of the data, census estimates were only available at the Census Tract level. This data dealt with Foreign Born, Disabilities and Non-English Spoken at Home. The remaining census data estimates were available at the Block Group level. The tables below list the ACS data sources as well as whether they were broken down to the Census Tract or

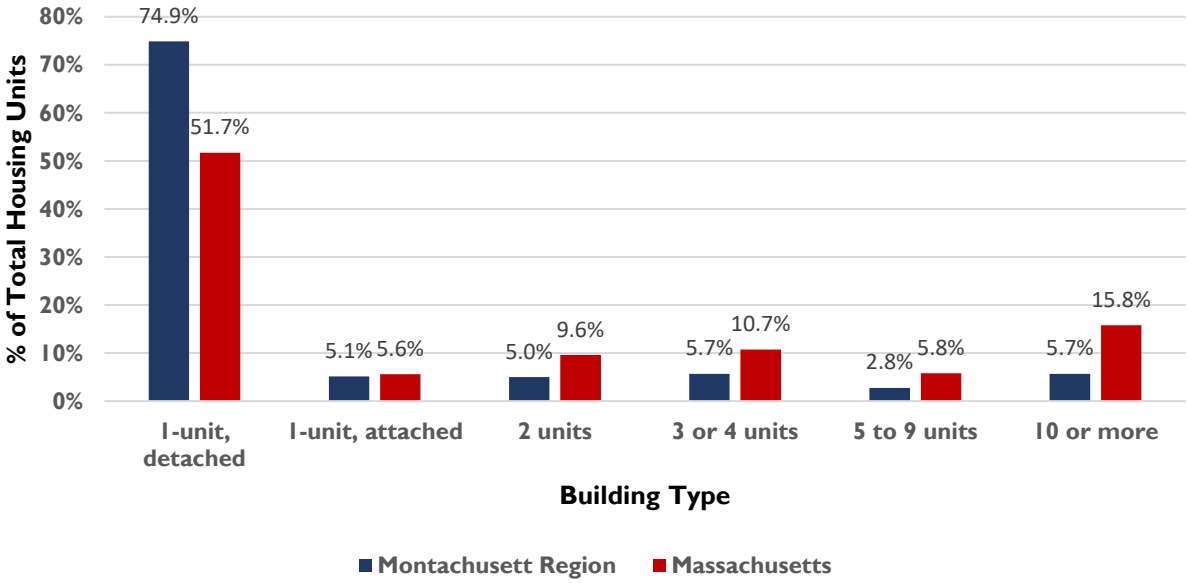
Block Group level. These tables, therefore, were used to determine Environmental Justice (EJ) and Title VI designated areas.

I. Housing Characteristics

To serve their aging populations as well as attract young professionals and working families, Montachusett communities will need to offer a variety of housing options. For many individuals, housing needs changes over a lifetime as household size and income decreases. Ensuring available housing near importance services (e.g. healthcare facilities, public transit, grocery stores) becomes more important as the ability and willingness to drive may decrease as well. Balancing the housing needs of seniors, students, and working families and individuals of all ages represents an ongoing challenge for each of our 22 communities.

Like the state as a whole – but to an even further degree – the majority of housing units in the Montachusett Region are single detached units (Figure 4.1 - 11).

Figure 4.1-11: Housing Units by Building Type

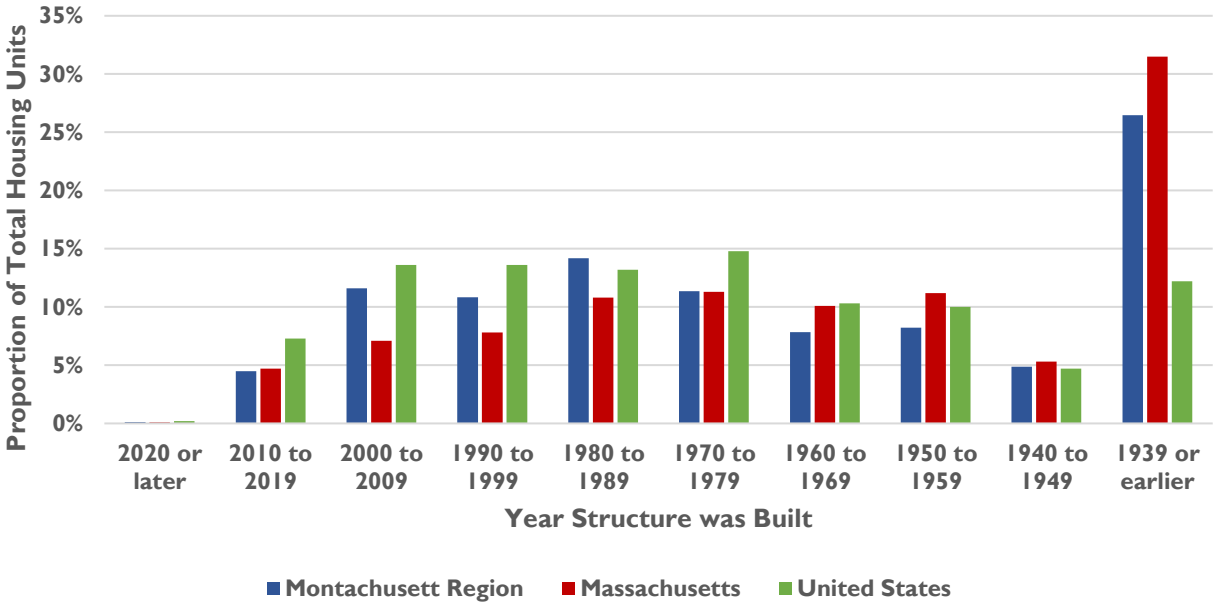


Source: American Community Survey (2017-2021) 5-Year Estimates

The ages of homes in the Montachusett Region are akin to much of New England, with nearly a third of all homes having been built prior to the second World War (Figure 4 - 12). All homes built prior to 1978 (when lead-based house paint was discontinued in the United States) are likely to contain some levels of

lead. Today, the Massachusetts Lead Law requires the removal or covering of lead paint hazards in homes built before 1978 where any children under six live, regardless of their blood lead level.

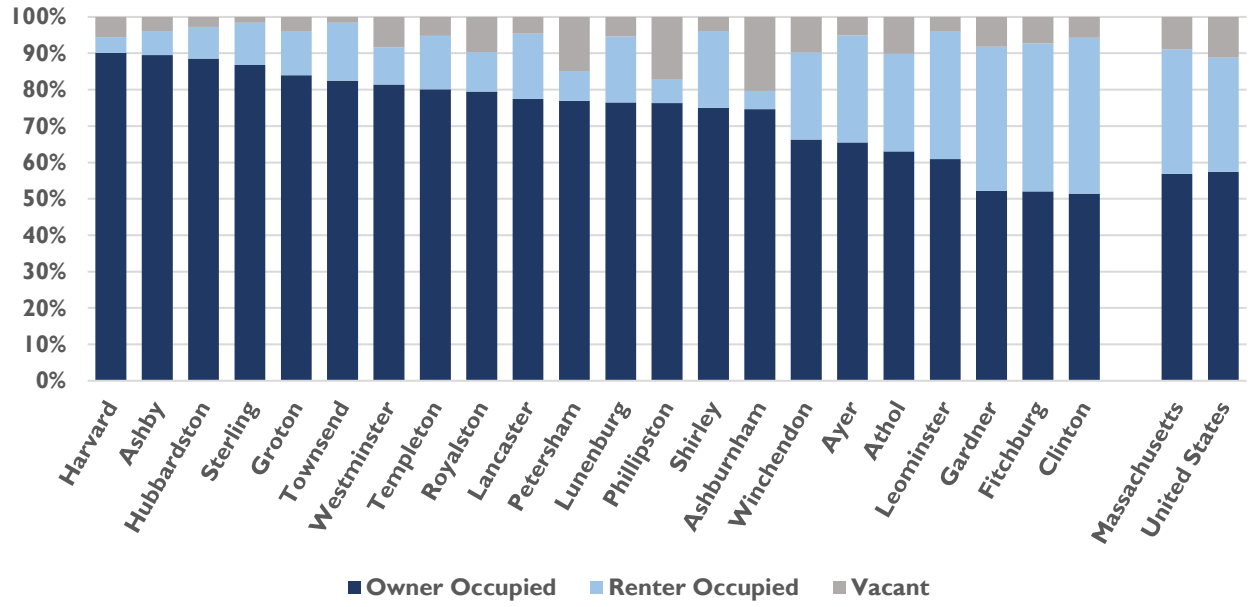
Figure 4.1-12: Proportion of Total Housing Units by Year Structure Was Built



Source: American Community Survey (2017-2021) 5-Year Estimates

Housing occupancy is highly variable between communities in the region (Figure 4 - 13), with homeowner occupancy ranging from as high as 90% in Harvard to as low as 51% in Clinton (compared to 57% in both the state and the nation).

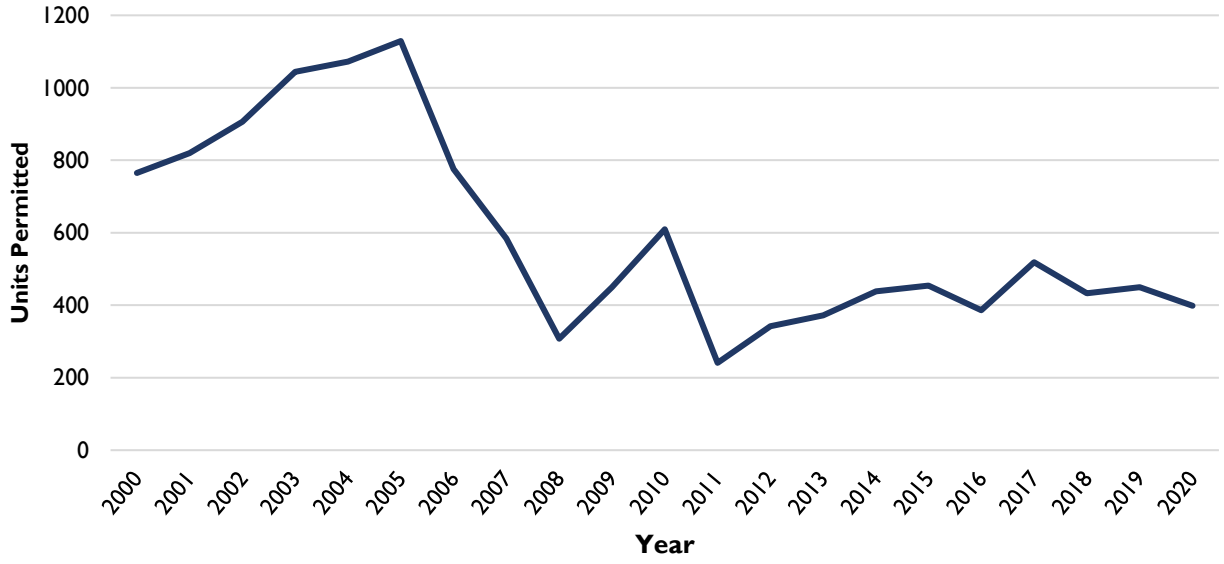
Figure 4.1-13: Housing Occupancy Status



Source: American Community Survey (2017-2021) 5-Year Estimates

In 2010, the region witnessed a spike in housing production which helped break the trend of declining construction which began in 2005 (Figure 4 - 14).

Figure 4.1-14: Number of Housing Units Permitted in the Montachusett Region (2000 to 2020)



Source: US Census Bureau – Annual Building Permit Survey

More than half of the building units permitted in 2010 were concentrated in the community of Lunenburg who supported the production of 308 units that year (of the total 610 in the entire region), including seven housing complexes with an estimated 186 total housing units.

It is generally accepted that a household can afford a home valued up to 30% of the household's annual income before becoming "cost burdened". Those households who pay a higher percentage of their income on housing may – according to the US Department of Housing and Urban Development – "have difficulty affording necessities such as food, clothing, transportation, and medical care". An estimated 16,082 owner-occupied households and 12,309 renter-occupied households are cost burdened throughout the Montachusett Region (Table 4 - 6).

Table 4.1-6: Cost Burden Severity by Community and Housing Occupancy

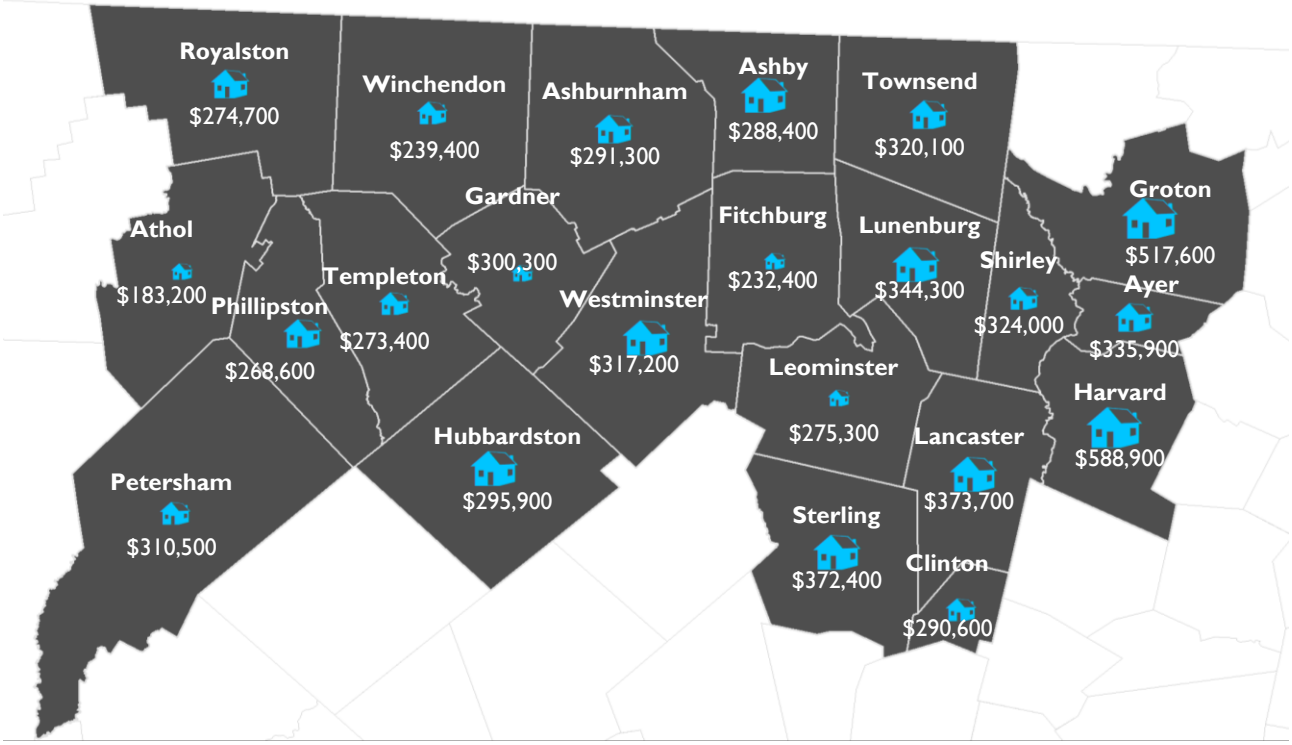
Community	Number of owner-occupied households that are cost burdened	% of owner-occupied households that are cost burdened	Number of renter-occupied households that are cost burdened	% of renter-occupied households that are cost burdened
Ashburnham	438	28.1	68	59.7
Ashby	266	28.2	10	13.5
Athol	845	34.5	788	58.8
Ayer	573	29.2	398	36.6
Clinton	833	31.0	992	34.4
Fitchburg	2,883	45.8	3,572	50.9
Gardner	1,498	43.1	1,642	45.8
Groton	587	21.8	206	52.7
Harvard	333	23.3	38	60.3
Hubbardston	244	20.3	49	47.6
Lancaster	524	29.7	232	54.8
Leominster	2,874	34.1	2,602	41.6
Lunenburg	896	33.5	350	47.3
Petersham	133	47.3	9	23.7
Phillipston	158	31.5	10	27.8
Royalston	120	33.2	30	65.2
Shirley	407	28.6	202	39.3
Sterling	582	35.7	131	39.3
Templeton	666	35.5	124	29.3
Townsend	712	32.0	196	39.2
Westminster	738	36.2	217	62.3
Winchendon	492	21.8	443	47.0

Source: American Community Survey (2017-2021) 5-Year Estimates

Almost twenty-eight percent (27.3%) of owner-occupied households are considered cost-burdened throughout Massachusetts; all but four communities in the Montachusett region exceed this figure. Although fewer total renters experience being cost burdened when compared to homeowners, their rate of burden is significantly higher. Specifically, 49.4% of renter-occupied households spend more than 30% of their income on living expenses across the state, while 8 of 22 Montachusett communities exceed this rate.

Another indicator of housing affordability is the median home value of the region. As a general trend, housing values are highest along the eastern edge of the Montachusett Region in those communities with greatest accessibility to Boston and major employment centers (Figure 4 - 15).

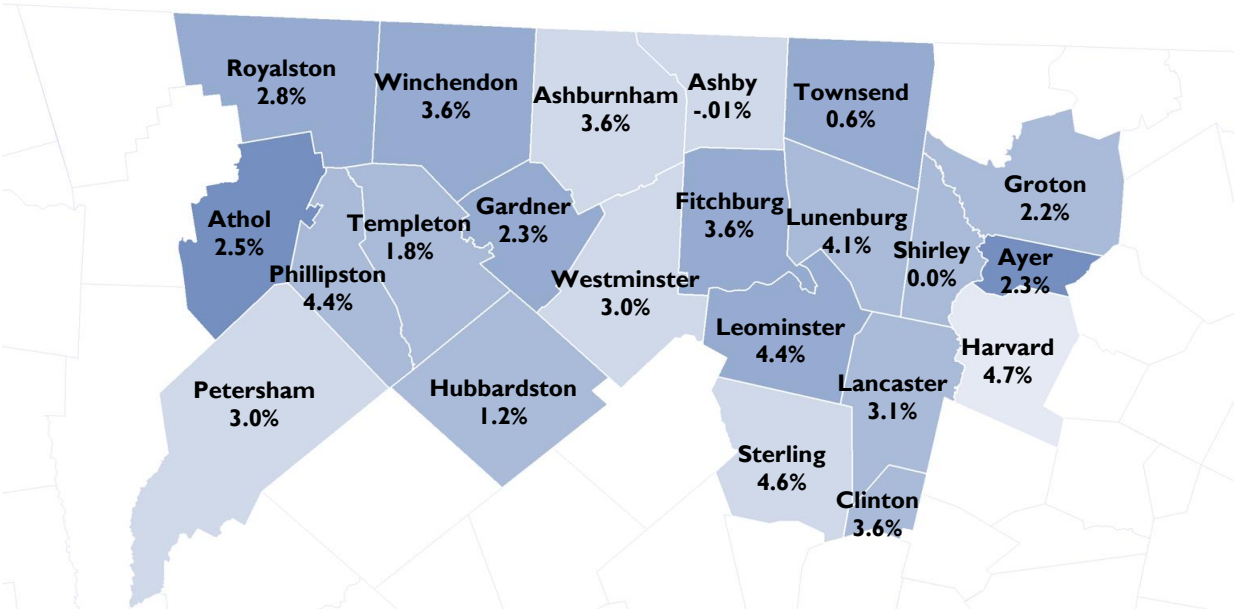
Figure 4.1-15: Median Household Value for Owner-Occupied Households



Source: American Community Survey (2017-2021) 5-Year Estimates

To project future household values, Zillow.com compiles the past six years of home sales data and forecasts ahead a single year (Figure 4 - 16). Housing values are projected to hold steady or slightly increase in every Montachusett community over the next year; in particular, Harvard (4.7%) and Sterling (4.6%) are expected to see moderate growth in their housing markets in the near future.

Figure 4.1-16: One-Year Household Value Projections



Source: Zillow Research 2023

J. Labor Force and Employment

Labor force and employment data were collected and compared across multiple sources, including American Community Survey estimates, ESRI's Business Analyst Online (BAO), and Massachusetts Office of Labor and Workforce Development. Overall, despite significant disruptions since before 2000, manufacturing remains the largest (NAICS 2-digit) employment sector in the region (15.7% of total employees) and integral to the economic health of many communities.

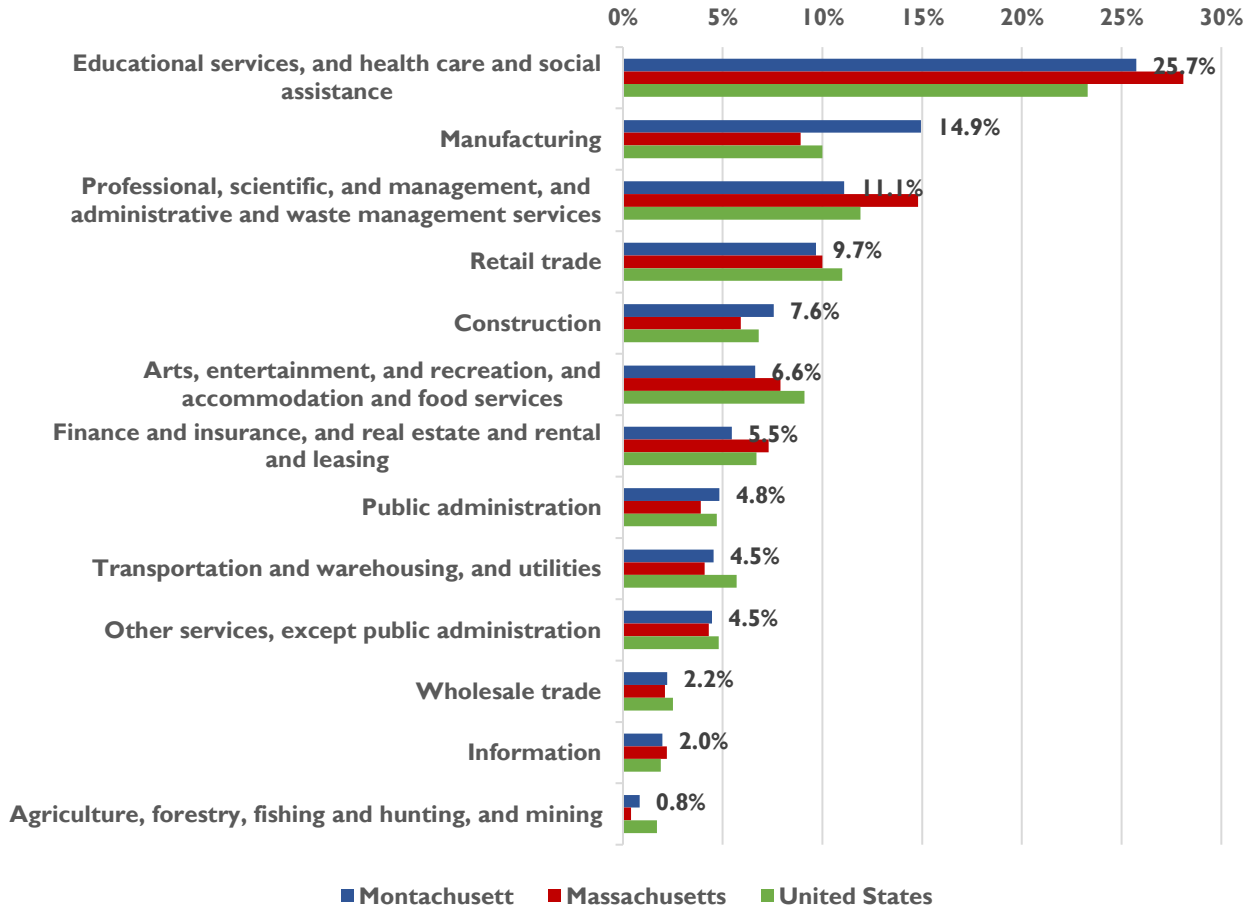
Table 4.1-7: Businesses and Employment by Industry (ESRI BAO 2022)

Industry	Businesses		Employees	
By NAICS Codes	Number	Percent	Number	Percent
Manufacturing	404	4.8%	14,699	15.7%
Health Care & Social Assistance	692	8.2%	14,047	15.0%
Retail Trade	1,096	13.0%	11,243	12.0%
Educational Services	249	3.0%	9,292	9.9%
Accommodation & Food Services	516	6.1%	8,256	8.8%
Other Services (except Public Administration)	1,310	15.6%	5,992	6.4%
Public Administration	466	5.5%	5,774	6.2%
Construction	782	9.3%	4,194	4.5%
Wholesale Trade	322	3.8%	3,929	4.2%
Professional, Scientific & Tech Services	651	7.7%	3,796	4.0%
Arts, Entertainment & Recreation	161	1.9%	2,588	2.8%
Administrative & Support & Waste Management & Remediation Services	298	3.5%	2,020	2.2%
Finance & Insurance	257	3.1%	1,980	2.1%
Real Estate, Rental & Leasing	380	4.5%	1,660	1.8%
Transportation & Warehousing	169	2.0%	1,612	1.7%
Information	181	2.1%	1,399	1.5%
Unclassified Establishments	382	4.5%	550	0.6%
Agriculture, Forestry, Fishing & Hunting	65	0.8%	322	0.3%
Management of Companies & Enterprises	12	0.1%	277	0.3%
Utilities	21	0.2%	172	0.2%
Mining	7	0.1%	71	0.1%
Total	8,421	100.0%	93,873	100.0%

Source: ESRI Business Analyst Online (BAO) 2022

When aggregated (as is done for the American Community Survey estimates), educational services, and health care and social assistance together represent the largest employing industry in the Montachusett Region, as we see in the state and nation as a whole.

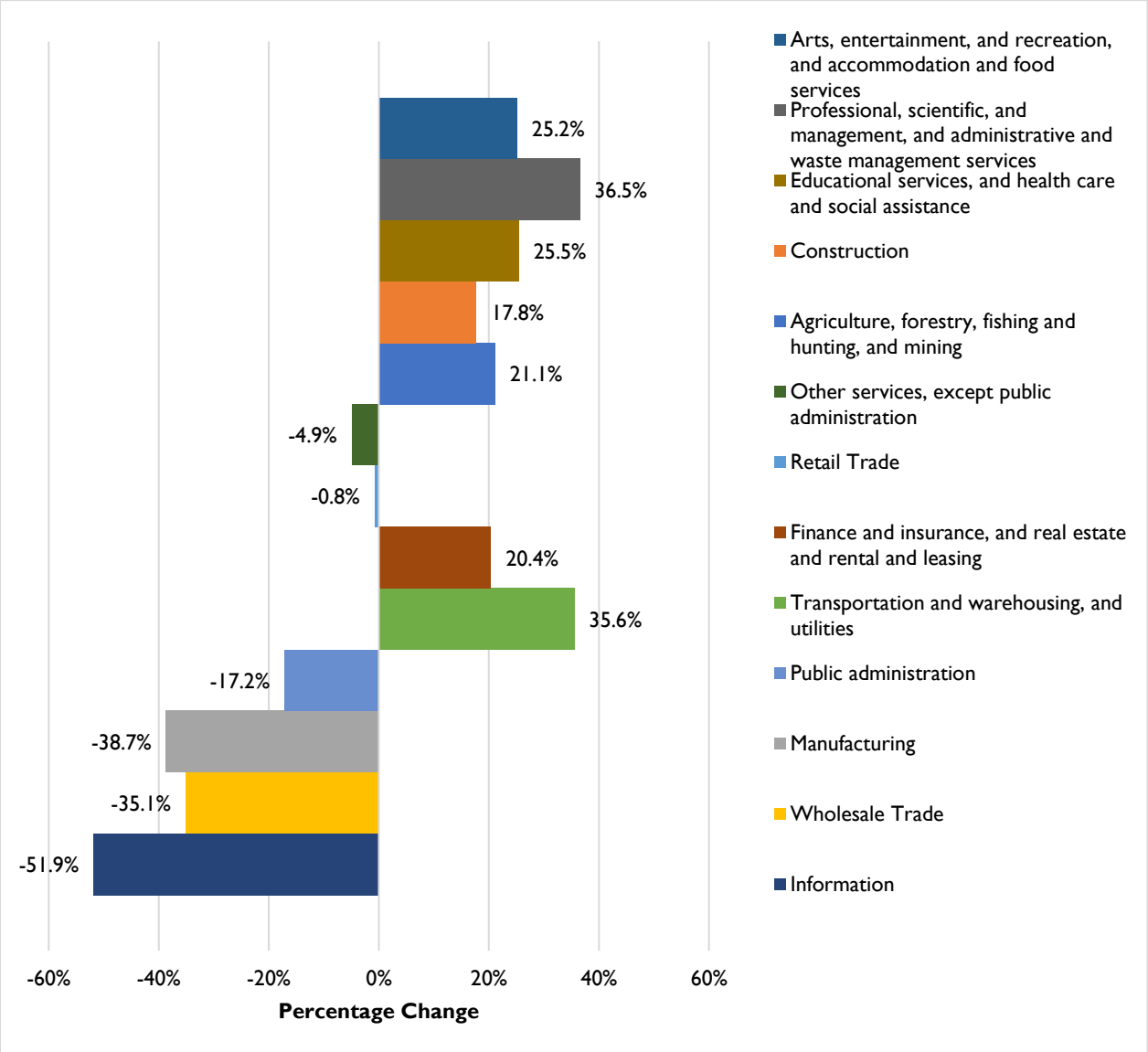
Figure 4.1-17: Employment by Industry



Source: American Community Survey (2017-2021) 5-Year Estimates

The level of manufacturing-based employment – despite declines in recent decades – continues to dwarf that of both the state and country. While efforts continue toward diversifying the regional economy into other growing sectors of the economy, including service sectors, the region's comparative advantage of an experienced manufacturing workforce and legacy industrial space will ensure manufacturing is maintained as a cornerstone in the region's economy.

Figure 4.1-18: Shift in Employment by Industry as a Share of the Regional Economy, Montachusett Region (2000 to 2021)



Source: US Census, American Community Survey (2017-2021) 5-Year Estimates

Between 2000 and 2021, the region witnessed some notable shifts in the total employment share by each industry. Arts, entertainment, and recreation, and accommodation and food services – although still modest in its total employment, with 9,054 jobs in 2021 – has increased its share of total employment in the region by 25.2% since 2000. Other industries which witness such a boost included professional, scientific, and management, and administrative and waste management services (36.5%,); educational services, and health care and social assistance (25.5%); and construction (27.8%).

While two of the greatest declines in total employment share occurred in the information (-51.9%) and wholesale trade (-35.1%) sectors, together these sectors are responsible for less than 4% of jobs in the region in 2021. Manufacturing, on the other hand, accounts for an estimated 14.5% of the region's employment and is down from 23.7% in 2000 (and a net loss of 7,885 jobs during that time).

According to the Massachusetts Executive Office of Labor and Workforce Development, the fastest growing occupation in the Montachusett Region is Maids and Housekeeping Cleaners (see Table 4 - 8). Nurse practitioners are also going to be needed in higher supply to help continue to meet the care needs of the region's growing senior population.

Table 4.1-8: Fifteen (15) Fastest Growing Occupations in the Montachusett Region

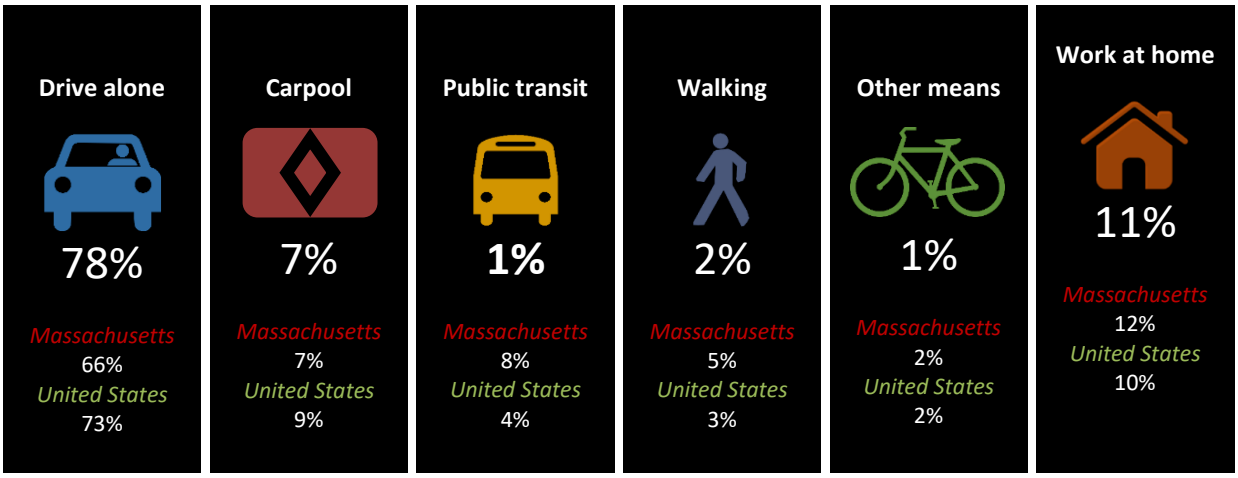
Title	Employees 2020	Projected Employees 2030	Numeric Change	Percent Change	2021 Mean Annual OES Wage
Maids and Housekeeping Cleaners	354	739	385	108.8%	$34,622
Cooks, Restaurant	565	1,025	460	81.4%	$30,609
Fitness Trainers and Aerobics Instructors	164	290	126	76.82%	$58,227
Nurse Practitioners	128	220	92	71.87%	$119,143
Bartenders	305	503	198	64.91%	$36,720
First-Line Supervisors of Housekeeping and Janitorial Worker	108	175	67	62.03%	$56,088
Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	168	256	88	52.38%	$31,292
Waiters and Waitresses	877	1,284	407	46.40%	$35,943
Industrial Machinery Mechanics	237	340	103	43.45%	$59,146
Dishwashers	200	286	86	43.00%	$31,127
Passenger Vehicle Drivers, Except Bus Drivers, Transit	674	959	285	42.28%	***
Chemists	249	351	102	40.96%	$107,177
Coaches and Scouts	101	142	41	40.59%	$49,133
Self-Enrichment Education Teachers	165	231	66	40.00%	$50,138
First-Line Supervisors of Food Preparation and Serving Workers	519	723	204	39.30%	$43,633

Source: Massachusetts Executive Office of Labor and Workforce Development 2023

K. Travel Means & Times

This section provides commuting information for workers aged 16 or over. This data comes from the American Community Survey (ACS) from the US Census Bureau.

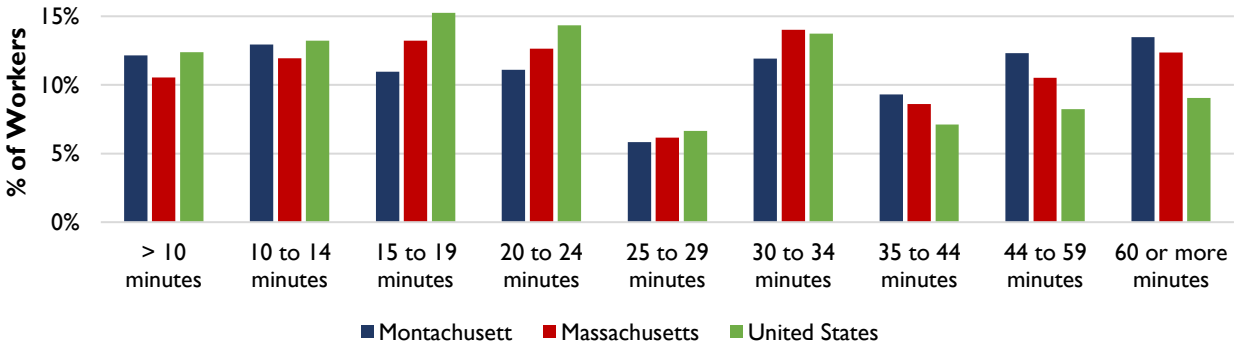
Figure 4.1-19: Means of Travel to Work, Montachusett Region



Source: American Community Survey (2017-2021) 5-Year Estimates

Montachusett Region commuters are more auto-reliant for than the state or nation, with 85% of workers either driving alone or carpooling to work (compared to 75% of workers in Massachusetts, and 82% of workers in the country). We also recognize Montachusett residents are significantly less reliant upon public transit and a few residents are able to walk to their place of employment.

Figure 4.1-20: Travel Time to Work



Source: American Community Survey (2017-2021) 5-Year Estimates

Interestingly, a higher proportion of Montachusett residents have *both* less than a 10-minute and more than a 45-minute commute to their place of employment when compared to Massachusetts.

Figure 4.1-21: Means of Travel to Work by Community

Ashburnham	75%	2%	5%	2%	2%	15%
Ashby	78%	2%	7%	0%	0%	13%
Athol	76%	5%	12%	2%	1%	5%
Ayer	84%	0%	3%	1%	3%	9%
Clinton	75%	2%	10%	1%	0%	11%
Fitchburg	74%	5%	10%	2%	2%	7%
Gardner	75%	2%	12%	2%	1%	8%
Groton	69%	1%	9%	0%	2%	19%
Harvard	61%	0%	6%	0%	5%	27%
Hubbardston	80%	2%	4%	0%	0%	14%
Lancaster	64%	1%	2%	2%	1%	30%
Leominster	82%	0%	7%	1%	1%	9%
Lunenburg	80%	0%	6%	0%	3%	11%
Petersham	79%	4%	10%	0%	0%	7%
Phillipston	82%	1%	7%	1%	0%	10%
Royalston	80%	0%	10%	4%	0%	5%
Shirley	83%	1%	4%	1%	1%	10%
Sterling	83%	0%	5%	0%	6%	6%
Templeton	82%	3%	5%	2%	0%	8%
Townsend	87%	2%	4%	1%	1%	6%
Westminster	81%	0%	5%	1%	2%	12%
Winchendon	76%	3%	11%	1%	1%	8%
Massachusetts	73%	3%	9%	2%	4%	10%
United States	66%	5%	7%	2%	8%	12%

Source: American Community Survey (2017-2021) 5-Year Estimates

Projections for the Montachusett Region

MassDOT worked in 2021 with the UMass Donahue Institute (UMDI), the Central Transportation Planning Staff (CTPS) of the Boston Region MPO), the Metropolitan Planning Commission (MAPC) and the state's other Regional Planning Agencies (RPAs), to again update and revise population, households, and employment projections for the Commonwealth's MPOs to use as part of their 2024 RTP. This was a repeat of efforts begun in 2017 that resulted in the development of projections for 2010 to 2040 for the 2020 RTPs. These projections were titled "Vintage 2018". Working with a Socioeconomic Projection Committee that included all of these individuals, UMDI compiled projections, in 10 year increments out to 2050, for the development of these RTP updates. These new projections are entitled "Vintage 2022" or V2022.

The complete methodology and development process can be found in detail at UMDI's website, Massachusetts Population Estimates Program. A methodology report on V2022 entitled "Long-Term Population Projections for Massachusetts Municipalities and Regional Planning Areas" is also available that outlines the projections process. Within this report, UMDI makes an important statement regarding limitations of the projections:

> It is important to note that modeled projections cannot and do not purport to predict the future, but rather may serve as points of reference for planners and researchers. Like all forecasts, the UMDI projections rely upon assumptions about future trends based on past and present trends which may or may not actually persist into the future. The V2022 series employs a status-quo model approach to predict future population change. It assumes that recently observed trends in the components of population change, including birth, death, and migration rates, will persist in future years. It is also a demographically-based model, assuming that population change is driven by births, deaths, and the persistence of historic migration rates into the future.
>
> As suggested by the demographic-accounting framework, the V2022 projections are based on demographic components of change to the exclusion of other factors, such as housing or transportation development initiatives, large-scale institutional changes, cultural shifts, and public policy revisions. To the extent that geographically-specific birth, death, and migration trends from the last ten years reflect the development that occurred in that place over the past ten years, the V2022 projections should serve as reasonable reflections of future development should development continue at the same relative pace in that geography. Should a region's economic development outlook change dramatically, relative to other places in the state or the U.S., then the migration component in the model may no longer reflect the migration that may be anticipated in

future years. An important counterpoint to the very likely possibility of future changes in migration, however, is that the strongest predictor of future population in almost all places is the population residing there today.

Factors specific to the timing of this series may also greatly impact the accuracy of the V2022 projections. For one, the projections are based on trends unfolding during what may be described as an off-trend period. The COVID-19 pandemic drastically shifted short-term trends in births and deaths -- two of the main components used as direct inputs in the UMDI population projections method -- not only in Massachusetts but around the U.S. as a whole. Secondly, the pandemic altered typical migration and immigration patterns, with an already declining trend in immigration exacerbated by the global pandemic and with a shift in domestic migration out of urban and into more rural and seasonal areas. While population data from 2020 are incorporated into the launch populations in our projections models, it is still too early to tell whether 2020 residency choices will persist into future years as the "new normal" or whether they will revert to pre-pandemic tendencies, or, if something in-between, to what extent they will persist or rebound.

Another major consideration affecting our ability to produce accurate population projections in 2022 relates to the release schedule of detailed Census 2020 data. As of the date of this report, the only decennial Census data available for 2020 are the total combined male and female populations by race and ethnicity for two large age cohorts: under-18 and 18-plus years of age. While detailed count data by specific five-year and single-year age cohorts are usually available to researchers by this time in the Census cycle, due to both pandemic and methodological-related delays within the U.S. Census Bureau, the UMass Donahue Institute Economic and Public Policy Research 11 release of five-year age cohorts is now not anticipated until May of 2023.1 The decennial Census counts published every 10 years by the U.S. Census Bureau are typically considered the "gold-standard" against which other estimates and rates may be evaluated or produced. In the V2022 estimates series, UMDI must instead rely on age distributions extrapolated from a Census 2010 base which, though reasonable, lack the precision of an actual recent count.

For all of these reasons, researchers should use caution when planning initiatives around the V2022 population projections, and be thoughtful about the data sources, methods, and assumptions that underpin the series. This methodology report represents UMDI's efforts to provide transparency and clarity on the inputs, methods, and assumptions used in the series so that potential users may be well informed on the components used to generate the final V2022 results.

For a complete and detailed discussion and a review of the overall methodology, various components and data sources of the V2022 projections, please see the UMDI methodology guide linked above.

Based upon the work conducted by UMDI and MassDOT as outlined on the UMDI report, a series of projections were calculated for the Montachusett Region. These projections were provided as regional totals and then disaggregated to the 22 communities that comprise the region.

A. Population

The population of the Montachusett region is expected to shrink gradually from 2020 until 2050 (Refer to the following Figure 4.1 - 22). From 2020 to 2050, the expected population for the region is projected to shrink by -8.51% while the population of Massachusetts is projected to increase by 3.39%.

Figure 4.1-22: Population Projection

TOWN	Census 2000	Census 2010	Census 2020	Population 2030	Population 2040	Population 2050
Ashburnham	5,546	6,081	6,315	6,195	5,931	5,582
Ashby	2,845	3,074	3,193	3,554	3,732	3,760
Athol	11,299	11,584	11,945	11,706	11,195	10,581
Ayer	7,287	7,427	8,479	9,128	9,424	9,353
Clinton	13,435	13,606	15,428	14,974	14,248	13,471
Fitchburg	39,102	40,318	41,946	41,614	41,193	40,305
Gardner	20,770	20,228	21,287	19,625	17,655	15,604
Groton	9,547	10,646	11,315	12,494	13,622	13,955
Harvard	5,981	6,520	6,851	6,964	7,144	6,945
Hubbardston	3,909	4,382	4,328	4,615	4,570	4,283
Lancaster	7,380	8,055	8,441	8,277	7,922	7,305
Leominster	41,303	40,759	43,782	41,404	38,098	34,581
Lunenburg	9,401	10,086	11,782	11,756	11,370	10,839
Petersham	1,180	1,234	1,194	1,108	963	839
Phillipston	1,621	1,682	1,726	1,674	1,540	1,346
Royalston	1,254	1,258	1,250	1,206	1,080	911
Shirley	6,373	7,211	7,431	8,476	9,258	9,803
Sterling	7,257	7,808	7,985	7,678	7,302	6,556
Templeton	6,799	8,013	8,149	8,926	9,511	9,915
Townsend	9,198	8,926	9,127	8,856	8,116	7,118
Westminster	6,907	7,277	8,213	7,932	7,541	7,019
Winchendon	9,611	10,300	10,364	10,285	9,824	9,135
TOTAL	228,005	236,475	250,531	248,447	241,239	229,206
Statewide	**6,349,097**	**6,547,629**	**7,029,917**	**7,195,346**	**7,263,082**	**7,267,961**

B. Households

Like population, the number of households in the region is expected to follow a negative trend through 2050. As shown in Figure 4.1-23 below, the region is projected to see a decrease from 96,886 in 2020 to 95,883 in 2050 (-1.09%). Statewide, projections show an increase in households from 2,749,225 in 2020 to 2,946,290 in 2050 (7.17%)

Figure 4.1-23: Household Projection

TOWN	Census 2000	Census 2010	Census 2020	Households 2030	Households 2040	Households 2050
Ashburnham	1,929	2,148	2,330	2,267	2,273	2,195
Ashby	978	1,105	1,160	1,134	1,123	1,087
Athol	4,487	4,656	4,862	5,008	4,997	4,849
Ayer	2,982	3,118	3,591	3,973	3,971	3,864
Clinton	5,597	5,831	6,581	6,550	6,483	6,297
Fitchburg	14,943	15,165	16,143	16,904	16,804	16,231
Gardner	8,282	8,224	8,720	8,750	8,583	8,259
Groton	3,268	3,753	3,972	4,141	4,153	3,974
Harvard	1,809	1,893	2,108	2,756	2,826	2,729
Hubbardston	1,308	1,566	1,684	1,632	1,621	1,554
Lancaster	2,049	2,409	2,619	2,897	3,104	3,019
Leominster	16,491	16,767	17,873	18,189	18,102	17,520
Lunenburg	3,535	3,835	4,546	4,136	4,122	3,970
Petersham	438	493	479	553	550	530
Phillipston	580	633	674	673	679	655
Royalston	449	498	514	559	566	549
Shirley	2,067	2,264	2,486	2,841	2,893	2,810
Sterling	2,573	2,810	2,994	3,037	3,073	2,974
Templeton	2,411	2,882	3,039	2,985	2,940	2,830
Townsend	3,110	3,240	3,460	3,356	3,347	3,223
Westminster	2,529	2,716	3,079	2,920	2,965	2,843
Winchendon	3,447	3,810	3,972	4,054	4,020	3,871
TOTAL	85,262	89,816	96,886	99,315	99,195	95,833
Statewide	**2,443,580**	**2,547,075**	**2,749,225**	**2,870,730**	**2,932,930**	**2,946,290**

C. Employment

Employment growth in the region is expected to have peaked in 2020 at 83,885 persons, followed by a period of slow decrease -0.85% (-710 persons) in 2030 and an additional -2.41%(-2,006 persons) in 2040 and -3.67% (-2,980 persons) in 2050. This is opposite of a projected increase in employment statewide as growth in the ten-year periods of 2020 to 2030, 2030 to 2040 and 2040 to 2050 are projected at 2%, 1.1% and 1.2%, respectively.

Figure 4.1-24: Employment Projection

MRPC Region	2020	2030	2040	2050	
	83,885	83,175	81,169	78,189	
		Change	Change	Change	Change
		20-'30	30-40	40-'50	20-'50
		(710)	(2,006)	(2,980)	(5,696)
		-0.85%	-2.41%	-3.67%	-6.79%
Statewide	2020	2030	2040	2050	
	3,633,367	3,704,952	3,744,092	3,788,585	
		Change	Change	Change	Change
		20-'30	30-40	40-'50	20-'50
		71,585	39,140	44,493	155,218
		2.0%	1.1%	1.2%	4.3%

Trends

Through the development and analysis of the demographics and projections for the Montachusett region, the following trends were identified and noted. Following these trends, a series of recommendations are presented for the region.

- Current growth expected to stall and begin a steady period of decline in future projections.
- The population in the region is aging faster than in the state or nation. This trend is also reflected in the 2030, 2040 and 2050 projections where the overall growth in the population of the region is expected to slow and decline. This aging of a large proportion of the population poses a number of planning challenges for the Region, including accessibility to health care and elderly services, public transportation, senior housing. In addition, there will be generational shifts in employment sectors and the workforce.
- Educational attainment rates are increasing in the regions male and female populations. However, they still remain lower than state averages. Efforts are needed in the Region to retain this increasing educated population and subsequently help to address shifts in the employment sectors.

- Seven Montachusett communities have a higher proportion of residents with a disability than the state as a whole. Athol, Fitchburg, and Gardner top the list. Among other planning considerations, the high percentages of residents with disabilities, coupled with a steadily aging population, only help to emphasize the importance of multimodal and
  functional transportation network.
- Eighteen (18) of the region's 22 communities have a lower per capita income than the state ($48,617), while eight rank below the state when examining median household income.
- An estimated 9.9% of individuals are living in poverty within the Commonwealth of Massachusetts. Six Montachusett communities have a higher concentration of poverty than the state as a whole, with Fitchburg (14.6%) and Gardner (14.1%) also exceeding the national poverty rate of 11.3%. Between 2020 and 2021, poverty rates showed a marginal uptick in the region, rising from 5.9% to 6.4%, still well below the state rate of nearly 10%. In order to reverse these trends, additional opportunities to create a more diverse employment sector is needed. Along with this, is the need for improved access to these jobs at a reasonable cost for those in the lower income strata.
- Based on an analysis of current and past transportation and highway projects versus identified Environmental Justice and Title VI populations, there does not appear to be an undo benefit or burden on these populations.
- Housing in the region trends toward single family homes. This along with a rising median home values can affectively price individuals out of the Montachusett Region. This can be especially harmful to younger, more highly educated individuals, which in turn can exasperate the aging population situation. In order to serve the regions changing population characteristics, i.e. aging, diversified, and low income, affordable housing units (either as single or multiple units) need to be an emphasis for the region's officials. Additionally, where appropriate direct tie ins to available transportation options should be a major factor for local officials in this area.

- Manufacturing continues to remain the largest employment sector in the region (nearly 16% of total employees) and integral to the economic health of many communities. The level of manufacturing-based employment, despite the decline in recent decades, continues to out strip that of both the state and country. While efforts continue toward diversifying the regional economy into other growing sectors, including the service sectors, the region's comparative advantage of an experienced manufacturing workforce and industrial space will help keep manufacturing as a cornerstone in the region's economy.
- Montachusett Region commuters are more auto-reliant than in the state or the nation. Eighty-five percent (85%) of workers either drive alone or carpool to work as compared to 75% of workers in Massachusetts, and 82% of workers in the country. Montachusett residents are also significantly less reliant upon public transit. The longer commute times and distances of Montachusett individuals tend to put more emphasis on the traditional commuter roads in the region, i.e. Route 2, I-190, Route 117, Route 119, Route 140, Route 12, etc. The potential for increased public transit usage exists if expansion and costs can be implemented in a reasonable fashion. In addition, these segments of commuters are also likely to be impacted by technological changes in travel modes, i.e. autonomous vehicles, rideshare options and alternative energy vehicles. With a greater demand or usage of these technologies, critical support infrastructure is needed from long term parking areas for autonomous vehicles, to charging stations, to incentive programs.

Recommendations

The following is a series of recommendations based upon the identified trends related to the demographic profile of the Montachusett Region. It should not be viewed as a complete and finite list but rather a starting point for the continued review of the needs of the region.

1. The aging of the region's population requires that several issues be addressed:
    a. Expanded transit options to vital services for elderly. Expansion to needed services such as medical and shopping should remain a priority. Additionally,

connections between communities should be examined and implemented where feasible.

b. Upgrades, expansion and improvements to the pedestrian network in the core centers of communities and in and around identified service areas, i.e. medical facilities, shopping centers, etc. Safer sidewalks and pedestrian corridors will also serve other segments of the population beyond the elderly.

c. Safety improvements along the road and pedestrian/bicycle networks need to be expanded and prioritized to help deal with the aging population as well as assisting with other segments with their activities.

2. Identification and prioritization are needed for projects that assist the disabled community throughout the region. This would include better sidewalks, improved access to transit options, and eliminating gaps in the network that prevent or discourage usage (ex. incomplete or non-existing sidewalks on fixed route transit lines).
3. Expansion of employment opportunities are needed in order to retain and expand the regional workforce. As the educational level continues to rise in the region, without adequate employment options, the population will continue to age as younger individuals seek better paying jobs outside of the region. Network improvements are needed to assist and encourage employers to remain in the region. This would involve infrastructure improvements to support industries, multiple travel options to bring employees to and from work, and expansion of outreach efforts to all segments of the population. Continued emphasis on maintaining pavement conditions and reducing bridge deficiencies will allow for greater marketing by municipalities of available industrial and commercial areas.
4. Expansion of mode options for commuters needs to also be a priority for the region. This would also involve the region's trail/pedestrian/bicycle networks. These systems can be improved and expanded in order to provide additional walking and biking mode options.

5. Additional planning is needed to address future technological advances in transportation as they occur and become more and more feasible. This would include issues such as:
    a. Autonomous vehicles. Where will they "park" when riders have reached their destinations? Is there a need for special lots or facilities? Are there potential congestion issues at the start and end of work shifts? Will "peak hours" increase because the autonomous vehicle may be making additional trips to desired locations (i.e., one trip in and one trip out in both the AM and PM (4 trips) as opposed to a driver that has one trip in and one trip out in the AM and PM (2 trips))?
    b. Electric vehicles. Where should charging stations be located? How many facilities exist, and do they adequately serve the population now? Environmentally, are there any drawbacks associated with batteries, etc., that need to be addressed?
    c. Ride share options. Can these systems be expanded to address the needs of the elderly, low income and disabled populations? Can the systems expand to the more rural communities to serve these areas without viable transit options?
6. The population is getting more and more diverse in terms of minority populations and language. Additional efforts are needed to draw these individuals into the transportation planning process to ensure adequate representation and service.

Infrastructure

Introduction

Within the transportation system, the infrastructure that makes up and serves the roadway network is critical to its effectiveness and efficiency. Poorly maintained bridges and pavement impact all aspects of movement, from commuting and recreation to freight and emergency services.

Bridges

Throughout the Montachusett region, many of its roads travel over numerous brooks, rivers and water bodies. Within the 22 communities of the Montachusett planning area, some 326 bridges are identified and rated by MassDOT as part of their inventory system. MassDOT regularly provides MRPC access to its bridge inventory which includes data such as the community where the bridge is located, the road name that the bridge is located on, the bridge identification number, functional classification of the road, year built, historical significance, rebuilt date (if applicable), AASHTO (American Association of State Highway and Transportation Officials) rating, and the deficiency status of each bridge, i.e. structurally deficient.

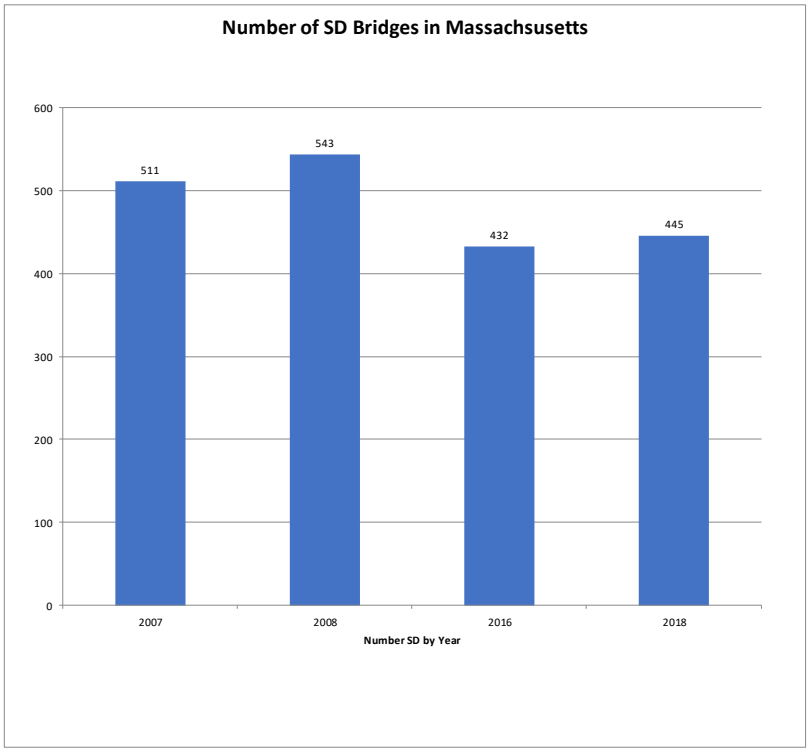
Structurally deficient bridges are a main concern in terms of repair priorities. A Structurally deficient bridge is not necessarily unsafe but is deteriorated to a point where it must be closely monitored and inspected or repaired. Structurally deficient bridges can result in bridge closings and weight restrictions which alter traffic patterns by forcing vehicles to find alternate routes frequently leading through residential streets. The result is increased congestion and pollution, potential loss of business, the potential for more accidents, and failure of the emergency response times and planning process.

A. Accelerated Bridge Program

The Accelerated Bridge Program (ABP) was initiated by the MassDOT in 2008 as an effort to reduce the number of bridges rated as structurally deficient. On February 1, 2007, there were 511 structurally deficient (SD) bridges statewide. This number increased to 543 by July 1, 2008 when the ABP Program was initiated. Without the program, the number of SD bridges was

expected to rise to 697 by October 1, 2016. The goal of the program was to reduce the number of SD bridges to fewer than 450 by October 1, 2016. That goal was reached with 432 ABP-eligible structurally deficient bridges as of October 1, 2016. The number of ABP-eligible structurally deficient bridges as of September 1, 2022 was 443.

Figure 4.2-1: Number of Structurally Deficient Bridges in Massachusetts



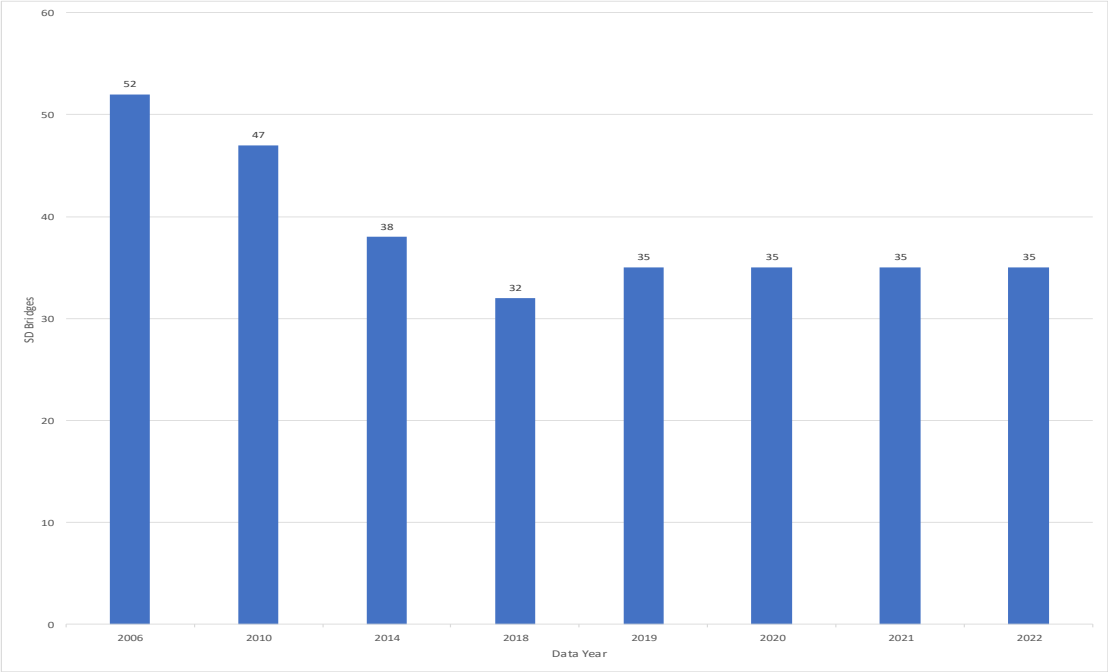
B. Montachusett Bridges – Current & Historical

The following table and graph provide a breakdown of the total bridge numbers regionwide as well as the number of SD bridges in each community from bridge inventories over the years.

Table 4.2-1: Structurally Deficient Bridge Changes

Structurally Deficient Bridges Regionwide							
2006	2010	2014	2018	2019	2020	2021	2022
52	47	38	32	35	35	35	35

Figure 4.2-2: Percent of Structurally Deficient Bridges in Region



Within the Montachusett Region, the 2022 bridge inventory lists 35 bridges as SD. This represents approximately 11% (35 of 326) of the Region's total bridges. Of particular note is that bridge inventories from 2006 and 2010 report structurally deficient bridges being around 15% of the total in the region. A major reason for the decrease in both number and percentage of SD bridges throughout the region in the following decade is due to major investments made from the Accelerated Bridge Funding Program. As this funding program has ended, recent inventories show a plateau trend in which the number and percentage of bridges rated as SD are leveling off, or even increasing.

In order to maintain an efficient movement of goods and people, a responsive and adequately funded bridge maintenance program is essential. It is important to discourage the previous trend of increasing percentage of bridges being rated as structurally deficient. These percentages will be monitored in future inventories to determine where current trends are heading.

Pavement

The *Pavement Management Program* at MRPC consists of surveying all federal aid eligible roadways in the region for the purpose of collecting, maintaining and evaluating pavement condition data for use in this transportation plan and project decision making.

There are approximately 667 miles of federal aid eligible roads in the Montachusett region, of which 222 miles are National Highway System (NHS) roads, and 445 miles are Surface Transportation Block Grant (STBG) roads. NHS roadways represent all Interstate roadways such as I-190, and I-495 along with a systematic network of principal arterials such as Route 2 and parts of Routes 12, 140 and 2A; NHS roads are regularly surveyed by MassDOT. STBG roadways, which include all other numbered routes as well as all urban arterials, urban collectors and rural arterials, are surveyed mostly by the MRPC, MassDOT also regularly collects data on all numbered routes.

A. The Roadway System

Of the approximately 2,124 miles of roads in the Montachusett region, approximately 445 miles are Surface Transportation Block Grant (STBG) eligible roadways and 222 miles are National Highway System (NHS) eligible roadways. This represents 31% of the region's road miles. The remaining 1457 miles (69%) are state and local aid eligible roads.

These roadways are defined as follows:

National Highway System (NHS) – all interstate roadways and a systematic network of principal arterials spanning the state. In addition, roads connecting the NHS roadways to military bases

(known as the Strategic Highway Network) are also considered part of the NHS network. NHS passenger and freight terminals are connected by roadways called NHS connectors.

Surface Transportation Block Grant (STBG) – comprised of any functionally classified roadway not part of the NHS network. STBG funded roadways include all urban arterials, urban collectors and rural arterials. According to previous funding legislation, rural collectors are STBG eligible, but have a limitation on the STBG funding amount.

State and Local Aid – includes Chapter 90 and other non-Federal Aid categories. Roadways that fall under this category are comprised of roads functionally classified as local roads.

The following table provides a breakdown of roads by community by their aid eligibility, NHS, STBG or State Aid/Local.

Table 4.2-2: Regional Centerline Miles

Community	NHS	STP	Total Fed-Aid	State and Local	Total
Ashburnham	9.60	10.70	20.30	77.30	97.60
Ashby	6.69	7.52	14.21	50.04	64.25
Athol	13.10	19.31	32.41	82.41	114.82
Ayer	6.96	9.75	16.71	36.82	53.53
Clinton	4.96	13.11	18.07	35.16	53.23
Fitchburg	18.45	47.13	65.58	137.01	202.59
Gardner	10.89	30.72	41.61	75.53	117.14
Groton	13.15	20.84	33.99	80.29	114.28
Harvard	13.70	5.22	18.92	60.98	79.90
Hubbardston	8.18	13.13	21.31	64.32	85.63
Lancaster	14.29	17.15	31.44	43.61	75.05
Leominster	19.28	42.64	61.92	121.12	183.04
Lunenburg	10.26	23.59	33.85	58.41	92.26
Petersham	12.55	7.07	19.62	59.63	79.25
Phillipston	2.97	8.23	11.20	41.94	53.14
Royalston	0.00	20.99	20.99	52.35	73.34
Shirley	3.56	16.38	19.94	31.82	51.76
Sterling	14.92	28.81	43.73	62.73	106.46
Templeton	5.68	35.15	40.83	63.97	104.80
Townsend	9.03	16.32	25.35	68.91	94.26
Westminster	13.65	29.53	43.18	67.19	110.37
Winchendon	10.44	21.23	31.67	85.99	117.66
	222.31	444.52	666.83	1457.53	2124.36

B. Regional Pavement Conditions

The structural conditions of the majority of the Federal Aid eligible roads are determined by MassDOT and MRPC pavement surveys. The condition is expressed by assigning either a Pavement Serviceability Index (PSI) number from 0 to 5 or a Pavement Condition Index number from 0 – 100(PCI) to segments along the roadway. PSI (MassDOT method) and PCI (MRPC method) is an overall rating of the pavements condition. Conditions are rated as Excellent, Good, Fair and Poor. The following table shows a general correlation between PSI and PCI,

condition, repair strategies, and associated cost. This average cost has been determined from consultation with MassDOT and other Regional Planning Agencies throughout the State.

Table 4.2-3: Pavement Condition – Cost Breakdown

PSI	PCI	Condition	Associated Repair	Repair Cost Per. Sq. Yard
0 - 2.29	0 - 64	Poor	Reconstruction	$45
2.3 - 2.79	65 - 84	Fair	Rehabilitation (Mill/Overlay)	$18
2.8 - 3.49	85 - 94	Good	Preventative Maintenance	$8.50
3.5 - 5	95 - 100	Excellent	Routine Maintenance	$0.75

Utilizing this information, a general condition of the Montachusett Region's federal aid eligible roadway network can be developed. The following lists pavement condition on federal aid eligible roads by town in the region. These federal aid miles are further broken down by local and state jurisdiction. Please note that due to the time frame between data collection and report preparation, conditions of the roadways may change. Additionally, mileage listed in the following charts may not reflect mileage listed on the "Total Fed-Aid Miles" column of the Centerline Miles table as a small percentage of roads not eligible for federal aid are included. Therefore, this information should be viewed in general terms regarding needs and condition.

Table 4.2-4: 2022 Regionwide Conditions

2022 REGIONWIDE	Condition	State			Local			Combined			
		Miles	Sq. Yards	Cost	Miles	Sq. Yards	Cost	Repair Category	Miles	Sq. Yards	Total
	Excellent	87.48	1231774	$923,830	137.16	1931232	$1,448,424	Routine Maintenance	224.65	3163006	$2,372,254
	Good	92.32	1299862	$11,048,830	94.41	1329253	$11,298,654	Preventative Maintenance	186.73	2629116	$22,347,484
	Fair	50.92	716941	$12,904,936	81.22	1143605	$20,584,898	Rehabilitation	132.14	1860546	$33,489,834
	Poor	11.13	156711	$7,052,015	156.53	2203943	$99,177,455	Reconstruction	167.66	2360655	$106,229,469
	Total	241.85		$31,929,611	469.32		$132,509,432	Total	711.17		$164,439,042

In comparing current regionwide network conditions to those from 2017, it would appear that the overall condition of federal aid eligible roads has shifted over the years. 'Improve System Preservation and Maintenance of All Modes' is a Goal originally stated in the 2016 RTP and still identified in this 2024 update. To monitor progress of that Goal, a Performance Measure was set to 'Increase the percent of categorized "good" to "excellent" federal aid eligible roadway miles within the region over a 10-year period'. The 2022 condition change charts below would indicate that this performance measure is currently being met. These conditions will continue to be monitored and reported on, on an annual basis.

It should be noted that the mileage of state jurisdiction roads has increased significantly since 2017. The reason for this is that divided highways have been accounted for in only one direction in earlier surveys in this analysis but will now be considering both ways. For example, Route 2 is a divided highway in the Montachusett region. Previous surveys only reflected condition data on one direction of the highway, current practice is to count both east and west directions. It is also normal to have a small difference in surveyed roads year to year due to the surveys available from either MRPC or MassDOT each year.

Table 4.2-5: 2022 and 2017 Regionwide Percentage Comparisons

	Condition	State		Local		Combined	
		Miles	%	Miles	%	Miles	%
2022	Excellent	87.48	36%	137.16	29%	224.65	32%
	Good	92.32	38%	94.41	20%	186.73	26%
	Fair	50.92	21%	81.22	17%	132.14	19%
	Poor	11.13	5%	156.53	33%	167.66	24%
	Total	241.85		469.32		711.17	

	Condition	State		Local		Combined	
		Miles	%	Miles	%	Miles	%
2017	Excellent	80.24	42%	75.06	16%	155.30	23%
	Good	52.72	27%	93.84	19%	146.56	22%
	Fair	32.36	17%	155.03	32%	187.39	28%
	Poor	27.11	14%	158.84	33%	185.95	28%
	Total	192.43		482.77		675.20	

Table 4.2-6: 2017 - 2022 Condition Percentage Change

	Condition	State	Local	Combined
		% Change	% Change	% Change
% Change 2017 - 2022	Excellent	-6%	14%	9%
	Good	11%	1%	5%
	Fair	4%	-15%	-9%
	Poor	-9%	0%	-4%

As with the condition of bridges, the regionwide pavement conditions are in danger of deteriorating. It is important to continue to monitor these conditions and consider trends in the decision-making process. For a map data base of all pavement conditions in the Montachusett region, visit the pavement conditions database on MRPC's MRMapper. (https://mrmapper.mrpc.org/)

Trends

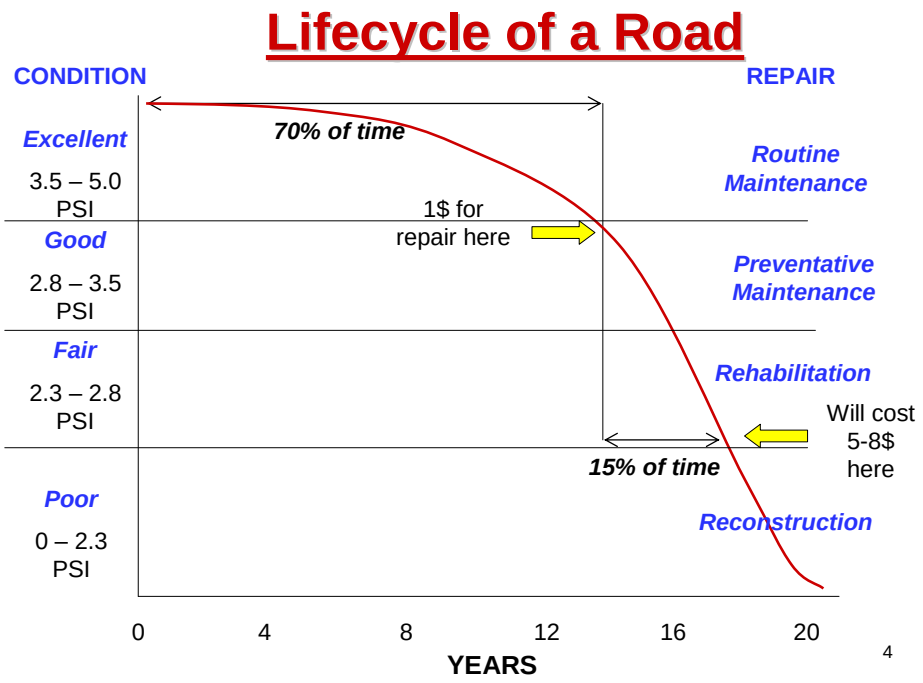
Analysis of roads and bridges in the Montachusett region demonstrate a network that is relatively stable, however, in danger of deterioration if proper investments are not maintained. It is important to prioritize maintenance and repair of this existing infrastructure to be able to maximize public funds and allow additional investments for improvements and expansion.

Recommendations

The transportation system in the Montachusett region largely consists of roads and bridges. Maintaining these assets are a challenge, however, we must understand the importance of a properly functioning and safe roadway system. Maintaining a state of good repair should be a main priority and in our best interest in order to stretch our investments to the greatest benefits. Ultimately, it is recommended that investments are guided by proven asset management practices and the proper amount of investment is made to ensure these assets do not deteriorate.

The figure below displays the concept of pavement lifecycle cost. A pavements lifecycle is the time between reconstruction periods. Lifecycle cost is the total cost spent on maintenance and repairs for a particular pavement section during its lifecycle. One of the main focuses of pavement management is to keep lifecycle cost low to stretch the dollar in what is commonly an ever-decreasing maintenance budget.

Figure 4.2-3: Lifecycle of a Road



Due to the rising cost of improvements and the declining funds for preserving existing infrastructure, it is challenging to make improvements to the pavement network. Building a historical and measurable database of conditions in the Montachusett region allows for a snapshot of overall conditions which will allow us to determine how the network changes over time. Maintaining historical databases of bridge and pavement data paired with applying proven methods of asset management is recommended. Conditions should be closely monitored due to the threat of a deteriorating network.

Safety

Introduction

The MRPC has an ongoing commitment to the goal of improving roadway safety in the Montachusett Region (Region) for all transportation modes. The MRPC has and will continue to work with MassDOT and MRPC Member Communities to improve roadway safety. The following content provides a snapshot of the existing safety conditions and information for improving safety in the Region.

2023 Massachusetts Strategic Highway Safety Plan

The MRPC continues to work cooperatively and in coordination with MassDOT for the implementation of the most recent Massachusetts Strategic Highway Safety Plan (Plan) (2023 Plan completed: 12/22). The Plan seeks to improve safety on all public roads in Massachusetts (state). The Plan provides a framework for how the state will work to make its roadways safer for all roadway users. The Vision Zero, Safe System Approach, Equity: Equitable Distribution of Resources, and Collaboration Efforts of the Plan are briefly described below.

VISION ZERO

The state's top priority on all public roadways (from residential streets to interstate highways disregarding jurisdiction and functional classification) is ensuring the safety of all roadway users whether a roadway user is driving an automobile, pickup truck, large truck, motorcycle, riding as a passenger, walking, bicycling, on a wheelchair, or using any other mobility device. One life lost or seriously diminished on the states' roadways is one too many. The state is committed to the goal of zero roadway fatalities and serious injuries.

SAFE SYSTEM APPROACH

To achieve Vision Zero, the state has adopted a Safe System Approach (SSA) that addresses and mitigates the risks inherent on roadways. The SSA is endorsed by the U.S. Department of Transportation as a framework for addressing roadway safety in a holistic manner. The SSA is a

system that works by anticipating human mistakes and keeps the kinetic energy of a crash on the human body at a tolerable level. A successful SSA identifies and mitigates risks on the roadway system to prevent crashes rather than waiting for crashes to occur followed by taking action afterward. The SSA approach requires responsibility for crash risk identification and mitigation across all agencies and communities. This includes those responsible for planning, programming, designing, constructing, maintaining, and utilizing (road users). Not to be forgotten are those who create, enforce, and adjudicate roadway system laws.

EQUITY: THE EQUITABLE DISTRIBUTION OF RESOURCES

The state has incorporated equity into every actionable effort that flows from the Plan. In this context, equity means the distribution of all roadway resources to all people in a just and impartial way. The actions to be taken will address the disproportionate harm that vulnerable populations and people of color often suffer on the state's roadways. An action plan will be undertaken to understand why the existing disparities exist through analysis of roadway fatality and serious injury crash data including all possible factors and the best practices to mitigate them.

COLLABORATION

The state is developing partnerships for every actionable effort that will flow from the Plan. Partnerships include supporting communities and other public entities to address safety locally and regionally, especially since most of the state's roadways (approximately 80%) are under local jurisdiction. Many communities have already taken steps to improve safety that the state will augment and learn from. The Plan seeks partnerships with philanthropic and private entities. It is important to realize that no single entity can achieve the Vision Zero goal alone.

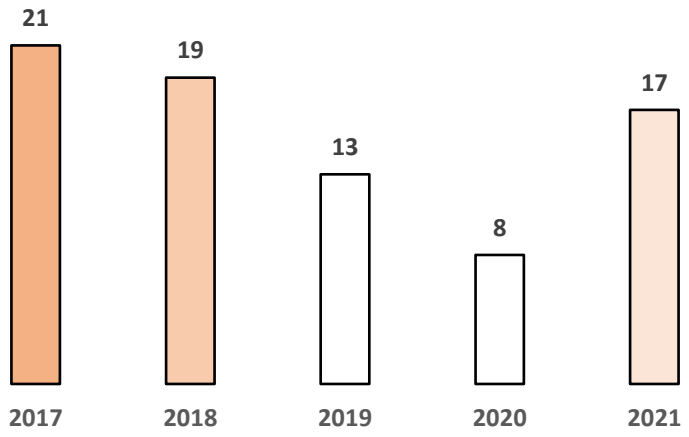
This link provides access to the Plan
2023 Plan Download

Impact of COVID on Fatalities and Serious Injuries

Reducing the number of Fatalities and Serious Injuries is the top priority in the Region. Since the COVID pandemic began, fatal crashes have increased dramatically in the Region, so it is urgent

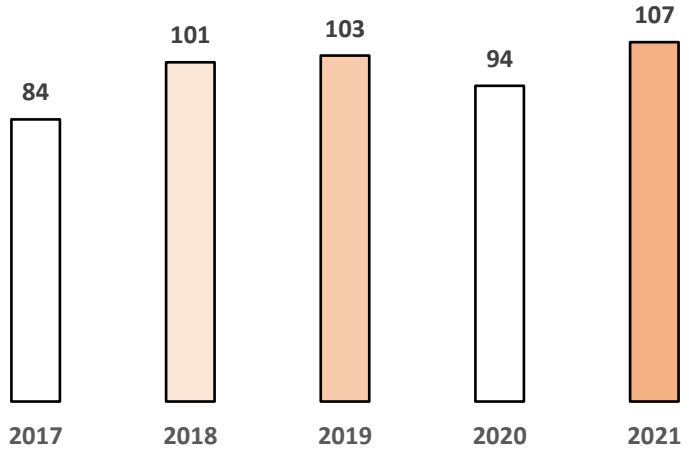
to expedite coordinated action to prevent fatal crashes. Serious Injuries have increased as well but not as dramatically as Fatalities.

Figure 4.2-1: Region Total Fatalities*



Year 2021 total Fatalities more than doubled the year 2020 total Fatalities (17 to 8, a 113% increase) after declining an average of four (4) Fatalities year to year from years 2017-2020 for the highest total since year 2018. Fortunately, year 2021 total Fatalities are not a new high for the Region as over the past 16 years, Fatalities occurred 30 times in year 2006, 17 times in year 2012, 23 times in year 2013, 21 times in year 2017, and 19 times in year 2018.

Figure 4.3-2: Region Total Serious Injuries*



After a small decline in total Serious Injuries from years 2019-2020 (103-94, an 8.7% decrease), total Serious Injuries increased moderately in year 2021 from 94-107 (a 13.8% increase). This is the highest Serious Injuries total since year 2016 when 110 Serious Injuries occurred.

*Source for all crash data in this chapter: MassDOT. **NOTE**: Crash data is regularly updated by MassDOT which may/will increase or decrease Fatality data, Serious Injury data, and all crash cluster data.

Safety Needs

Total Fatalities Trend by 5-Year Rolling Average

The figure *Region Total Fatalities 5-Year Rolling Averages* (**Figure 4.3-3**) below graphically represents the number of roadway crash Fatalities that occurred in the Region from 2012-2021 (the last year of each 5-year period). The number of Fatalities is provided as an annual average based on a five-year rolling average (i.e., years 08-12, 09-13, etc.).

Figure 4.3-3: Region Total Fatalities 5-Year Rolling Averages

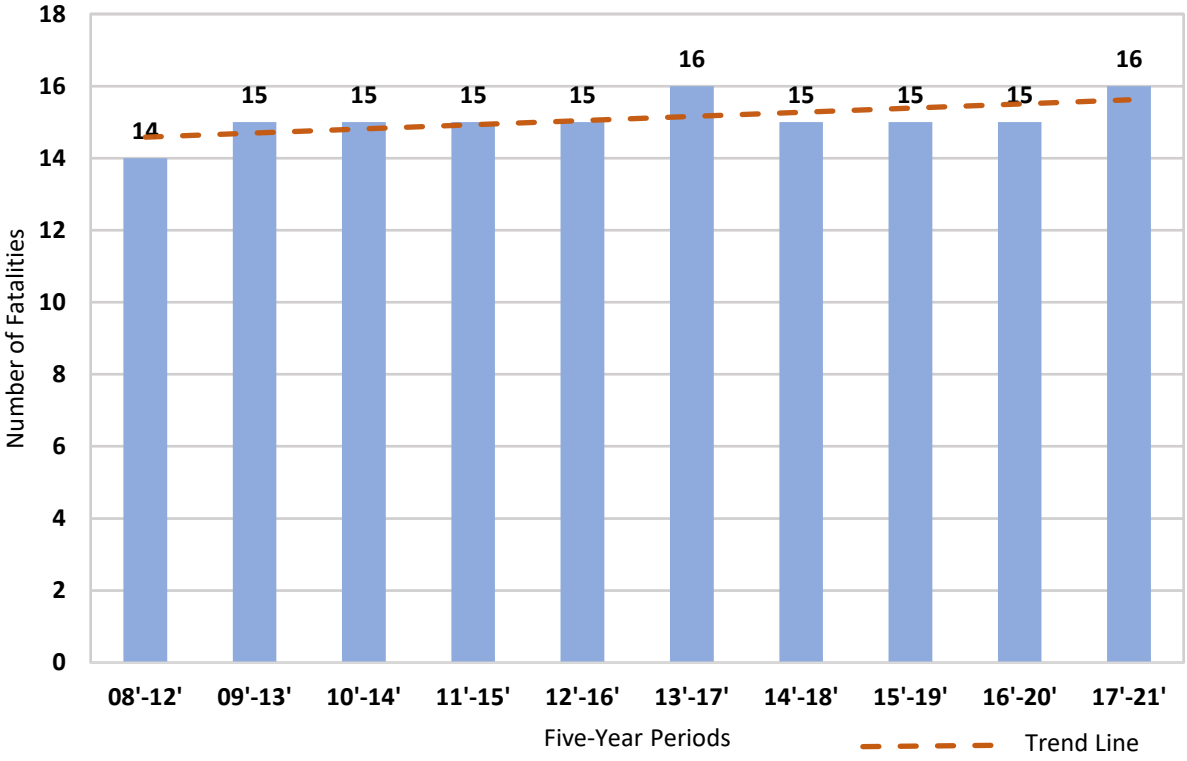


Figure 4.3-3 shows that the number of Fatalities that occurred remained consistent at 15 Fatalities over the years of 09-13 to 12-16 with the 08-12 period being an exception with 14 Fatalities. The 13-17 period saw an increase of one (1) Fatality to 16 Fatalities, but the number of Fatalities receded to 15 Fatalities for the years 14-18 to 16-20. The number of Fatalities returned to 16 for the 17-21 period which includes the impact of the COVID pandemic year of 2021, but also year 2020 which experienced the lowest number of Fatalities (8) of any year since 2014. Fortunately, this is not a new high for the Fatality 5-year rolling average analysis for the Region, but it does equal the previous high of the 13-17 period.

This resulted in Fatalities trending upward since 2012 as depicted by the Trend Line in **Figure 4.3-3**. To begin to reverse the upward trend in Fatalities in the Region to meet the Vision Zero goal, Safe System Approach projects need to be considered for development on the roadways where the Fatalities occur. The MRPC will contact Member Communities concerning the historic locations of Fatalities for further study and potential project development.

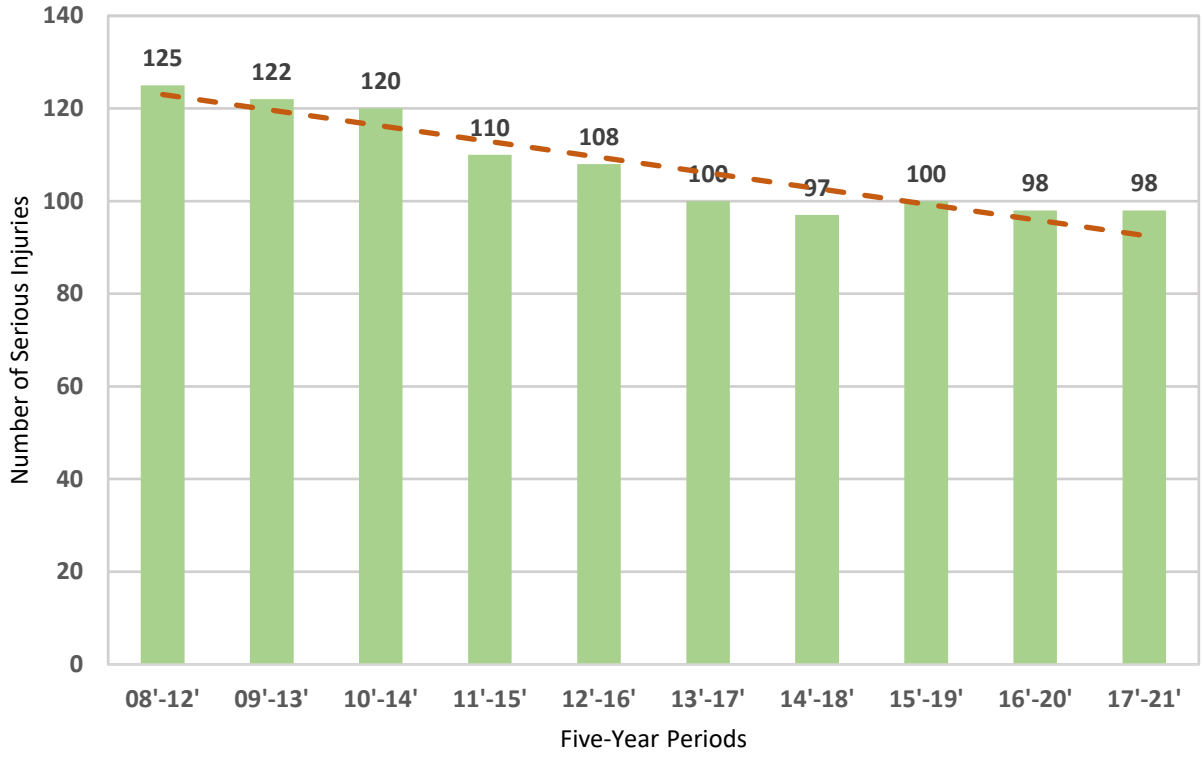
Total Serious Injuries Trend by 5-Year Rolling Average

The figure *Region Total Serious Injuries 5-Year Rolling Averages* (**Figure 4.3-4**) below graphically represents the number of roadway crash Serious Injuries that occurred in the Region from 2012-2021 (the last year of each 5-year period). The number of Serious Injuries is provided as an annual average based on a five-year rolling average.

Figure 4.3-4 shows that the number of Serious Injuries decreased 21.6% for a decrease of 27 Serious Injuries from 125 to 98 from the 08-12 period to the 17-21 period. The most significant decrease in the number of Serious Injuries occurred from 08-12 period to 13-17 period which saw a decrease of 22.4% for a decrease of 28 Serious Injuries from 125 to 97. The number of Serious Injuries rose during the 15-19 period to 100 followed by a minor decrease of two (2) Serious Injuries during the 16-20 period. The number of Serious Injuries for the 17-21 period equaled the 16-20 period total of 98 which includes the impact of the COVID pandemic year of

2021. Fortunately, this is not a new high for the Serious Injury 5-year rolling average analysis for the Region.

Figure 4.3-4: Region Total Serious Injuries 5-Year Rolling Averages



This resulted in Serious Injuries trending downward since 2012 as depicted by the Trend Line in **Figure 4.3-4**. To continue the downward trend of Serious Injuries from 17-21 total of 98 in the Region to meet the Vision Zero goal, Safe System Approach projects need to be considered for development on the roadways where the Serious Injuries occur. MRPC will contact Member Communities concerning the historic locations of Serious Injuries for further study and potential project development.

All Mode High Crash Intersections (HCIs)
At-Risk Road Segments for Crash Type Speeding (*At-Risk Rd Segs*)

HCIs include all crashes involving all types of motorized vehicles and people that are:

- Walking / on bicycles / using public transportation / or using any other mobility means such as wheelchairs.

HCIs prioritize Fatal crashes and Serious Injury crashes over crashes that result in property damage only. **Please see the HSIP Project Selection Criteria for more information**.

- **Table 4.3-1** below shows that for the 3-year period of 2017-2019, a total of 106 **HCIs** occurred in Member Communities.
- The **HCIs** are unevenly distributed among 15 Member Communities.
- 71.7% (76 of 106) of the **HCIs** occurred in the three Member Communities of Fitchburg, Gardner, and Leominster.

Table 4.3-1: HCIs Per Member Communities

COMMUNITIES	# of HCIs Per Community
ASHBY	1
ATHOL	3
AYER	1
CLINTON	3
FITCHBURG	**29**
GARDNER	**11**
GROTON	3
HARVARD	1
LANCASTER	3
LEOMINSTER	**34**
LEOMINSTER & FITCHBURG*	2
LUNENBURG	3
STERLING	3
TOWNSEND	3
WESTMINSTER	3
WINCHENDON	3
REGION TOTAL:	106

*HCIs occurred at City Lines

◆ **All 106 HCIs need safety improvements. However, projects cannot be completed for all of them at the same time. In light of this, the MRPC recommends that Member Communities select at least one to submit as a safety improvement project. Please see the Appendix for the full All Mode HCIs Table.**

❖ **Please contact the MRPC for further information on the full All Mode HCIs Table.**

Table 4.3-2 below list the:

- Top 10 **HCIs** in the Region that may also abut ***At-Risk Rd Segs***.
- **HCIs** that are listed in the state's Top 200 High Crash Locations Report .
- **HCIs** that are NEAR Top 200 HCLs that may also abut ***At-Risk Rd Segs***.
- **HCIs** that overlap Bike and Pedestrian High Crash Locations that may also abut ***At-Risk Rd Segs***.

NOTE: 48 **HCIs** abut 40 ***At-Risk Rd Segs***.

NOTE: All Ped and Bike **HCLs** in the Region are included in **Table 4.3-2**.

- **Table 4.3-2** is **NOT A PRIORITIZED LIST** of **HCIs**. Each of the 106 **HCIs** in the full **HCIs** table is a priority for safety improvement.

Table 4.3-2: Top 10 Region HCIs / HCIs that are also (or near) Top 200 HCLs / Ped HCLs / Bike HCLs and Abut At-Risk Rd Segs in Member Communities

COMMUNITIES	HCIs 2017 - 2019	State Top 200 HCLs^	Overlap Bike HCLs^^	Overlap Ped HCLs^^	Abut At-Risk Rd Segs*
FITCHBURG	**1. WATER ST (SR 12) at WANOOSNOC RD**	●			●
LEOMINSTER	**2. NORTH MAIN ST (SR 12) at LINDELL AVE**	●			●
	3. MAIN ST (SR 13) at HAMILTON ST	●	●		●
LANCASTER	**4. LOWER BOLTON RD (SR 110) at BOLTON RD**	●			●
LEOMINSTER	**5. HAWS ST at RT 2 EXIT 100 ON/OFF RAMP**				●
FITCHBURG	**6. LUNENBURG ST (SR 2A) at BOUTELLE ST**				
	7. SOUTH ST at WANOOSNOC RD				●
LEOMINSTER	**8. NORTH MAIN ST (SR 12) at NELSON ST**				●
FITCHBURG	**9. MAIN ST (SR 2A) at NORTH ST**			●	●
	10. BEMIS RD at AIRPORT RD				
LEOMINSTER	MAIN ST (SR 13) at RAILROAD ST		●**		●
FITCHBURG	MAIN ST at CUSHING ST			●	●
LEOMINSTER	MONUMENT SQ (SR 12) at MECHANIC ST			●	●
FITCHBURG	MAIN ST at BOULDER DR			●	●
LEOMINSTER	MAIN ST (SR 13) at RIVER ST	●**	●		●
FITCHBURG	MAIN ST at WATER ST			●	●
	WATER ST (SR 12) at MARKET BASKET DRW			●	
ATHOL	MAIN ST (SR 2A) at EXCHANGE ST		●		●
FITCHBURG	WATER ST (SR 12) at LAUREL ST (SR 2A)			●	●
GARDNER	MAIN ST (SR 68) at WILLOW ST			●	
FITCHBURG	WATER ST (SR 12) at WANOOSNOC RD	●**			●

^HCIs that are included in the state's Top 200 High Crash Locations Report

^^Bike and Ped HCLs are included in the state's Top 200 High Crash Locations Report

*Identified Locations from the At-Risk Road Segments for Speeding

**Any HCIs located near a State Top 200 HCL or a Bike HCL

For ***At-Risk Rd Segs*** and to achieve the Safe Systems Approach and the Equity efforts of the Plan, road segments that are susceptible to Fatal crashes and Serious Injury crashes related to speeding were identified by MassDOT using the following risk factors:

- Roadway Risk Factors: The occurrence of Fatal crashes and Serious Injury crashes that exceeded the speed limit; Average Annual Daily Traffic (AADT); degree of road

curvature; posted speed limit; presence of a sidewalk on at least one side of the road; divided or undivided road; stability of road shoulder; and other factors.

- Societal Risk Factors: Proportion of younger drivers in a community; vulnerable and people of color populations within a community; and other demographic and socioeconomic characteristics.

NOTE: Not all Risk Factors need to occur on a road segment for that road segment to become an ***At-Risk Rd Seg***. For example, road curvature does not need to exist on a road segment, but if it does exist, then it becomes a Risk Factor.

- **Table 4.3-3** below shows that for the 5-year period of 2013-2017, a total of 160 ***At-Risk Rd Segs*** were identified in Member Communities.
- ***At-Risk Rd Segs*** are unevenly distributed among 19 Member Communities.
- 57% (91 of 160) of the ***At-Risk Rd Segs*** occurred in five Member Communities: Clinton; Fitchburg; Groton; Lancaster; Leominster.

Table 4.3-3: At-Risk Rd Segs Per Member Communities

COMMUNITIES	# of At-Risk Rd Segs Per Community
ASHBURNHAM	3
ASHBY	2
ATHOL	7
AYER	8
CLINTON	**10**
FITCHBURG	**31**
GARDNER	9
GROTON	**13**
HARVARD	3
LANCASTER	**11**
LEOMINSTER	**26**
LUNENBURG	5
PETERSHAM	2
SHIRLEY	4
STERLING	3
TEMPLETON	2
TOWNSEND	9
WESTMINSTER	7
WINCHENDON	5
REGION TOTAL:	160

◆ **All 160 *At-Risk Rd Segs* need safety improvements. However, projects cannot be completed for all of them at the same time. In light of this, the MRPC recommends that**

Member Communities select at least one to submit as a safety improvement project. Please see the Appendix for the full *At-Risk Rd Segs* Table.

❖ **Please contact the MRPC for further information on the full *At-Risk Rd Segs* Table.**

Tables 4.3-4A and **4.3-4B** below list the 40 ***At-Risk Rd Segs*** that also abut at least one **HCI**. Intersection crashes were not included in this analysis. Intersections are covered in the ***All Mode HCIs*** analysis above.

Table 4.3-4A: At-Risk Rd Segs that Abut HCIs in Member Communities

COMMUNITIES	At-Risk Rd Segs	Abut All Mode HCI*
ATHOL	MAIN STREET	•
	SOUTH MAIN STREET	•
CLINTON	HIGH STREET	•
	WATER STREET	•
FITCHBURG	ELECTRIC AVENUE	•
	JOHN FITCH HIGHWAY	•
	LAUREL STREET	•
	MAIN STREET	•
	MOUNT ELAM ROAD	•
	NORTH STREET	•
	OLD SOUTH STREET	•
	PEARL STREET	•
	PRINCETON ROAD	•
	RIVER STREET	•
	SOUTH STREET	•
	WANOOSNOC ROAD	•
	WATER STREET	•
	WESTMINSTER STREET	•
GARDNER	TIMPANY BOULEVARD	•
GROTON	BROADMEADOW ROAD	•
	LONGLEY ROAD	•
	LOWELL ROAD	•
LANCASTER	CENTER BRIDGE ROAD	•
	HIGH STREET EXTENSION	•
	LOWER BOLTON ROAD	•
	MAIN STREET	•

*Abuts at least 1 HCI

Table 4.3-4B: At-Risk Rd Segs that Abut All Mode HCIs in Member Communities

COMMUNITIES	At-Risk Rd Segs	Abut All Mode HCI*
LEOMINSTER	HAMILTON STREET	•
	HARVARD STREET	•
	HAWS STREET	•
	LITCHFIELD STREET	•
	MAIN STREET	•
	MECHANIC STREET	•
	MONUMENT SQUARE	•
	NORTH MAIN STREET	•
	RIVER STREET	•
	TOLMAN AVENUE	•
TOWNSEND	SOUTH STREET	•
WESTMINSTER	EAST MAIN STREET	•
WINCHENDON	FRONT STREET	•
	SCHOOL STREET	•

*Abuts at least 1 HCI

Future Analysis:
Other Crash Types that May Occur on At-Risk Road Segments
Segments with Excessive Fatal and/or Serious Injury crashes

The following list of Crash Types are susceptible to Fatal crashes and Serious Injury crashes on road segments. MassDOT has developed Risk Factors for the highlighted Crash Types. The MRPC will be conducting an analysis of these Crash Types in the near future. Risk Factors for **At-Grade Rail Crossing**; **Intersection**; and **Safety of Persons Working on Roadway** (Work Zone) Crash Types are under development by MassDOT.

At-Grade Rail Crossing: It is a crash in which the **ROADWAY JUNCTION TYPE** field in the crash report is reported to be a **RAILWAY GRADE CROSSING**.

Bicycle/Bicyclist: It is a crash in which the **PERSON TYPE** field in the crash report is reported to be **NON-MOTORIST** and the **NON-MOTORIST TYPE** field in the crash report is reported to be **CYCLIST**.

Distracted Driver: It is a crash in which the **DRIVER DISTRACTED TYPE** field in the crash report is reported to be **MANUALLY OPERATING AN ELECTRONIC DEVICE**; **TALKING ON HANDS-FREE ELECTRONIC DEVICE**; **TALKING ON HAND-HELD ELECTRONIC DEVICE**; **OTHER ACTIVITY**; **ELECTRONIC DEVICE**; **OTHER ACTIVITY (SEARCHING, EATING,**

PERSONAL HYGIENE, ETC.); **PASSENGER**; or **EXTERNAL DISTRACTION (OUTSIDE THE VEHICLE)**.

Impaired Driving: It is a crash in which one or more drivers is reported as being suspected of using alcohol. On the crash report **ALCOHOL SUSPECTED FIELD** equals **YES**.

Intersection: It is a crash in which the **ROADWAY JUNCTION TYPE** field in the crash report is reported to be either a **T** intersection; **Y** intersection; **4-WAY** intersection; **5-POINT OR MORE** intersection; or **TRAFFIC CIRCLE**.

Lane Departure: It is a crash in which the **VEHICLE SEQUENCE OF EVENTS** field in the crash report is reports as a collision with a **CURB**; **TREE**; **UTILITY POLE**; **LIGHT POLE**; **GUARDRAIL**; **SIGN POST**; **FENCE**; **MAIL BOX**; **BRIDGE** (or any other roadside object); **RAN OFF THE ROAD RIGHT**; **RAN OFF THE ROAD LEFT**; **CROSS MEDIAN/CENTERLINE**.

Large Truck Involved: It is a crash in which the **VEHICLE CONFIGURATION CODE** field in the crash report is reported to be **BUS (SEATS FOR 16 OR MORE, INCLUDING DRIVER)**; **BUS (SEATS FOR 9-15 PEOPLE, INCLUDING DRIVER)**; **SINGLE-UNIT TRUCK (2-AXLE, 6-TIRES)**; **SINGLE-UNIT TRUCK (3-OR-MORE AXLES)**; **TRUCK/TRAILER**; **TRUCK TRACTOR (BOBTAIL)**; **TRACTOR/SEMI-TRAILER**; **TRACTOR/DOUBLES**; **TRACTOR/TRIPLES**; **UNKNOWN HEAVY TRUCK, CANNOT CLASSIFY**.

Motorcycle/Motorcyclist: It is a crash in which the **VEHICLE CONFIGURATION CODE** field in the crash report is reported to be **MOTORCYCLE**.

Occupant Protection: It is a crash in which the **PROTECTIVE SYSTEM USE** field in the crash report is reported to be **NO**.

Older Driver: It is a crash in which the **AGE OF DRIVER – OLDEST KNOWN** field in the crash report is reported to be between the ages of **65 AND 110**.

Pedestrian: It is a crash in which the **PERSON TYPE FIELD** in the crash report is reported to be **NON-MOTORIST** and the **NON-MOTORIST TYPE** field in the crash report is reported to be **PEDESTRIAN**.

Safety of Persons Working on Roadways (Work Zone): It is a crash in which the **WORK ZONE RELATED FLAG** in the crash report is reported as **YES**.

Speeding: It is a crash in which the **DRIVER CONTRIBUTING CIRCUMSTANCE** field in the crash report is reported to be **EXCEEDED AUTHORIZED SPEED LIMIT**.

Young Driver: It is a crash in which the **AGE OF DRIVER – YOUNGEST KNOWN** field in the crash report is reported to be between the ages of **15 AND 20**.

Segments with Excessive Fatal and/or Serious Injury Crashes: Have been identified by MassDOT. The Top 5% and Next 10% segments will be considered for safety improvement projects. The MRPC will be conducting an analysis of these segments in the near future.

Safety Recommendations and Action Items

Action Items

- To improve safety at **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs***, or any combination thereof, safety improvement projects need to be considered for development based on the strategies and actions found in the Plan.
- Safety project development includes the requirement of conducting a Road Safety Audit (RSA) that will provide safety improvements alternatives before the design is initiated.
- Member Communities may choose to contact the MRPC for the **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs*** that may exist within their community.
- MRPC will contact Member Communities concerning the **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs*** for further study and potential project development.
- **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs*** data is updated by MassDOT which may add locations or subtract existing locations.
- The MRPC maintains regional **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs*** **Tables**.
- The MRPC will be conducting an analysis of the Crash Types that are susceptible to Fatal crashes and Serious Injury crashes on road segments in the near future.

Future Safety Improvement Projects

Table 4.3-5 below lists the top **HCI** from the full **All Mode HCIs Table** for each Member Community listed in **Table 4.3-1** above. Please see the Appendix for the full **All Mode HCIs Table**. All 106 locations in the table need safety improvements. However, projects cannot be

completed for all of them at the same time. In light of this, the MRPC recommends that Member Communities select at least one to submit as a safety improvement project.

Table 4.3-5: Top HCIs in Member Communities

COMMUNITIES	Top HCI in each Community 2017 - 2019	Crash Count	1) Fatal &/or Serious Injury	2) Minor &/or Possible Injury	1 & 2 Total	PDO	EPDO	Region Top 5%	Region Top 100	State Top 200 HCI	**
ASHBY	GREENVILLE RD (SR 31) at TURNPIKE RD	17	2	5	7	10	157	Yes			
ATHOL	TEMPLETON RD (SR 2A) at ORCHARD ST	14	0	4	4	10	94		Yes		
AYER	GROTON HARVARD RD at CENTRAL AVE	13	0	5	5	8	113	Yes			
CLINTON	MAIN ST (SR 68) at BROOK ST	10	0	4	4	6	90		Yes		
	STERLING ST (SR 62) at GREELEY ST	10	0	4	4	6	90		Yes		
FITCHBURG	WATER ST (SR 12) at WANOOSNOC RD	50	1	13	14	36	330	Yes		Yes	Yes
GARDNER	TIMPANY BLVD (SR 68) at CONANT ST	19	0	6	6	13	139	Yes			
GROTON	MAIN ST (SR 119) at LOWELL RD (SR 40)	19	0	3	3	16	79		Yes		
HARVARD	JACKSON RD at GIVRY ST	9	0	6	6	3	129	Yes			
LANCASTER	LOWER BOLTON RD (SR 110) at BOLTON RD	28	1	10	11	17	248	Yes		Yes	Yes
LEOMINSTER	NORTH MAIN ST (SR 12) at LINDELL AVE	47	3	9	12	35	287	Yes		Yes	Yes
LEOMINSTER* &	NORTH MAIN ST (SR 12) at BATTLES ST*	23	0	7	7	16	163	Yes			
FITCHBURG*	NORTH MAIN ST (SR 12) at ERDMAN WAY*	22	0	5	5	17	122	Yes			
LUNENBURG	CHASE RD (SR 13) at MASSACHUSETTS AVE (SR 2A)	9	0	5	5	4	109	Yes			
STERLING	PRINCETON RD (62) at REDEMPTION ROCK TRAIL (140)	13	0	4	4	9	93		Yes		
TOWNSEND	MAIN ST (SR 119) at SOUTH ST	16	0	4	4	12	96		Yes		
WESTMINSTER	E MAIN ST (2A) at RAMP-RTS 2 EB/140 SB TO RTS 2A/140	20	1	3	4	16	100	Yes			
WINCHENDON	SPRING ST (SR 12) at GARDNER RD (SR 140)	10	0	4	4	6	90		Yes		

*these 2 HCIs occurred at the City Line **Abuts At-Risk Rd Seg

Tables 4.3-6A and **4.3-6B** below list one ***At-Risk Rd Seg*** from the full ***At-Risk Rd Segs*** **Table** for each Member Community listed in **Table 4.3-3** above. Please see the Appendix for the full ***At-Risk Rd Segs*** **Table**. All 160 locations in the table need safety improvements. However, projects cannot be completed for all of them at the same time. In light of this, the MRPC recommends that Member Communities select at least one to submit as a safety improvement project.

Table 4.3-6A: At-Risk Rd Segs in Member Communities

COMMUNITIES	At-Risk Rd Segs	Abuts All Mode HCI*
ASHBURNHAM	MAIN STREET	
ASHBY	MAIN STREET	
ATHOL	MAIN STREET	Yes
AYER	MAIN STREET	
CLINTON	MAIN STREET	
FITCHBURG	MAIN STREET	Yes
GARDNER	MAIN STREET	
GROTON	MAIN STREET	

*Abuts at least 1 HCI

Table 4.3-6B: At-Risk Rd Segs in Member Communities

COMMUNITIES	At-Risk Rd Segs	Abuts All Mode HCI*
HARVARD	AYER ROAD	
LANCASTER	MAIN STREET	Yes
LEOMINSTER	MAIN STREET	Yes
LUNENBURG	MASSACHUSETTS AVE	
PETERSHAM	BARRE ROAD	
SHIRLEY	LANCASTER ROAD	
STERLING	MAIN STREET	
TEMPLETON	PATRIOTS ROAD	
TOWNSEND	MAIN STREET	
WESTMINSTER	EAST MAIN STREET	Yes
WINCHENDON	FRONT STREET	Yes

*Abuts at least 1 HCI

4.4 Bicycle & Pedestrian

Introduction

Increasing concern for air quality, energy conservation, rising fuel costs, and the health benefits of getting outdoors is generating continued interest in multi-modal transportation in the Montachusett Region and throughout the state. The MRPC has been working toward a more sustainable transportation system by educating and promoting transportation mode choice throughout the region. This section will review existing and proposed Bicycle and Pedestrian transportation alternatives while focusing on the importance of mode shift.

Existing Infrastructure

A. Bikeways

Bikeways are special routes and/or facilities established to facilitate the movement of bicycles as an energy efficient transportation and/or recreational mode of travel. Bikeability is a measure of how well an area encourages biking for everyday trip purposes.

In 2019 MassDOT updated the "Massachusetts Bicycle Transportation Plan". This plan consists of an overview, a roadmap which includes the vision, goals and principles, as well as initiatives and an action plan. As a part of this update development, MassDOT also developed the "Municipal Resource Guide for Bikeability" to go along with the updated Bike Plan. This plan is meant to assist communities in enhancing community bikeability and includes additional resources.

The Vision, Goals and Principles identified in the updated Bike Plan include –

Vision – Biking in Massachusetts will be a safe, comfortable, and convenient option for everyday travel.

- Goal 1 – Create high-comfort connected bike networks for people of all ages and abilities.
- Goal 2 – Increase the convenience and attractiveness of everyday biking.
    - Principle 1 – Treat all people the same regardless of travel mode
    - Principle 2 – Address gaps and barriers known to discourage everyday biking
    - Principle 3 – Lead by example and partner with municipalities to advance everyday biking

MassDOT developed a Capital Investment Plan (CIP) to manage funding that works towards this vision. This plan includes projects such as small-scale maintenance projects to large-scale multimodal modernization projects. All projects are scored based on their anticipated benefits in order to determine investment priorities. Additional programs include Complete Streets Funding Program, the Chapter 90 Program, the Multi-Use Pathways Program and the MassTrails Funding Program.

1. Bikeway Projects in the Montachusett Region

- **Mass Central Rail Trail** (MCRT)– (Clinton/Sterling) The Montachusett Region considers the completion of this statewide trail a transportation priority as it is a vital link for regional and statewide trail connections. An estimated 53 miles of this trail are already open and, when complete, it will total around 104 miles of trail (https://www.masscentralrailtrail.org/).

- Sterling - The Sterling spur runs between Gates Road at Washacum Street in Sterling center, with parking at both trailheads. This trail section is constructed on the right-of-way of the previous Fitchburg & Worcester Railroad, which ran from Sterling Junction through Sterling Center to Pratt's Junction.

Wachusett Greenways, in partnership with Sterling and seven more regional towns and the Commonwealth, constructed and maintains the central portion of the statewide MCRT. The MCRT runs along a 30 mile route through Sterling, West Boylston, Holden, Rutland, Oakham and Barre following the old Mass Central Railroad alignment with other connecting lands. Twenty miles of the trail are complete and construction continues to fill in the gaps.

The Town of Sterling and Wachusett Greenways are collaborating to plan extension of the MCRT spur north from Washacum Street to Chocksett Road. MasDOT's construction of a roundabout at Route 12 and Chocksett Road, a second roundabout at I-190 Exit 6, with lane reductions, and additional pedestrian and bicycling accommodations offers the potential for safe extension of the route further north. The general direction of the Sterling Spur of the MCRT offers the potential to connect to the recently constructed Twin Cities Rail Trail in Fitchburg/Leominster.

- Clinton - The Clinton/Berlin areas are important components of the MCRT. Wachusett Greenways anticipates constructing the MCRT from West Boylston to Route 110, leading to a Clinton connection. The route from the West Boylston, Thomas Street trail entrance, bridges along the Route 140 Beaman Street causeway, then follows old Pleasant Street to the Bean Road, Sterling and Prescott Street, West Boylston line. Wachusett Greenways has identified trail route options from there to

Route 110 at Chase Hill Road, Sterling on DCR land and town roads. Wachusett Greenways is currently constructing the old Pleasant Street, West Boylston section.

The Town of Clinton recently purchased the segment of trail that includes the 1,000-foot tunnel in 2020. The Clinton Greenway Conservation Trust is currently working with the town of Clinton on the design phase for the remediation of the tunnel and the design of the trail from the tunnel to the Berlin town line. When this design phase is completed, bid documents will be ready for the remediation of the tunnel and the trail will move on to the build phase. The Montachusett Region is in support of using Transportation funds to complete this work.

The DCR Wachusett Reservoir section of the MCRT in Clinton is already open and in use. It runs from gate 39 at South Meadow Road to Gate 43 at the base of Grove Street. This is the only trail along the Wachusett Reservoir where bikes are allowed. To connect the Clinton owned section of the trail to the DCR section of the trail, a crossing at Route 70 and the Nashua River will need to be designed and completed. This project will part of the next design phase for the Clinton section.

A connection to the west also needs to be designed and built to connect Clinton to the Sterling section of the trail. There are a few options to join these sections. One option is “rail with trail” as the rail bed between Clinton and West Boylston is still active. Another option may be to develop a trail along Route 110. An exact path has yet to be determined.

The MCRT could be the longest rail trail in the northeast and at Northampton it is going to connect directly with a North/South trail to New Haven, CT making for a totally

sustainable tourism experience for families. Boston to Northampton on the MCRT and then south to New Haven on the Farmington Canal Greenway and then take passenger rail back to Boston.

- **Nashua River Rail Trail** – (Ayer/Groton) This popular trail is a former railroad right of way that travels 11 miles through the towns of Ayer, Groton, Pepperell and Dunstable. Managed by the Department of Conservation and Recreation, the trail was officially opened to the public on October 25, 2002. The trail is an active transportation corridor to the Ayer Commuter Rail Station as well as a popular destination for recreation. Unfortunately, the condition of the trial surface has deteriorated over the years and it is in dire need of repairs.

- **North Central Pathway** – (Gardner/Winchendon) This recreational trail connects the communities of Gardner and Winchendon. The trail was broken down into phases to ease the development process.
  - Phase 1 – Dedicated paved trail from Park Street past Crystal Lake to Mount Wachusett Community College (MWCC)
  - Phase 2 – Using existing roads from MWCC, Kelton & Stone Streets to Route 140. This portion of the trail exists only as an on-street connection with signage. Once Phase 6 is completed, this phase will no longer be needed.
  - Dunn Park Spur – Existing roads from MWCC to Dunn Park with dedicated connector at the Middle School
  - Phase 3 –3.2 miles paved from Route 140 to Old Gardner Road in Winchendon
  - Phase 4 – Downtown Winchendon to Glenn Allen Street
  - Phase 5 – $1.7 Million-dollar project that consists of 2.1 miles starting at North Ashburnham Road to Glennallen Street (Rt. 202).

- Phase 6 – A $8.3 Million-dollar bridge over Route 140 that is currently in the design process. It is listed on the Draft 2024-2028 TIP for year FY2027.
- Phase 7 – Proposed along the old rail bed from Park Street to the bridge at Route 140 (Phase 6).

When completed, this trail will provide the region with a link to many other recreational sites and activities including Dunn Pond, Gardner High School Athletic Facilities, Mount Wachusett Community College, Gardner Municipal Golf Course, the Gardner Veterans Rink, Clark YMCA, Grout Park and many more.

- **Twin Cities Rail Trail**

After over 20 years of planning, phase 1 of this 4.5-mile rail was completed in the summer of 2022. When all phases are completed, the trail will connect downtown Fitchburg to downtown Leominster via the former CSX railroad bed that parallels Route 12. Due to the complex nature of the trail design, the project was broken up into three phases.

- Phase 1 **–** Construction of this phase began during FY2020 and is the main portion of the trail connecting the area of First Street in Fitchburg south to Carter Park in Leominster. This portion of the trail has two major bridges and many road crossings.
- Phase 2 – Scheduled for FY2024, this phase will consist of a bridge over the Nashua River and existing railroad tracks over to the Intermodal station in Fitchburg. This phase of the trail is extremely important as it will connect trail users directly to the commuter rail as well as MART transit services.
- Phase 3 – This phase will continue the trail through Carter Park to Mechanic Street in Leominster. At the time of this write up, the City of Leominster is in negotiations with CSX to purchase the rail line through Carter Park. It is expected that this will be completed by 2024. If timing allows, this phase may be combined with Phase II to

shorten the time frame for project completion and reduce the project's administrative costs.

This trail provides a much-needed multi-modal connection from one city center to the other by providing many different populations, including environmental justice neighborhoods, access to recreation, shopping, medical centers as well as to transit options. Future connections south to Sterling and the Mass Central Rail Trail are a possibility for trail expansion.

Ashburnham Rail Trail – (Ashburnham) The Town of Ashburnham and Ashburnham Rail Trail (ART) Inc., a private not for profit, are working together toward their goal of a safe, non-motorized route between Ashburnham Center and South Ashburnham. This relatively flat, shared use path will benefit residents and visitors by providing a safe route along a very busy 2.5-mile section of Route 101 where sidewalks and bike lanes are currently unavailable due to geographic constraints.

Ashburnham is working toward two major aspects of this project:

1. Turnpike Road intersection looking west - Completion of the engineering and design of the 2.5-mile section of the Rail Trail, which will provide users convenient access to the many existing businesses and service of Ashburnham Center, as well as providing excellent opportunity for future growth in this area. Along the route, the Rail Trail would offer access to the Post Office, municipal soccer fields, J.R. Briggs Elementary School, and the William J. Bresnahan Community Center. The Town has purchased the abandoned railroad bed and both the Town and volunteers maintain and improve the trail. A multi-use path is included in the Reconstruction of Rte. 101S MassDOT TIP currently scheduled for completion in FY25. The path will allow safe pedestrian and bike access between Turnpike Road and the Bresnahan Community Center.

2. Bridge over Whitney Pond - At the South Ashburnham termination of the current Rail Trail, the goal is to connect the Ashburnham Rail Trail to the North Central Pathway of Greater Gardner and Winchendon via the abandoned Cheshire Branch of the former Boston & Maine Railroad. With this connection, Ashburnham would be a major entryway to a tri-state network of rail trails.

Progress on the 2.5-mile section of the trail has been difficult, slow, and will be expensive. However, the project is vital to Ashburnham's future economic development. To date, the Town has acquired ownership and/or rights to most segments that comprise the Rail Trail. In 2007 and with support of Ashburnham residents at Town Meeting, a 25% Design Plan was completed for the Rail Trail and an application for an Abbreviated Notice of Resource Area Delineation was submitted to the Ashburnham Conservation Commission. In 2022, MassDOT expressed an interest in linking the Rail Trail segment from downtown Ashburnham and Turnpike Rd. to the Rte. 101S TIP multi-use path. The Town must complete 100% of the design plan between Williams and Turnpike Rd., which includes a bridge before possibly receiving state funding to complete the project segment.

Challenges that lie ahead for completion of the Rail Trail include:

- Parking and access point delineations
- Clearing, grading and surface preparation
- Whitney Pond Bridge reconstruction after Whitney Pond Dam removal is completed.
- Bridge construction at the washed-out gulley behind the soccer fields
- Municipal, State and Federal permitting
- Applying for and receiving state and federal grant funding

The financial constraints have left Ashburnham and ART, Inc. with few options of moving forward with these expensive and major projects. Funding and grant money are limited for such a short but vital section of rail trail. That is why the Cheshire Line is such an important piece of the plan.

With greater awareness of the incredible asset they have in Ashburnham, the Town and ART, Inc. hope to keep their dream of a Tri-State Rail Trail alive.

- **Squannacook River Rail Trail** – (Townsend/Groton)

  The construction of the Squannacook River Rail Trail has been broken down into four phases.

  - Phase 1- Townsend center to Old Meetinghouse Road (Complete)
  - Phase 2 - Old Meetinghouse Road to Townsend Harbor (Complete)
  - Phase 3 - From the Bertozzi Wildlife Management Area in West Groton to the northern Crosswinds Drive crossing in West Groton (Complete)
  - Phase 4 - From the northern Crosswinds Drive crossing to Townsend Harbor (behind the Harbor Village Mall). (Completion estimated for March 2024)

  When completed, the Squannacook River Rail Trail will be 3.7 miles long. This multi-use recreational trail will parallel the scenic Squannacook River and will connect the town centers of Townsend Harbor and Townsend Center, two historical districts, two shopping centers, the North Middlesex Regional High School, and several major open space/ conservation areas (notably Townsend State Forest and the Squannacook River and Ash Swamp Wildlife Management Areas). In Townsend, this trail closely parallels the bicycle and pedestrian unfriendly Route 119, providing a long-desired safe alternative to that state highway for non-motorized travel. The surface is/will be stone dust, with a 10-foot width. The rail bed is owned by the MBTA, and was leased in March 2015 by the non-profit Squannacook Greenways, Inc. Squannacook Greenways was the first non-profit in the state of Massachusetts to sign a lease to construct a rail trail with the MBTA. They were also the recipient of two MassTrails grants, funds from Groton's Community Preservation Act as well as private foundation money to continue efforts in project development. More information can be found at sqgw.org and http://squannacookgreenways.org/ .

- **Nashoba Regional Greenway (NRG) -** (Ayer, Devens, Harvard) The Nashoba region of Massachusetts is located between and around routes 128 and 495 in the vicinity of the Fitchburg commuter rail line. This greenway aims to connect shared-use trails and greenways, notably the Nashua River Rail Trail, the Bruce Freeman Rail Trail, the Assabet River Rail Trail, the Minuteman Bikeway, and the Mass Central Rail Trail.
  Currently, however, there are no designated safe/appropriate routes to connect these resources to mass transit, community centers, or regional attractions. The Nashoba Regional Greenways (NRG) coalition is a group of town officials and volunteers from fifteen communities who are working together to fill that gap using the existing road and trail network. They envision a network of quiet and safe routes, designated by signage, suitable for bicycles, pedestrians, strollers alike.

B. Pedestrians

Like the roadway projects in the region, pedestrian facilities in the Montachusett Region are also limited due to a lack of funding. During these tough economic times, communities tend to focus their monies elsewhere. Local communities have expressed interest and support of improved pedestrian ways, often in connection with potential bikeways, but they lack adequate funding for the design and construction of these facilities.

As mentioned in the bicycle section above, in addition to the Massachusetts Bicycle Transportation Plan, the state of Massachusetts also created the Massachusetts Pedestrian Transportation Plan in 2019.

The Vision, Goals and Principles identified in the updated Pedestrian Plan include:

Vision – All people in Massachusetts will have a safe, comfortable, and convenient option to walk for short trips.

- Goal 1 – Eliminate pedestrian fatalities and serious injuries
- Goal 2 – Increase the percentage of short trips made by walking

Principles

1. Value people walking and their travel needs, especially the most vulnerable – children, elderly, people with disabilities – to ensure they can walk safely.
2. Prioritize improvements for people walking by proactively addressing gaps and barriers that discourage walking and are known to increase the likelihood of crashes.
3. Lead the Commonwealth in meeting the pedestrian plan goals by supporting local municipalities and other agencies to increase everyday walking.

In 2020, the MRPC developed a Regional Bike and Pedestrian Plan. The MRPC incorporated data from the statewide Bike and Pedestrian Plans into this document as well as the information and recommendations that were included within this 2024 Regional Transportation Plan.

C. Sidewalks

The majority of the communities in the Montachusett Region are rural in nature with small downtown areas. The areas typically contain sidewalks within the major activity centers. The urban communities have a more extensive infrastructure within the central business districts that facilitates pedestrian circulation. Efforts have been made to improve pedestrian access by means of sidewalk improvements, crosswalk delineation, and construction of handicapped ramps, improved lighting, and connections to municipal parking lots. Designated fixed route bus stops are also common along the sidewalks providing a connection between different modes of travel. MRPC conducted a sidewalk and bike lane inventory in 2020 which can be seen on the MrMapper site on the MRPC webpage - https://mrmapper.mrpc.org/ .

D. Trails

Using Unified Planning Work Program (UPWP) funds, the MRPC was able to conduct a region wide trail inventory starting in 2005 and finishing in 2011. Through public outreach, local meetings and data collection, the MRPC was able to gather trail data for each of their 22 communities plus Devens. This data was broken down into three categories:

- Existing Formal – Trails that are open to the public.
- Existing Informal – Trails that exist but are not open to the public. These trails are likely on private or environmentally sensitive land.
- Potential – These are trails that are not currently in existence but that have potential for development in the future.

In 2012, the trail inventory data was updated through community outreach and field investigation. A Montachusett Regional Trail Guide was then created with the updated trail data in 2014. This guide includes all of the Existing Formal Trails along with local cultural and historical points of interest. The first guide consisted of 10,000 printed copies that were distributed throughout the region. These guides were so popular that they were all dispersed in just over a few years.

In 2019, the MRPC, with the help of the Montachusett Regional Trails Coalition (MRTC), updated existing trail data once again and published an updated Montachusett Regional Trail Guide. At the time of this document, the MRPC currently has approximately 665.5 miles of existing formal trails throughout the region. This total does not include the town of Groton, which owns its own trail inventory using an open-source application made by a third-party vendor. The third-party vendor has multiple legal requirements that must be met in order to use the data stored on its site. Because the application is open-source, anyone can submit or edit the data. Therefore, the data may not be reliable. In previous iterations of the Trail Inventory, the MRPC included Groton's trail data. However, once the hinderances of using the trail data stored on this application were recognized, it was decided that it would be in everyone's best interest to remove Groton's trail data from the MRPC's Trail Inventory.

Resources & Funding

MassDOT developed the Capital Improvement Plan (CIP) which will allow the state to develop and implement the Commonwealth's transportation investment strategy. This plan includes a magnitude of projects and project types – from small-scale maintenance projects to large-scale

multimodal modernization projects. All projects listed in the CIP are subject to the MassDOT Healthy Transportation Policy Directive which requires the incorporation of walking, bicycling, and transit in all projects.

Funding sources for multi-modal projects include:

- Complete Streets
- Chapter 90
- Shared Use Path Program
- Safe Routes to School
- MassTrails Grants
- Shared Streets and Spaces

A. Working with the Montachusett Regional Trail Coalition

The MRPC is partnered with the Montachusett Regional Trail Coalition (MRTC) in support of their mission "To advance local and regional connectivity, community commitment, and enthusiasm for trails in the Montachusett Region." This mission was re-established during a strategic planning process that was made possible in part by a grant from the Community Foundation of North Central Massachusetts. During this process, a vision statement, guiding principles and goals were also established-

Vision Statement

MRTC envisions:

- fostering trail connections in and around the Montachusett region;
- serving as a centralized resource for regional trail planning;
- helping our communities see trails as essential infrastructure.

Guiding Principles

MRTC advances the development of diverse, high-quality shared-use trails and greenways that are sustainable and accessible:

- Collaboration - Seek participation of diverse stakeholders who represent the communities we serve.
- Connectivity - Advocate for trail linkages within and between communities to bring people and places together in the region.
- Accessibility - Provide trail experiences for people of all abilities and ages.
- Sustainable Development - Commit to developing trails that protect the environment and meet user needs through best management practices.
- Economic Vitality - Support the local economy by putting North Central Massachusetts on the map as a recreational and tourist destination.
- Healthy Lifestyles - Encourage the health, fitness, and well-being of residents by providing multimodal trail opportunities.
- Awareness & Education - Work to make trails a part of the community fabric, connect people with the natural world, and provide outdoor learning experiences for people of all ages.

Goals

- Goal 1 – Identify, secure, and appropriately utilize the human and financial resources necessary to carry out the work of the strategic plan.
- Goal 2 – Develop and implement a marketing plan that targets the proper audiences, strengthens brand awareness, and supports MRTC's mission.
- Goal 3 – Promote trail connectivity and usage throughout the region by identifying and acting upon opportunities for outreach, education, and advocacy.

The MRTC has been instrumental in gaining public involvement, education, and working with MRPC to identify trail gaps and priorities. Some of the significant trail projects that have been identified include:

1. Connecting the Twin Cities Rail Trail from its terminus in Leominster south to Sterling where it would connect to the Sterling Spur and the Mass Central Rail Trail.
2. Connecting the North Central Pathway in Winchendon to the Ashburnham Rail Trail to the south

3. A Gardner to Athol connection that has yet to be determined

Since COVID 19, the MRTC has been struggling to get up and running again. It is the hope that the group can regain momentum and continue their mission.

B. Sidewalk Inventory & Pedestrian/Bicycle Connections for MART Bus Routes (2018)

This study focused on the Cities of Fitchburg, Gardner and Leominster, in particular, the major fixed bus routes within these communities. The goal was to find and prioritize areas where there are gaps in accessing the bus routes. The study area was defined by the areas within ¼ mile of the bus routes.

As part of the process, a sidewalk inventory was conducted within this study area, and trail data was also included to show transportation alternatives. Data was gathered regarding special populations and points of interest were noted. All of these data sets were mapped and assisted in the prioritization of key areas.

Priority areas for each community included:

- Fitchburg State University (Fitchburg) – This area was listed as one of the top bus routes (Route 4), is located in both of the top five specialty population block groups, and incorporates a major continuing education facility in the area. John Fitch Highway is also a major roadway in the City of Fitchburg (12,000-20,000 avg. vehicles per day). There is also recreational trails nearby at Coolidge Park and Fitchburg State University's athletic fields.

- Leominster Hospital (Leominster) – This area incorporates both elderly and disabled populations, is located on one of the top bus routes (Route 2) and travel routes (North Main Street (Rt. 12) - average of 15,000-30,000 vehicles per day), includes a major medical facility and shopping plazas as well as low income and/or elderly housing facilities.

- Johnny Appleseed Plaza (Leominster) – This is a large area that mostly encompasses Central Street (Route 12) along bus route 9 in the area of Johnny Appleseed Plaza and Willard Street, which connects over to the Walmart shopping area. This section includes both top populations of elderly and individuals with disabilities, low income and/or elderly housing facilities, shopping plazas, and a possible trail connection on the east side of the plaza.

- Parker Pond (Gardner) – This area is located in both of the top five specialty population block groups and is located in between two major routes, Route 68 and 101. The smaller side streets to the east of Parker Pond do not currently have sidewalks. The bus route connects the two routs via Foss Road and Robillard Street. Connections from the smaller side streets near Parker Pond to the bus route and major roadways would be ideal.

- Timpany Plaza (Gardner)– The area just north of Timpany Plaza is listed as having both disabled and elderly populations and is one of the top 5 block groups for elderly residents. It is located within walking distance to the bus route along both Timpany Boulevard and Pearson Boulevard. Both of these locations have many points of interest such as shopping and restaurants and recreational fields/playgrounds.

- Gardner Plaza Shopping Center (Gardner) – The Gardner Plaza is located just off of Route 2 to the north. There are shops and restaurants located here as well as along Pearson Boulevard. There are also two nursing homes and an elementary school located within close proximity. The main focus area is east of Elm Street which is just north of the plaza.

C. Mobility and Access (2022)

This study, similar to the Sidewalk Inventory & Pedestrian/Bicycle Connections for MART Bus Routes mentioned above, examined existing transportation infrastructure that covers vehicular

and non-vehicular mobility needs. The goal of the study was to identify key locations where accessibility should be improved in order to create more transportation options for a variety of ages and populations, specifically Environmental Justice and Title VI populations. Previous studies were examined to assist with identifying these key areas and also to prioritize them by most impactful need.

MRPC staff reviewed existing reports regarding accessibility. Studies that included data gathering for specific types of infrastructure such as trails, sidewalks, bike lanes, pavement condition, etc., were used to assist with the analysis. The main focus was around major destinations such as shopping areas, medical facilities and major employers. MRPC then broke down the data collection into two parts – mobility access for motorists and mobility access for non-motorist. Transit was used for both data sets and was also highlighted in previous reports regarding access to the transit bus lines. The main goal is to identify which areas have the greatest need for improvements in order to create a more user-friendly environment for both transportation modes.

Based upon the data collected and the analysis conducted, the following priority areas were identified. These are the top five priority areas based on the data analysis categories listed above. Each category (vehicular and non-vehicular) has its own set of priority areas and sometimes these areas overlap.

1. Gardner Center- This area has the highest number of analysis criteria with a total of 21 (11–Non-Vehicular & 10 –Vehicular) which makes it the top priority area for both categories. The analysis for this location was based on the following: located within two different vulnerable populations, the MART bus route is located nearby but not directly adjacent to the point(s) of interest (POI), poor pavement conditions adjacent to the POI, located adjacent to both vehicular and non-vehicular top crash clusters, sidewalks nearby but not adjacent to the POI, and no bike infrastructure, commuter rail stop, park & ride, or trails within the priority area.

2. Leominster Center - This location has 18 total points with 9 being a vehicular focus and 9 as non-vehicular. There are 3 vulnerable populations located within this area, which is the highest number of these types of populations within the entire analysis. There are no park & ride facilities, commuter rail stops, trails or bike infrastructure in this area. Poor pavement conditions and both motor vehicle and bike/pedestrian crash clusters adjacent to the points of interest, and sidewalks are present nearby, but connections could be made adjacent to the points of interest.
3. Athol Center - This location also has 18 total points (10 non-vehicular points and 8 vehicular points) in the analysis. The Athol Center is located within two different vulnerable populations, the MART bus route is located nearby but not directly adjacent to the point(s) of interest (POI), poor pavement conditions adjacent to the POI, located adjacent to non-vehicular top crash clusters, trails are located nearby but not adjacent to the POI, and no bike infrastructure, commuter rail stop, or park & ride within the priority area.
4. Fitchburg Center - This location has 17 total points for the analysis (7 for vehicular and 10 for non-vehicular). It is located in 2 top vulnerable populations, there are no park & ride facilities, the MART bus routes, sidewalks, bike infrastructure, and poor pavement conditions are located nearby but not adjacent to the points of interest, there are non-vehicular crash clusters adjacent to the points of interest and vehicular crash clusters nearby.
5. Leominster High School - This location has a total of 15 points for the analysis (8 vehicular and 7 non-vehicular). It is located in 2 vulnerable population groups and there are no commuter rail stops or park and ride facilities in the area. The MART transit bus routes are located nearby but are not adjacent to the points of interest, there are poor pavement conditions throughout the area which also extend adjacent to the points of interest, there are zero vehicular and non-vehicular crash clusters located in the area, there are sidewalks throughout the area and some that are adjacent to the points of interest but bike infrastructure and trails are nonexistent.

Trends

The desire for more multi modal transportation options within the Montachusett Region has increased significantly over the past few years. More people are seeing the value in having these types of transportation options and are also advocating for the development of new, safer, bicycle and pedestrian facilities throughout the region. Programs such as Complete Streets and Safe Routes to School are gaining support from our communities -

- Complete Streets – 19 out of 22 communities have approved policies, one is registered, and 15 have received funding for multi modal projects
- Safe Routes to School – 18 out of 22 communities are partners with the program.

Montachusett Region Communities Participation in Safe Routes to School & Complete Streets

	Safe Routes to School		Complete Streets		
Community	**Participant**	**Infrastructure Funds**	**Tier 1 Policy**	**Tier 2 Prioritization Plan**	**Tier 3 Construction Funds**
Ashburnham	X		2019	2019	2020
Ashby	X				
Athol	X		2019	2019	2020
Ayer	X		2016	2017	2019
Clinton	X		2016	2017	2017 & 2020
Fitchburg	X	2016-2017	2016	2017	2018 & 2020
Gardner	X	2022	2016	2017	2018 & 2023
Groton			2016	2017	2018 & 2022
Harvard	X		2017	2018	2019
Hubbardston	X		2017	2017	2018
Lancaster			2016	2017	2018 & 2022
Leominster	X	2022	2016	2017	2018
Lunenburg	X		2017	2018	2020
Petersham	X				
Phillipston			2018		
Royalston	X		Registered		
Shirley	X		2016	2018	2020 & 2023
Sterling	X		2020	2021	2022
Templeton			2017		
Townsend	X		2017	2018	
Westminster	X		2022	2022	
Winchendon	X		2016	2017	2022

The State is also contributing financially to trail projects through the MassTrails Grant program. This program provides grants to support recreational trail and shared use pathway projects across the Commonwealth. These grants are reviewed and recommended by the Massachusetts Recreational Trails Advisory Board and the Commonwealth's Inter-Agency Trails Team. There are two funding sources for the grant –

1. Recreational Trails Program (RTP) – these grants are federally funded through the Federal Highway Administration (FHWA), administered at the State level, and provide funding for the development and maintenance of recreational trail projects, both motorized and non-motorized.
2. Commonwealth Trails Grants – "These grants are supported by the State's annual Capital Investment Plan (CIP) and aim to help communities design, create and maintain off-road shared-use pathway connections between where Massachusetts residents live, learn, work, shop and recreate, especially by building out the longer distance regional networks of multi-use pathways across the state and filling in critical gaps in existing networks, or overcoming current barriers to connectivity." (www.mass.gov/guides/masstrails-grants)

In 2022, seven communities within the Montachusett Region received MassTrails funding – Athol, Clinton, Gardner, Groton, Lunenburg, Sterling and Templeton.

Other notable funding sources are the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and Transportation Alternatives Program (TAP). CMAQ provides federal funding for states to support projects and programs intended to improve air quality and reduce traffic congestion. Example projects include – traffic flow improvements, public transit services and facilities, bicycle and pedestrian facilities and programs, rideshare activities, etc. The Twin Cities Rail Trail phase 2 and the North Central Pathway bridge project are currently scheduled in the FY2024-2028 Transportation Improvement Plan. The BIL continues the Transportation Alternatives set-aside from the Surface Transportation Block Grant (STBG) program. Eligible uses of the set-aside funds include all projects and activities that were previously eligible under

the Transportation Alternatives Program under the Moving Ahead for Progress in the 21st Century Act (MAP-21). This encompasses 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. (https://www.mass.gov/doc/stip-ffy-2023-2027-appendix-funding-category/download)

Recommendations

As these multi modal trail and bikeway projects continue to be studies and developed, funding is always a major component. Increasing the existing funding programs and available dollar amounts are always critical to further these regionally significant projects. Additionally, continuing the study and planning of trail related developments in order to identify priority trails and trail connections are also key for alternate modes of transportation.

Economic Vitality

Introduction

The MRPC has an ongoing commitment to the goal of improving economic vitality in the Montachusett Region (Region) by focusing on improving the transportation infrastructure that services the diverse economic drivers within the Region. The MRPC has and will continue to work with MassDOT, MRPC Member Communities, and Devens to improve the transportation infrastructure. The following content provides a snapshot of the existing transportation infrastructure critical to the economic vitality of the Region that should be the focus of future improvement and recommendations for improving the infrastructure.

Economic Vitality Needs

Critical Rural Freight Corridors (CRFCs) & Critical Urban Freight Corridors (CUFCs)

One of the ten federal requirements from the current **2017 Ma Freight Plan** (see below for more) was to develop two freight corridor listings:

- **CRFCs**: Are public roads not in an urbanized area which provide access and connection to the *Primary Highway Freight System* (PHFS) and the Interstate with other important ports, public transportation facilities, or other intermodal freight facilities.
- **CUFCs**: Are public roads in urbanized areas which provide access and connection to the PHFS and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities.

Purpose and Implications of CUFCs and CRFCs
Regional Freight Corridors (RegionFCs*)
*RegionFCs: MRPC highways that facilitate regional freight traffic for the Region

Massachusetts highways that facilitate inbound and outbound freight traffic in Massachusetts include:

- Five major Interstate corridors: Interstates 84, 90, 91, 93, and 95;
- Seven auxiliary corridors: Interstates 190, 290, 291, 391, 295, 395, and 495;

- Seven major non-Interstate corridors include US-3, US-6, MA-2, MA-3, MA-24, MA-128, and MA-146

Of the above Highways, the following are RegionFCs:

- I-190 and MA-2: The two RegionFCs form an interchange in Leominster at Exit 19 and Exit 101 respectively

The following highways provide freight truck access and egress for the RegionFCs from outside the Region:

- I-495 to MA-2 via Exit 78 in Littleton (MA-2 Exit 113)
- I-495 to MA-2 via the following Routes and Exits (south to north):
    - Route 62 via Exit 67; Route 117 via Exit 70; Route 111 via Exit 75; Route 2A/110 via Exit 79; Route 119 via Exit 80
- I-290 to I-190 via Exit 22 in Worcester
- I-91 to MA-2 via Exit 46 in Greenfield
- I-91 to Route 202 to MA-2 via Exit 14

RegionFCs, CRFCs and CUFCs & National Highway Freight Network (NHFN)
National Highway Freight Program (NHFP) Funding

The FHWA defines the NHFN for the purpose of prioritizing through routes critical to interstate commerce:

- The RegionFCs are included in the NHFN
- The Region CRFCs and CUFCs (listed below) provide connectivity to the NHFN for manufacturers and consumers in the Region
- The Montachusett MPO used its own analysis and discretion to designate their mileage allotment to develop Region CRFCs and CUFCs to address the greatest regional freight needs
- The CRFC and CUFC designations increase NHFN in Massachusetts allowing expanded use of NHFP formula funds and, if renewed, the FASTLANE Grant Program funds for eligible projects that support identified national goals (23 U.S.C. 167(b), 23 U.S.C. 117(a)(2))

- MassDOT directs funds toward projects that will improve system performance and the efficient movement of freight on the NHFN in Massachusetts
- By programming these projects using a mix of NHFP and other funds, MassDOT will advance projects on the roadway segments deemed most critical to freight needs by the MPOs
- Additionally, each project is screened to make sure it meets at least one statutory requirement before NHFP funds are applied
- After the development of the STIP and CIP, the project list is updated annually

The following four CUFCs and three CRFCs received MPO endorsement in 2017. The two Route 2 CRFCs also serve as part of the Route 2 RegionFC:

- **Jackson Road (CUFC)** in Harvard/Devens connects Route 2 (Exit 106) to the developing industrial and freight centers at Devens and indirect access to the railroad freight terminal as well as destinations in Ayer.
- **Barnum Road (CUFC)** in Ayer/Devens provides indirect access via Jackson Road to the developing industrial and freight centers at Devens and direct access to the railroad freight terminal as well as destinations in Ayer.
- **Lunenburg/Fort Pond Road (Route 70) (CUFC)** in Lancaster/Lunenburg allows access from Route 2 (Exit 103) to mining facilities at P.J. Keating, a manufacturer of construction earth products and installer of hot mix asphalt, and its mines and truck terminals.
- **Route 111 (CRFC)** from Route 2 (Exit 109) through the Town of Harvard is a connection between two PHFS - Route 2 and I-495 (Exit 75) in the Town of Boxborough.
- Two **Route 2 CRFCs** (also serve as part of the Route 2 RegionFC): One in Phillipston / Templeton, and one in Harvard. Route 2 is the main east-west corridor in the Region. It is parallel to significant freight and commuter rail infrastructure as well as connecting the regional industrial centers of Devens, Leominster, Fitchburg, and Gardner. Exits 82, 79, and 109 connect the two Route 2 CRFCs to destinations north and south of Route 2. Route 2 connects to interstates I-495 to the east, I-190 within the Region and to the south, and I-91 to the west.

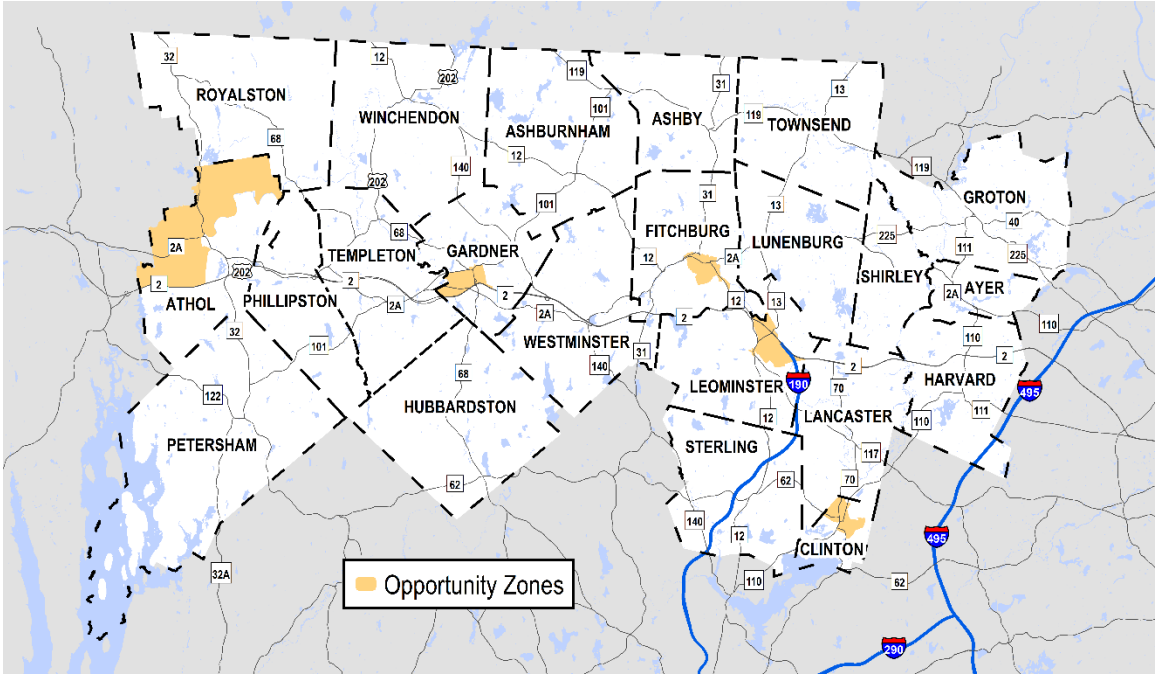
Figure 4.5-1: Narrow Rd & Dangerous S-shaped Horizontal Curve at Rt 31 RR Bridge

- **Princeton Road (Route 31) (CUFC)** in Fitchburg allows direct access to Wachusett Station and an industrial park and other numerous industrial facilities north of Route 2 (Exit 95). South of Route 2 it provides access to New England Renewable Power, a biomass power plant.

Federal Opportunity Zone Program
2021 Montachusett Region Comprehensive Economic Development Strategy (MRCEDS)

MRCEDS (see below for more) provides a description of the federal *Opportunity Zone* program and the *Opportunity Zones* that are within the Region. Opportunity Zones are census tracts generally composed of economically distressed areas. Ten census tracts were approved within five communities in the Region. The Opportunity Zones are distributed evenly (two each) among the following communities – Athol, Clinton, Fitchburg, Gardner, and Leominster (**Figure 4.5-2**).

Figure 4.5-2 - Federal Opportunity Zones



The *Athol Route 2 Interchange Study* evaluated the feasibility of a new interchange on Route 2 at South Athol Road where Athol continues to seek the initiation of an interchange project. The proposed interchange project falls within the ***Athol Opportunity Zone*** that includes Route 2 as does much of the study area examined the interchange study.

Road Network Constraints

The MRPC road network constraints are a land use conflict that impacts, or potentially impacts, economic vitality. The constraints include:

- Congested roads and bottlenecks, include at-grade railroad crossings.
    - Economic vitality is hindered by the same congested roads and bottlenecks that affect all traffic in the Region. Please refer to the *Systems Preservation* section of this document for a more detailed description of the congested roads and bottleneck constraints.
    - Railroad at-grade crossings also present a potential congested road and bottleneck problem in several municipalities throughout the Region.
- Roadway safety, including safety at at-grade railroad crossings.

- Economic vitality is hindered by the same High Crash Intersections and At-Risk Road Segments that affect all traffic in the Region. Please refer to the Safety Needs section of this document for a more detailed description of the safety constraints.
- Railroad at-grade crossings also present a potential safety problem in several municipalities throughout the Region.

Montachusett Region Trail Coalition (MRTC)

The MRPC will continue to work with the MRTC to improve the transportation infrastructure that services the regional recreational destinations. Refer to the *Bike & Pedestrian* section of this document for a more detailed description of the transportation infrastructure constraints of the regional recreational destinations.

Future Improvement Projects and Activities

- Continue to seek to improve freight truck access on the RegionFCs, CUFCs, and CRFCs
- Continue to seek to improve external and internal freight truck access for the 10 Opportunity Zones
- Continue to seek an interchange project on Route 2 at South Athol Road in Athol
- Continue to seek to improve congested roads and bottleneck locations
- Continue to seek to safety improvement at High Crash Intersections and on At-Risk Road Segments
- Continue to seek to improve external and internal access to the regional recreational destinations

<u>Current and Future Guidance Plans</u>

Four of the following plans provided guidance for the completion of this Economic Vitality chapter while two will provide guidance to improve economic vitality in the Region after the plans are completed.

2017 Ma Freight Plan & DRAFT 2023 Ma Freight Plan

The draft of the 2023 Ma Freight Plan (23MFP) that builds on the 2017 Ma Freight Plan (17MFP) was released for public comment that will end on June 29, 2023. The draft 23MFP will then be submitted to the Federal Highway Administration for final review and approval. The draft 23MFP is available at **DRAFT 23MFP**. The **17MFP** remains in effect until the 23MFP becomes approved.

The MRPC will continue to work with MassDOT, MRPC Member Communities, and Devens to apply the 17MFP improvement strategies to the Region until the draft 23MFP is approved. The 17MFP (endorsed April, 2018) follows a "scenario-based analysis" model which recognizes that many plausible futures exist. The 17MFP identifies drivers of change in the world and the range of ways in which they could progress and combines these into multiple plausible futures and presents strategies which will allow Massachusetts to thrive across the widest range of outcomes. The 17MFP is a companion plan to the **Ma State Rail Plan** discussed below.

17MFP & DRAFT 23MFP Improvement Strategies

The draft 23MFP presents several draft improvement strategies and several that will possibly be carried over from the 17MFP. The strategies are located in chapter seven of the 23MFP.

- Improvement Strategies that may be **CARRIED OVER** from the 17MFP will include:
    - improve the condition of freight network assets
    - Improve truck parking
    - Improve congestion and bottlenecks, including last-mile access
    - Upgrade railroad freight lines to the 286K standard
    - Strategies to address deliveries and curbside demand in urban districts and town centers
    - Policies to reduce greenhouse gas emissions from transportation
    - Coordinate with states in the region on freight planning
    - Freight related workforce development
- **Draft** Improvement Strategies to the 23MFP will include:
    - Improve safety on roadways and at highway-rail grade crossings

- Other improvements to highway-rail grade crossings
- Better integrate freight planning into MassDOT activities
- Alternative fuels/zero-emission freight vehicles
- Real-time and new data sources
- Improve and preserve freight connections to and from Boston's freight facilities

Freight Study (under development) – Ayer, Lancaster, Lunenburg, Shirley

This study is under development with a preferred completion date of October, 2024. The study will identify the major truck routes that provide heavy truck access to destinations within these communities and address their concerns with heavy truck traffic. There are currently several large commercial operations, as well as a number of planned developments, that generate/will generate heavy truck traffic and safety concerns for these communities. The planned developments include the Capital Commerce Center and Unified Global Packaging in Lancaster and the recently completed Industrial Development in Lunenburg that is unoccupied at this time. The freight study will also provide potential solutions/improvement alternatives to mitigate current and future heavy truck conditions and needs.

2018 Ma State Rail Plan (MSRP)

The MRPC will seek to apply the MSRP (**Ma State Rail Plan**) recommendations to the Region. The purpose of the MSRP is to guide the future of the rail system and rail services in Massachusetts. The Goals of the MSRP are:

1. Maintain existing rail system in a state-of-good-repair, expand accessibility, and preserve railroad rights-of-way
2. Support economic growth throughout Massachusetts and enable the State to compete in the changing global economy
3. Improve the safety and security of the rail system
4. Provide a rail system that is environmentally and financially responsible
5. Improve intermodal connectivity for both passenger and freight rail facilities by stronger coordination between rail system users to promote system use and efficiency

6. Maximize the return on public dollars towards rail investment by maximizing the use of existing rights-of-way

2021 MRCEDS

The MRPC will seek to apply the 2021 MRCEDS roadway infrastructure recommendations to the Region. The Economic Development Administration (EDA) administers the *Comprehensive Economic Development Strategy* (CEDS) program. The CEDS program was established as an economic development planning tool to assist communities, regions, and states to advance economic development activities, programs, and projects. Through CEDS, a qualifying economic development organization works to identify a region's flexibility to adapt to the everchanging global economy, persistent economic distresses and learn to utilize a region's assets to maximize economic opportunity that fosters growth and job creation and retention for the residents of a region.

Athol Route 2 Interchange Study

The purpose of this study is to assist Athol in evaluating the feasibility of a new Interchange project on Route 2 at South Athol Road where Athol is seeking to initiate an Interchange project. The study evaluates the potential effects of converting the existing grade separated roads into an interchange on the existing transportation system and on the surrounding environment as well as providing ramp alternatives.

The Interchange project was first identified in the Montachusett 2016 RTP and then again in the 2020 RTP. Since these roads are already grade separated, only ramps would be needed to connect them to create the Interchange. The proposed Interchange project is based on the following comments received from the Town:

- The proposed Interchange project falls within the ***Athol Opportunity Zone*** (see above)
- Freight movement in Athol is limited due to railroad bridge height restrictions that results in heavy trucks using side streets and driving through residential areas
- The North Quabbin Commons commercial development on Templeton Road (Route 2A) has the potential of producing traffic backups on Route 2 at Exit 77

- The Interchange would **reduce greenhouse gas emissions** as it would improve heavy truck access and egress to Route 2 for South Athol Road
- The Interchange would promote economic growth in Athol primarily along the South Athol Road Corridor
- Heavy truck traffic on smaller local roads would cease thus creating a safer roadway environment in neighborhoods, extending the pavement life of neighborhood roads, and healthier neighborhoods through **decreased greenhouse gas emissions**
- The Interchange would improve South Athol Road access and egress to essential community and regional services that includes the following:
    - Athol Fire Department
    - Athol Hospital
    - MA State Police Barracks in Athol
    - Athol High School
- The Interchange would reduce school bus pick-up and drop-off travel times

Trends

The MRPC recognizes that the transportation network plays an important role in the economic growth of the Region. Many sectors of the economy depend heavily on safe and efficient movement of goods and services by truck and rail.

The Economic Vitality Needs section above reveals two existing issues that continue to facilitate an increasing trend that hinders growth in economic vitality in the Region:

- Aging railroad bridges, most of which were constructed approximately 100 years ago, are narrow and many have bridge height restrictions. Also, the bridge alignment geometry of many railroad bridges is not aligned with the geometry of the intersecting road creating dangerous S-shaped horizontal curves with poor sight distance
- Many of the Route 2 interchanges, including the ramps, do not have the capacity to meet traffic volume demand. One new interchange in Athol has been proposed

Devens is an **EPA Smartway Affiliate Partner** (press release here) that has connected numerous businesses directly to active rail lines by installing rail spurs. This helps to improve economic efficiencies and avoid unnecessary truck trips through the Region. The companies that have been connected to active rail lines by installing rail spurs are:

- New England Sheets
- 66 Saratoga (three spurs installed)
- US Gypsum
- Devens Recycling

Potential rail spurs:

- P&G/Gillette/Sonoco

Existing rail spurs:

- Southern Container (previous name)
- Armed Forces and Army National Guard
- PanAm/Guilford Intermodal Facility

Many types of organizations can become a **Smartway Affiliate Partner**. Devens also operates the **Devens Eco-Efficiency Center** that supports businesses in improving operational efficiencies.

Devens enforces the state's **Anti-Idling Law** and requires shore and auxiliary power technologies for freight operations. To enforce anti-idling laws, Devens has two requirements:

- It is included as a condition of approval in any development that requires compliance so that it can be enforced locally
- Projects are required to post signage at all loading docks to inform drivers

Devens partners with the State Police (contracted as the Devens Police Force) to assist with enforcement.

To reduce the potential for idling, Devens requires projects with loading docks to:

- Install shore power systems as part of their development so that refrigeration trailers can plug in and not have to rely on the diesel cab engine for power while at the loading dock

- Install auxiliary power units to keep the truck cabs conditioned during cold and hot weather
- Businesses must include these components in their operations and maintenance manuals for the property to raise maximum awareness of these requirements

On a cyclical basis, MassDOT solicits new candidate projects for funding under the **Industrial Rail Access Program (IRAP)**. The IRAP accepts applications from freight rail-supported businesses across the state for projects to expand or improve rail or freight access that will support economic opportunity, safety, and job growth. IRAP is a competitive state-funded public/private partnership program that provides financial assistance to eligible applicants to invest in industry-based rail infrastructure access improvement projects. Applicants must match public funds with private funds, with private funds paying at least 40 percent of a project's total cost. Applicants may match more than the required minimum. MassDOT manages IRAP and typically solicits new candidate projects in the spring of each year.

Below is a listing of previously funded projects by funding round in the Region

- Arrowhead Environmental Partners , Ayer (2023)
- Leominster Packaging & Warehousing, Inc., Leominster (2021)
- United Material Management, Leominster (2020)
- Pan Am Southern, LLC., Ayer (2018, 2020)
- Pan Am Intermodal Yard Improvements, Ayer (IRAP IV)
- Catania Spagna Track Expansion, Ayer (IRAP III)
- Ardent Mills Loop Track Restoration, Ayer (IRAP II)

Economic Vitality Recommendations and Action Items

Future & Ongoing Economic Vitality Projects and Action Items to Improve Safety & Reduce Greenhouse Gas Emissions in the Region

- Improve the narrow road and/or dangerous S-shaped horizontal curves and the height restrictions of the aging railroad bridges

- Improve Route 2 interchanges to meet current design standards and future traffic volume demand
- Encourage organizations in the Region to become EPA Smartway Affiliate Partners to improve freight sustainability
- Encourage organizations in the Region to apply for IRAP funded projects to expand or improve rail or freight access to support economic growth and safety
- Continue to seek to improve freight truck access on the RegionFCs, CUFCs, and CRFCs
- Continue to seek to improve external and internal freight truck access for the 10 Opportunity Zones
- Continue to seek a new interchange on Route 2 at South Athol Road in Athol
- Continue to seek to improve congested roads and bottleneck locations
- Continue to seek to safety improvement at High Crash Intersections and on At-Risk Road Segments
- Continue to seek to improve external and internal access to the regional recreational destinations
- MRPC will continue conducting freight corridor analyses

Congestion

Introduction

Congestion occurs at intersections and along road segments throughout the region which adversely impacts commuter travel, the efficient movement of goods and air quality. The following areas of congestion were identified through local knowledge, public input from surveys, MRPC studies, identified bottlenecks and various technical data sources.

Congested Corridors

Congestion in the following corridors/locations tends to create the greatest impacts to traffic flow in the region. Inadequate geometrics, right-of-way issues and improper signal timings and/or phases result in poor vehicle flows and, in many cases, unsafe conditions. Concerns will range from local intersections and corridors to congestion on regionally important highways such as Route 2.

- Route 2, Harvard, Lancaster, Leominster, Fitchburg, Westminster, and Gardner –

  This highway serves as the second major east-west connector for the Commonwealth and has a significant effect on development well beyond the Region. Improvements and maintenance are vital along the entire stretch of Route 2 to maintain its usefulness and move commuters. Regular resurfacing and maintenance costs are significant in terms of dollars and are usually well beyond the limited federal funds allocated to the Region. There is still a need for an increased investment to maintain Route 2, along with all roadways in the region, in an acceptable condition. The possibility of the section of Route 2 between I-495 and I-190 being incorporated into the interstate system due to its natural connection between these two major routes has been discussed. Designation of this type, i.e. interstate highway, would make this segment eligible for Interstate Maintenance funds. Connections to nearly all major routes in the region exist on Route 2, as does the interchange of Route 2 and I-190. Recent improvements to the pavement striping in this location seem to have reduced confusion and congestion, although further study is needed.

- Route 12, Fitchburg and Leominster

This main corridor through the cities of Fitchburg and Leominster may be the most congested in the region. Many improvement projects have been completed in recent years to address congestion issues. Most recently are geometric and signal improvements around Routes 12, 2 and Hamilton Street in Leominster. Adequate access to Route 2 often dominates local concerns. The City of Fitchburg continues to maintain the need for improved access between Route 2 and its downtown as a major force in the communities' economic development; this would also serve as a congestion mitigation measure for traffic on surrounding streets and intersections leading into the city from the highway. This concern is echoed by the North Central Massachusetts Chamber of Commerce as one of the major needs for the area as well as the city. A major project scheduled in 2024 will rebuild the two bridges carrying Water Street (Route 12) in Fitchburg, one over the Nashua River, another over Boulder Drive and the Boston and Maine Railroad. This project will greatly improve access to downtown Fitchburg by improving safety and traffic flow.

- Route 13 Leominster

Although many improvements have been made in the last 20 years this corridor still remains among the regions most congested. Several recommendations were proposed to address congestion as well as safety issues associated with heavy traffic volumes and the poor geometrics of the Route 13/Haws Street/Route 2 interchange. In 2008 the Route 13 Bridge over the North Nashua River was rehabilitated and pedestrian safety improvements were made. In 2010 MassDOT introduced design plans for Route 13 in Leominster between Prospect and Haws Streets, the most congested area of Route 13, which involves a new signal at Route 13 and Mead, as well as signal equipment upgrades and coordination of existing signals. These improvements will be completed in 2023 and are projected to further improve traffic flow in this corridor.

- South Street/Merriam Avenue, Fitchburg and Leominster

This corridor serves as one of two major connecting roads between Fitchburg and Leominster in addition to providing direct access to Route 2. Volumes along this corridor are mainly affected by a traffic signal at the Route 2 westbound ramp/Twin City Mall entrance crossing as well as by the Merriam Avenue Bridge over Route 2. Road widths are limited by the bridge and abutting land uses to two travel lanes; one northbound and one southbound. In 2018 MRPC completed the Merriam Avenue – South Street Corridor Bottleneck Study which profiled this area and made recommendations to improve congestion.

- Route 117, Lancaster and Leominster

This state route is a major commuter road that provides access to I-190 at the Leominster/Lancaster line and I-495 in Bolton located east of Lancaster. Most of the congestion along this corridor occurs during AM and PM peak hours. Also causing significant delays is an at-grade freight railroad crossing east of Route 70 in Lancaster which frequently stalls traffic for long periods of time as trains pass through. Within the past 20 years there has been major commercial development on both sides of Route 117 on the Leominster/Lancaster line. These commercial developments have been complemented by various improvements to the roadway including the addition of turning lanes and stop lights allowing easier access to both I-190 and the commercial access roads. MRPC conducted the "Route 117 Corridor Profile" (2014) through the town of Lancaster which suggested major improvements to the intersections of Route 117/Lunenburg Road and Route 117/Main Street. A significant project funded through the 2022 TIP will improve traffic flow and safety through the addition of geometric and signal upgrades.

- Downtown Gardner

Route 101 (Central Street/Parker Street) runs east-west through this corridor while Route 68 (Main Street/Parker Street) runs north-south. The layout of this intersection can be

confusing to drivers and is a high crash location in the region. Furthermore, traffic routinely backs up through downtown during peak hours. While many variations of geometrics have been tried over the years Right of Way issues make it difficult to make an ideal improvement. Long term efforts may need to involve complete reconstruction and reconfiguration of this intersection.

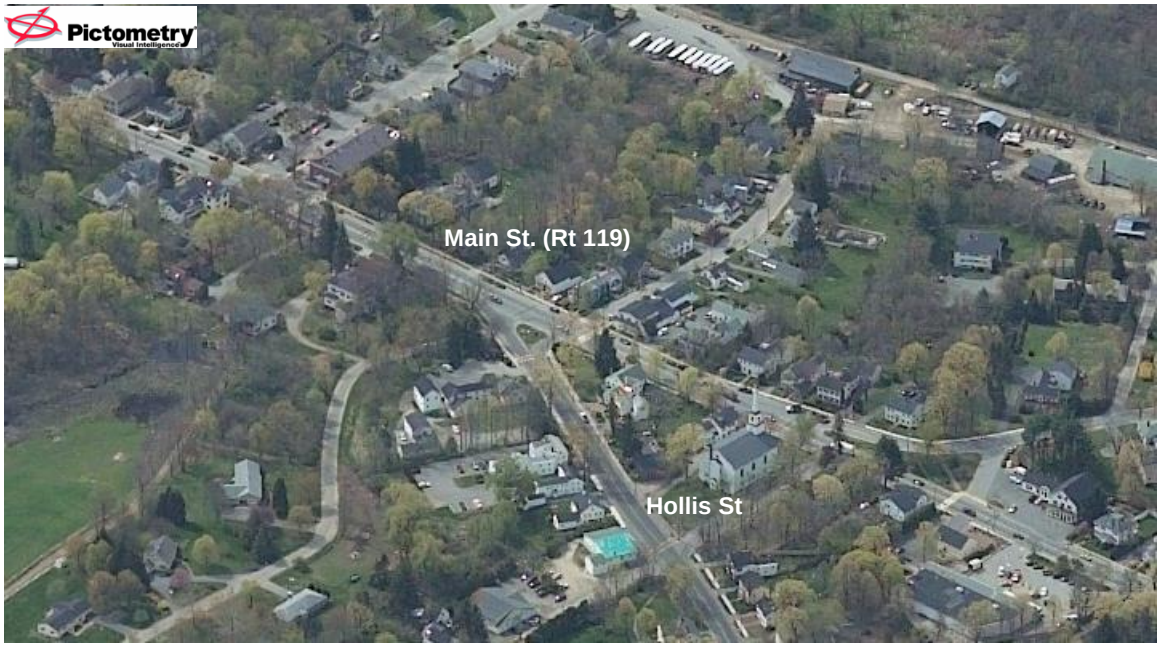
Figure 4.6-1 - Main Street (Route 68)/Central Street (Route 101) in Gardner Looking North.

- Route 119, Townsend and Groton

This road has become a major commuting route for the northern portion of the Region. Route 119 runs southeast from New Hampshire to I-495 in Littleton to Route 2 at the Concord Rotary. Peak hour flows are heaviest eastbound in the AM and reversed in the PM reflecting its use as a commuting road to the I-495/Boston area. The route runs through the town centers of Townsend and Groton and as such greatly impacts local travel patterns.

Figure 4.6-2 – Route 119 in Townsend Looking North

Figure 4.6-3 – Route 119 in Groton Looking South



- Route 2A, Ayer

From Park Street (Routes 2A/111) to the Littleton town line, includes Main Street, East Main Street, and Littleton Road. Peak hour traffic suffers from slow travel speeds along the Main Street segment through the downtown area due to side street traffic, on-street parking, an MBTA Commuter Rail stop downtown and narrow lanes. A notable intersection in this corridor is Park Street (Routes 2A/111) and Main Street. Park Street traffic looking to continue onto Route 2A east/111 south must stop and wait for a gap in traffic on East Main Street/Main Street which results in long peak hour delays from this approach. A project currently under design will rehabilitate this corridor by making geometric and signal improvements that will increase traffic flow and safety. This project (#609227 – Roadway rehabilitation on Route 2A/111, Park Street and Main Street) is the highest ranked project of all eligible TIP projects and is listed in the appendix of the 2024-2028 TIP.

Figure 4.6-4 - Main Street (Routes 2A/111) in Ayer from Park Street to Columbia Street Looking North

Transportation Studies with Congestion Elements

Member communities regularly request various types of transportation studies which the MRPC con4ducts through the Unified Planning Work Program (UPWP). Many of these studies involve examining congestion issues along a roadway or corridor. One of the most useful data sets pertaining to congestion issues is travel time. Travel time data is collected using a GPS Device and TravTime 2.0™, a software program which measures travel time and delays on a roadway. Since MRPC has acquired TravTime software, it has regularly been included in analysis in transportation studies done throughout the region. Numerous travel time runs are taken through the study area. From this, an average travel time can be computed during the peak hour through a particular road or corridor. This data is compared to free flow travel time to

depict a travel time index rating. The free-flow travel time is the amount of time in seconds it takes to travel a particular corridor at the posted speed limit without any delay. The travel time index (TTI) is a ratio between the average peak hour travel time and free-flow travel time. For example, a TTI value of 1.30 indicates that the average travel time at peak hour takes 30 percent longer than free flow travel time. The table below shows the different congestion levels of the TTI of an arterial roadway.

Table 4.6-5 - Travel Time Index (TTI) Levels of Congestion

Functional Class	No/Low Congestion	Moderate Congestion	High Congestion	Severe Congestion
Arterials	< 1.5	1.5 - 2.0	2.0 - 2.6	> 2.6

*Source: Federal Highway Administration

Three recent studies which included travel time analysis have been completed in recent years. Below are descriptions of each of these study areas and results from our Travel Time analysis.

A. Downtown Fitchburg Bottleneck Profile (2012)

The *Downtown Fitchburg Bottleneck Profile* was an effort to highlight various issues causing one of the most significant bottlenecks in the Montachusett Region – Downtown Fitchburg. Throughout the program year various data was collected and analyzed to draw attention to issues leading to traffic delays in the area.

Study Area

The study area encompasses the downtown area from Moran Square at the intersection of Main (Rte. 2A), Lunenburg (Rte. 2A) and Summer Streets in the east extending west to the area known as the "Upper Common" at the intersection of Main, River (Rte. 31) and Mechanic (Rte. 31) Streets. Traffic along the roadways of Main Street and Boulder Drive, including the intersections with other side streets were considered for this report.

Travel Time

	Run 1	Run 2	Run 3	Run 4	Run 5	Average Time	Travel Time Index (TTI)
Eastbound (Minutes)	3.73	3.63	3.73	3.85	3.45	3.08	**1.40**
Westbound (Minutes)	5.7	5.83	4.35	3.95	6.03	5.17	**2.18**
Posted Speed Limit = 25 MPH		Corridor Distance (Miles) = 0.99 WB / 0.92 EB			Free Flow Travel Time (Minutes) = 2.38 WB / 2.21 EB		

From the travel time results it is clear that traveling westbound on Main Street during peak hour entails dealing with a high level of congestion. A major inhibitor of traffic flow through downtown was the lack of a system of properly operating and coordinated network of traffic signals.

Figure 4.6-6 - Main Street in Fitchburg Looking North

B. Route 117 Corridor Profile (2014)

The Town of Lancaster requested the Montachusett Regional Planning Commission (MRPC) to conduct a study of Route 117 through the community in the spring of 2013. In its efforts the MRPC in turn has engaged town officials to form an informal Steering Committee to assist, offer guidance and provide local knowledge that would contribute to a Corridor Profile along the road. The goal was to assess the conditions and problems that may exist along Route 117 and offer recommendations and avenues to make improvements where necessary. After much data collection, analysis, site visits and public engagement the MRPC completed the ***Route 117 Lancaster Corridor Profile*** in 2014. As part of the report, multiple Travel Time runs were taken during the measured peak hour times through the entire 4.7 miles of Route 117 in Lancaster.

Travel Time

	Run 1	Run 2	Run 3	Average Time	Travel Time Index (TTI)
Eastbound (Minutes)	8.68	8.33	8.93	8.65	**1.15**
Westbound (Minutes)	8.3	8.47	11.95	9.57	**1.28**
Posted Speed Limit = 40 MPH		Corridor Distance (Miles) = 5.0 Miles		Free Flow Travel Time (Minutes) = 7.5 WB / 7.5 EB	

Although congestion did not pose a great issue through the corridor as a whole, the junction of Route 117 and Route 70 and its two major intersections were identified as having long delays for the Route 70 approaches. Improvement alternatives were presented to the town and a project at this location is listed in year 2021 of the 2020-2024 Transportation Improvement Program.

Figure 4.6-7 - Lancaster Route 117/70 looking North

C. Merriam Avenue – South Street Corridor Bottleneck Study (2018)

The Merriam Avenue - South Street Bottleneck study stems from a goal set in the 2016 RTP of the to “reduce congestion and improve mobility”. One performance measure set under this goal was to “identify one (1) bottleneck location and conduct a study every 2 years in order to develop and/or implement corrective measures”. This section of Merriam Avenue and South Street in the cities of Leominster and Fitchburg has long been considered one of the regions congested corridors and is considered a traffic “bottleneck”. The Federal Highway Administration’s (FHWA) definition of a traffic bottleneck is "a localized section of highway that

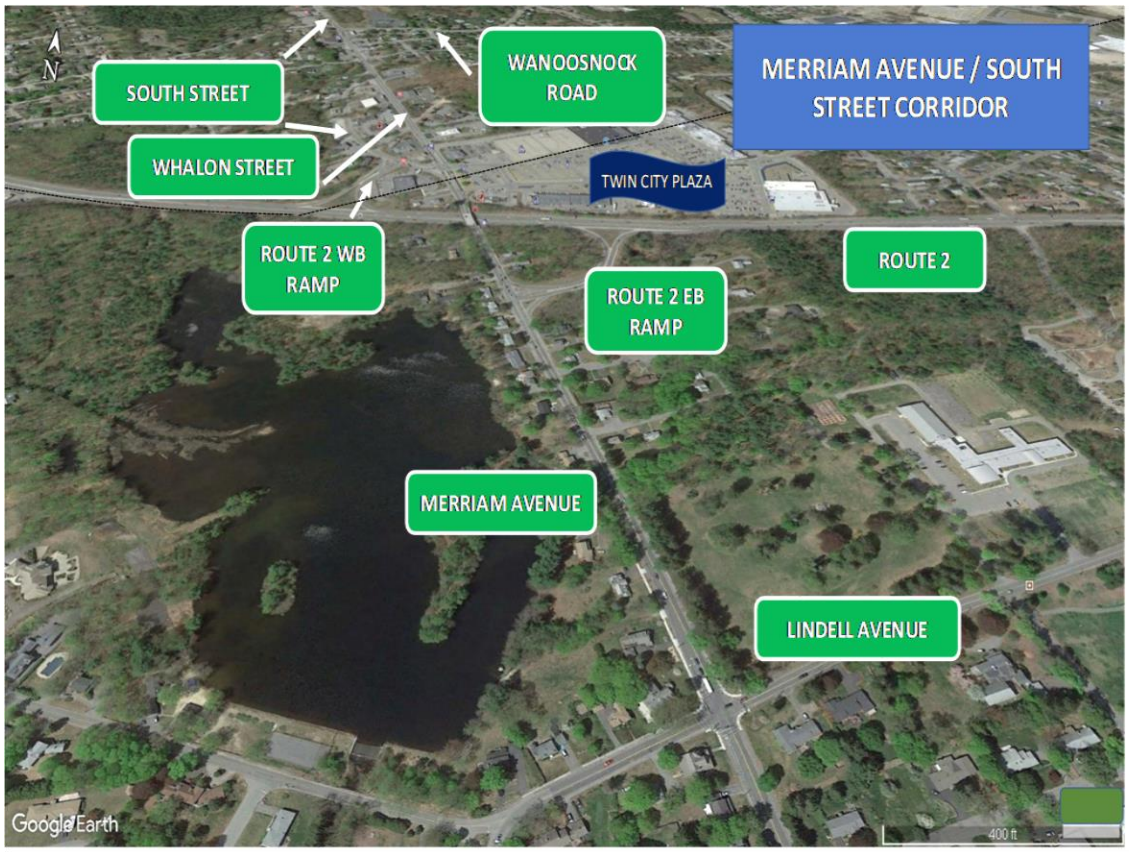
experiences reduced speeds and inherent delays due to a recurring operational influence or a nonrecurring impacting event." This study profiles existing conditions and identifies factors adding to the congestion of the Merriam Avenue - South Street corridor.

Study Area

The study area extends from the south at the intersection of Merriam Avenue and Lindell Avenue in Leominster, to the north at the intersection of South Street and Wanoosnoc road in Fitchburg. The Merriam Avenue - South Street corridor serves as one of two major connecting roads between the cities of Fitchburg and Leominster in addition to providing direct access to Route 2. Contained within this corridor are the following primary locations, listed from south to north, which are the main catalysts for congestion and are highlighted in this study.

- Intersection of Merriam Ave./ Route 2 East ramp
- Merriam Ave. bridge over Route 2
- Signalized Intersection of Merriam Ave./ South St./ Whalon St./ Twin City Plaza
- Signalized Intersection of South St./ Wanoosnoc Rd.

Figure 4.6-8 - Leominster/Fitchburg, Merriam Ave/South Street Corridor



Travel Time

Functional Class	No/Low Congestion	Moderate Congestion	High Congestion	Severe Congestion
Arterials	< 1.5	1.5 - 2.0	2.0 - 2.6	> 2.6

Southbound

Northbound

Southbound Traffic through the study area measures no or low congestion (TTI of 1.34). Northbound traffic experienced high congestion (TTI of 2.51). The study also considered delay caused by the intersections along the corridor and physical challenges along the road such as the road being limited to two lanes over the route 2 bridge. A number of improvement alternatives were presented in the study.

D. Sterling – Route 140 at 62 Intersection Analysis (2020)

Route 140 at Route 62 in Sterling is a significant source of localized congestion along this semi-rural stretch of roads. Safety is also an issue, as this skewed intersection has a large, open area of pavement which offers many possible conflict points. This analysis compared possible improvements and discussed the benefits of a roundabout versus a signalized intersection. Ultimately, a TIP project was approved in 2022 which will see the construction of a roundabout which help mitigate both congestion and safety concerns. This project (#612612 - Intersection Improvements at Route 140 and Route 62) is listed in federal fiscal year 2028 in the 2024 – 2028 TIP.

E. Fitchburg – Route 12 and 31 Intersection analysis (2021)

This analysis focused on the busy intersection of Routes 12 (Ashburnham and River Street) and 31 (Westminster Street) in Fitchburg, which had experienced a high crash rate over the three-year period of 2017 to 2019. This three-way intersection has an ill-positioned stop sign on Route 31 (Westminster Street), which has contributed to the high number of crashes. According to the MassDOT crash database, there were approximately 49 recorded crashes at this location in this time period, of which 28 were reported as rear-end crashes.

Figure 4.6-9 – Route 31 at Route 12, Fitchburg

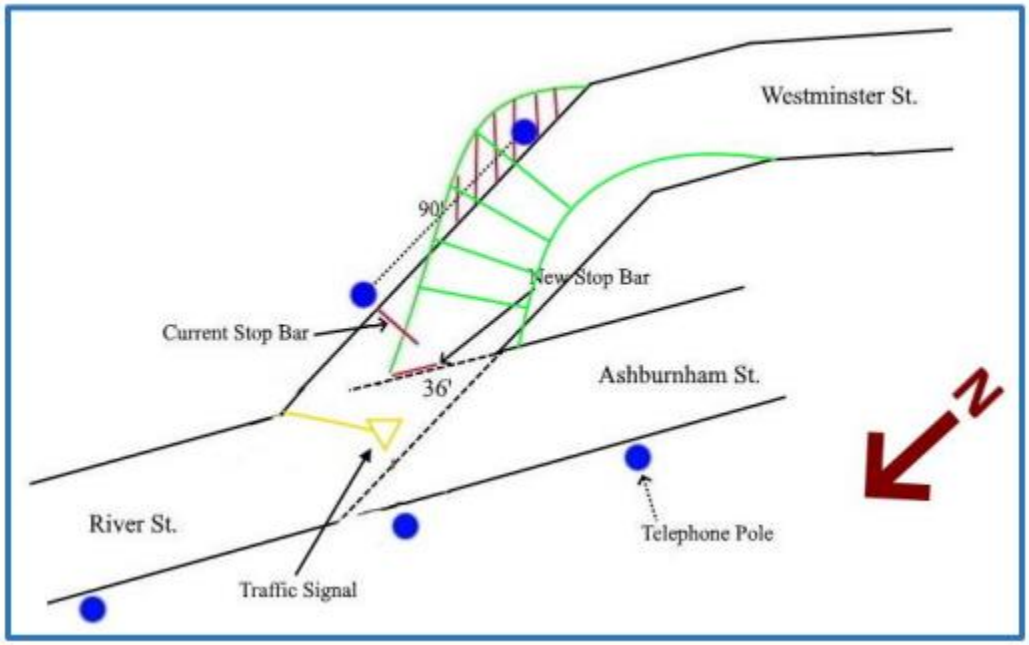
The analysis analyzed traffic and safety data and considered multiple improvement alternatives. Data indicated that this location met three traffic signal warrants based on:

- Peak hour volumes
- 4-hour volumes
- 8-hour volumes

Ultimately this resulted in two recommendation designs. One designed as a short-term solution and another as a long-term solution. The short-term design recommendation is the bump out to correct the geometric difficulties of the intersection while the long-term recommendation includes the addition of a signal to the bump out. This way, the bump out will improve the intersection in the meantime until the signal is approved and funded, which should occur around the same time the data analysis shows the intersection will fail, in approximately 10+

years. The bump out design in which utility poles are relocated was chosen to give extra room for the turn.

Figure 4.6-10 – Route 31 at Route 12 Recommendation, Fitchburg



F. Townsend – Main Street (Route 119) at Canal Street/West Elm Street Intersection Analysis (2021)

The MRPC received an official request from the Town of Townsend to conduct a traffic analysis of the Main Street (Route 119) at Canal Street / West Elm Street intersection.

The Town's official request letter stated the following:

- *Vehicles turning onto / or off of / or crossing over, Route 119 encounter dangerous circumstances due to the layout of the Intersection;*
- *This is a light commercial district and improvements to both vehicular and pedestrian traffic as a result of a study would well serve the citizens;*

This Study considered the following existing conditions of the intersection: the offset geometric alignment (or layout); pedestrian and bike facilities; signage; pavement markings; land use; traffic congestion; safety; environmental constraints, and pavement condition. This Study also provided improvement alternatives for consideration by the Town.

Figure 4.6-11 – Main Street (Route 119) at Canal and Elm Streets, Townsend

The recommendation was that the existing offset geometry, pavement condition, pavement markings condition, signage condition, inadequate pedestrian and bike facilities, and the potential future traffic growth of the Intersection during the PM peak hour should be the priorities for improving the Intersection if the Town so chooses. The MRPC recommends that the Town consider Complete Street Concept solutions to address these priorities for the Intersection.

Covid-19 Pandemic Impact on Traffic

Past RTPs have typically looked at traffic volumes at continuous count stations in the region. Since the July 2019 endorsement of the 2020 RTP (Working Towards the Future), a significant and unforeseeable occurrence took place in the Covid-19 pandemic. The shutdowns halted the economy and commenced a new age of remote school and work. Traffic significantly decreased in March of 2020, and when it began to recover, traffic patterns changed. Although the declared emergency is officially over, its effects remain in both historical volumes and existing trends. It is widely accepted that the proliferation of virtual participation in work and society will prove to have a lasting impact, however, what that impact will reflect on traffic in 2050 is difficult to project.

Continuous Count Stations in Region

The following tables list average daily traffic volumes from MassDOT continuous count stations on major routes (Route 2 and I-190) in the Montachusett region going back to 2001. From these tables the following patterns can be seen.

- Pre-pandemic counts had recuperated to pre-recession (pre-2008) levels after a period of decline throughout the region in the mid 2000's.
- Steady growth had been occurring throughout the region since 2015.
- After a significant decline in volumes in 2020, traffic in the region has slowly begun to recover to pre-pandemic levels.

Tables 4.6-1, Continuous Count Stations

Route 2 Littleton East of Harvard Town Line			Route 2 Lancaster West of Route 70			Route 2 Westminster East of Route 140		
Year	Volume	Growth	Year	Volume	Growth	Year	Volume	Growth
2022	47,254	2%	2022	57,663	0%	2022	46,372	-2%
2021	46,418	12%	2021	57,765	8%	2021	47,074	16%
2020	40,933	-35%	2020	53,249	-18%	2020	39,355	-24%
2019	55,214	1%	2019	62,646	5%	2019	48,922	-6%
2018	54,452	2%	2018	59,761	4%	2018	52,062	2%
2017	53,473	0%	2017	57,154	3%	2017	51,279	1%
2016	53,207	2%	2016	55,471	2%	2016	50,872	4%
2015	52,262	9%	2015	54,277	6%	2015	48,912	15%
2014	47,432	2%	2014	51,454	1%	2014	41,401	2%
2013	46,642	2%	2013	50,847	1%	2013	40,614	2%
2012	45,692	0%	2012	50,113	1%	2012	39,880	-6%
2011	45,569	-3%	2011	49,476	-3%	2011	42,088	-2%
2010	47,100	-3%	2010	51,104	1%	2010	43,000	1%
2009	48,540	-1%	2009	50,435	5%	2009	42,770	-1%
2008	48,803	0%	2008	47,806	1%	2008	42,999	3%
2007	48,800	8%	2007	47,186	-1%	2007	41,887	-1%
2006	45,112	-2%	2006	47,800	6%	2006	42,172	-2%
2005	46,229	-1%	2005	45,104	-3%	2005	42,991	-1%
2004	46,900	-7%	2004	46,433	2%	2004	43,257	3%
2003	50,022	-1%	2003	45,454	0%	2003	42,168	-1%
2002	50,603	1%	2002	45,457		2002	42,663	4%
2001	50,000		Growth since 2002:		21%	2001	40,923	
Growth since 2001:		-6%	Growth since 2019:		-9%	Growth since 2001:		12%
Growth since 2019:		-17%				Growth since 2019:		-5%

Route 2 Athol East of Orange TL			I-190 Leominster North of Route 117			I-190 Sterling North of Route 12		
Year	Volume	Growth	Year	Volume	Growth	Year	Volume	Growth
2022	10,124	2%	2022	51,334	2%	2022	38,496	1%
2021	9,945	-6%	2021	50,406	12%	2021	37,947	7%
2020	10,537	-35%	2020	44,568	-18%	2020	35,433	-11%
2019	14,264	-5%	2019	52,442	1%	2019	39,403	1%
2018	14,910	14%	2018	51,923	-1%	2018	39,013	1%
2017	12,749	0%	2017	52,354	3%	2017	38,807	2%
2016	12,699	9%	2016	50,736	6%	2016	38,121	0%
2015	11,514	5%	2015	47,892	7%	2015	37,931	4%
2014	10,965	3%	2014	45,395	2%	2014	36,505	6%
2013	10,615	-2%	2013	44,399	0%	2013	34,322	-1%
2012	10,826	-5%	2012	44,239	1%	2012	34,819	8%
2011	11,385	1%	2011	43,774	-1%	2011	32,080	3%
2010	11,274	-30%	2010	44,293	1%	2010	31,131	-12%
2009	14,711	27%	2009	43,792	3%	2009	34,735	7%
2008	10,740	-2%	2008	42,272	7%	2008	32,180	-1%
2007	11,003	-2%	2007	39,149	-6%	2007	32,612	-2%
2006	11,202	0%	2006	41,503	1%	2006	33,168	2%
2005	11,180	0%	2005	41,154	0%	2005	32,646	-9%
2004	11,127	1%	2004	41,168	4%	2004	35,700	22%
2003	10,967	2%	2003	39,579	0%	2003	28,000	0%
2002	10,800	4%	2002	39,700	8%	2002	28,000	10%
2001	10,415		2001	36,548		2001	25,100	
Growth since 2001:		**-3%**	**Growth since 2001:**		**29%**	**Growth since 2019:**		**35%**
Growth since 2019:		**-41%**	**Growth since 2019:**		**-2%**	**Growth since 2019:**		**-2%**

I-190 Sterling North of Route 140			I-190 Sterling South of Route 140			12 Sterling North of I-190		
Year	Volume	Growth	Year	Volume	Growth	Year	Volume	Growth
2022	33,247	2%	2022	34,775	0%	2022	8,946	1%
2021	32,527	9%	2021	34,765	15%	2021	8,872	8%
2020	29,568	-28%	2020	29,614	-26%	2020	8,200	-17%
2019	37,748	1%	2019	37,233	-7%	2019	9,557	4%
2018	37,374	5%	2018	39,961	6%	2018	9,193	1%
2017	35,588	2%	2017	37,689	18%	2017	9,107	4%
2016	34,959	2%	2016	30,844	0%	2016	8,709	1%
2015	34,322	7%	2015	30,691	-8%	2015	8,629	-1%
2014	31,828	4%	2014	33,143	2%	2014	8,712	-14%
2013	30,586	-1%	2013	32,625	-1%	2013	9,946	12%
2012	30,764	0%	2012	33,058	1%	2012	8,763	-17%
2011	30,802	3%	2011	32,629	-1%	2011	10,284	21%
2010	30,003	-3%	2010	33,026	2%	2010	8,137	-3%
2009	31,050	-15%	2009	32,483	3%	2009	8,375	-2%
2008	35,782	17%	2008	31,398	-1%	2008	8,501	1%
2007	29,524	0%	2007	31,653	6%	2007	8,385	0%
2006	29,537	1%	2006	29,722	6%	2006	8,379	-3%
2005	29,290	0%	2005	27,919	-23%	2005	8,625	-4%
2004	29,300	4%	2004	34,300	0%	2004	9,003	0%
2003	28,078	4%	2003	34,200	11%	2003	8,969	4%
2002	26,965	1%	2002	30,600	23%	2002	8,647	-1%
2001	26,800		2001	23,500		2001	8,693	
Growth since 2001:		**19%**	**Growth since 2001:**		**32%**	**Growth since 2001:**		**3%**
Growth since 2019:		**-14%**	**Growth since 2019:**		**-7%**	**Growth since 2019:**		**-7%**

202 North of Templeton Town-Line		
Year	Volume	Growth
2022	4,716	0%
2021	4,721	11%
2020	4,215	-21%
2019	5,109	0%
2018	5,130	1%
2017	5,073	1%
2016	5,013	6%
2015	4,720	
Growth since 2015:		0%
Growth since 2019:		-8%

The official end of the Covid-19 Emergency on May 11, 2023 will set a new benchmark. Future analysis will specify if traffic volumes continue to increase, or plateau, likely due to holdover effects the pandemic has had on travel habits.

Progress

The table 4-28 below shows projects with congestion benefits which are scheduled through the 2024-2028 Transportation Improvement Program. As mentioned, some of the most congested roadways have been or will be addressed in the near future.

Table 4.6-2 - 2024-2028 TIP Projects with Congestion Benefits

City/Town	Project	Year	Cost
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	2024	$18,836,028
Leominster	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	2024 - 2025	$21,444,970
Sterling	STERLING - INTERSECTION IMPROVEMENTS AT ROUTE 140 AND ROUTE 62	2028	$3,616,300
Ayer	AYER - ROADWAY REHABILITATION ON ROUTE 2A/111 (PARK STREET AND MAIN STREET	APPENDIX	$4,800,000
Winchendon	WINCHENDON - INTERSECTION IMPROVEMENTS AT BLAIR SQUARE: FRONT STREET, CENTRAL STREET, AND SRING STREET AND ROUTES 12 AND 202	APPENDIX	$3,129,916

Trends

Pre-pandemic counts throughout the region showed a period of increased traffic. The proliferation of remote work and social activities during the pandemic have undoubtably changed future trends in travel. Still, congestion remains throughout the region, especially in areas highlighted in this section. Along with increased traffic comes heavier and more frequent periods of congestion. Many of the highlighted areas in this section have shown congestion for many years, especially during rush hour. It is important to mitigate congestion issues that exist, while continuing to monitor changes in our network.

Recommendations

It is important to prepare for increased traffic and congestion throughout the region. Investments must be well thought out and balanced with other needs such as investments in maintenance and expansion. The following recommendations are made to help prevent the spread of congestion in the region.

- Continue to monitor trends throughout the region.
- Continue to monitor emerging technologies such as autonomous vehicles and ride hailing services and the impact made on congestion throughout the region.

- Continue to profile areas of heavy congestion and make recommendations for improvements.

Transit

Introduction

Transit continues to be a major transportation factor in the in the Montachusett region. From fixed route buses to commuter rail, shuttles and on demand services, many individuals relay on the regional transit system for access to services such as jobs, grocery stores, medical facilities, schools, social services, and recreation. Expansion and continued improvements to the transit system will continue to be a major factor in the overall goal of reducing the number of single occupant vehicles (SOV) on the road network, and in the reduction of greenhouse gases (GHG).

Since the completion and endorsement of the 2020 Montachusett RTP (July 2019), the region, Commonwealth, nation and the world suffered under the constraints and consequences of the global Corona Virus pandemic. From early 2020 to late 2022, various federal, state and local mandates limited the ability for numerous services, businesses and activities to operate as usual. The resulting effect to the transit system was a significant impact, i.e., reduction, to ridership and revenue. Because of this, an effected review and comparison of trends in fixed route, paratransit and commuter rail services from 2019 to 2023 cannot be developed and analyzed with any degree of certainty. The best that can be accomplished is to identify the impacts and then monitor the gradual return to pre-pandemic normalcy. In the following sections, a review of pre-pandemic figures from the 2020 RTP will be presented along with statistics that illustrate the pandemic impacts to the various transit systems.

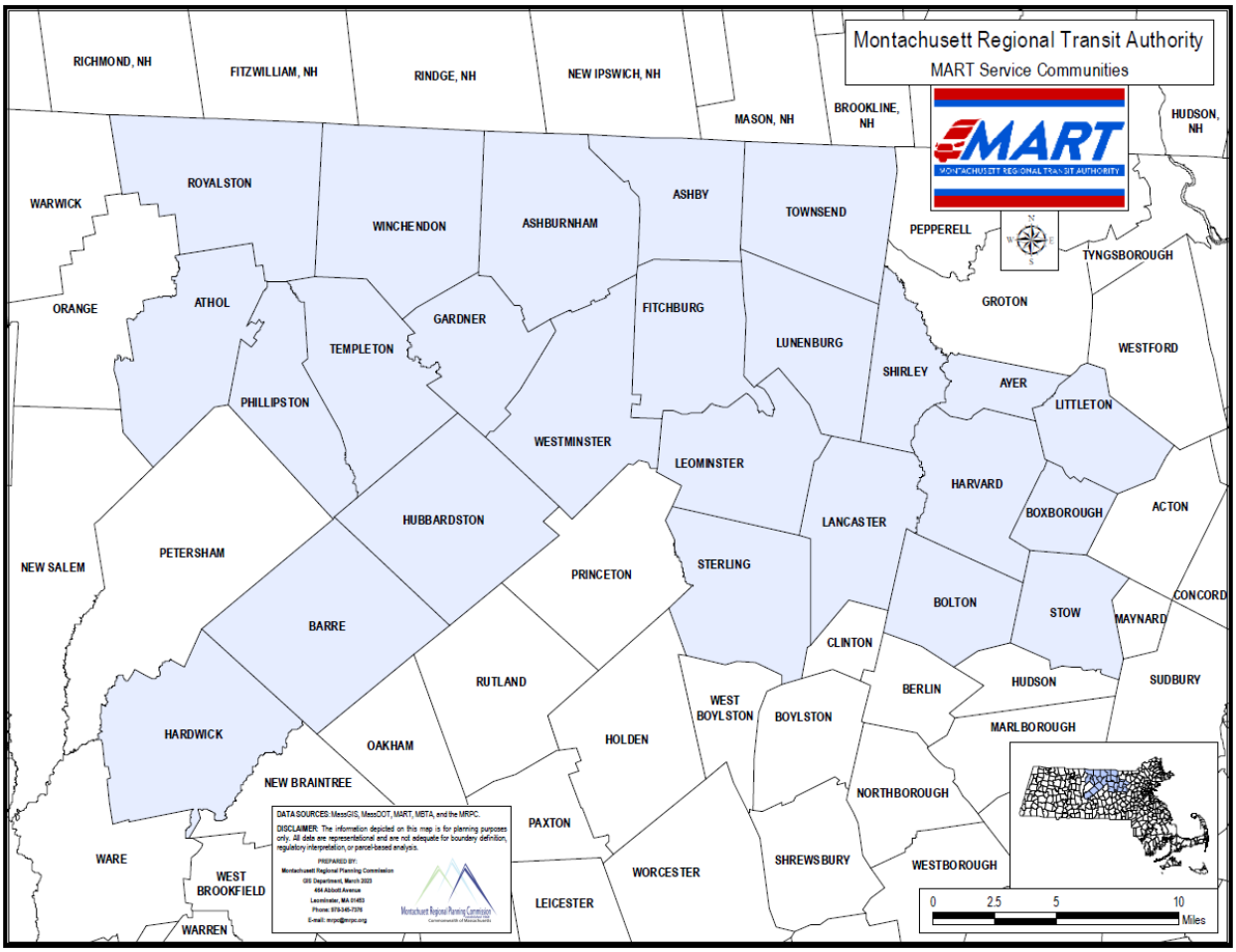
Transit System Overview

A. RTA Jurisdiction

Within the region, the Montachusett Regional Transit Authority (MART) is the major provider of services. As has been the case since the authority was started in 1978, fixed route services are mainly concentrated within the urban cities of Fitchburg, Leominster, Gardner and to a lesser degree – Westminster, Lunenburg and Lancaster. Over the past ten years, service has expanded slowly into neighboring rural communities. The expansion has been driven both by requests by

local communities, as well as the need for services to integrate with redesigned fixed routes and schedules. The communities served by MART have grown steadily over the years. Since 2019, MART has added three additional communities to its service area: Barre, Phillipston, and Townsend. MART now serves 25 total communities. In the MRPC region are the 19 communities of Ashburnham, Ashby, Athol, Ayer, Fitchburg, Gardner, Harvard, Hubbardston, Lancaster, Leominster, Lunenburg, Phillipston, Royalston, Shirley, Sterling, Templeton, Townsend, Winchendon, and Westminster. Outside of the Montachusett region, MART serves the 6 communities of Barre, Bolton, Boxborough, Hardwick, Littleton, and Stow.

Figure 4.7-1 MART Jurisdiction



Fixed route bus, paratransit and subscription services are operated by a private management company, currently, Management of Transportation Services, Inc. MART's brokerage

transportation is operated by a variety of private vendors throughout Massachusetts. The Massachusetts Bay Transportation Authority (MBTA) is responsible for commuter rail services from Fitchburg to Boston. MART has also worked with communities to develop micro transit services to support expanded business opportunities and a growing number of regional attractions in its service area. Over the past three years, MART has endeavored to accomplish many of the goals that were set established in the 2020 RTP, albeit within the numerous and unprecedented challenges presented by the pandemic, some of which are still presenting limitations on the ability to provide expanded services, primarily workforce expansion and funding limitations.

Pre-Pandemic Transit

A. Fixed Route System

1. Fitchburg/Leominster and Gardner

Local fixed route bus services operate along set routes and follows a set schedule Monday through Saturday. Twelve (12) routes are available in Fitchburg, Leominster and Gardner. There is also a supplemental route to Lunenburg in the afternoon. Buses also run more frequently (15 minutes) to and from Fitchburg State University during the campus school year on weekdays. Bus services are not offered on Sundays and holidays. Regional frequencies vary depending on the route.

Table 4.7-1: Fixed Routes Yearly Ridership

Fixed Routes	2015	2016	2017	2018	Percent Change 2015 to 2018
Leominster/Fitchburg	605,952	591,374	496,005	470,744	-22.31%
Gardner	57,193	58,852	47,548	45,848	-19.84%

Source: Montachusett Regional Transit Authority – 2020 RTP

MART's fixed-route bus ridership decreased over the 4-year period from FY 2015 to FY 2018. The biggest single decline was from 2016 to 2017 with at 16% drop in Leominster/Fitchburg ridership and a 19% drop in Gardner ridership. Ridership data from 2018 indicates the decline

leveled off between FY 2017 and FY 2018, with a 5.09% drop in Leominster/Fitchburg ridership and a 3.58% drop in Gardner ridership.

2. Regional Services

In 2019, MART had a number of regional fixed route bus and shuttle services that spanned a wide geographic area. Most of the services were new and did not cover the 4 years of the 2020 RTP. The Link Bus service is available along Route 2/2A between Greenfield and Gardner, stopping in Gardner, Templeton, Phillipston, and Athol. The Athol Link connected to Route 32 and was operated by the Franklin Regional Transit Authority (FRTA). MART also operated the Winchendon Link which traveled along state Routes 68 & 202 from Gardner through Baldwinville (a section of Templeton) to Winchendon Center.

Table 4.7-2: Link Yearly Ridership

Link Route	2015	2016	2017	2018	Percent Change 2015 to 2018
Athol Link	31,238	19,559	13,883	10,694	**
Athol-Orange Shuttle	N/A	10,318	18,124	22,043	**
Winchendon Link	5,760	6,022	5,388	5,158	-10.45%

Source: Montachusett Regional Transit Authority – 2020 RTP

The drop in ridership on the Athol/Orange link between 2015 and 2016 was due to a change in services. In FY16 the Athol-Orange Fixed Route Shuttle was initiated, i.e. November 2015. This service replaced an old Dial-A-Ride service and instituted a local fixed route service between Athol and Orange. Therefore, the ridership was not actually lost, but just diverted to a different route. Combining Athol Link ridership with the Athol-Orange Shuttle ridership shows an increase of almost 5%. The Winchendon Link continued to ups and downs; peaking in FY16 at 6,022 riders and bottoming out at 5,158 in FY18.

The Intercity Bus Route travels within Gardner, through Westminster, then to Fitchburg and Leominster. This route runs from Labor Day up to Memorial Day.

Table 4.7-3: Intercity Yearly Ridership

Intercity Routes	2015	2016	2017	2018	Percent Change 2015 to 2018
Intercity Bus	18,409	16,690	10,383*	7,608	-58.67%!
Wachusett Shuttle	N/A	N/A	2,284	4,284	**

Source: Montachusett Regional Transit Authority – 2020 RTP

* This figure includes the Commuter Bus runs through May, and excludes the riders diverted to the new Wachusett Shuttle.
! 58% decrease includes the Wachusett Shuttle riders.

The Wachusett Shuttle began service on September 30, 2016 (FY 2017) and had an 87.57% increase in ridership due to the opening of Wachusett Station. This route diverted some of the riders from the Intercity Bus who rode to access the downtown Fitchburg Commuter Rail Station. This shuttle has a shorter route with more runs with direct access between Gardner City Hall and Wachusett Station.

In FY2017 MART, through a public-private partnership with the Devens Enterprise Commission, launched a new regional shuttle to provide the commuters from Fitchburg and Leominster with access to jobs in Devens, and with stops in the local communities of Shirley and Ayer (the Commuter Rail Stations) in order to provide the last mile connection. This service began slowly but was able to achieve a measurable ridership in only ten weeks. It continued to grow into 2018 with a peak ridership of 508 in the month of March 2018.

In June 2018, in collaboration with the towns of Littleton and Westford, MART launched the Littleton-Westford Commuter Rail Shuttle, which provided last mile access from the Littleton/495 MBTA Commuter Rail Station to the many business and technology companies along Route 110 in Littleton and Westford. The first month of ridership had 250 riders for only 4 hours of service a day, Monday through Friday.

Table 4.7-4: Other Regional Shuttle Yearly Ridership

Intercity Routes	2015	2016	2017	2018	Percent Change 2015 to 2018
Devens Regional	--	--	416*	4,701	**
Littleton-Westford Commuter	--	--	--	250†	**

Source: Montachusett Regional Transit Authority – 2020 RTP

* Started as a pilot in late April 2017. Launched at full-time route in October 2017.
† Launched on June 4, 2018. Only 1 month of ridership.

At the time of the 2020 RTP, ridership on fixed routes (excluding the Wachusett Shuttle) continued to decrease. The change from FY2017 to FY2018 seemed to show the decrease was slowing, from an overall decrease of -21.96% between FY2016 and FY2017 to -12.04% between FY2017 and FY2018.

B. Paratransit

MART's complementary paratransit service in 2019 included origin to destination transportation for citizens with disabilities who were eligible under the criteria of the Americans with Disabilities Act (ADA). In other communities in the region, twenty-one (21) member Councils on Aging (COA) provided service for seniors and the disabled; Royalston did not have MART affiliated COA transportation available. Prices and times of operation varied per community.

Table 4.7-5: Paratransit Yearly Ridership (not including COA)

Communities	2015	2016	2017	2018	Percent Change 2015-2018
Leominster/Fitchburg	93,655	74,095	68,606	71,565	-23.59%
Gardner	18,707	15,341†	16,367	18,837	0.69%
Athol	51,081	17,760‡	1,485	1,470	**
Dial-A-MART Services*	155,958	158,758	155,627	146,166	-6.28%

Source: Montachusett Regional Transit Authority – 2020 RTP

* Includes traditional Dial-A-MART for social service agencies such as GVNA & 7 Hills, as well as HST services such as MassHealth rides and routes for DDS. DDS routes account for 65% of the rides.
† Westminster ADA new service added.
‡Athol services changed from full scale Dial-A-Ride to breakout into Athol ADA, Athol COA & Athol Fixed Route shuttle beginning in November 2015. This number reflects 4 months of full Dial-A-Ride and 8 months of Athol ADA only. About 40% of the ridership was diverted to the fixed route shuttle in the first year. FY17 reflects a full year of Athol ADA Only. Athol COA

ridership is about 10% of the original Dial-A-Ride (~5100 rides per year). The percentage change from FY 2017 to FY 2018 is a decrease of 1.01%.

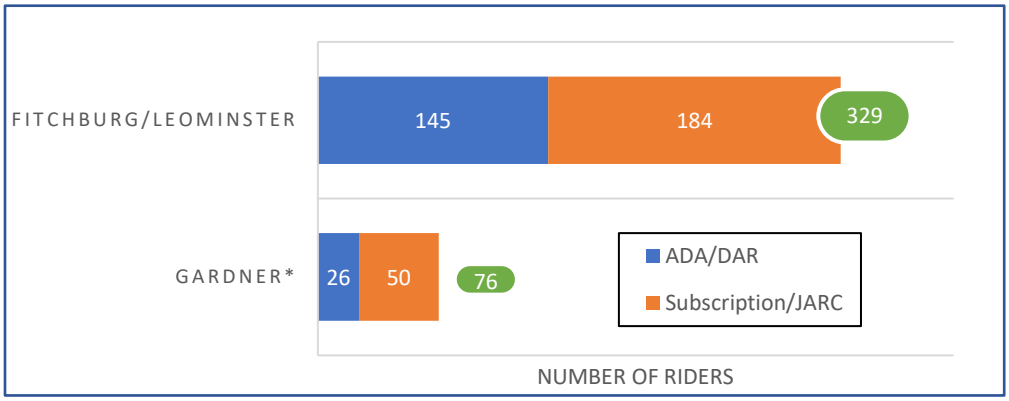
Table 4.7-6 COA Yearly Ridership

Communities	2015	2016	2017	2018	Percent Change 2015-2018
All COA Service	116,756	117,084	111,100	107,830	-7.65%

Source: Montachusett Regional Transit Authority – 2020 RTP

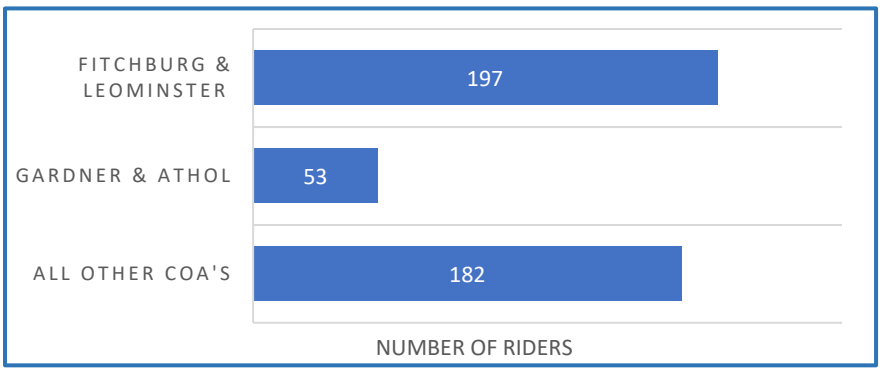
During 2015, paratransit and COA ridership peaked, but then they experienced a gradual decline. The following charts (Figures 4-56 and 4-57) highlight the average daily paratransit (not including contracted social service agency rides) and COA ridership across different services and communities at the time of the 2020 RTP.

Figure 4.7-2: Paratransit Average Daily Ridership (2018)



Source: Montachusett Regional Transit Authority – 2020 RTP

Figure 4.7-3: Council on Aging Average Daily Ridership (2018)



Source: Montachusett Regional Transit Authority – 2020 RTP

C. Dial-A-MART

Dial-A-MART service is transportation that serves the needs of either human service agencies or targeted populations (elderly, individuals with disabilities, and/or low-income individuals) through eligible agency sponsored trips. Service is provided on a negotiated cost basis with the agencies. MART utilizes the Dial-A-Mart Services to allow its operating company to act as a private vendor to the Brokerage Services Division of MART. This allows for cost savings to the brokerage program and increased revenue to support paratransit operations.

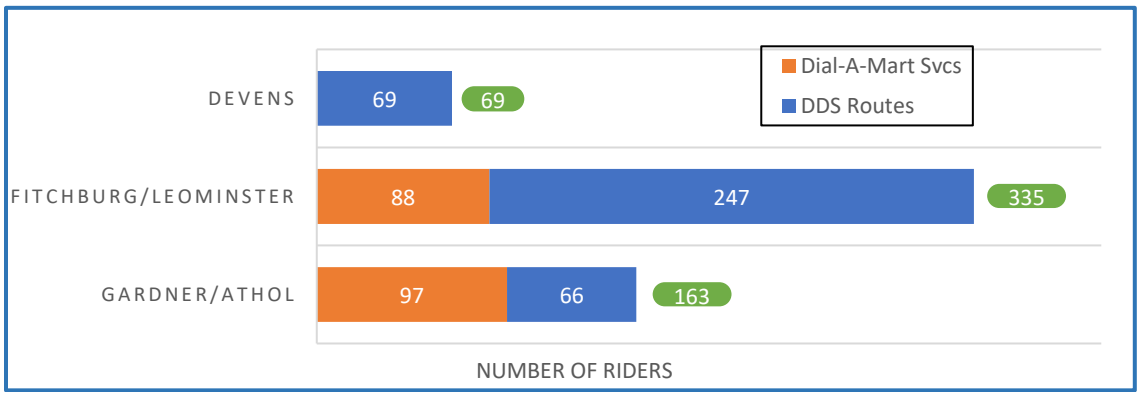
Figure 4.7-4 highlights average daily ridership figures for the Dial-A-Mart services and the Department of Developmental Services (DDS) routes brokered by MART from 2015 to 2018. Overall, the average daily ridership decreased by approximately 2%. However, ridership fluctuated each year, as can be seen in Table 4.7-7.

Table 4.7-7: Dial-A-MART Yearly Ridership

Communities	2015	2016	2017	2018	Percent Change 2015 to 2018
Dial-A-MART Services*	155,958	158,758	155,627	146,166	-6.28%

Source: Montachusett Regional Transit Authority – 2020 RTP

Figure 4.7-4: Average Daily Ridership for Sponsored Paratransit Services (2018)



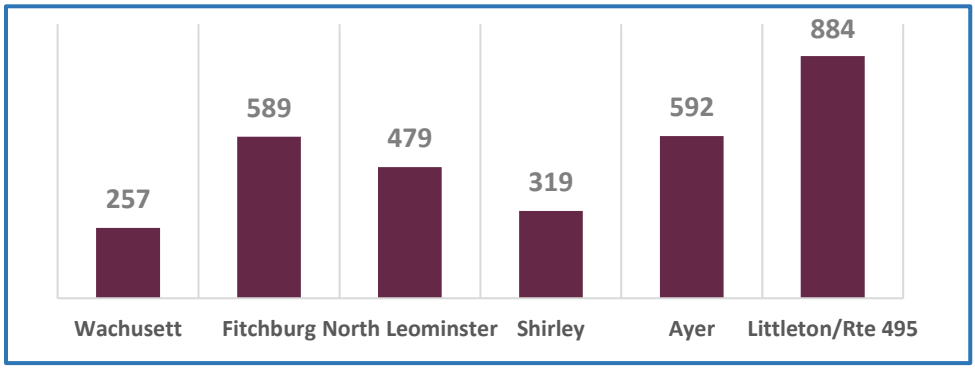
Source: Montachusett Regional Transit Authority

D. Commuter Rail Stations

Commuter rail service is managed by the Massachusetts Bay Transportation Authority (MBTA). In September 2016, MBTA extended service 4.5 miles of the Fitchburg Line with the opening of the Wachusett Station in Fitchburg. MART provided a transit shuttle from Gardner to Wachusett Station. The Fitchburg Line thus operates from Wachusett to Boston, with stops in Fitchburg, Leominster, Shirley, Ayer and Littleton within the MART service area. In 2019, the MBTA audit reported that of the various north-side commuter rail lines, the Fitchburg line had experienced the largest real increase and percentage increase for riders. Since 2012, two inbound trains and two outbound trains were added to increase service on this line.

At that time, daily ridership for the commuter line, shown in Figure 4.7-5, had a large number of riders boarding and alighting at the Littleton stop. The Littleton stop parking facilities added parking for an additional 50 vehicles at the time of the 2020 RTP. It still remained at capacity daily, with some drivers often parking illegally.

Figure 4.7-5: Commuter Rail Average Daily Ridership



Source: Massachusetts Bay Transit Authority and Central Transportation Planning Staff - 2020 RTP

Table 4.7-8: Commuter Rail Lot Parking Spaces – Current (2023)

Community	Commuter Rail Station	Current No. of Parking Spaces	In use*	Percent usage	Planned Parking Spaces	Estimated Year of Completion
Fitchburg	Wachusett Station	360	127	35.28%	360	Completed
	Main Street	425	311	73.18%	425	Completed
Leominster	North Leominster	360	133	36.94%	360	Completed
Shirley	Front Street	65	120	184.6%	65	N/A
Ayer	Main Street/Park Street	65	65	100%	200	Completed
Littleton	Foster Street	250	255	102%	250	Completed
Total		1,530			1,665	

Source: Montachusett Regional Transit Authority – 2020 RTP
Parking lot usage was counted on Thursday July 11, 2019 by the MRPC.

Table 4.7-9 displays the percentage changes in ridership from 2012 to 2018. Due to Wachusett station's introduction in 2016, data to calculate a percentage change for boarding/alighting at Wachusett Station, as well as some percentages for the Fitchburg stop was not available. Most notable is the inbound change for the Littleton stop which saw an increase of 135.6% boarding and a 700% increase in alighting. Other notable changes included a 50% increase of outbound boarders at the North Leominster stop, a 38% decrease in the same measure at the Shirley stop, and in 71.6% increase in outbound alighting at the Littleton station.

The changes in daily ridership are shown in Figure 4-7.6. At the time, the trend seemed to indicate that ridership was holding steady, with a large increase at the Littleton station.

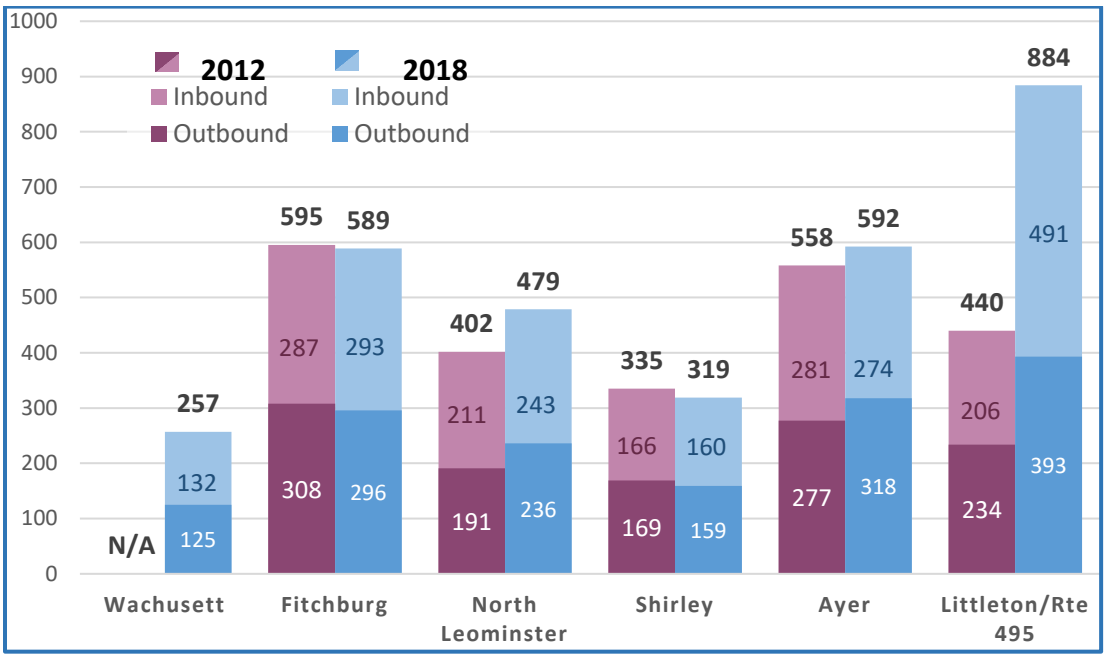
Table 4.7-9: Percentage Change in Commuter Ridership from 2012 to 2018

	Inbound		Outbound	
	Boarding	**Alighting**	**Boarding**	**Alighting**
Wachusett	n/a	n/a	n/a	n/a
Fitchburg	n/a	n/a	n/a	-3.9%
North Leominster	11.8%	n/a*	50%	23.3%
Shirley	-4.5%	8.3%	-38%	-3.2%
Ayer	-2.0%	-6.3%	-9%	18.2%
Littleton/Rte 495	135.6%	700.0%	-22%	71.6%

Source: Massachusetts Bay Transit Authority and Central Transportation Planning Staff – 2020 RTP

*Data collected by the MBTA and the CTPS did not record any alighting at the North Leominster stop during their study in 2012, and therefore a percent change cannot be calculated.

Figure 4.7-6: Commuter Rail Daily Ridership, 2012 vs 2018



Source: Massachusetts Bay Transit Authority and Central Transportation Planning Staff – 2020 RTP

Pandemic and Post Pandemic Transit

A. Fixed Route System

1. Fitchburg/Leominster and Gardner

In 2019, the trend of decreased ridership along the fixed route system in Fitchburg, Leominster and Gardner continues as documented in the last RTP. Beginning in 2020 with the onset of the COVID pandemic and all of its associated restrictions on the public and transit agencies, the decrease in ridership (and its associated revenues) took a major decline. From 2020 to 2022, ridership fell in Fitchburg/Leominster and Gardner, 56.6 % and 28.14&, respectively. In Fitchburg/Leominster, this represented a more than 50% decrease in total ridership per year.

Table 4.7-10: Fixed Routes Yearly Ridership

Fixed Routes	2019	2020	2021	2022	Avg Ridership Per FY 2015 to 2019 Pre-Pandemic Years Yearly Ridership	Avg Ridership Per FY 2020 to 2022 Peak Pandemic Years Yearly Ridership	2023 (7 Months)
Leominster/Fitchburg	436,204	346,478	181,837	221,250	520,056	249,855	144,497
Avg Ridership Per Month	*36,350*	*28,873*	*15,153*	*18,438*	*43,338*	*20,821*	*20,642*
Gardner	48,642	48,030	31,046	37,481	51,617	38,852	28,788
Avg Ridership Per Month	*4,054*	*4,003*	*2,587*	*3,123*	*4,301*	*3,238*	*4,113*

Source: Montachusett Regional Transit Authority

Table 4.7-11: Fixed Routes Yearly Ridership

Fixed Routes	Percent Change Non-Pandemic Years (2015-2019)	Percent Change Pandemic Years (2020-2022)	Percent Change 2015 to 2022
Leominster/Fitchburg	-38.91%	-56.60%	-173.88%
Gardner	-17.58%	-28.14%	-52.59%

Source: Montachusett Regional Transit Authority

In the first seven months of 2023, ridership figures are showing an improved situation for both the Fitchburg/Leominster and Gardner systems. Average monthly ridership is currently equaling or exceeding monthly figures from the pandemic years of 2020 to 2022. This trend will hopefully continue as we move further away from the pandemic crisis.

2. Regional Services

Ridership on the Link System also saw ridership decreases during the peak pandemic years of 2020 to 2022. Although in most instances a ridership decline was already underway from 2018 to 2019, once the crisis hit, the decline doubled from the 2018 to 2019 levels. The Winchendon Link system alone saw a 41.39% decline cutting ridership almost in half from 2019 levels.

Table 4.7-12: Link Yearly Ridership

Link Route	2019	2020	2021	2022	Percent Change 2018 to 2019	Percent Change 2020 to 2022
Athol Link	10,011	11,890	10,681	10,565	-6.82%	-12.54%
Athol-Orange Shuttle	22,758	21,306	17,756	20,585	3.14%	-3.50%
Winchendon Link	4,285	3,539	2,122	2,503	-20.37%	-41.39%

Source: Montachusett Regional Transit Authority

The Intercity Bus ridership drop while on a decline heading into 2019, once the pandemic appeared, ridership dropped over 90% from 2019 to 2020. Overall, ridership dropped an incredible 804.90% during peak pandemic years.

The Wachusett Shuttle that provided access to Wachusett Station and the Fitchburg Commuter Rail Line saw ridership decrease 52.77% as commuters altered their regular work routine from travel east into the Boston Metro area to a work from home stance.

Table 4-.7-13: Intercity Yearly Ridership

Intercity Routes	2019	2020	2021	2022	Percent Change 2019 to 2020	Percent Change 2020 to 2022
Intercity Bus	5,839	4,244	266	469	-37.58%	-804.90%
Wachusett Shuttle	3,360	3,946	1,618	2,583	14.85%	-52.77%

Source: Montachusett Regional Transit Authority

The trend of double-digit percentage drops in ridership continues when looking at the shuttle services implemented by MART. The Devens Regional shuttle lost over half of its yearly ridership from 2019 to 2022. The Littleton-Westford Commuter shuttle while stable from 2019 to 2020, by 2021 the service was discontinued altogether. Resumption has not been planned as of this RTP.

Table 4.7-14: Other Regional Shuttle Yearly Ridership

Intercity Routes	2019	2020	2021	2022	Percent Change 2019 to 2020	Percent Change 2020 to 2022
Devens Regional	3,989	2,239	1,533	1,468	-78.16%	-52.52%
Littleton-Westford Commuter	2,452	2,420	0	0	-1.32%	N/A

Source: Montachusett Regional Transit Authority

B. Paratransit

The use of paratransit services also saw changes based on COVID restrictions put in place. Ridership was decreasing from 2018 to 2019, those decreases accelerated from 2020 to 2022. However, with the exception of Athol, paratransit ridership has grown from the peak pandemic year of 2021 to 2022. Paratransit service lends itself to a more health secure option that can be attractive to users, especially the more COVID vulnerable individuals.

Table 4.7-15: Paratransit Yearly Ridership (not including COA)

Communities	2019	2020	2021	2022	Percent Change 2019 to 2020	Percent Change 2020 to 2022
Leominster/Fitchburg	70,991	53,832	48,169	71,722	-31.88%	24.94%
Gardner	25,398	21,431	15,532	18,614	-18.51%	-15.13%
Athol	1,314	1,154	558	291	-13.86%	-296.56%
Dial-A-MART Services	138,093	92,308	24,353	63,261	-49.60%	-45.92%

Source: Montachusett Regional Transit Authority

C. Dial-A-MART

Dial-A-MART services while remaining relatively consistent were showing a slight yearly decline heading into 2019. Ridership then dropped severely beginning in 2020 until it hit a low in 2021 approximately 80% below 2019 levels. However, in 2022, ridership levels were beginning to recover from the COVID lows as it grew over 61% from 2021.

Table 4.7-16: Dial-A-MART Yearly Ridership

Communities	2019	2020	2021	2022	Percent Change 2019 to 2020	Percent Change 2020 to 2022
Dial-A-MART Services	138,093	92,308	24,353	63,261	-49.60%	-45.92%

Source: Montachusett Regional Transit Authority

D. Commuter Rail Stations

Table 4.7-17: Commuter Rail Lot Parking Spaces – Current and Future Potential

Community	Commuter Rail Station	Current No. of Parking Spaces	In use*	Percent usage	Potential/Planned Parking Spaces	Estimated Year of Completion
Fitchburg	Wachusett Station	360	127	35.28%	360	Completed
	Main Street	425	311	73.18%	425	Completed
Leominster	North Leominster	360	133	36.94%	360	Completed
Shirley	Front Street	65	120	184.60%	65	N/A
Ayer	Main Street/Park Street	65	65	100%	200	Completed
Littleton	Foster Street	250	255	102%	250	Completed
Total		1,530			1,665	

Source: Montachusett Regional Transit Authority

*Parking lot use counted on Thursday July 11, 2019 by MRPC

E. Other Current Transit Capital Improvements

MART has purchased and deployed a fleet of minibuses (Arbocs) which were purchased and deployed to significantly reduce:

- Fleet acquisition costs
- Operational costs
- Maintenance costs

The minibuses will be used to:

- Operate fixed routes with ridership that does not warrant a large-frame bus

- Establish feeder routes between unserved and under-served areas of the fixed route communities and the current fixed routes; and
- Develop shuttle routes between rural communities and the fixed route communities for access to fixed route services.

MART has purchased and is utilizing recently acquired GPS-based transit technologies:

- Genfare Fare Collection System
    - Provides Multiple Purchase Options
        - Mobile devices
        - Internet
        - On-vehicle
        - Ticket Vending Machines
    - Provides Internal Data Collection and Trend Analysis
        - Ridership
        - Boarding location
        - Payment methodology
- Passio Go! System
    - Provides passengers w/ estimated arrival time at stops.
    - Provides transit staff w/ operational vehicle tracking.
    - Automated Passenger Counters
    - Provides transit staff w/ On-Time Performance capabilities for analyzing and improving fixed route and paratransit system performance.

F. Other Current Transit Operational Improvements

The Athol Shuttle route and schedule was modified in December 2022, increasing the service area and improving the route timing. Ridership has increased by 6% through June 2023.

The Advisory Board of the Transit Authority recently voted to approve several key fare policy changes:

- Full fares were reduced from $1.25 to $1.00

- School age students ride free
- No cost transfers for inter-city regional routes

MART has also recently launched two new micro transit services:

- Sterling, Lancaster, and Lunenburg service (funded by MassDevelopment Taxi/Livery grant)
- Bolton, Boxboro, Littleton and Stow service (funded by MAPC Community Connections grant)

Measures Implemented During Pandemic

In response to the pandemic, MART and other RTAs implemented a number of measures to combat spread and to provide a safe transit experience for riders and employees. Many of these particular measures have remained in place in place as part of the overall transit system.

Table 4.7-18: Pandemic Measures Implemented by MART

Pandemic Measure	Date Implemented	End Date	Results/Action	Continued
Driver Safety Partitions in Rollingstock	3/1/2020	N/A	Allowed Drivers to Continue Work Throughout Pandemic	To Remain in Place
Vehicle Enhancement - Static Disinfectant	3/1/2020	N/A	Extra Cleaning Allowed Drivers and Ridership to be More Comfortable	To Remain in Place
Personnel Segregation – Implemented Alternating Schedules, Work from Home Policy and Separation of Personnel into Different Facilities to Adhere to Distance Guidelines	2/20/2020	5/15/2022	Provided a Safer Work Environment. Policies were Discontinued with Reduction of COVID Threat	Discontinued
Garages Disinfection - Handrails and Elevators	3/1/2020	5/15/2022	Cleaning Allowed for Comfort and Safety of Employees and Ridership	Discontinued
Wearing of Masks and Gloves	3/1/2020	3/15/2023	Lifted when Federal Mandate Discontinued	Discontinued
Rolling Stock Reconfigured to Include Medical MERV Rated Filters	5/1/2020	N/A	Improved Driver and Ridership Conform and Security	To Remain in Place

Improvements Made Since 2019

MART has been striving to accomplish many of the goals that were established in the 2020 RTP. The following have been implemented or are scheduled to be implemented by the time of the next scheduled RTP in 2028.

Table 4.7-19: Improvements Implemented by MART Since 2019

RTA Projects/Programs	FY	Reason	Est Cost
Vehicle Exhaust Detection System (Co/No) for Facilities	2021	Safety Feature at 840 North Main & 1427R Water St. to detect and alarm when fumes reach safety limits	$90,000
Gardner Bay Flooring	2021	Stripped and recoated failing slab for entire bus-bay	$428,000
Employee Parking Lot Reconfiguration	2021	Demolished, regraded, and paved new lot	$246,000
840 North Main St Office Renovation - (Phase 1 & 2)	2021-2023	Completed total conversion of 1st floor space into office space for 46 staff. Modern office setting and prototype for future renovations.	$900,000
1427R Water Street Facility - Fire Panel	2022	Replaced fire panels past useful life, with a 4100ES system	$62,00
1427R Water Street Facility - VR Lift	2022	Replaced aging Parallelogram lift with new Vertical Rise lift	$112,000
Service Contracts - Multiple	2022-2026	Service contracts with trades for preventative maintenance. Part of initiative to better support, maintain and extract value out of existing systems. Cost is per/year.	$130,000
New Farebox System	2022	Allows RTA to better understand the relationship of ridership vs. revenue	$1,500,000
New APC - Passenger Counter System)	2022	Increases knowledge through data acquisition to improve transportation needs of the ridership	$565,000
New Security Camera System	2022	Improves over all safety of employees and ridership	$200,000
Thermal Compliant Vehicle Data/Functional Devices	2022	Improves data gathering capacity located in vehicles.	$50,000
Rolling Stock Consortium - Procurement Vans/Cutaways	2022	Group of RTA's that procure smaller rollingstock as a unified group.	Multi million-dollars
LBE Grant Award - EV/Solar Study for Water St. Facility for DOT-FHWA CFI Grant	2023	Award of $75,000 to conduct concept and preliminary work for DOT-FHWA's CFI Grant with goal of acquiring funding for construction.	$75,000

Table 4.7-19: Improvements Implemented by MART Since 2019 (cont.)

RTA Projects/Programs	FY	Reason	Est Cost
Ayer - Depot Square Project	2023	Completed Depot Square Project to finalizing MART's commitment to the Town of Ayer.	$540,000
Athol Depot - Facade Restoration	2023	Completed historical restoration of the Athol Depot. Included masonry, doors, windows, and hardware.	$580,000

Human Service Transportation Brokerage Improvements

MART responded to a Request for Proposals issued by the Executive Office of Health and Human Services for Human Service Transportation (HST) Brokerage Services in June of 2020 and was subsequently awarded two of the three newly defined regions for brokerage services to commence on July 1, 2021. MART now manages more than eighty-two percent (82%) of the HST brokerage for the Commonwealth of Massachusetts.

To enhance the management of the brokerage services, MART developed and deployed additional technologies and reporting systems including:

- Technologies
  - MassHealth Member Trip Booking Portal
  - Facility Trip Booking Portal
  - Call Center w/ Integrated Voice Response (IVR)
  - Real-time notifications to customers for vehicle arrivals
  - Web portals for Complaint and Service reporting
  - GPS vehicle tracking
  - Vendor Contract Management and Credentialing Portal
  - Integration w/ Lyft
- Reporting Dashboards
  - Trip volume reporting (by agency, trip type, region, etc.)
    - Distribution by Company, driver, vehicle type, etc.
    - On-time performance

- Expenditure reporting (by agency, trip type, region, city/town/etc.)
    - Total cost of trips
    - Average cost per trip
- Call Center Metrics
    - Call Volume
    - Answered vs. Abandoned Calls
    - Call Duration
    - Available agents (by hour, region, agency, etc.)
- Complaints
    - Complainant Information
    - Transportation Provider Information
    - Complaints by category
    - Time to resolve and notification to consumer
    - By Agency, region, date, etc.

The significant enhancement to the technologies used to manage the brokerage operations, as well as the enhanced and upgraded dashboard reporting has substantially improved the customer experience and the abilities of MART and the HST office to manage the expanding needs and growth of the HST brokerage.

For FY23, MART provided nearly 5.8 million trips with a budget of $235 million. The trips continue to increase post-COVID and MART is continuing to increase the pool of transportation providers providing services. The new integration with Lyft will greatly improve the increasingly frequent need to provide same day / next day trips, as well as non-emergent hospital trips and releases.

Trends

As indicated in the review of the ridership figures during the pandemic years of 2020 to 2022, clearly show and illustrate the negative impacts being felt by MART as well as other RTAs across the nation. Ridership and its corresponding revenue figures have placed a major strain and

burden on the transit system from fixed routes to commuter rail. Figures also indicate that trends are beginning to turn around and rebound from the lowest points of the pandemic.

Filling service gaps, meeting service needs, and increasing accessibility to residents continues to be a priority for MART. MART will continue to review its various transit routes and options as well as its facilities and rolling stock.

Transit Challenges

1. MART and its operating companies are still experiencing significant financial and operational impacts resulting from increased costs related to supply chain shortages, as well as a challenging workforce and labor participation environment.
2. Capital projects continue to be negatively impacted, due to significantly higher costs, contractor responsiveness and supply chain product availability.
3. All MART commuter rail garage facilities continue to generate substantially less parking fare revenue than the pre-pandemic period.
4. Although ridership continues to recover, both fixed route and paratransit ridership are still below pre-pandemic levels.

Recommendations

In order to provide increased mobility for Montachusett area residents that do not own automobiles or that choose to be less dependent on a personal vehicle, MART will need to continue to refine and implement public transit programs designed to increase ridership. To accomplish this, it will be necessary to examine the routes and schedules in order to determine the most efficient and effective services. Overcoming the negative effects of the COVID pandemic will be a continued long-range effort for the transit authority. MART remains open to expanding services wherever possible to fill service gaps, meet unmet regional needs and increase accessibility to health facilities and social services.

Where is becomes apparent that certain services are needed, MART should continue to work with those institutions to examine requests, organizational involvement, and ways to help

defray the cost of the additional services. Continued participation of local industries, businesses, major shopping centers and schools in developing appropriate schedules, routes and promotional programs is an important part of this ongoing planning and implementation of services.

Special service provided to the elderly and the disabled will need to be closely monitored to insure continuation of appropriate levels of service. The continuation of brokerage programs with the Department of Public Health, Department of Developmental Services, MassHealth, Department of Mental Health, MRC, and MCB is of major importance and should remain a focal issue.

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. The present vehicle fleet is constantly being replaced with new lift equipped ADA compliant equipment. The Montachusett TIP process should continue to be utilized to upgrade and replace buses and vans for the MART fleet, as well as continue to upgrade maintenance facilities. Opportunities in the Bipartisan Infrastructure Law (BIL) provide an opportunity to replace existing vehicles with electric, net zero and energy efficient vehicles. Additionally, the supporting infrastructure needed to supply these new technologies should also remain a major goal for MART.

It is recommended that MART collaborate with municipalities to lift the age requirement on the Council on Aging public transportation vehicles in order to provide service to a larger portion of the community. The Council on Aging van services could be expanded to operate on weekends and nights so that those who utilize the service have more scheduling opportunities.

It is recommended that MART continue to increase its social media presence to better promote services and information to the community. MART should continue to collaborate with local municipalities to promote available public transit options on the municipalities' websites and social media pages. It is also recommended that MART continue to disseminate information through traditional media like local newspapers, local access television, and radio while still improving its social media presence. Within the last RTP, it was recommended that MART hold

periodic training sessions in order to teach users on how to read and follow bus schedules. The pandemic obviously derailed this initiative. Training videos were developed and placed on the web as part of their outreach efforts. However, in person outreach meetings should return as an effort for the Transit Authority.

Most of the above actions are designed to improve efficiency and lower overall demand on the highway system. There remain several key and identifiable avenues by which the MART system can be both properly maintained and improved. They are:

Table 4.7-20: Recommended Programs/Projects

RTA Projects Recommendations	Expected FY	Reason for Recommendation	Est Cost
Ridership Demographics Study	2023-2026	A large project involving MART and its Operating company to understand where the ridership is, where they want to go etc. in order to maximize mobility.	N/A
ITC Roof, Concourse & Stair Tower, Main Street - Fitchburg	2023-2024	3 Projects to modernize and rehabilitate the aging Intermodal Transportation Center (ITC)	$1,250,000
Rebranding Campaign	2023-2025	Standardization of agency image (Logo/Colors) across its portfolio of buildings and fleet vehicles	$400,000
Elevator Modernization	2023-2024	Upgrade original elevator components following an assessment. Project will have two phases and cover all 7 elevators/lifts across MART the portfolio.	$500,000
Hydrogen Fueling Station - FTA's Lo-No & Bus-Bus Facility Grant Submission	2024-2025	Infrastructure for Hydrogen Fueling station to make-ready the Water St. Facility for Hydrogen Fuel Cell (HFC) Zero Emission fleet vehicles	$5,000,000
ITC Parking Garage - Structural Repairs, Main Street - Fitchburg	2024-2025	Address original design flaws to ensure structural integrity and safety and to prolong the facility's life expectancy.	$950,000
Fuel Station Upgrades - Systemwide	2024-2025	Final fuel station upgrades so that the system will last through the final rollover of the combustion fleet vehicles as the fossil fuels are phased out for ZEV (Hydrogen & EV).	$235,000
North Main St. Parking Expansion - Leominster	2025	Additional parking at the new 840 North Main St. Facility in Leominster	$480,000

Table 4.7-20: Recommended Programs/Projects (cont.)

RTA Projects Recommendations	Expected FY	Reason for Recommendation	Est Cost
HVAC Replacement 1427R Water Street - Fitchburg	2025	Replace underperforming HVAC system at Administrative offices.	$400,000
EV Vehicle Charing Infrastructure - DOT-FHWA CFI Grant Submission	2025-2026	Infrastructure upgrades for Electric Vehicle Charging Stations, Solar Canopy, Battery Backup, and Utility hookup in order to make-ready the Water St. Facility for Electric Vehicle (EV) Zero Emission fleet vehicles	$8,000,000
ITC Atrium, Main Street - Fitchburg	2026+	Repurpose for public/governmental use the underutilized North Pod Atrium at the Intermodal Transportation Center	$680,000
ITC 2nd Floor 100 & 150 Main Street - Fitchburg	2026+	Refurbish existing open office space, improve layout, floor plan, and space use at the Intermodal Transportation Center.	$900,000
ITC New Garage Lighting & Protection Main Street - Fitchburg	2026+	New garage lighting with anti-bird features at the Intermodal Transportation Center	$200,000
ITC Asphalt Sealing & Restriping, Main Street - Fitchburg	2026+	Topcoat/resealing and striping of asphalt + concrete sealant at the Intermodal Transportation Center	$320,000
Wachusett Station, Fitchburg Commuter Rail Asphalt Resealing + Concrete Sealing & Striping	2026+	Topcoat/resealing and striping asphalt + concrete sealant at the Wachusett Rail Station	$380,000
NL Asphalt + Concrete Sealing & Restriping	2026+	Topcoat/resealing and striping asphalt + concrete sealant	$280,000
Mechanic/Bay Side Update with New Equipment -Gardner Facility	2026+	Update Mechanic Space, Floors, Painting, Wash Bay Epoxy, plus 2 new Post Lifts	$1,100,000
840 North Main St. Facility 2nd Floor Office Renovation - Leominster	2026+	2nd Floor Office Build Out and Refurbishment of Space for Better Utilization; to include Rehab of Bathrooms. An Assessment to determine a better layout to be conducted. Existing layout from a prior car dealership.	$900,000

Table 4.7-20: Recommended Programs/Projects (cont.)

RTA Projects Recommendations	Expected FY	Reason for Recommendation	Est Cost
ITC Generator Replacement, Main Street - Fitchburg	2026+	Replace generator that supports 150 Main Street facility. Old generator installed in 2005 at the Intermodal Transportation Center.	$120,000
840 North Main St. Facility Generator Replacement - Leominster	2026+	Replace generator that supports 150 Main Street facility. Old generator installed in 2005.	$120,000

Other Future Transit Improvements Planned

The following transit improvements are currently in process or will be getting underway during FY24:

- The Gardner fixed routes are being assessed for:
  - Service area improvements
  - Improvements to the route schedules for commuter and local businesses
- Assessing and analyzing Fitchburg / Leominster fixed routes to enhance routing and schedules.
- Purchasing a facility within Devens to establish a satellite operations center to improve the ability to develop fixed route services to Devens, as well as to provide services in the eastern portion of our service area.
- Launching transit dashboards for improved access to information

Environment

Introduction

Environment and climate change are important areas of consideration for transportation planning. The Montachusett region needs to help protect and minimize negative impacts to its many areas of environmental value and its air, water, soil and wildlife. Along with environmental protection, the Montachusett region hopes to reduce greenhouse gas emissions which contribute to global climate change. This section will discuss the current and future activities the Montachusett region is undertaking to protect its environment and reduce greenhouse gas emissions.

> "The best climate science for Massachusetts continues to stress three findings: temperatures have gone up over the years and will continue to increase; there could be both fewer rainy days and more intense rainstorms; and sea levels will rise and combine with more powerful coastal storms."
>
> – 2022 Massachusetts Climate Change Assessment

Impact

In response to building concerns on the effect of global climate change and the development of Massachusetts Green DOT initiatives, the MRPC has looked at ways climate change will impact the Montachusett region. In particular, staff has focused on potential flooding by identifying flood prone areas and the effects that it will have on each community in relation to major transportation infrastructure. Transportation infrastructures such as roadways, bridges, rail lines etc. are essential for the economic wellbeing of our region. More than half the country's population now lives along the nation's coasts, and one third lives in the highly populated coastal areas of the Northeast. The area between Boston and Philadelphia is one of the most populous areas of the country. The Montachusett region, being a part of this larger corridor, not only has infrastructure which carries regional significance but national as well.

Regional Significance

"Massachusetts' current climate, and the threat of future climate change, is the result of two key dimensions of weather: temperature and precipitation. Changes in global temperatures over time also contribute to a third key dimension of climate change, sea level rise." Even though there are no coastal areas in the Montachusett region it is important to note other effects climate change may have on inland areas. "While climate projections find that there may be fewer days that are rainy or snowy, on those days when it does rain or snow, there can be more moisture. The greater intensity and duration of rainfall on rainy days can lead to flooding, stress on built infrastructure, natural ecosystems and consequent impacts on human health" (***2022 Massachusetts Climate Change Assessment*** - https://www.mass.gov/info-details/massachusetts-climate-change-assessment#read-the-report-). Since flooding is a major concern to transportation infrastructure in the region, it is important to identify and recognize areas which are vulnerable to such events.

The flood zone maps at the end of this section show Federal Emergency Management Agency (FEMA) 100-year flood zones in the Montachusett region. A 100 year flood is "calculated to be the level of flood water expected to be equaled or exceeded every 100 years on average. The 100-year flood is more accurately referred to as the 1% annual exceedance probability flood, since it is a flood that has a 1% chance of being equaled or exceeded in any single year." (United States Geological Survey "100 Year Flood – It's all about Chance" https://pubs.er.usgs.gov/publication/gip106)

The map ***FEMA 100-Year Flood Zones, MA DOT Bridges, and DCR Dams*** at the end of this section shows all dams in the region and bridges that structurally deficient. According to the Massachusetts Highway Project Development and Design Guidebook, a *structurally deficient* bridge is defined as "a bridge structure that has a defect requiring corrective action." (***Massachusetts Highway Design Handbook -*** https://www.mass.gov/lists/design-guides-and-manuals)

Dams are shown by their Hazard Codes, a system that categorizes dams according to the degree of adverse incremental consequences of a failure or mis-operation of a dam. The hazard

potential classification does not reflect in any way on the current condition of the dam (e.g., safety, structural integrity, flood routing capacity), rather the potential hazards downstream that would be realized by a failure. Three classification levels are *Low, Significant, and High.* According to the Massachusetts Office of Dam Safety a…

High Hazard Potential dam refers to dams located where failure will likely cause loss of life and serious damage to home(s), industrial or commercial facilities, important public utilities, main highway(s) or railroad(s).

Significant Hazard Potential dam refers to dams located where failure may cause loss of life and damage home(s), industrial or commercial facilities, secondary highway(s) or railroad(s) or cause interruption of use or service of relatively important facilities.

Low Hazard Potential dam refers to dams located where failure may cause minimal property damage to others. Loss of life is not expected.

The map ***TIP Projects and 100 Year Flood Zones*** at the end of the section overlays all projects currently listed in the "Target Section" of the Transportation Improvement Program (TIP) for the years 2024 through 2028 that are within the above-mentioned FEMA 100-year flood zones. The TIP is an annual prioritized listing of transportation and transit projects in the region proposed for implementation during the five-future federal fiscal years. Target section projects are prioritized and listed by the Montachusett MPO after consideration of several different criteria including effects on the environment and climate.

Table 4.8-1: High Hazard Dams in the Montachusett Region

HIGH HAZARD DAMS IN THE MONTACHUSETT REGION				
Dam Name	**City/Town**	**Ownership**	**Regulating Authority**	**ID Code**
Lower Naukeag Lake Dam	Ashburnham	Municipality	Office of Dam Safety	MA00002
Upper Naukeag Lake Dam	Ashburnham	Municipality	Office of Dam Safety	MA00003
Winnekeag Lake Dam	Ashburnham	Private	Office of Dam Safety	MA00007
Lake Wampanoag Dam	Ashburnham	Private	Office of Dam Safety	MA00010
Ashby Reservoir Dam	Ashby	Municipality	Office of Dam Safety	MA00334
Whites Mill Pond Dam	Winchendon	Private	Office of Dam Safety	MA00630
Lake Monomonac Dam	Winchendon	Municipality	Office of Dam Safety	MA00631
Whitney Pond Dam	Winchendon	Municipality	Office of Dam Safety	MA00633
Crocker Pond Dam	Westminster	Private	Office of Dam Safety	MA00638
Westminster Reservoir Dam	Westminster	Private	Office of Dam Safety	MA00639
Wyman Pond Compensating Reservoir Dam	Westminster	Municipality	Office of Dam Safety	MA00641
Hickory Hills Lake Dam	Lunenburg	Private	Office of Dam Safety	MA00851
Fall Brook Reservoir Dam and Dike	Leominster	Municipality	Office of Dam Safety	MA00869
Notown Reservoir Dam	Leominster	Municipality	Office of Dam Safety	MA00870
Scott Reservoir Dam	Fitchburg	Municipality	Office of Dam Safety	MA00871
Lovell Reservoir Dam	Fitchburg	Municipality	Office of Dam Safety	MA00872
Wrights Reservoir Dam	Gardner	Municipality	Office of Dam Safety	MA00117
Cowee Pond Dam	Gardner	Municipality	Office of Dam Safety	MA00118
Perley Brook Reservoir Dam	Gardner	Municipality	Office of Dam Safety	MA00119
Lake Shirley Dam	Lunenburg	Municipality	Office of Dam Safety	MA00455
Lost Lake Dam	Groton	Municipality	Office of Dam Safety	MA00808
Greenes Pond Dam	Fitchburg	Municipality	Office of Dam Safety	MA00875
Overlook Reservoir Dam	Fitchburg	Municipality	Office of Dam Safety	MA00876
Snows Mill Pond Dam	Fitchburg	Private	Office of Dam Safety	MA00878
McTaggarts Pond Dam	Fitchburg	Municipality	Office of Dam Safety	MA00879
Rockwell Pond Dam	Leominster	Municipality	Office of Dam Safety	MA00882
Pierce Pond Dam	Leominster	Private	Office of Dam Safety	MA00883
Wachusett Reservoir Dam	Clinton	State	Office of Dam Safety	MA00886
Cresticon Upper Dam	Athol	Private	FERC Jurisdiction	MA00932
Crescent Street Dam	Athol	Private	Office of Dam Safety	MA00934
Birch Hill Dam	Royalston	Federal Agency	Army Corps of Engineers	MA00963
Tully Lake Dam	Royalston	Federal Agency	Army Corps of Engineers	MA00970
Bickford Pond Dike	Hubbardston	Municipality	Office of Dam Safety	MA01022
Wachusett Reservoir North Dike	Clinton	State	Office of Dam Safety	MA01294
Lovell Reservoir Dike	Fitchburg	Municipality	Office of Dam Safety	MA01334
Lake Samoset Dam	Leominster	Private	Office of Dam Safety	MA00866
Notown Reservoir Dike	Leominster	Municipality	Office of Dam Safety	MA01240
Overlook Reservoir Dike	Fitchburg	Municipality	Office of Dam Safety	MA01236
Falulah Reservoir Dam	Fitchburg	Municipality	Office of Dam Safety	MA02312
Red Dam	Winchendon	Municipality	Office of Dam Safety	MA02345
Damon Pond Dam	Ashby	State	Office of Dam Safety	MA02518

Table 4.8-2: Structurally Deficient Bridges in the Montachusett Region

Community	Roadway	Bridge Over	Owner	Year Built	Year Rebuilt
Hubbardston	HWY WILLIAMSVILL	WATER BURNSHIRT RIVER	MUN	1939	
Winchendon	US202 MAPLE ST	WATER N BR MILLERS RIVER	DOT	1937	
Fitchburg	HWY CIRCLE ST	WATER N NASHUA RIVER	MUN	1937	
Royalston	HWY WINCHNDON RD	WATER PRIEST BROOK	MUN	1937	
Templeton	HWY MAIN ST	WATER OTTER RIVER	MUN	1938	
Shirley	HWY LONGLEY RD	WATER MULPUS BROOK	MUN	1968	
Townsend	HWY W MEADOW RD	WATER LOCKE BROOK	MUN	1917	1985
Fitchburg	ST 12 WATER ST	WATER N NASHUA RIVER	DOT	1937	1961
Fitchburg	ST 2 A/LNENBRG ST	WATER BAKER BROOK	DOT	1954	
Fitchburg	ST 31 WESTMNSTR RD	WATER PHILLIPS BROOK	DOT	1947	
Ayer	ST 2 A/FTCHBRG RD	WATER NASHUA RIVER	DOT	1975	
Royalston	HWY N FITZWLM RD	WATER LAWRENCE BROOK	MUN	1959	
Hubbardston	ST 62 OLD BSTN TPK	WATER W BR WARE RIVER	MUN	1950	
Townsend	ST119 MAIN ST	WATER PEARL HILL BROOK	DOT	1907	1931
Westminster	ST 12 ASHBURNHM ST	WATER PHILLIPS BROOK	DOT	1926	
Ashby	ST119 STATE RD	WATER S BR SOUHEGAN RIV	DOT	1962	
Athol	ST 2 A/S MAIN ST	WATER WEST BROOK	DOT	1930	
Petersham	ST101 POPPLE CAMP	WATER E BR SWIFT RIVER	MUN	1929	
Winchendon	US202 RIVER ST	WATER MILLERS RIVER	DOT	1932	

Scheduled for construction in 2024-2028 TIP

Currently under construction

Table 4.8-3: TIP Projects within 100-Year Flood Zones

Project Number	Description	FFY	Cost
609244	ASHBURNHAM- ROADWAY REHABILITATION ON ROUTE 101 SOUTH	2025	$9,240,930
604499	LEOMINSTER- RECONSTRUCTION/ REHABILITATION ON ROUTE 12 (CENTRAL STREET), INCLUDING REHABILITATION OF L-08-022	2024 - 2025	$13,814,345
606640	AYER- RESURFACING & RELATED WORK ON ROUTE 2A (FITCHBURG ROAD & PARK STREET)	Appendix	$2,400,000
608424	TEMPLETON- RECONSTRUCTION OF ROUTE 68, FROM KING PHILLIP TRAIL (ROUTE 202) NORTH TO THE PHILLIPSTON TOWN LINE (2.65 MILES)	2026	$6,790,886
607432	WESTMINSTER- REHABILITATION & BOX WIDENING ON ROUTE 140, FROM PATRICIA ROAD TO THE PRINCETON T.L.	2023	$6,375,205
608879	WINCHENDON- RESURFACING & RELATED WORK ON MAPLE STREET (ROUTE 202), FROM VINE STREET TO GLENALLEN STREET (1.36 MILES)	Appendix	$1,680,444
609213	HARVARD- RESURFACING AND BOX WIDENING ON AYER ROAD, FROM ROUTE 2 TO THE AYER TOWN LINE	2026 - 2027	$11,353,264
612242	FITCHBURG- RECONSTRUCTION OF JOHN FITCH HIGHWAY	2028	$9,174,115

Tracking Progress

The below tables are of the number of structurally deficient bridges within 100-year flood zones in the region as well as in the region as a whole. Of particular note is that during the 2013 version of this report there were 27 structurally deficient bridges in 100-year flood zones in the region. In 2016 there were only 19, a decrease of 8. This nearly 30% decrease is due to major investments in bridge infrastructure throughout the Commonwealth from the Accelerated Bridge Funding Program. In 2022, the latest data available, there are currently 19 such bridges in 100-year flood zones in the Montachusett region. It is important to continue to invest in our current infrastructure, not only to ensure the safety of its users, but to prevent the need for expensive emergency type investments which ultimately syphon funding from other needs. The possibility of an uptick in number of structurally deficient bridges in the region should be seen as a warning sign that current investments in bridge infrastructure are not enough. It should also be noted that four structurally deficient bridges in 100-year flood zones are scheduled for or under repair within the next five years, however, as those bridges are fixed others are sure to deteriorate to the point where they are structurally deficient.

Structurally Deficient Bridges in 100 Year Flood Zones					
2013	2016	2019	2020	2021	2022
27	19	20	20	20	19

Structurally Deficient Bridges Regionwide							
2006	2010	2014	2018	2019	2020	2021	2022
52	47	38	32	35	35	35	35

Vulnerable Roadways

One of the biggest impacts climate change will have on transportation infrastructure in the Montachusett region will be more frequent and intense flooding events on roadways, causing damage and hindering access for system users. Nearly 3% of roads in the region exist within the 100-year flood zones. Although they are not the only infrastructure at risk, identifying these locations is important when prioritizing improvements to be funded. The following table is a community-by-community breakdown of where these roads are located and corresponds to the individual community maps at the end of this section. These maps will be referenced when evaluating projects on the TIP.

Table 4.8-4: Road Mileage in Flood Zones

	Total Road Mileage	Mileage in Flood Zone	Percent in Flood Zone
Ashburnham	125.07	3.17	2.54%
Ashby	70.12	1.25	1.79%
Athol	144.57	2.28	1.58%
Ayer	70.49	4.14	5.87%
Clinton	69.26	1.36	1.96%
Fitchburg	240.74	8.86	3.68%
Gardner	148.43	2.29	1.55%
Groton	149.50	3.13	2.09%
Harvard	151.76	2.06	1.36%
Hubbardston	113.54	4.30	3.79%
Lancaster	150.22	4.98	3.32%
Leominster	243.70	7.00	2.87%
Lunenburg	123.48	1.84	1.49%
Petersham	111.93	2.26	2.02%
Phillipston	66.89	1.58	2.37%
Royalston	81.17	4.05	4.99%
Shirley	78.58	2.22	2.83%
Sterling	144.23	1.90	1.32%
Templeton	137.90	5.58	4.05%
Townsend	109.51	3.11	2.84%
Westminster	150.81	3.14	2.09%
Winchendon	152.76	13.93	9.12%
Regional Total	2834.65	84.47	2.98%

Culverts

It is estimated that half of all culvert in the commonwealth are inadequet to handle large flood events. While there is high quality data available on bridges, dams and roads in the region, culverts lack a reliable centralized inventory database to analyze. Nonetheless, these structures are an integral part of a well operating transportation system. Many of these culverts are municipally owned and maintained. MassDER surveys indicate challenges faced by municipalities include a lack of in-house expertise with design of culverts; inability to identify

which culverts are most vulnerable to washouts; difficulty with the permitting process; and lack of funds for engineering, design and construction.

> "The Massachusetts Department of Ecological Restoration (MassDER) estimates that more than half of the 25,000 culverts and small bridges in Massachusetts restrict streamflow, create barriers to fish, and pose a risk to the public due to their vulnerability due to storm events. "
>
> – MassDER

"In 2017, DER launched the Culvert Replacement Municipal Assistance Grant Program to help municipalities replace culverts with better design crossings. To date DER has provided incentive funding totaling over $2.5 million to 36 municipalities. Three projects have been constructed and 12 projects are almost shovel-ready" (MassDER). Considering the anticipated increase in flood events due to development and climate change, it is important to maintain momentum on improving the network of culverts in the region.

Development of EV Infrastructure within the Montachusett Region

Over the last decade, there has been improved access to and availability of electric vehicles (EV's). This trend is expected to continue as government incentives and requirements, along with lower manufacturing costs, increase demand for these vehicles. Along with the proliferation on EV's in the region, there have been an increase in number and demand for EV charging stations. The existence of these stations in the region will have an impact on EV usage as the incentives to such technology become greater with easier access to charging stations. The increase in this infrastructure within the region are being monitored annually. Currently, there are forty-two (42) EV charging stations in the region, an increase from thirty-three (33) EV charging stations documented in 2021. These stations are listed in the table below and included in the map "***Alternative Fueling Stations***".

Table 4.8-5: EV Charging Stations in the Montachusett Region

City	Station Name	Street Address
Leominster	NATIONAL GRID CHILIS LEOMNSTR	42 Orchard Hill Park Dr
Lancaster	Ron Bouchard's Nissan	490 Old Union Turnpike
Sterling	Kitchen Associates	76 Leominster Rd
Athol	Athol Public Library	568 Main St
Lancaster	NATIONAL GRID LANCASTER	Thayer Memorial Dr
Leominster	The Mall at Whitney Field - Tesla Supercharger	100 Commercial Road
Leominster	RONBOCHARGE SHOP 02	500 Old Union Turnpike
Fitchburg	CONLONFA CONLON FA 1	Conlon Fine Arts Center (Rear) 367 North Street
Ayer	TOWN OF AYER 0 PARK ST EV 1	1C Park St
Gardner	MT WACHUSETT CC MWCC STA 3	444 Green St
Fitchburg	EV CHARGING MS1	144 Main St
Leominster	EV CHARGING NS1	36 Nashua St
Devens	DEVENS DEVENS #2	33 Andrews Parkway
Leominster	MCKENZIE ENG STATION 1	305 Whitney St
Templeton	TEMPLETON LIGHT EV 1	79 Bridge St
Winchendon	MFS FRONT 1	664 Spring St
Leominster	RONBOCHARGE SHOP 01	500 Old Union Turnpike
Gardner	MT WACHUSETT CC MWCC STA 2	444 Green St
Gardner	MT WACHUSETT CC MWCC STA 1	444 Green St
Fitchburg	EV CHARGING MS2	144 Main St
Leominster	EV CHARGING NS2	36 Nashua St
Winchendon	MFS FRONT 3	664 Spring St
Winchendon	MFS FRONT 2	664 Spring St
Lancaster	PERKINS MANOR	Perkins Dr
Lancaster	PERKINS HERMANN BLDG	Pinfeather Ln
Baldwinville	Templeton Light	86 Bridge St
Sterling	SMLD NORTHGATE 3-2	3000 Meadows Drive
Sterling	SMLD NORTHGATE 3-1	3000 Meadows Drive
Athol	TOWN OF ATHOL STATION 1	100 Main St
Athol	TOWN OF ATHOL STATION 2	100 Main St
Leominster	GERONIMO STATION1	Twin City Marketplace (Hannaford)
Harvard	HILDRETH SCHOOL STATION1	27A Mass Ave
Groton	LAWRENCE AC. GRAY BUILDING 1	26 Powderhouse Rd
Groton	LAWRENCE AC. LA SOUTH	14 Main St
Gardner	ENERGICA ROBS DYNO SERV	45 Fredette Street
Sterling	SMLD LIBRARY	14 Houghton Rd
Sterling	SMLD TOWN HALL	1 PARK ST
Sterling	SMLD DUNKIN DONUTS	50 Leominster Rd
Groton	Groton - Groton Senior Center	117 West Main Street
Groton	Groton - Church Common	2 Lowell Road
Groton	Groton - Country Club	94 Lovers Lane
Groton	Groton - Prescott School Community Center	145 Main Street

National Electric Vehicle Infrastructure (NEVI) Program Deployment Plan

In September of 2022, the Federal Highway Administration (FHWA) approved the Massachsuetts NEVI Deployment Plan, which is required to access funding through the NEVI formula program. The Deployment Plan is the framework for Massachusetts to expand its EV

highway fast charging network. The Massachusetts NEVI Deployment Plan can be located at https://www.fhwa.dot.gov/environment/nevi/ev_deployment_plans/ma_nevi_plan.pdf

Massachusetts Vehicle Census

The Massachusetts Vehicle Census was made available to the public in July of 2023 and is the first state level dataset in the nation that joins vehicle-level odometer readings with vehicle attribute and registration transaction histories. This powerful resource allows policymakers, researchers, and other stakeholders to understand state and local trends in vehicle usage and ownership. The following data derives from the Massachusetts Vehicle Census and will be compared over time in future years.

- 3% of vehicles in the Montachusett region are either zero-emission or hybrid, compared to 4.4% of vehicles statewide.
- It is estimated that zero-emission or hybrid account for 3.6% of daily vehicle miles driven in the region, compared with 4.8% statewide.

Massachusetts Climate Change Assessment

The Massachusetts Climate Change Assessment (Climate Assessment) evaluates the impacts of climate change to the Commonwealth, including human health and safety, natural resources, and public and private assets. The Climate Assessment serves to directly inform the 2023 update to the State Hazard Mitigation and Climate Adaptation Plan (SHMCAP).

Many of the same climate change related impacts mentioned in this section were highlighted in the Climate Assessment. Urgent impacts in the infrastructure sector were identified and are listed below.

- **Damage to Inland Buildings** from heavy rainfall and overwhelmed drainage systems.
- **Damage to Electric Transmission and Utility Distribution Infrastructure** associated with heat stress and extreme events.

- **Damage to Rails and Loss of Rail/Transit Service**, including flooding and track buckling during high heat events.

Regional findings indicated unique impacts of concern by region. For Montachusett communities the following impacts of concern were identified.

- Decrease in Agricultural Productivity
- Health Effects of Extreme Storms and Power Outages
- Reduction in Food Safety and Security
- Loss of Urban Tree Cover

Trends

Climate change impacts such as global warming is expected to increase the frequency of precipitation and severity of weather events. It is important to anticipate the impact of such factors on transportation infrastructure.

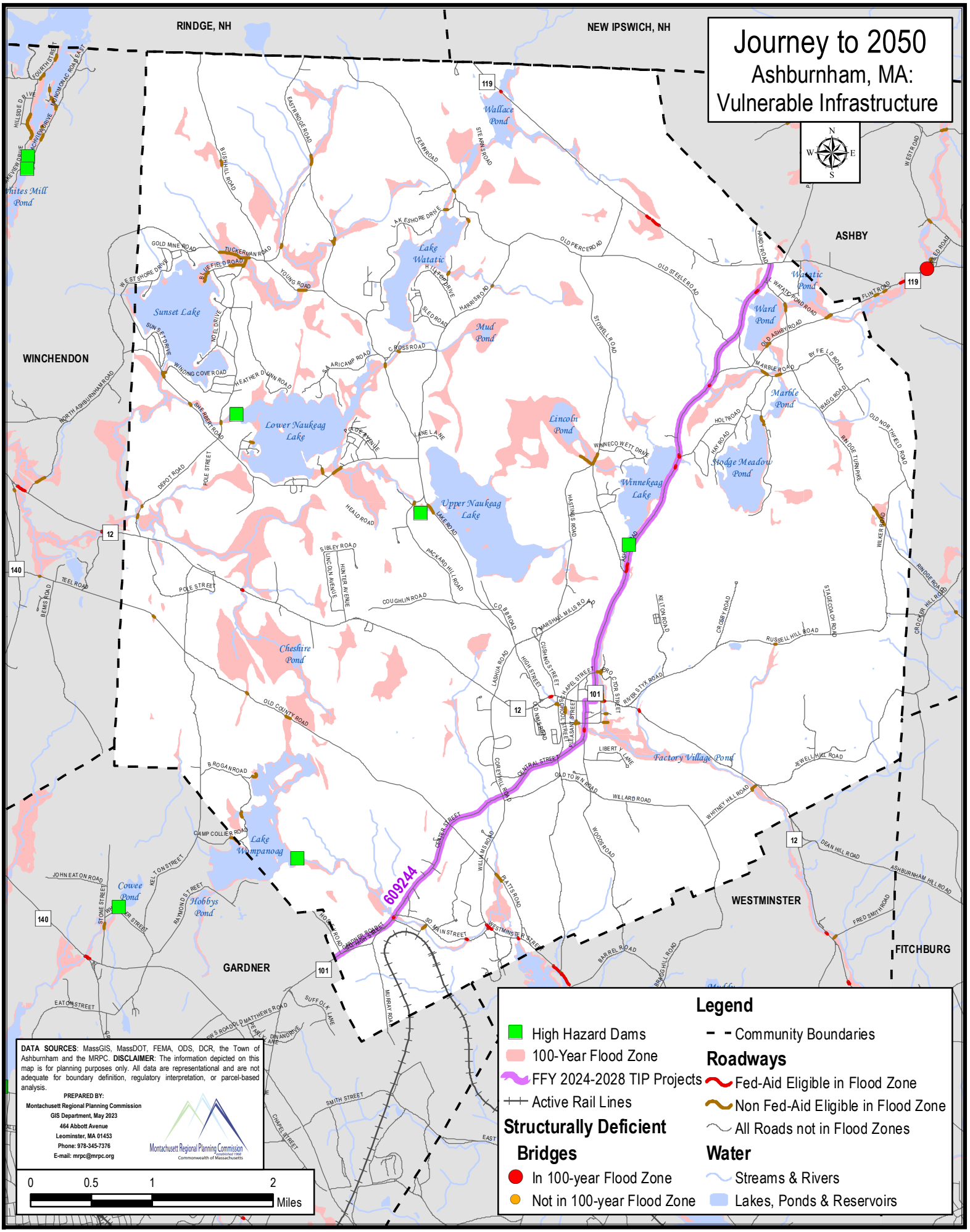
Recommendations

- Encourage the development of more projects which qualify for Congestion Mitigation and Air Quality (CMAQ) funds.
- Maintain the prevalence of environmental factors when reviewing and prioritizing transportation projects.
- Continue to monitor and assess vulnerable infrastructures.
- Continue to promote opportunities for infrastructure upgrades through our local, state and federal partners.

The importance of the environment in the Montachusett region goes beyond just the moral responsibility to protect our planet. Natural resources and attractions which exist in the region could also have economic benefits as well. Both the protection of our environment and the

efficient connectivity of people to these assets should play a prominent role in transportation decision making now and in the future. Environmental Performance Measures set in this plan will help ensure progress continues to be made.

Journey to 2050
Ashburnham, MA: Vulnerable Infrastructure



DATA SOURCES: MassGIS, MassDOT, FEMA, ODS, DCR, the Town of Ashburnham 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.

PREPARED BY:
Montachusett Regional Planning Commission
GIS Department, May 2023
464 Abbott Avenue
Leominster, MA 01453
Phone: 978-345-7376
E-mail: mrpc@mrpc.org

Montachusett Regional Planning Commission
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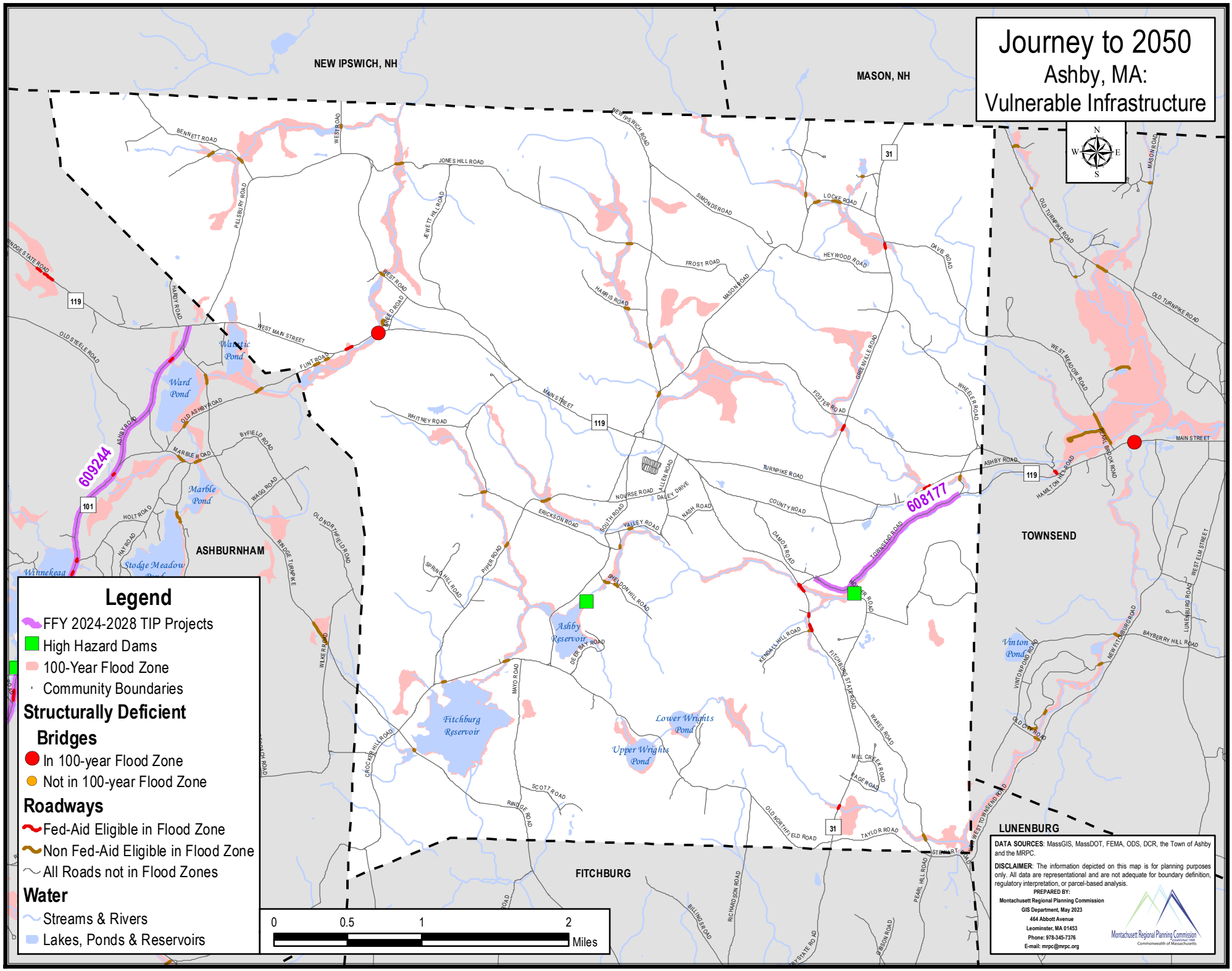
Journey to 2050
Ashby, MA: Vulnerable Infrastructure



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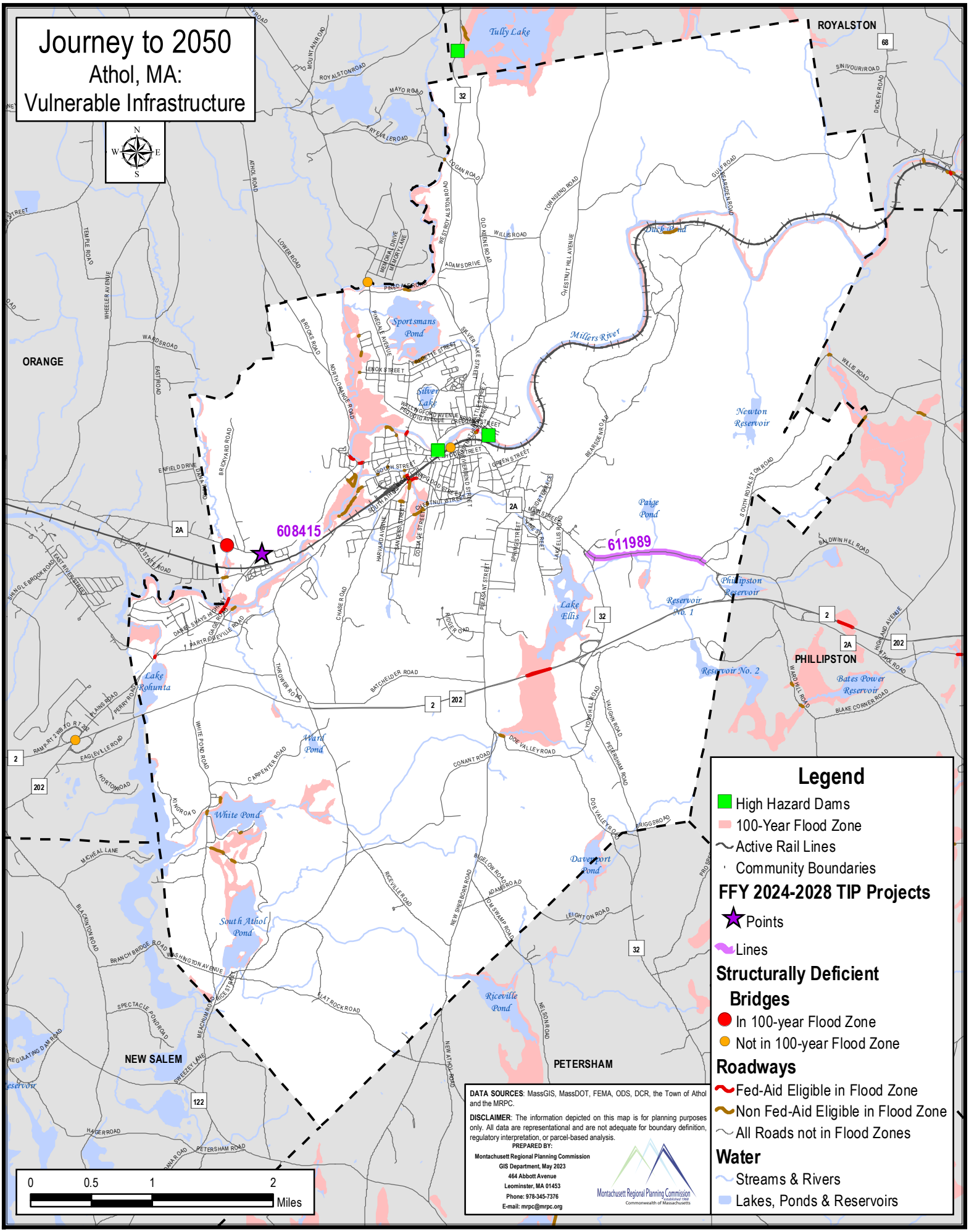
Journey to 2050
Athol, MA: Vulnerable Infrastructure



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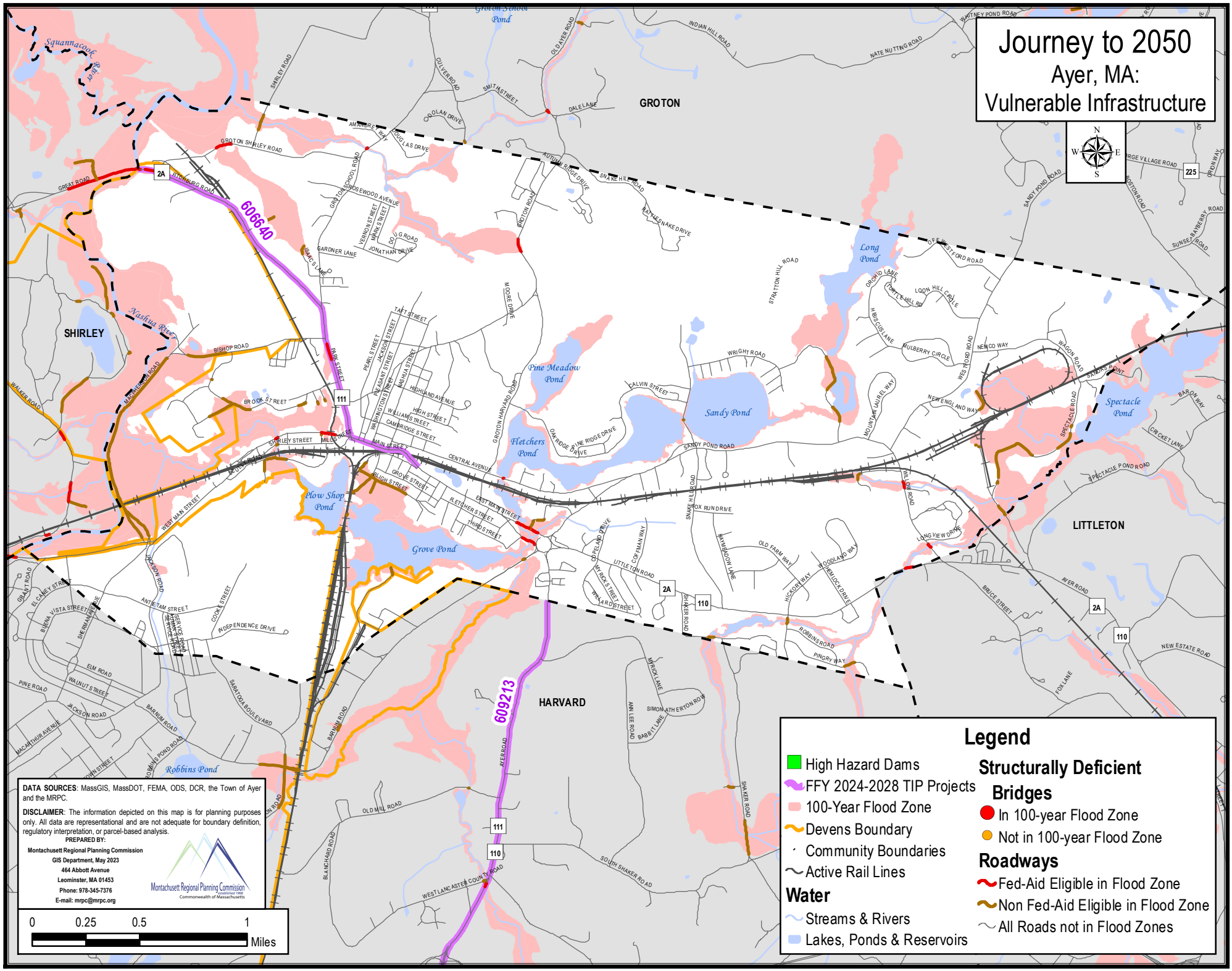
Journey to 2050
Ayer, MA: Vulnerable Infrastructure



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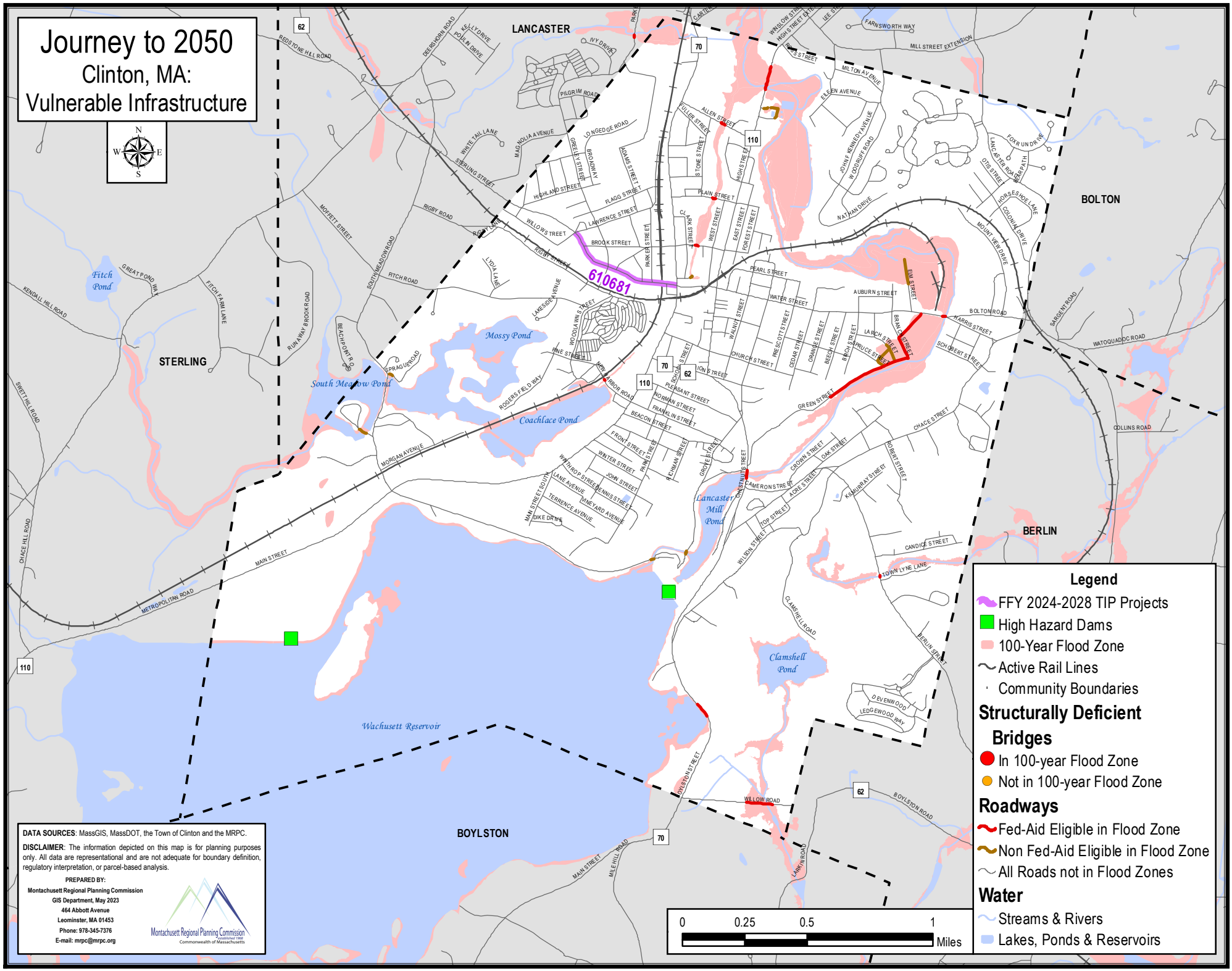
Journey to 2050
Clinton, MA: Vulnerable Infrastructure



DATA SOURCES: MassGIS, MassDOT, the Town of Clinton and the MRPC.

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Montachusett Regional Planning Commission
GIS Department, May 2023
464 Abbott Avenue
Leominster, MA 01453
Phone: 978-345-7376
E-mail: mrpc@mrpc.org

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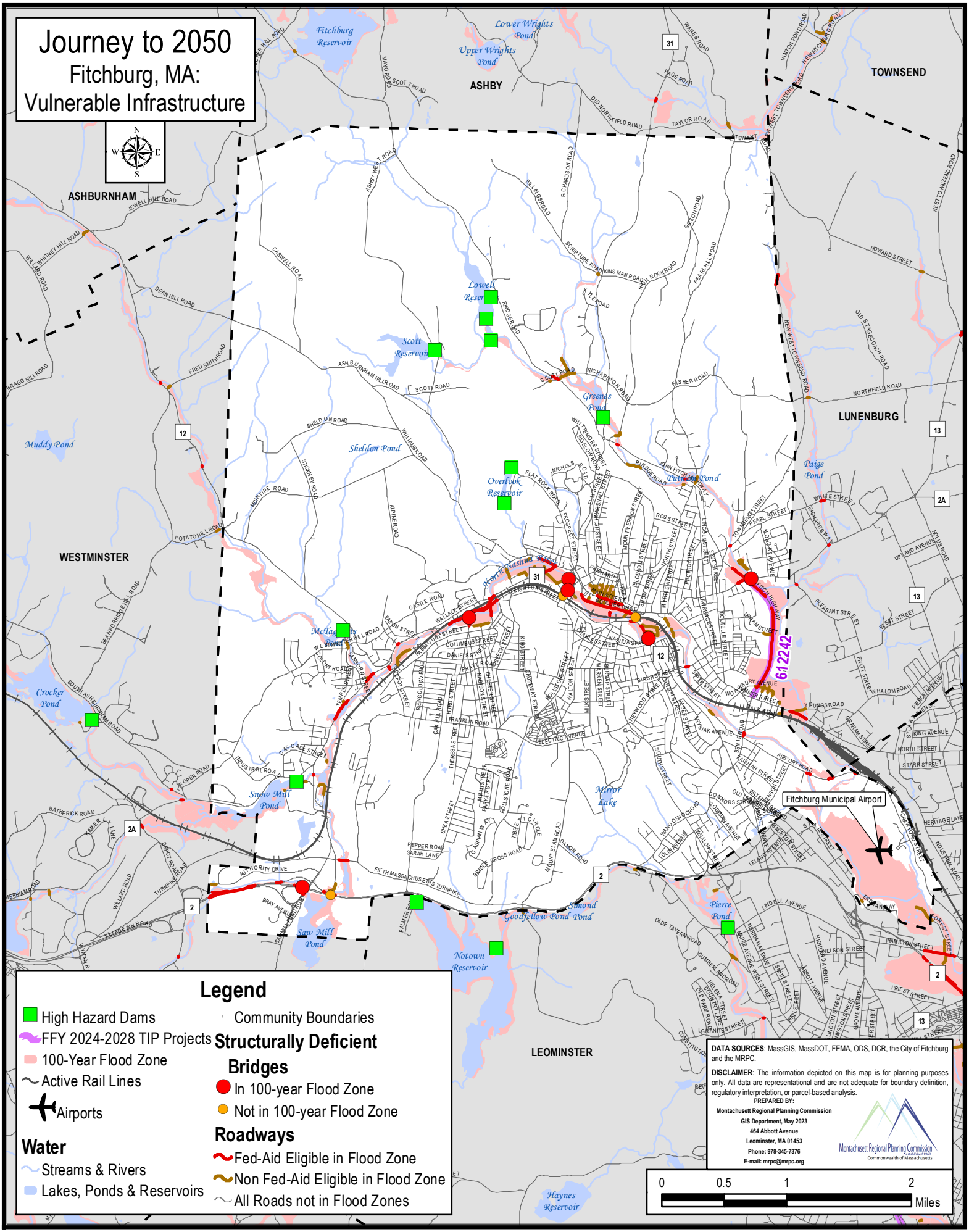
Journey to 2050
Fitchburg, MA: Vulnerable Infrastructure



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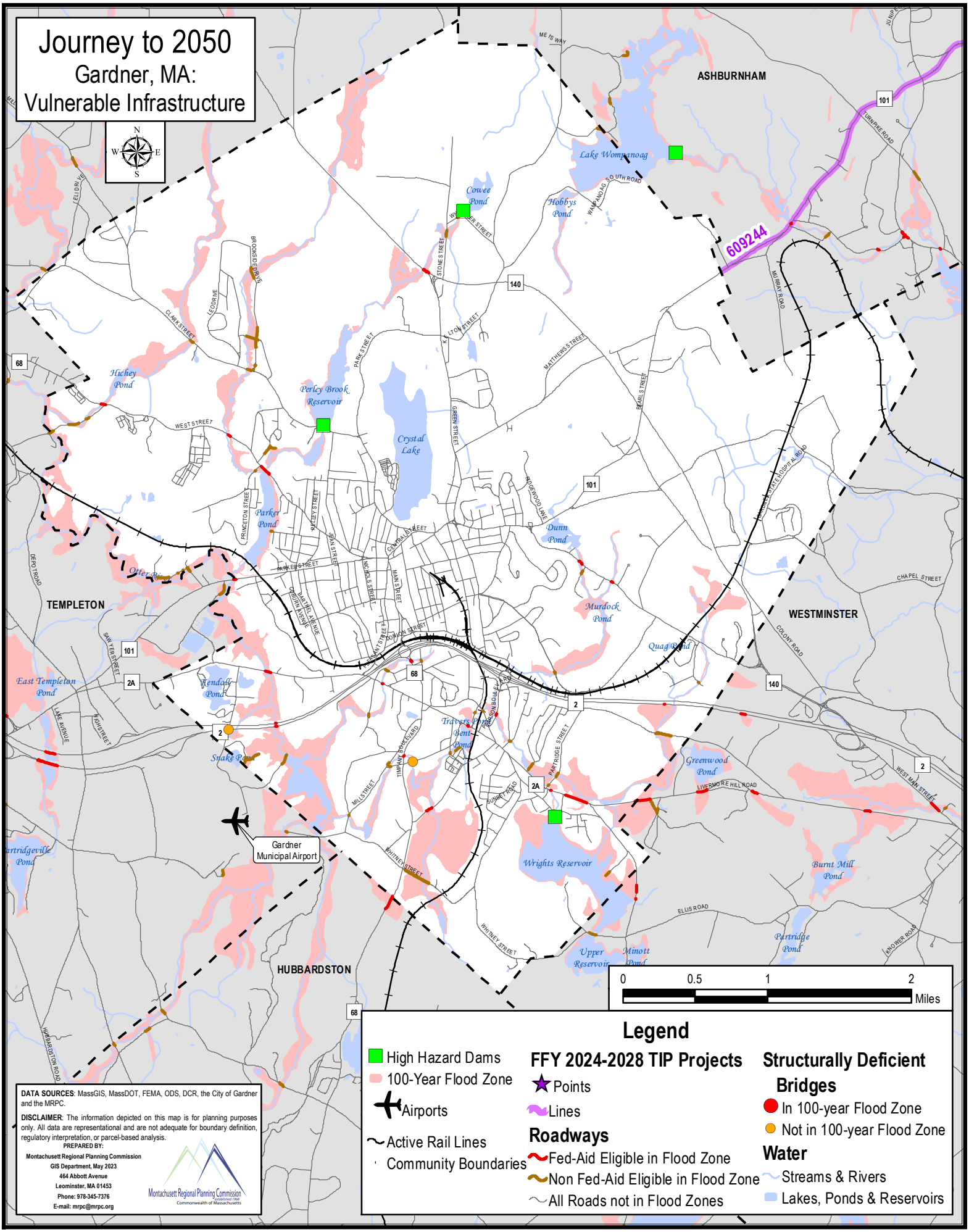
Journey to 2050
Gardner, MA: Vulnerable Infrastructure



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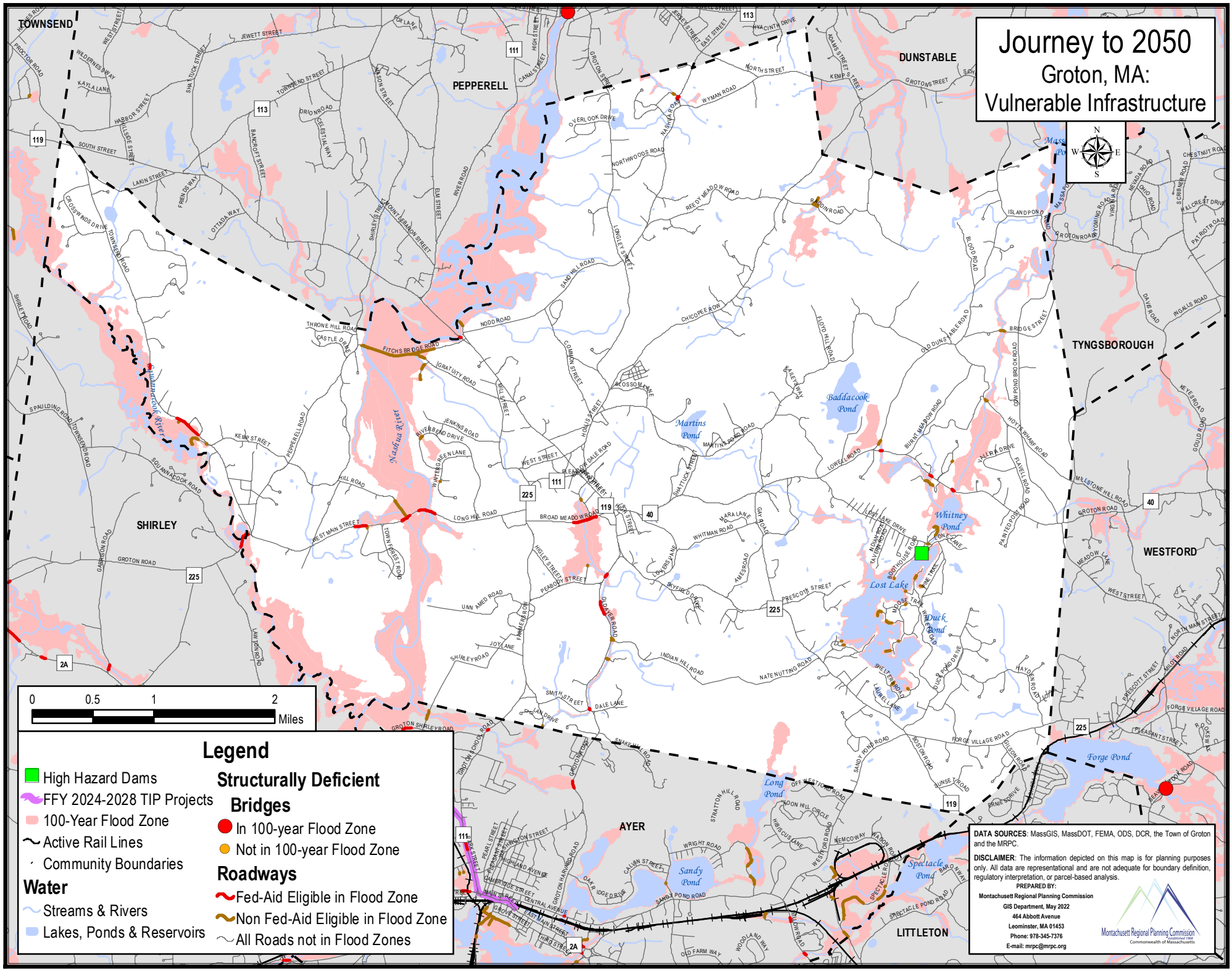
Journey to 2050
Groton, MA: Vulnerable Infrastructure



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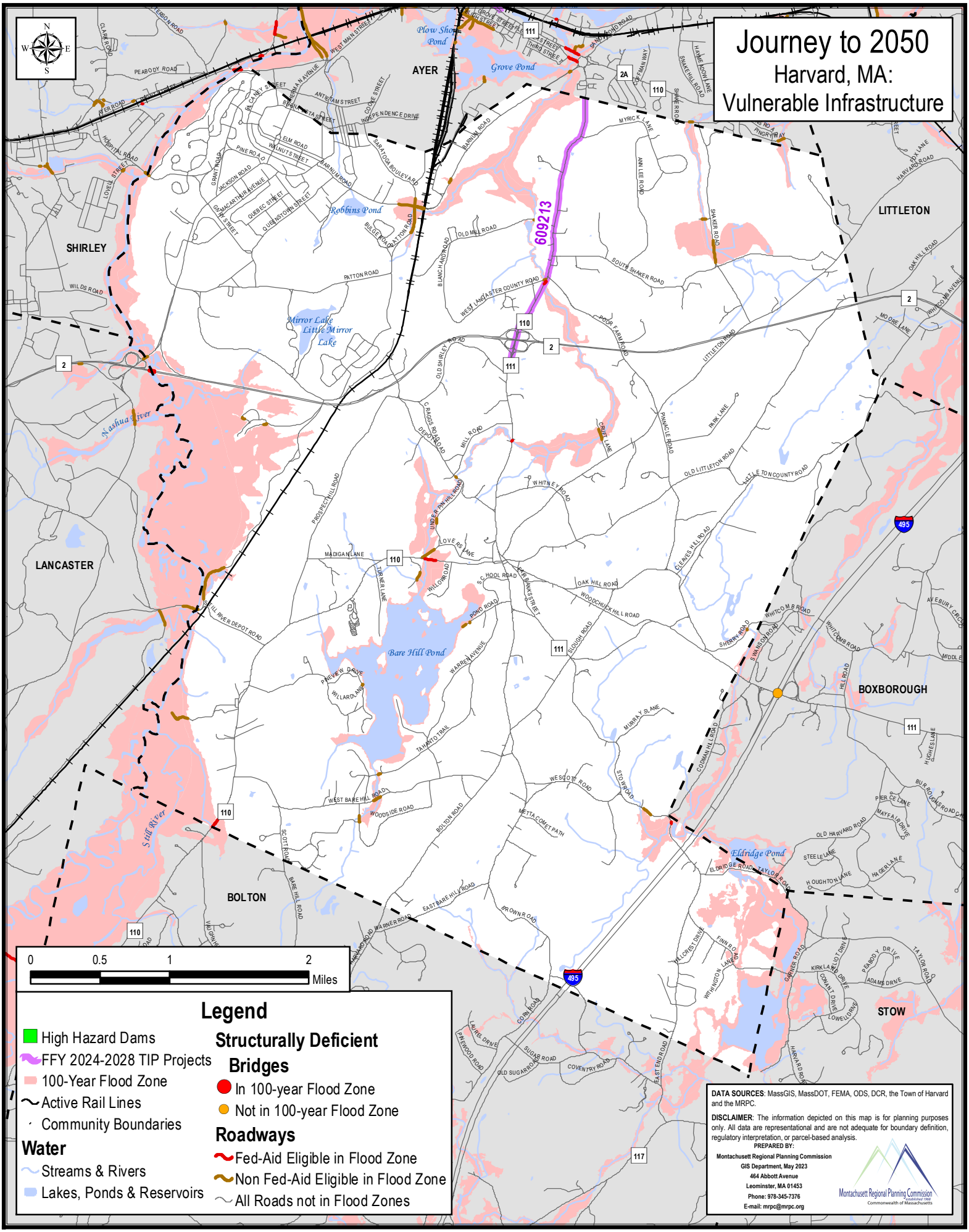
Journey to 2050
Harvard, MA: Vulnerable Infrastructure



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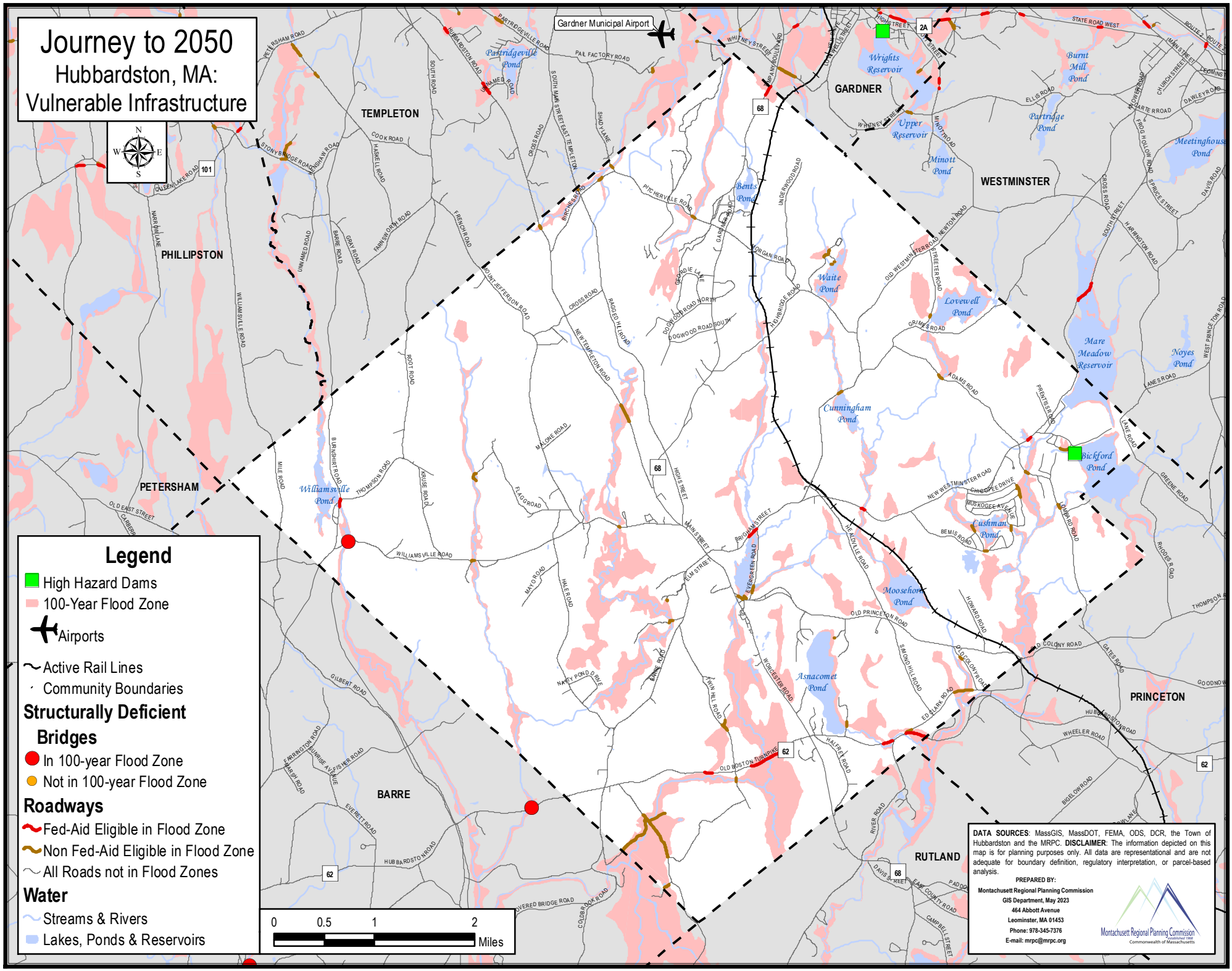
Journey to 2050
Hubbardston, MA: Vulnerable Infrastructure



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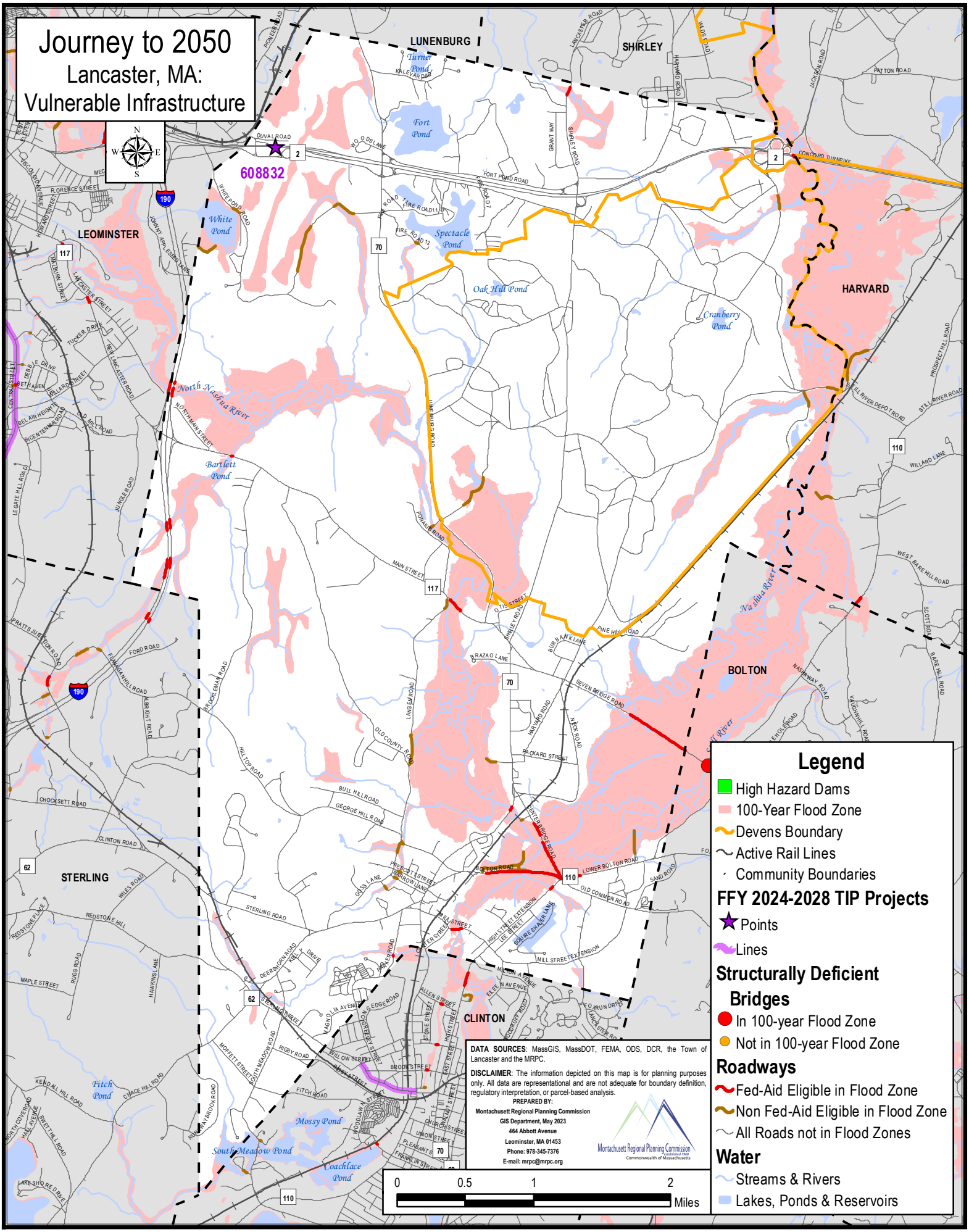
Journey to 2050
Lancaster, MA: Vulnerable Infrastructure



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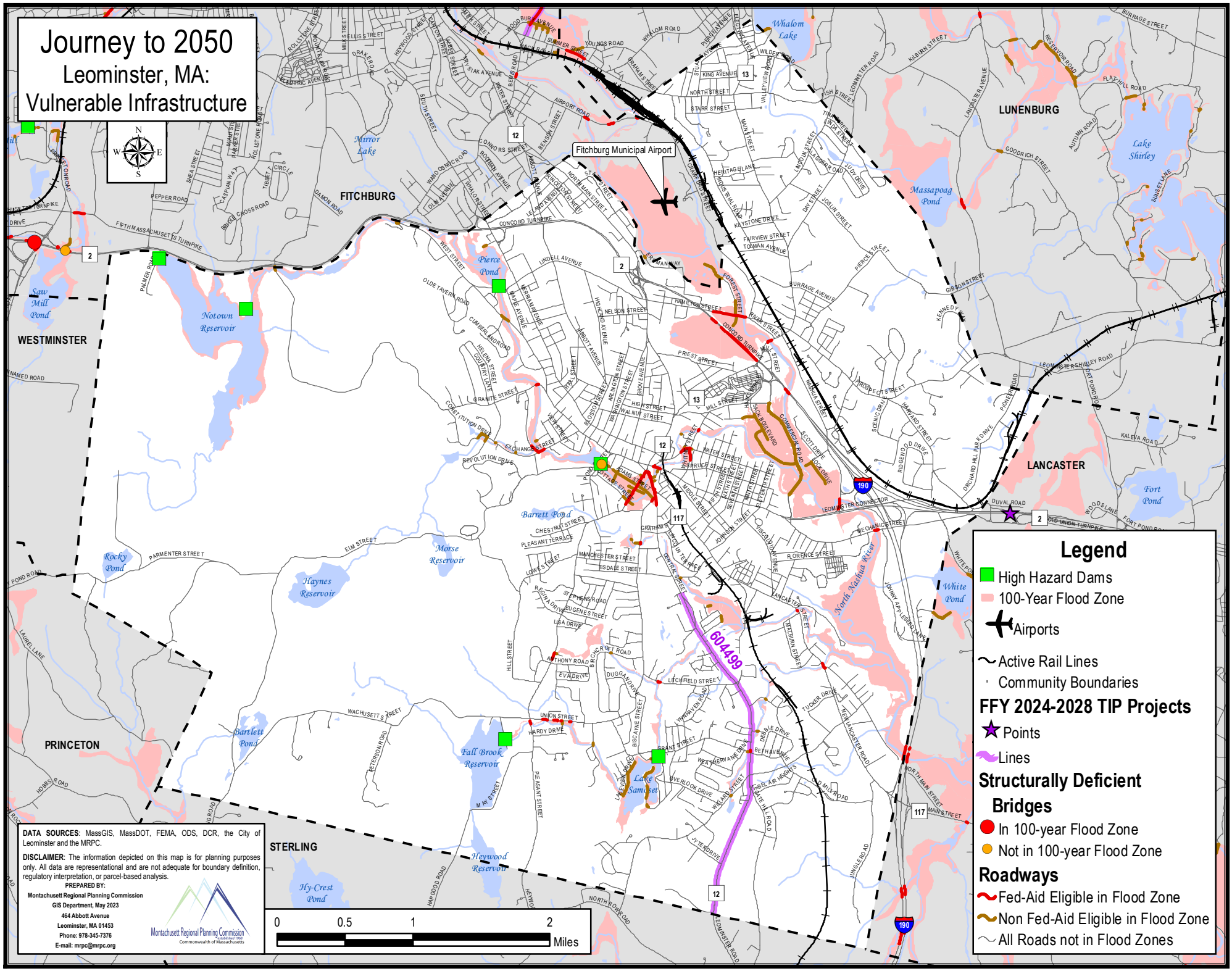
Journey to 2050
Leominster, MA: Vulnerable Infrastructure



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GIS Department, May 2023
464 Abbott Avenue
Leominster, MA 01453
Phone: 978-345-7376
E-mail: mrpc@mrpc.org

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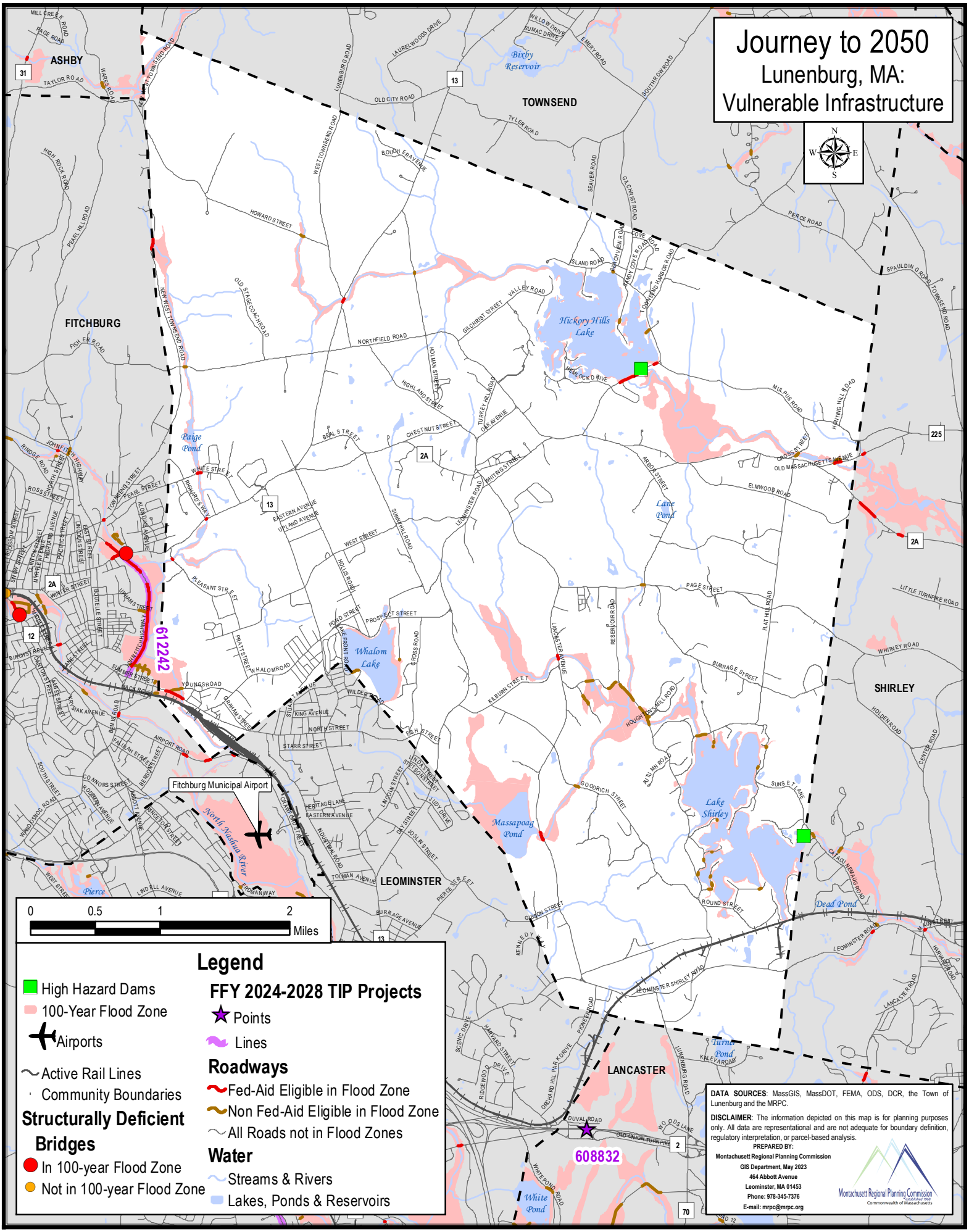
Journey to 2050
Lunenburg, MA: Vulnerable Infrastructure



DATA SOURCES: MassGIS, MassDOT, FEMA, ODS, DCR, the Town of Lunenburg and the MRPC.

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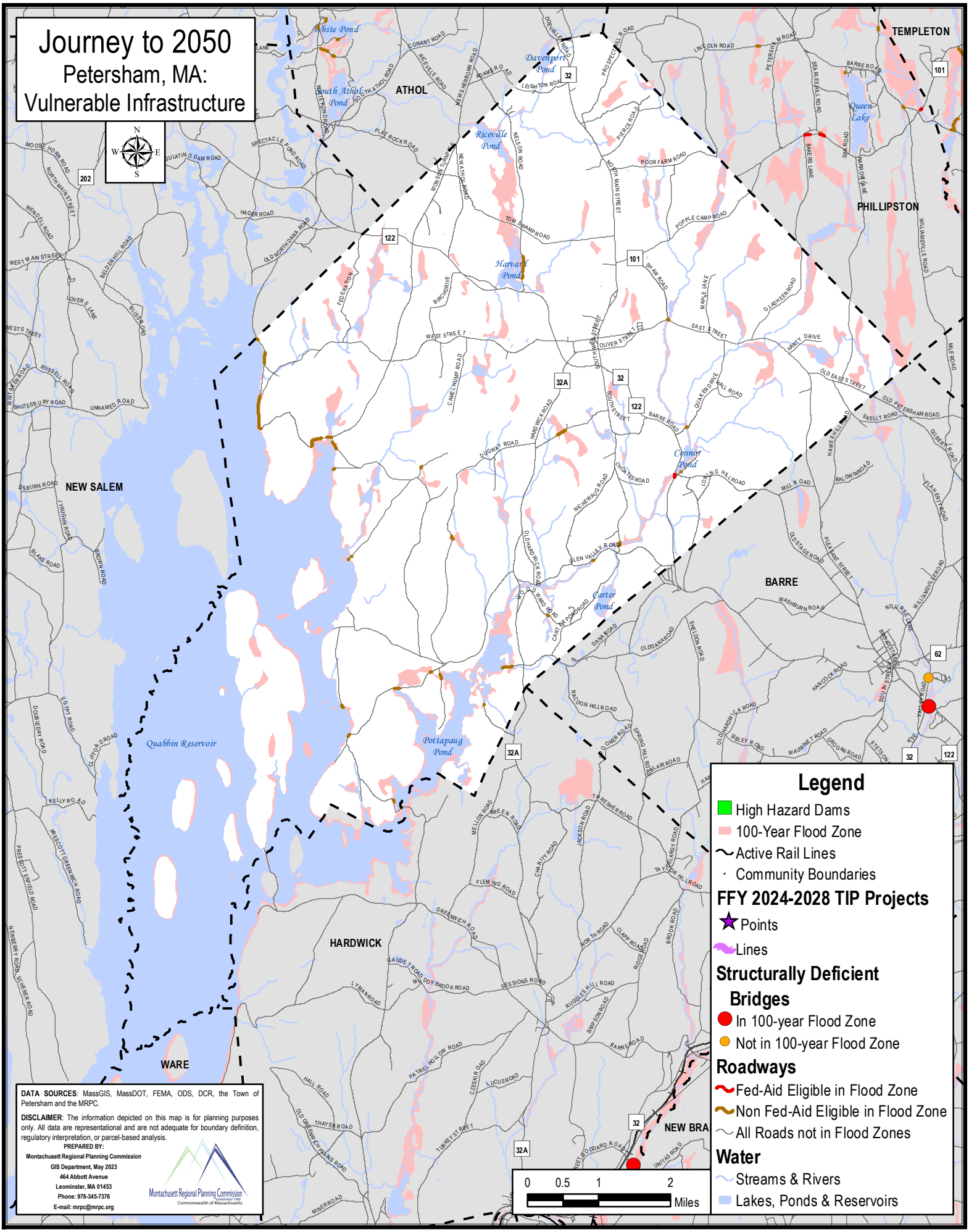
PREPARED BY:
Montachusett Regional Planning Commission
GIS Department, May 2023
464 Abbott Avenue
Leominster, MA 01453
Phone: 978-345-7376
E-mail: mrpc@mrpc.org

Montachusett Regional Planning Commission
Established 1968
Commonwealth of Massachusetts

Journey to 2050
Petersham, MA: Vulnerable Infrastructure



DATA SOURCES: MassGIS, MassDOT, FEMA, ODS, DCR, the Town of Petersham and the MRPC.

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GIS Department, May 2023
464 Abbott Avenue
Leominster, MA 01453
Phone: 978-345-7376
E-mail: mrpc@mrpc.org

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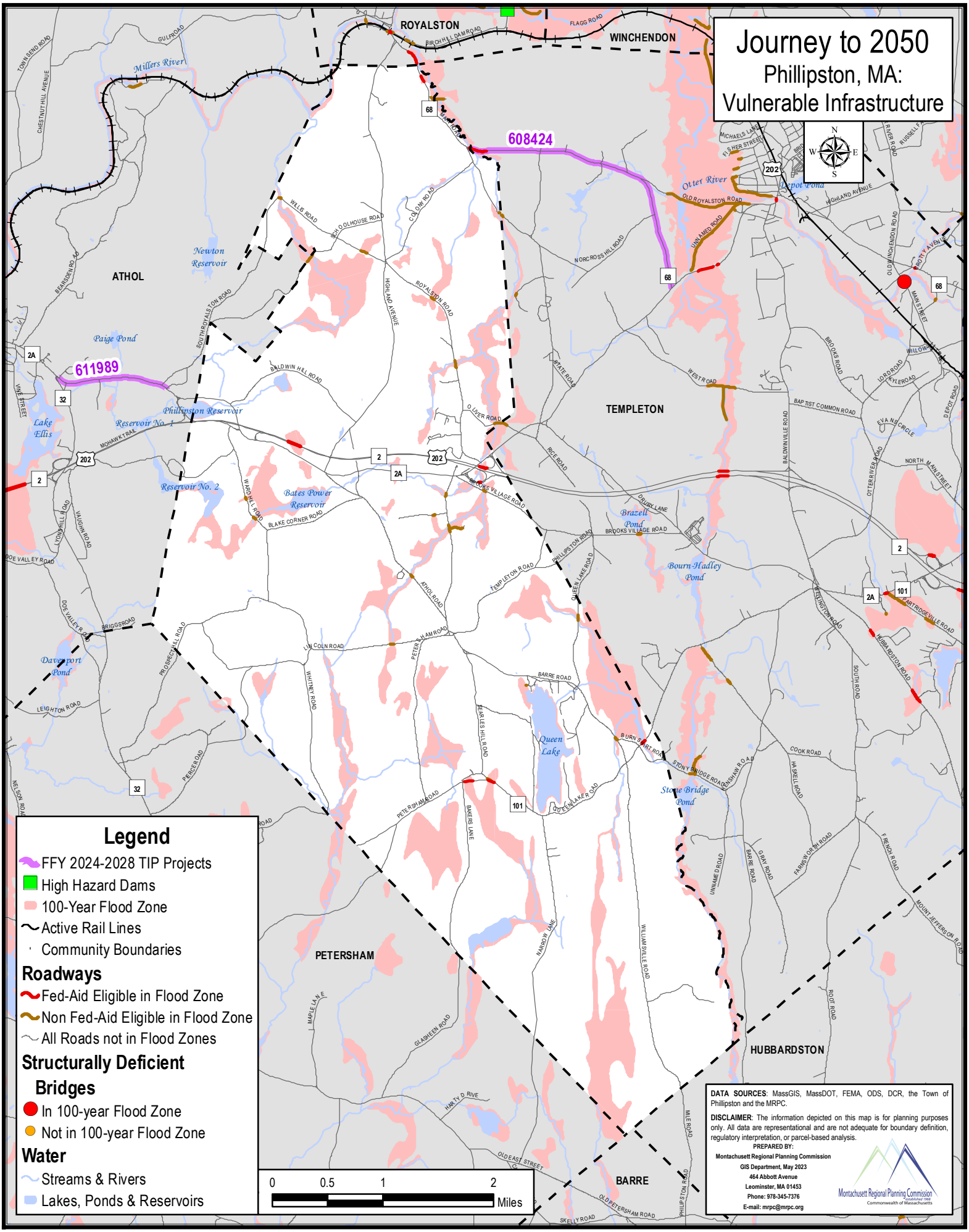
/MRPC/MRPC_ClimateChangeAndTransportation_2023/RTP_Petersham_VulnerableInfrastructure_8Sx11P.mxd [1:105,000]05_25_23

Journey to 2050
Phillipston, MA: Vulnerable Infrastructure



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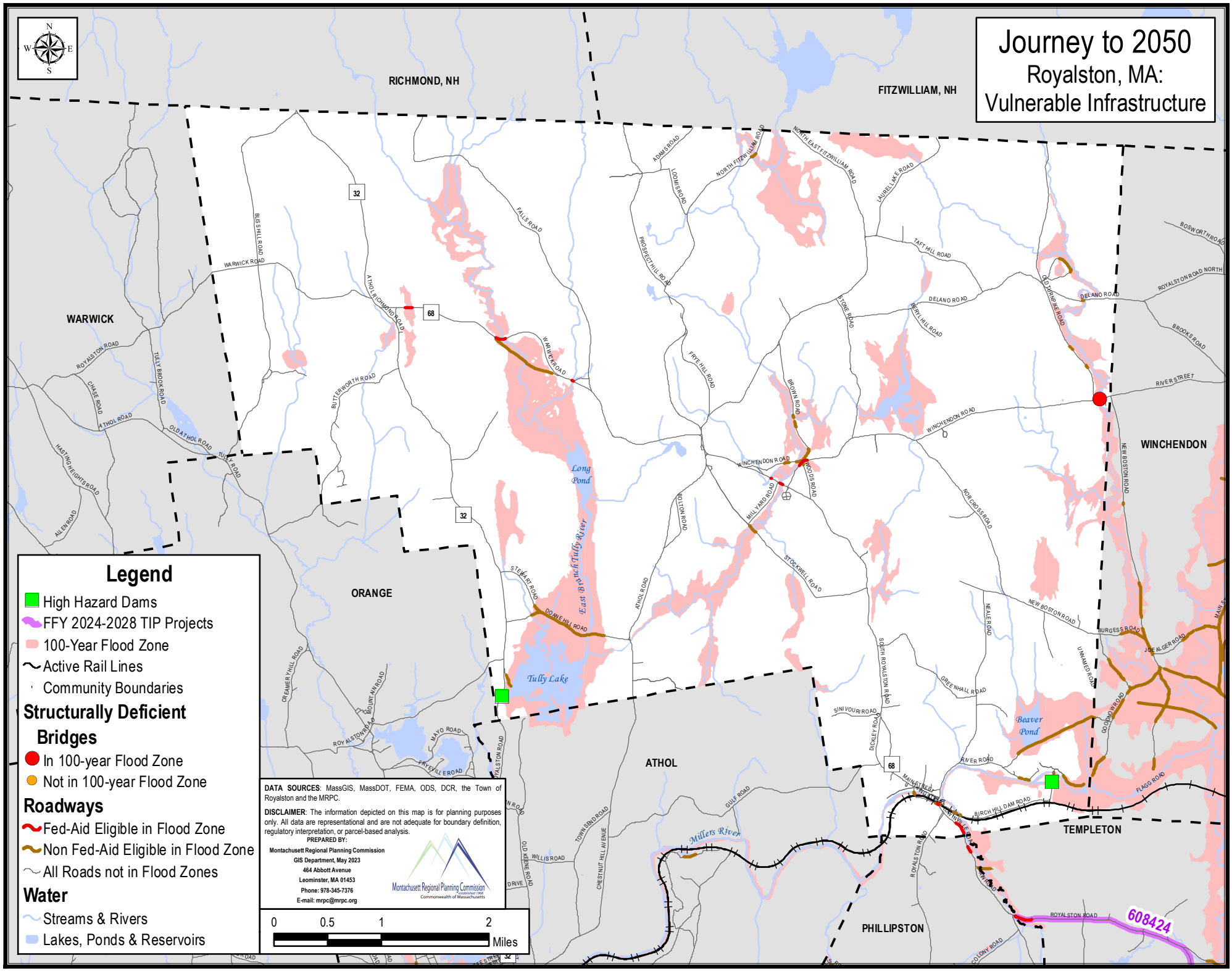
Journey to 2050
Royalston, MA: Vulnerable Infrastructure



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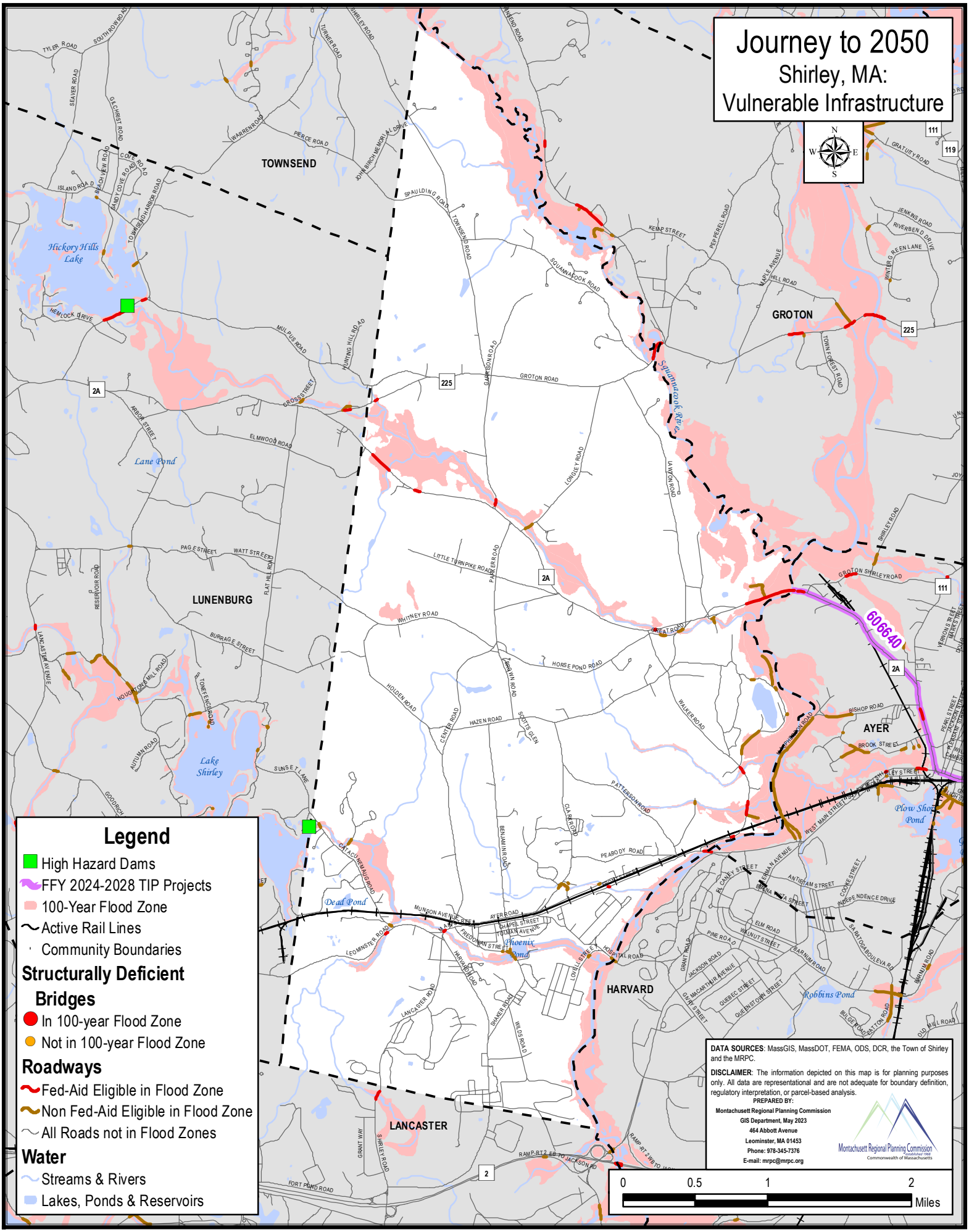
Journey to 2050
Shirley, MA: Vulnerable Infrastructure



DATA SOURCES: MassGIS, MassDOT, FEMA, ODS, DCR, the Town of Shirley and the MRPC.

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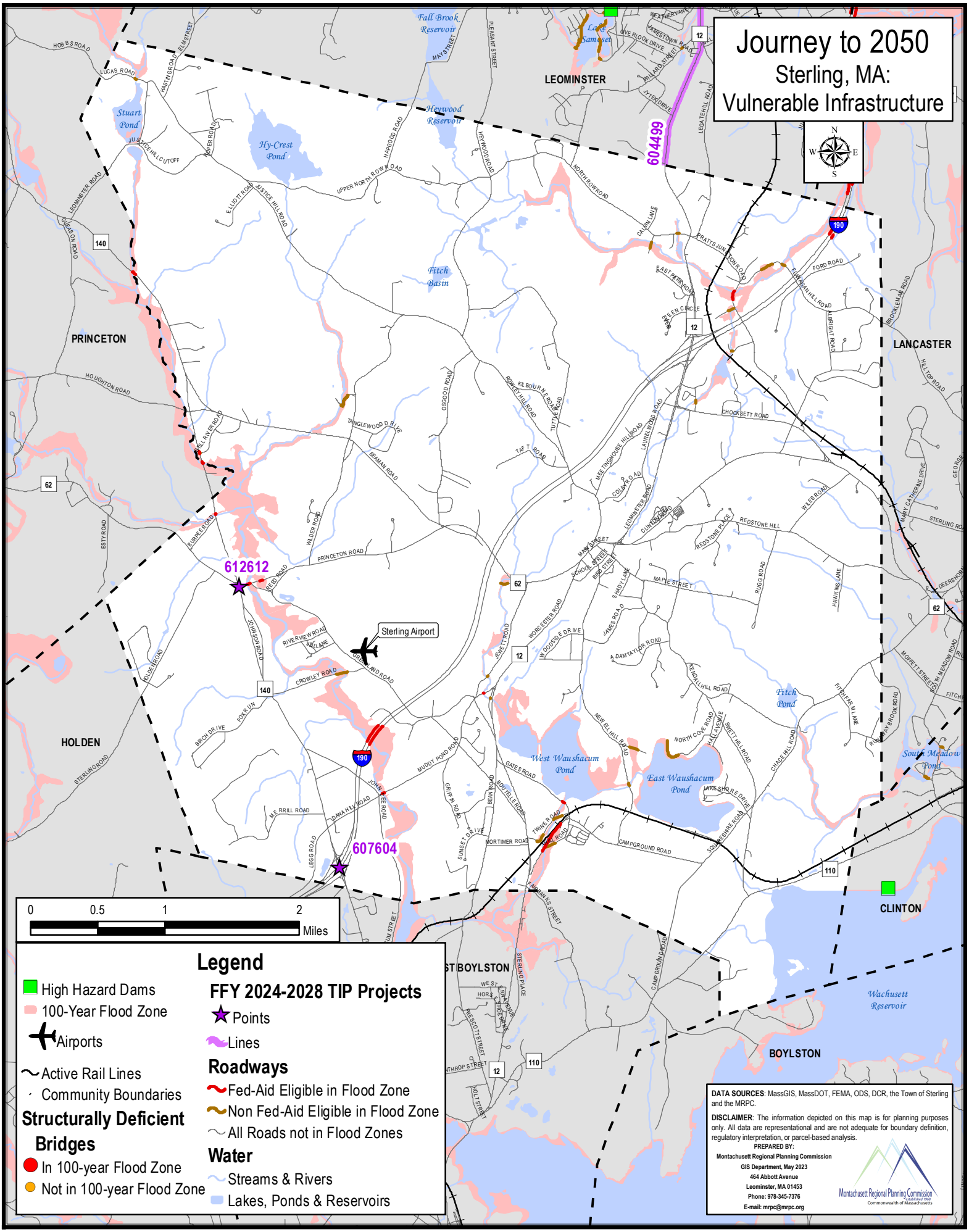
Montachusett Regional Planning Commission
GIS Department, May 2023
464 Abbott Avenue
Leominster, MA 01453
Phone: 978-345-7376
E-mail: mrpc@mrpc.org

Montachusett Regional Planning Commission
Established 1968
Commonwealth of Massachusetts

/MRPC/MRPC_ClimateChangeAndTransportation_2023/RTP_Shirley_VulnerableInfrastructure_85x11P.mxd [152.000]05_25_23

Journey to 2050
Sterling, MA: Vulnerable Infrastructure



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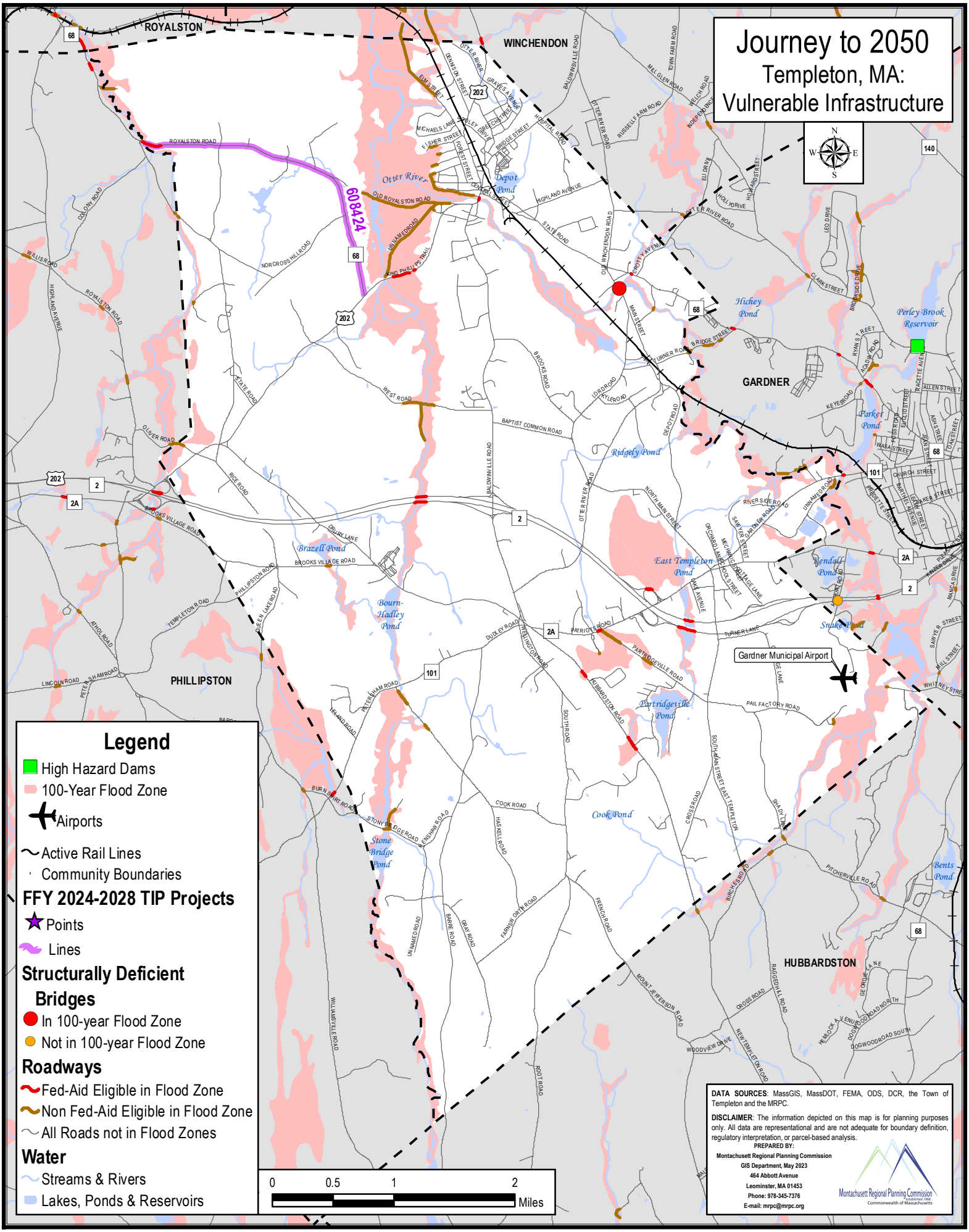
Journey to 2050
Templeton, MA: Vulnerable Infrastructure



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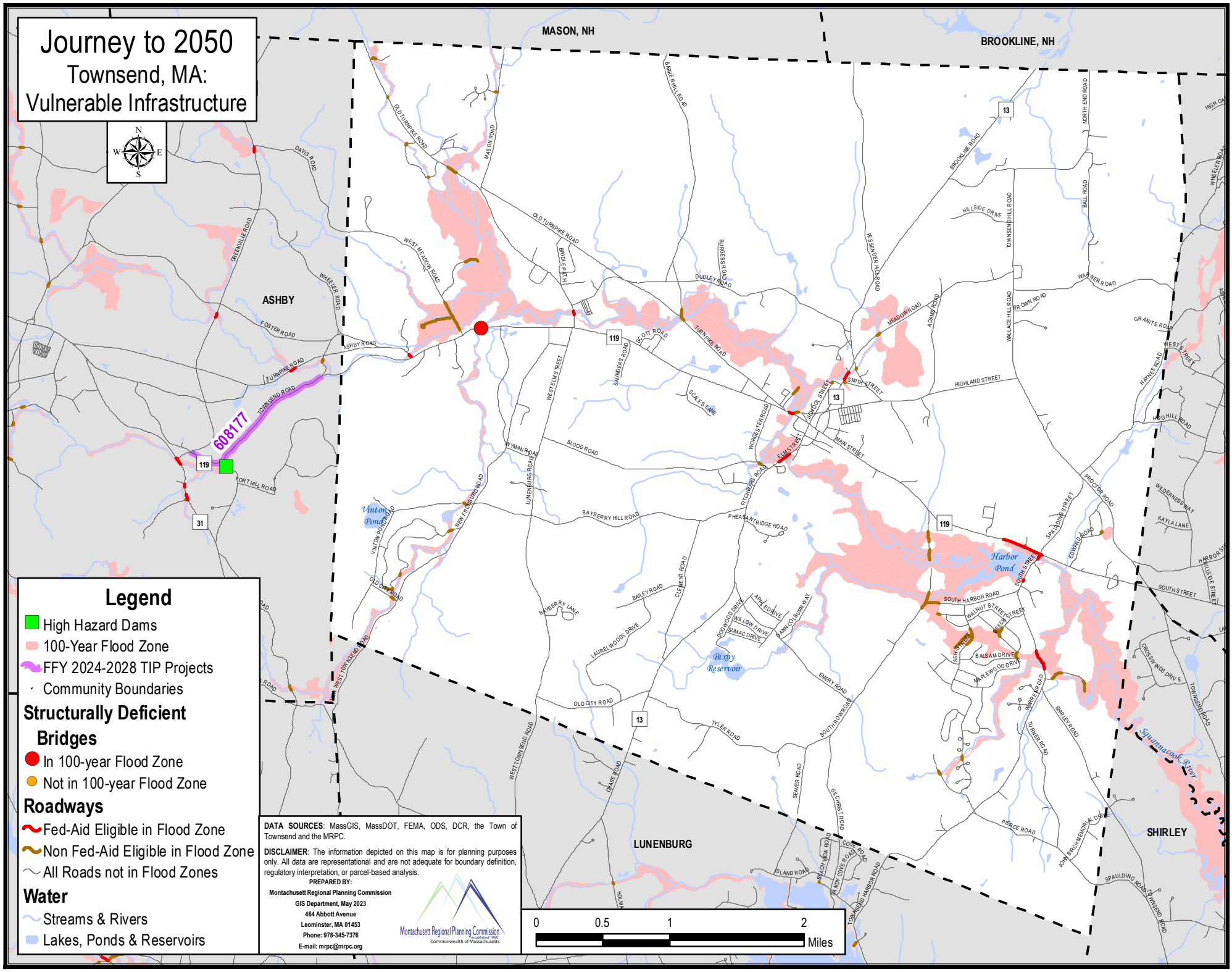
Journey to 2050
Townsend, MA: Vulnerable Infrastructure



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Journey to 2050
Westminster, MA: Vulnerable Infrastructure

Legend

- High Hazard Dams
- FFY 2024-2028 TIP Projects
- 100-Year Flood Zone
- Active Rail Lines
- Community Boundaries

Structurally Deficient Bridges

- In 100-year Flood Zone
- Not in 100-year Flood Zone

Roadways

- Fed-Aid Eligible in Flood Zone
- Non Fed-Aid Eligible in Flood Zone
- All Roads not in Flood Zones

Water

- Streams & Rivers
- Lakes, Ponds & Reservoirs

ASHBURNHAM
FITCHBURG
LEOMINSTER
HUBBARDSTON
PRINCETON

Whitman Reservoir
Muddy Pond
Crocker Pond
Snow Mill Pond
Saw Mill Pond
Greenwood Pond
Wrights Reservoir
Burnt Mill Pond
Round Meadow Pond
Upper Reservoir
Partridge Pond
Meetinghouse Pond
Wyman Pond
Crow Hills Pond
Waite Pond
Lovewell Pond
Mare Meadow Reservoir
Noyes Pond
Wachusett Lake
Cunningham Pond

609244

DATA SOURCES: MassGIS, MassDOT, FEMA, ODS, DCR, the Town of Westminster 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.

PREPARED BY:
Montachusett Regional Planning Commission
GIS Department, May 2023
464 Abbott Avenue
Leominster, MA 01453
Phone: 978-345-7376
E-mail: mrpc@mrpc.org

Montachusett Regional Planning Commission
Established 1968
Commonwealth of Massachusetts

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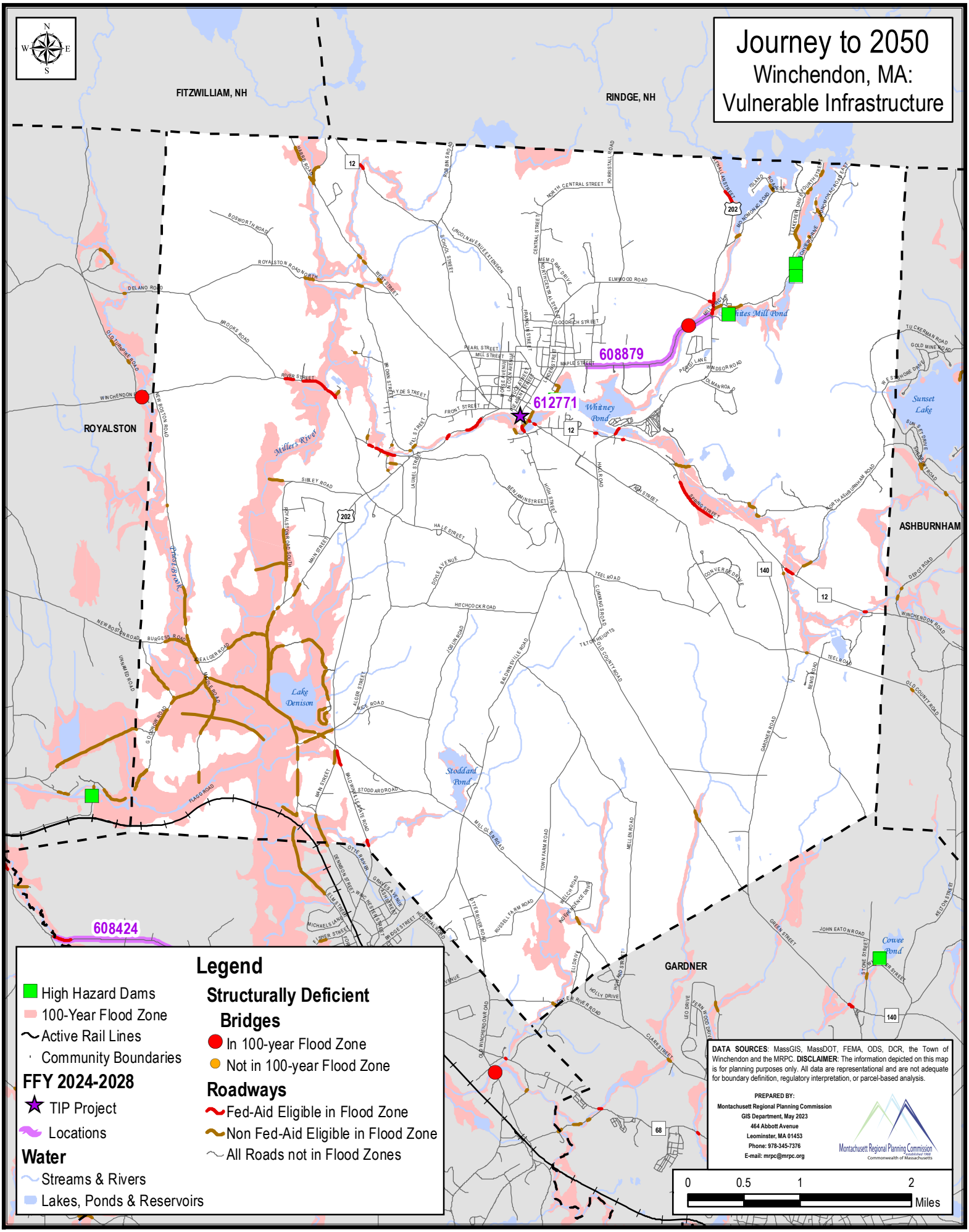
Journey to 2050
Winchendon, MA: Vulnerable Infrastructure



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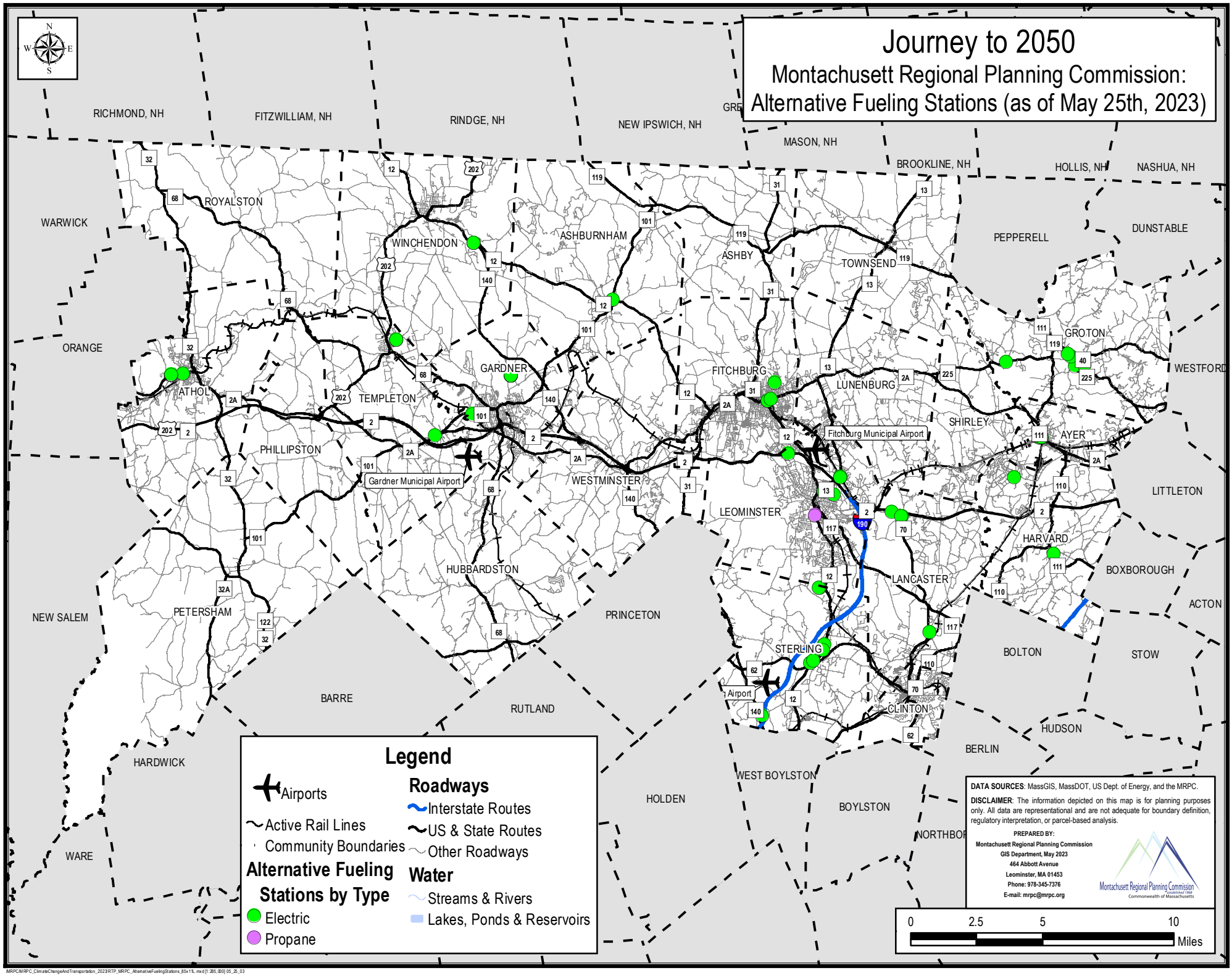
Journey to 2050

Montachusett Regional Planning Commission: Alternative Fueling Stations (as of May 25th, 2023)



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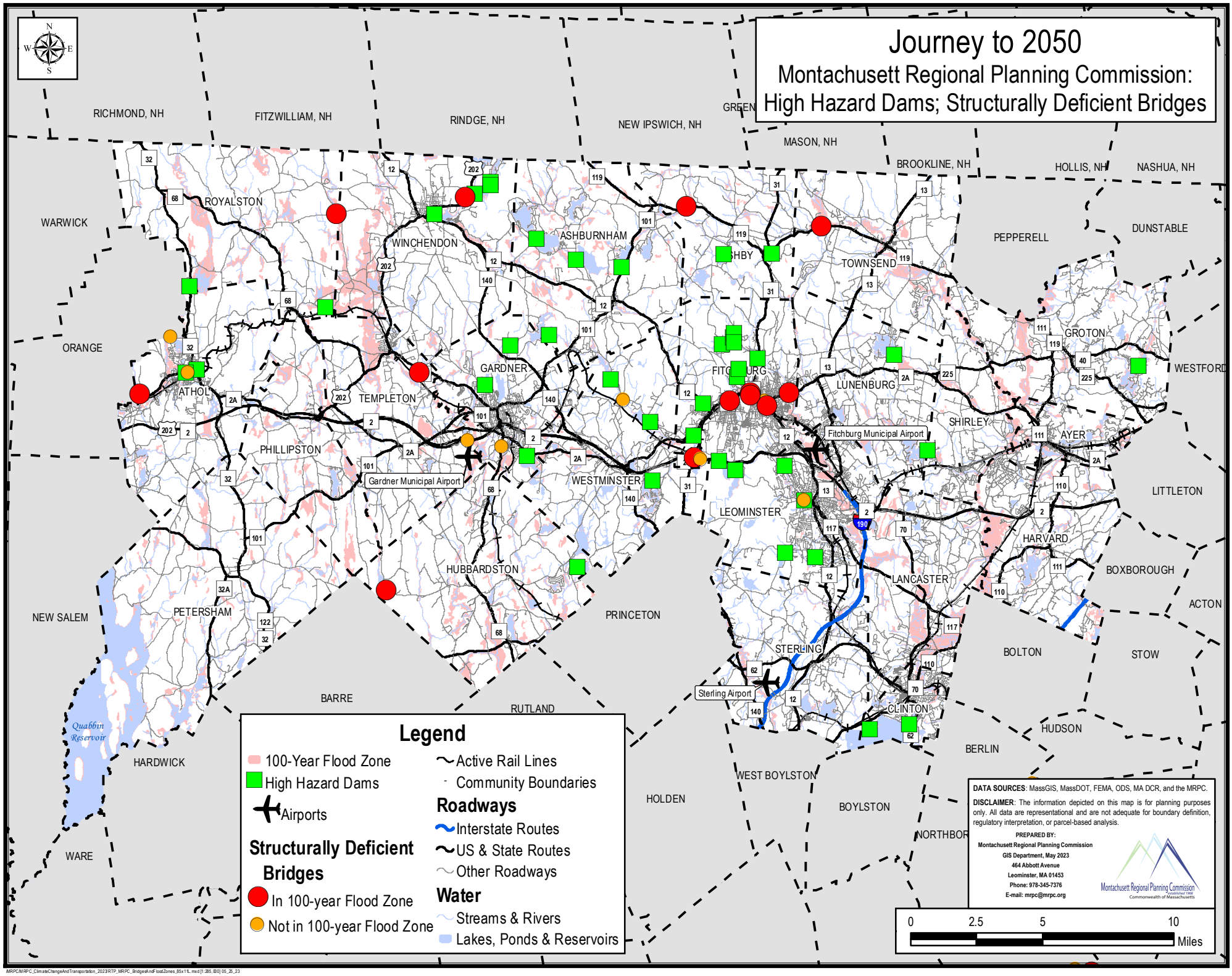
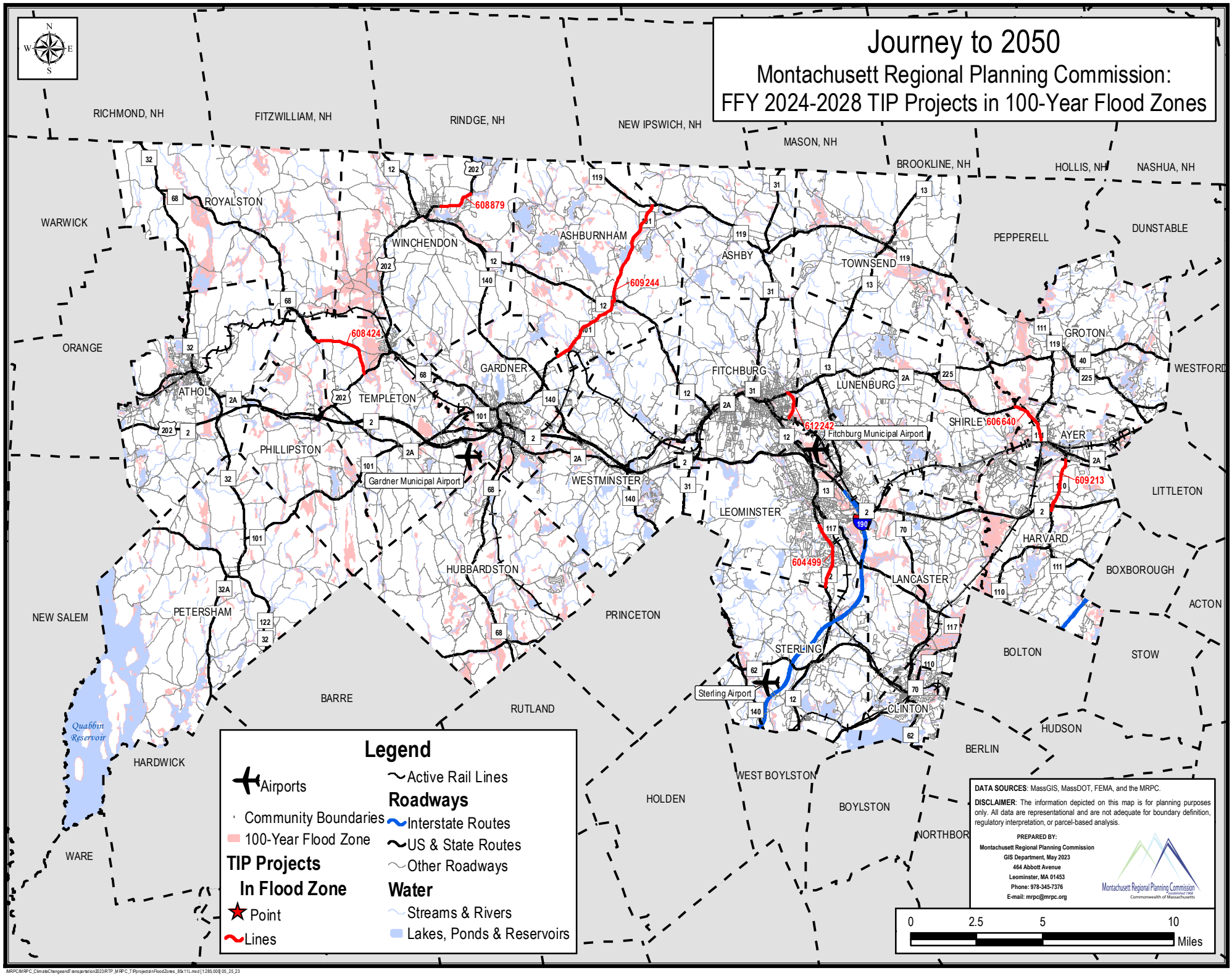


MRPC/MRPC_ClimateChangeAndTransportation_2023/RTP_MRPC_BridgesAndFloodZones_8.5x11L.mxd [1:285, (0,0)] 05_25_23

Journey to 2050

Montachusett Regional Planning Commission: FFY 2024-2028 TIP Projects in 100-Year Flood Zones



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5

Public Outreach

Public Outreach, Input and Participation

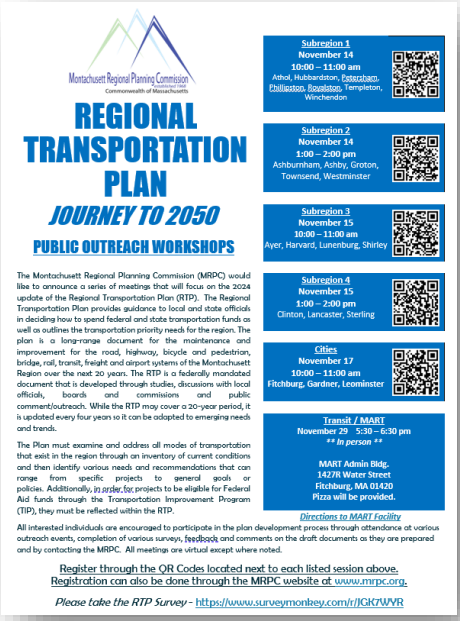
Introduction

An important part of the development process for the RTP is public outreach and involvement. To obtain this, several methods were utilized in an attempt to bring as many individuals as possible into the plan development. This included updates at several meetings, targeted emails, and online and hard copy surveys. Additionally, during the development of other planning documents, notice of applicability and linkage to the RTP were identified and incorporated.

Public Meetings

Several meetings regularly held by or specifically scheduled by the MRPC were utilized as opportunities for input and discussion of the RTP. These included:

- RTP Workshops
- Montachusett Joint Transportation Committee (MJTC)
- Montachusett Regional Planning Commission (MRPC)
- Montachusett Regional Transit Authority (MART) Advisory Board
- Montachusett Regional Comprehensive Economic Development Strategies (MRCEDS) Committee
- The Health Equity Partnership of North Central Mass (CHNA 9)



Montachusett Regional Planning Commission
Commonwealth of Massachusetts

REGIONAL TRANSPORTATION PLAN
JOURNEY TO 2050
PUBLIC OUTREACH WORKSHOPS

The Montachusett Regional Planning Commission (MRPC) would like to announce a series of meetings that will focus on the 2024 update of the Regional Transportation Plan (RTP). The Regional Transportation Plan provides guidance to local and state officials in deciding how to spend federal and state transportation funds as well as outlines the transportation priority needs for the region. The plan is a long-range document for the maintenance and improvement for the road, highway, bicycle and pedestrian, bridge, rail, transit, freight and airport systems of the Montachusett Region over the next 20 years. The RTP is a federally mandated document that is developed through studies, discussions with local officials, boards and commissions and public comment/outreach. While the RTP may cover a 20-year period, it is updated every four years so it can be adapted to emerging needs and trends.

The Plan must examine and address all modes of transportation that exist in the region through an inventory of current conditions and then identify various needs and recommendations that can range from specific projects to general goals or policies. Additionally, in order for projects to be eligible for Federal Aid funds through the Transportation Improvement Program (TIP), they must be reflected within the RTP.

Subregion 1
November 14
10:00 – 11:00 am
Athol, Hubbardston, Petersham, Phillipston, Royalston, Templeton, Winchendon

Subregion 2
November 14
1:00 – 2:00 pm
Ashburnham, Ashby, Groton, Townsend, Westminster

Subregion 3
November 15
10:00 – 11:00 am
Ayer, Harvard, Lunenburg, Shirley

Subregion 4
November 15
1:00 – 2:00 pm
Clinton, Lancaster, Sterling

Cities
November 17
10:00 – 11:00 am
Fitchburg, Gardner, Leominster

Transit / MART
November 29 5:30 – 6:30 pm
** In person **

MART Admin Bldg.
147/R Water Street
Fitchburg, MA 01420
Pizza will be provided.

Directions to MART Facility

All interested individuals are encouraged to participate in the plan development process through attendance at various outreach events, completion of various surveys, feedback and comments on the draft documents as they are prepared and by contacting the MRPC. All meetings are virtual except where noted.

Register through the QR Codes located next to each listed session above.
Registration can also be done through the MRPC website at www.mrpc.org.

Please take the RTP Survey - https://www.surveymonkey.com/r/JGK7WYR

A. RTP Workshops

A series of meetings were held at five locations around the region to discuss various topics and to solicit input directly related to the RTP development. A mass mailing was disseminated to

various individuals, organizations and groups announcing the time and locations of these meetings. In addition, all relevant information was posted to the MRPC website.

Focus	Date	Location
MPO Subregion 1	November 14, 2022 10:00 - 11:00 AM	Zoom
MPO Subregion 2	November 14, 2022 1:00 - 2:00 PM	Zoom
MPO Subregion 3	November 15, 2022 10:00 - 11:00 AM	Zoom
MPO Subregion 4	November 15, 2022 1:00 - 2:00 PM	Zoom
Cities	November 17, 2022 10:00 - 11:00 AM	Zoom
Transit	November 29, 2022 5:30 -6:30 PM	MART Admin. Bldg. Fitchburg, MA
Meeting in a Box w/ MDOT & CHNA9	February 16, 2023 10:00 - 11:30 AM	Zoom

1. RTP Outreach Meeting Comments

The following is a summary of comments made at the RTP Outreach Meetings:

- **<u>Subregion 1 meeting notes</u>**
  (submitted after the meeting) Ashburnham put together an informational sheet that focuses on transportation home from emergency situations such as hospitalization. Your health insurance will provide transportation to the hospital via an ambulance but not home. The sheet encourages people to have a plan in place for emergencies.

- **<u>Subregion 2 meeting notes</u>**

- Townsend doesn't have any public transportation except the senior center van.
- Looking for more funding/better clarification for bike/ped infrastructure and projects
- Townsend – asking for assistance to get in contact with the state to discuss these funding issues.

- Can we get engineering design for an RTP project through something like the Safe Streets Grant. It will depend on the program, eligibility requirements and the particular project.
- Rt. 119/Harbor Village intersection at the high school/shopping center – Townsend. Safety concerns with pedestrian crossing for high school and rail trail. Traffic light needed.
- Smaller communities with limited funding make it difficult to incorporate public transportation options.

Comment submitted 11/14/23 –

- I agree 100% with the issues Bill Rideout described regarding the stretch of Route 119 between the high school and Harbor Village shopping center. I agree that it's a very busy and dangerous stretch of road. One thing Bill did not mention is that at the end of the school day, students pour out of the high school and cross the highway to go to the gym, the sub shops, etc. So far, drivers seem to watch out for them, but there's a lot going on with cars going in and out of the shopping center and high school as well as thru traffic.
- You did not mention the intersection at Townsend Road/Proctor Road/Rt. 119, which is a trouble spot for drivers. The long angles of approach from Townsend and Proctor Roads make it very hard to judge when trying to turn onto Rt. 119, especially during rush hour when breaks in traffic are few and far between.
- Regarding the intersection of Routes 119 and 13, our town is the main thoroughfare for traffic from several MA and NH towns. Living near the center of town for many years, I see it first-hand daily. This is not only a congestion issue for drivers, but a safety issue for bicyclists and pedestrians. It seemed like the amount of traffic diminished a bit during the worst of the pandemic, and we hoped it might remain light due to people working from home, but now it seems worse than ever.
- I used to say I would move out of town if I ever had to wait through a second red light, but now I often wait two or even three cycles of the red light before I can get out of my

street. (So I use a bike instead for local errands. Thankfully, we now have a rail trail! And bike lanes!)

- **Subregion 3 meeting notes**

- Covid travel patterns – Ayer has the commuter rail station where ridership drastically dropped during the pandemic and now it seems to be growing back to the number of riders. Transit seems to be increasing back to pre-pandemic numbers but there are also more people still working from home. Ayer is unsure about where they will be in the future based on commuter rail use. The community needs may change.
- Sterling – Noticed that while traveling on Rt.2 and passing the Littleton Commuter Rail Station, it's noticed that the cars parked there have decreased since the pandemic and still seem to be less than pre-pandemic times.
- Also mentioned Rt. 2 being a barrier at multiple locations – Shirley/Devens; Rt. 2 at I-190 and through Leominster. Brad mentioned some recent projects along the highway that are starting to make improvements but still more needs to be done. How do we impress MassDOT to express the needs along Rt. 2? Improve conversations with MassDOT regarding the issues/needs along the highway and stress the importance within the RTP.

- **Subregion 4 meeting notes**

- No Comments

- **Cities meeting notes**

- Fitchburg – FSU went remote during the pandemic which caused far less users for the transit system. Currently having hybrid and in person. Commuter Rail costs seem to be keeping the ridership low more than the pandemic
- West Fitchburg commuter rail stop (near Great Wolf Lodge). When GW closed during the pandemic, they didn't have to pay lodging tax which was lost revenue to the city.
- EV charging stations – EV charging stations might led to more tourism/visitors if placed in proper locations.

- Promote the RTP with the local TV access channels. FSU and MWCC

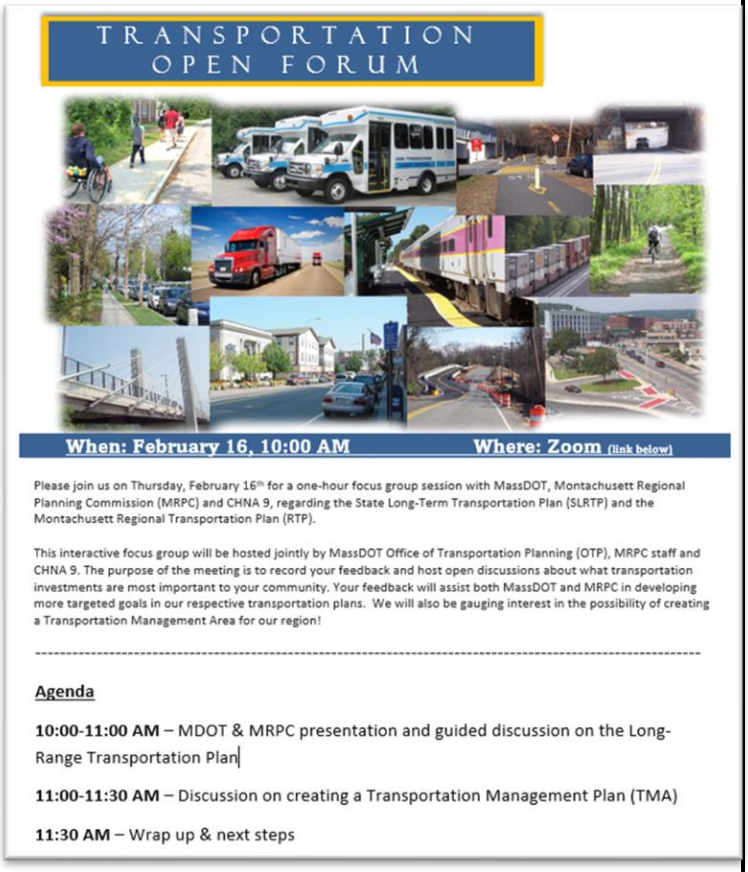
- **<u>Transit meeting notes</u>**

- Discussion about translating the RTP outreach survey into Spanish
- Transit Challenges – population is aging and the need for transportation for seniors is increasing and will continue to increase
- Rules need to change (federal) to allow more people to use the transit services (not just seniors or disabled populations)
- Economic Development concerns – different shift work off peak hours, people can find work but can't get there. Lots of career centers interested in how to get their clients to/from work – this is the #1 challenge for the transit authority at this time. #2 finding enough drivers to work and getting enough funding to pay enough to retain employees, #3 access to healthcare
- Mental health concerns – loneliness, lack of transportation for doctors appointments, refilling prescriptions, etc.
- CDL licenses need to be easier to get. The tests aren't offered enough and the training can be far away. Needs to be simplified.
- Pandemic changes – ridership is still 60% lower than pre-pandemic and doesn't appear to be increasing. Need more marketing and outreach regarding travel patterns/need.
- MART is working on altering routes. No one uses the large loop bus routes anymore. Everyone is looking for more micro transit/ on demand services or smaller routes into the neighborhoods (not just major roadways). Shorter trips/times is more realistic.
- Traffic seems to be increasing along Rt. 2 due to more people moving west.
- MART receive 2 micro transit grants to pilot.
- MRPC should take more of a leadership role to help rural communities increase their transit options
- North Central Chamber of Commerce released a Workforce Development report that states that Transportation is a major concern and a Transportation Management Association (TMA) should be established. Maybe MRPC is the lead?

- Transportation links to housing development. Certain developments require transit access to move forward.

B. Meeting in a Box – Transportation Forum (2/16/23)

This interactive focus group was hosted jointly by MassDOT Office of Transportation Planning (OTP), MRPC staff and CHNA 9. The purpose of the meeting was to record feedback and host open discussions about what transportation investments are most important to each community. The feedback gathered assisted both MassDOT and MRPC in developing more targeted goals in our respective transportation plans. We also gauged interest in the possibility of creating a Transportation Management Area for our region. The following questions were asked by MDOT at this meeting. The notes and comments are listed below each question.



TRANSPORTATION OPEN FORUM

When: February 16, 10:00 AM **Where: Zoom** (link below)

Please join us on Thursday, February 16th for a one-hour focus group session with MassDOT, Montachusett Regional Planning Commission (MRPC) and CHNA 9, regarding the State Long-Term Transportation Plan (SLRTP) and the Montachusett Regional Transportation Plan (RTP).

This interactive focus group will be hosted jointly by MassDOT Office of Transportation Planning (OTP), MRPC staff and CHNA 9. The purpose of the meeting is to record your feedback and host open discussions about what transportation investments are most important to your community. Your feedback will assist both MassDOT and MRPC in developing more targeted goals in our respective transportation plans. We will also be gauging interest in the possibility of creating a Transportation Management Area for our region!

Agenda

10:00-11:00 AM – MDOT & MRPC presentation and guided discussion on the Long-Range Transportation Plan

11:00-11:30 AM – Discussion on creating a Transportation Management Plan (TMA)

11:30 AM – Wrap up & next steps

1. What are the most important features to improve on our roadways? Why?
   - Question about the definition of "Safety Improvements"
   - Question regarding what are "Transit Features"
   - MART could use more bus shelters so people don't need to stand in the bad weather (Fitchburg)
   - Please provide examples of "climate-resilient infrastructure"

- Survey comment – It would be helpful for more information on Transportation/Transit features before the survey.

2. What are the most important features to improve on our transit network? Why?
   - More reliable transit service (timing and system repairs/maintenance)
   - Community shuttle service for more rural communities are important
   - Paratransit for those who are not just elderly/disabled is needed
   - Templeton wants to connect the senior centers to other senior centers and beyond)
   - Definitions of Paratransit?
   - Groton uses the Senior Center van for seniors but it would be beneficial for other members of the community as well.
   - Townsend agreed and is in a similar position as Groton where the senior center van can only be used for seniors but there are many other residents, and surrounding communities, who would benefit from more services (ex. Disabled populations, youth, access to jobs and/or higher education, etc)
   - Ayer needs a fixed bus line and connections to the Fitchburg/Leominster routes

3. Are there any other transportation improvements that should be funded?
   - Commuter Rail expansion to Gardner, Athol to Greenfield
   - Survey questions appear to have been written by folks in Boston and not other parts of the state
   - Flashing crosswalk signs (Templeton)
   - Routes connecting Fitchburg to Lowell and Fitchburg to Worcester at least. Maybe Gardner to Worcester too.
   - Good wayfinding takes the mystery out of using any service
   - Since the (new) Twin Cities Rail Trail connects two downtowns in the region (Fitchburg & Leominster), the topic of Bike Sharing Stations seems relevant for a potential commuting option.
   - Bicycle infrastructure is critical and maintenance of that infrastructure is imperative. Groton has the Nashua River Rail Trail which is a critical connector, but is not well maintained by DCR.
   - For communities like Townsend it is both roadways and (non-existing) transit

4. Which type of improvements are most important for the state to spend money on?

- Statewide, the Commonwealth needs to increase (Ch. 90) roadway funding since the region's roads are in very poor shape. Regionally, state funding toward completion of "Phase 2" of the Twin Cities Rail Trail is a key priority for Fitchburg.
- How to create a program for the heavily automobile dependent communities (think Athol, Orange region) to provide safe, operable vehicles to low income clientele
- continued safety improvements to narrowed portion of Route 2 between Phillipston and Orange (eg. ATHOL).
- GARDNER/ATHOL: If bicycle transportation is a focus, charging points for electric bikes (like exists for automobiles) is a need as well
- connecting trail systems, rail trails, bike trails, and allowing shared use of state funded trail systems should be receiving state funding.

5. Are there any types of destinations that need better transportation connections? Which are most in need?
   - Making extensive plans involving rail transit might have been a good strategy in 1923. However, in 2023, modern information technology and communication make possible the dispatch of a fleet of small vehicles on roadways, which (assuming a sensible implementation) could enable flexible transport options for people living in less-dense regions.
   - Unique tourism/visitor destinations (such as Game On Fitchburg, or Mt. Wachusett ski/snowboarding area) need transportation options aside from individual passenger vehicle.
   - Jobs & healthcare services would be a priority
   - When a person has a need to get to one of these things, they have a need to get to all of these things

6. When funding transportation, how important is it to consider equity and fairness?
   - Geography as well as population categories
   - Extremely important because populations that have been previously underserved tend to be those that need it most.
   - Equity is a dire need in our rural communities. This has been recognized by the Rural Policy Advisory Commission but it is difficult to get traction versus the more populous regions of the Commonwealth.
   - Better cost equity regarding Commuter Rail is greatly needed. Many folks without vehicles would also find cost of monthly commuter rail pass something that is cost-prohibitive.

7. When funding transportation, how important is it to consider connectivity and coverage to the places people need to go?
   - Very important. No sense funding a service that does not provide connectivity
   - Again, we have no coverage in much of our area so it's all needed
   - In Ayer, connectivity and coverage are the main issues
   - Townsend would benefit from a continuously running shuttle from town hall east down 119 to shopping to the sr ctr/librry and back to the center of town

8. When funding transportation, how important is it to consider reliability and limiting unexpected delays?
   - Hopefully something more reliable than the T!
   - How is DOT an others considering possible micro transit option? "Microtransit is simply tech-enabled shared transportation that lives in the space between traditional fixed route transit and ride hailing technology"
   - more rural community transit availability. Rural towns folk have no way to get around.

9. If you could design a transportation system to meet all your needs, what would it include? Dream big…
   - Bike and pedestrian lanes as well as micro transit
   - statewide-door through door paratransit
   - extended hour transportation options as not all jobs end at 5pm
   - "on demand" door-to-door transportation service (maybe fully automated in the future?)
   - Small local hubs to pick up groups. Door to door probably not practical.
   - In town routes(or micro transit?) that have spokes to bigger transportation hubs like Fitchburg - maybe Gardner and/or Athol in future too

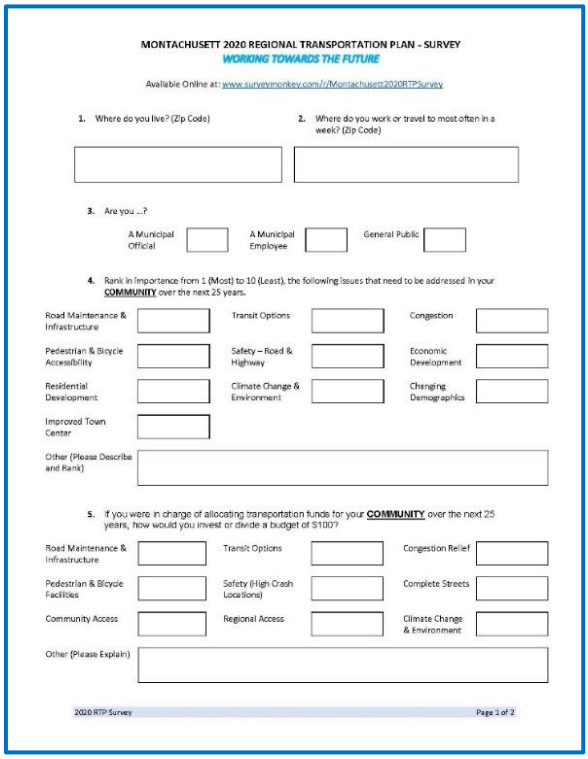
Other Comments/Questions

- Can you talk about how their efforts tie into the states 2050 climate goals?
- Thank You, this was great. Wish you all well in your data collection. It's important.
- More than 40% of MA Greenhouse Gas Emissions are transportation related so some of the climate funds might work looking into how that might relate.

C. Outreach Survey

The MRPC developed a survey for distribution throughout the region that would help in the development of this RTP. Primarily, it would help to identify the mood of the region towards various programming options and needs as well as shape potential planning scenarios. This chapter outlines the survey, the responses received, and conclusions drawn from the results.

The survey was devised to be short, easy to answer and hopefully, provide insight to the needs of the Region. The survey was made available at each of the public outreach workshops put on by the MRPC, at meetings of the MPO, MJTC and full Commission, at each community's Library and Senior Center/Council on Aging and online via SurveyMonkey.com. In addition, notices regarding access to the survey were distributed multiple times to all members of the RTP mailing list. From this outreach effort, 303 responses were received.



MONTACHUSETT 2020 REGIONAL TRANSPORTATION PLAN - SURVEY

WORKING TOWARDS THE FUTURE

Available Online at: www.surveymonkey.com/r/Montachusett2020RTPSurvey

1. Where do you live? (Zip Code)
2. Where do you work or travel to most often in a week? (Zip Code)

3. Are you ...?

A Municipal Official ☐ A Municipal Employee ☐ General Public ☐

4. Rank in importance from 1 (Most) to 10 (Least), the following issues that need to be addressed in your **COMMUNITY** over the next 25 years.

Road Maintenance & Infrastructure		Transit Options		Congestion	
Pedestrian & Bicycle Accessibility		Safety – Road & Highway		Economic Development	
Residential Development		Climate Change & Environment		Changing Demographics	
Improved Town Center					
Other (Please Describe and Rank)					

5. If you were in charge of allocating transportation funds for your **COMMUNITY** over the next 25 years, how would you invest or divide a budget of $100?

Road Maintenance & Infrastructure		Transit Options		Congestion Relief	
Pedestrian & Bicycle Facilities		Safety (High Crash Locations)		Complete Streets	
Community Access		Regional Access		Climate Change & Environment	
Other (Please Explain)					

2020 RTP Survey Page 1 of 2

➢ Questions, Responses and Observations

The following section reviews each question individually, summarizes the responses received and draws observations based upon an analysis of the data.

Question 1 - Where do you live? (Zip Code)

This question simply asks the respondent to identify the primary place of residents by zip code.

Question 1: Where do you live?	No. of Responses From	Percent of Responses
Ashburnham	14	4.62%
Ashby	4	1.32%
Athol	18	5.94%
Ayer	8	2.64%
Clinton	6	1.98%
Fitchburg	18	5.94%
Gardner	47	15.51%
Groton	6	1.98%
Harvard	3	0.99%
Hubbardston	6	1.98%
Lancaster	9	2.97%
Leominster	25	8.25%
Lunenburg	6	1.98%
Petersham	-	-
Phillipston (included w/Athol)	-	-
Royalston (included w/Athol)	-	-
Shirley	5	1.65%
Sterling	5	1.65%
Templeton	14	4.62%
Townsend	63	20.79%
Westminster	13	4.29%
Winchendon	7	2.31%
Devens	1	0.33%
Devens (included w/Harvard & Shirley)	-	-
Outside of Region	23	7.59%
Outside of State	2	0.66%
TOTALS	**303**	**100.00%**

MRPC Community Responses	*278*	*91.75%*
Non-MRPC Responses	*25*	*8.25%*

Of the 303 responses, just under 92% were from residents of the Montachusett region. The remaining 25 respondents were from communities outside of the planning region.

Question 2 - Where do you work or travel to most often in a week?

Community	Responses		Community	Responses
Gardner	57		Hubbardston	2
Leominster	43		Lancaster	2
Fitchburg	27		Templeton	2
Townsend	26		Westminster	2
Athol/Phillipston	14		Andover	1
Ayer	11		Ashby	1
Groton	9		Berlin	1
Ashburnham	6		Burlington	1
Cambridge	6		Chelmsford	1
Devens/Ayer	6		Danvers	1
Worcester	6		Dorchester	1
Clinton	5		Dracut	1
Shirley	5		East Templeton	1
Lowell	4		Granby	1
Nashua, NH	4		Hudson	1
Westford	4		N. Billerica	1
Boston	3		Orange/Warwick	1
Harvard	3		Peterborough, NH	1
Littleton	3		Royalston	1
Lunenburg	3		Sterling	1
West Townsend	3		Sudbury	1
Winchendon	3		Uxbridge	1
Acton	2		Waltham	1
Ashuelot, NH	2		Westborough	1
Greenfield	2			
			Total	285

The majority of respondents travel to the three cities within the Montachusett Region (Gardner, Leominster, and Fitchburg) and 233 or 85% of respondents work (or travel most often) to communities within the Montachusett Region.

Question 3 - Are you …?

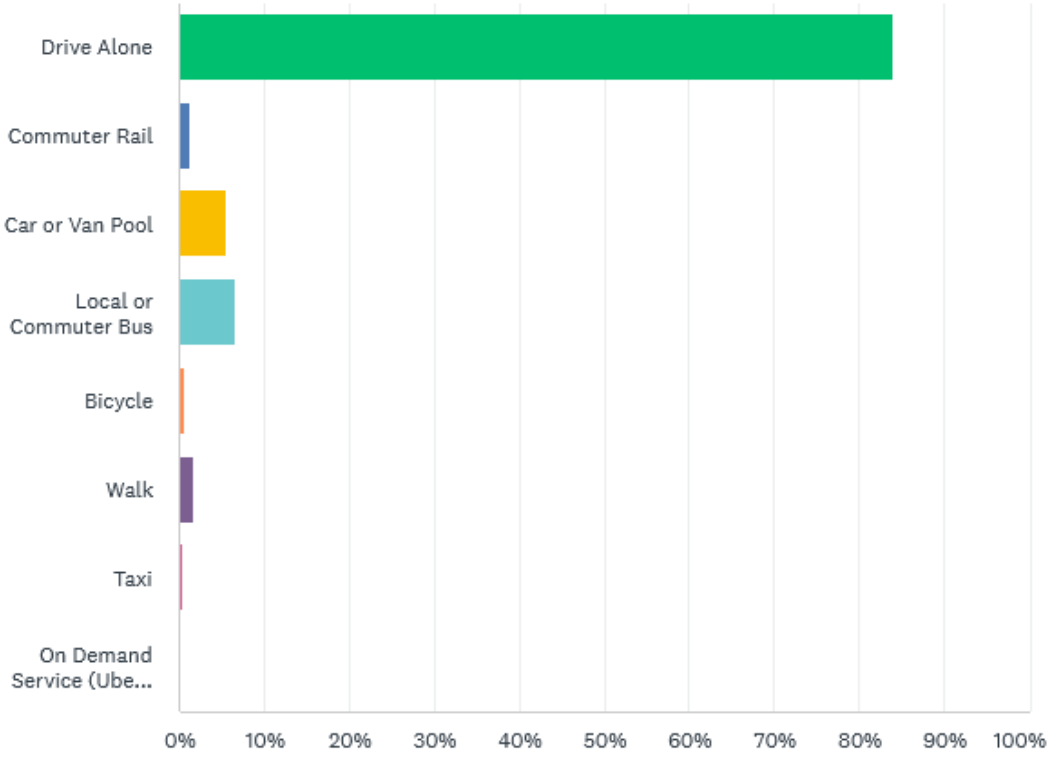
This question identified the respondent as a Municipal Employee, a Municipal Official (board member, etc.) or the General Public.

Question 3 - Are you…

An Elected/Appointed Public Official	21
A Public Employee	71
A Member of the General Public	202
No Response	9
Total	**303**

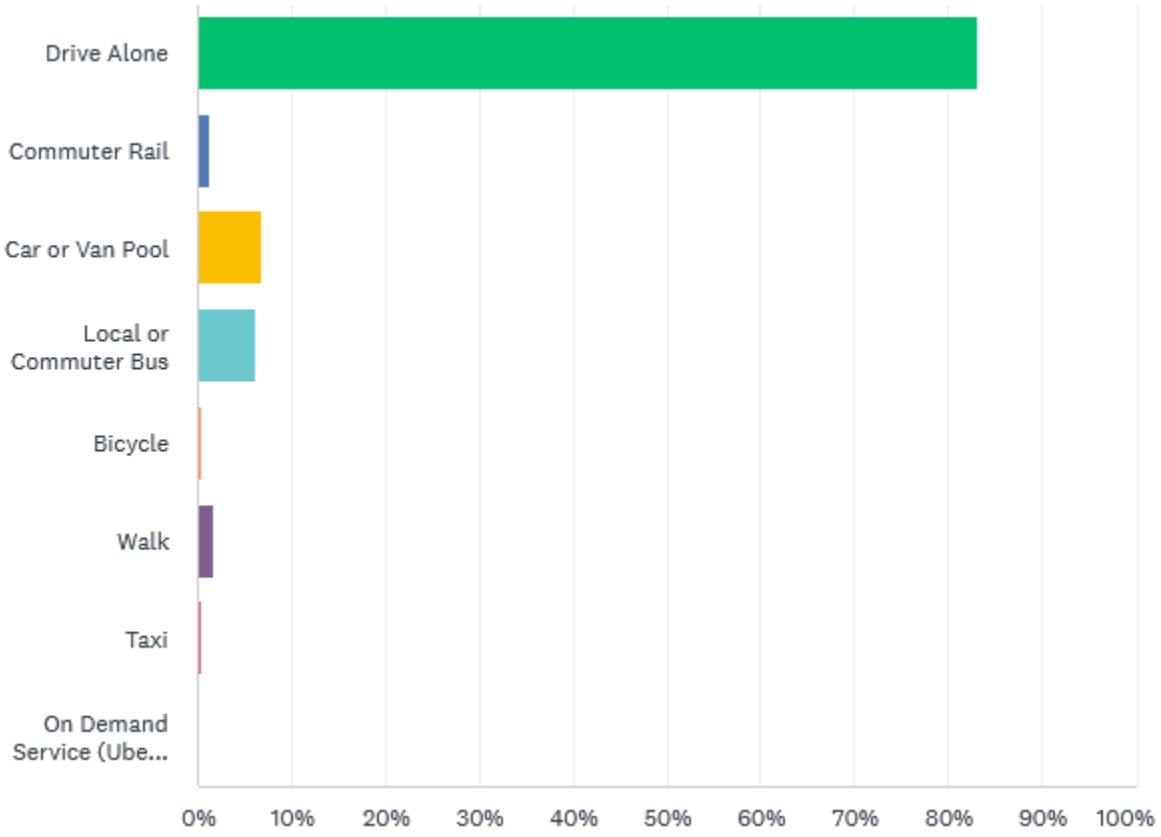
The majority of the respondents (202 or 67%) were members of the general public, seventy-one (71) or 23% were public employees, twenty-one (21) or 7% were Elected/Appointed Public Officials and nine (9) or 3% gave no response.

Question 4 - What is your primary method of travel in a week PRE-pandemic?



Drive Alone is the top choice for survey respondents (84%) followed by Local/Commuter Bus (7%), Car/Van Pool (5%), Walk (2%) and Commuter Rail (1%).

Question 5 - What is your primary method of travel in a week POST-pandemic?

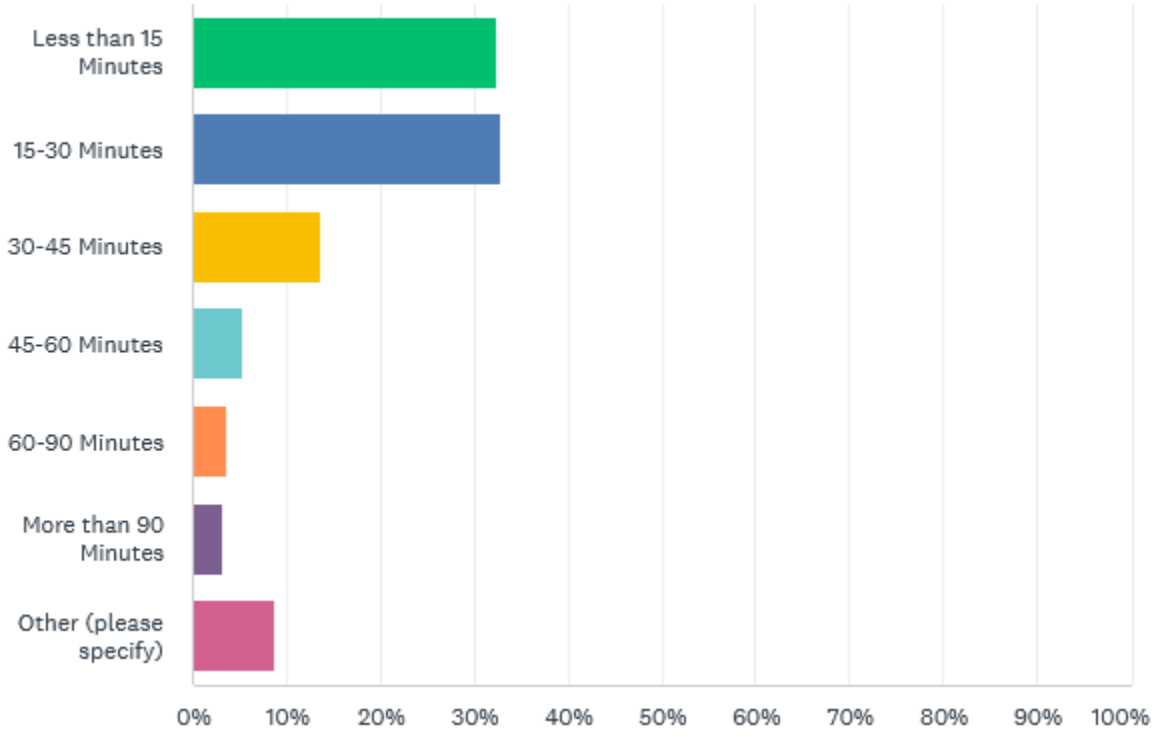


The travel mode appears to have not changed a lot pre and post pandemic. Drive Alone continues to be the top choice at 83% followed by Local/Commuter Bus (7%), Car/Van Pool (6%), Walk (2%), and Commuter Rail (1%).

Question 6 - What is your average length of commute one way PRE-pandemic?

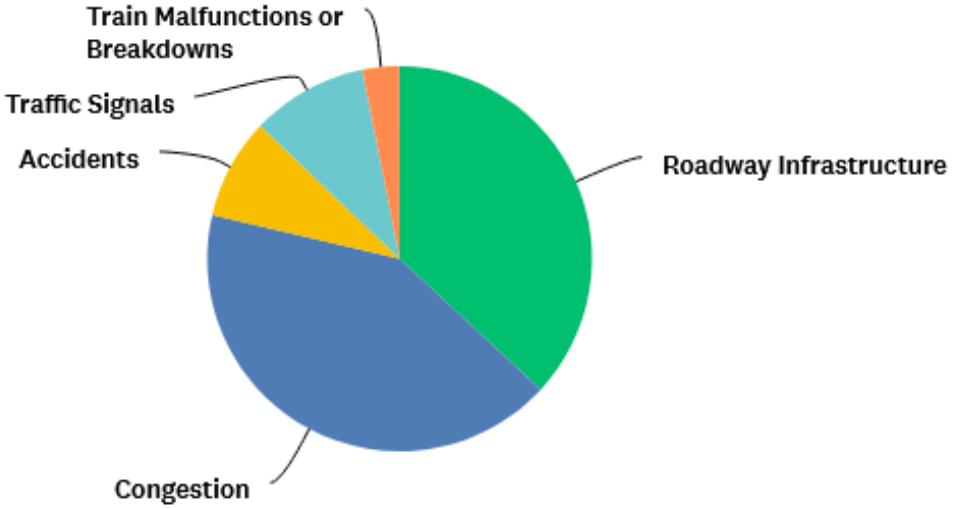
The responses are fairly spread out with 15-30 minutes being the top choice with 36%, followed by Less than 15 Minutes (27%), 30-45 Minutes (12%), 45-60 Minutes (7%), 60-90 Minutes (4%) and More than 90 Minutes (3%). The responses in the "other" category (11%) mainly included people who are retired or work from home.

Question 7 - What is your average length of commute one way POST-pandemic?



These responses were similar to the pre-pandemic question previously with the top choice still being 15-30 minutes (33%) which was a decrease from pre-pandemic (36%). Less than 15 minutes increased to 32% from 27%. The remaining answers were very similar to the pre-pandemic responses.

Question 8 – What is the major condition that impacts your commute the most?



Congestion (42%) and Roadway Infrastructure (37%) were the top responses for what has the highest impact on commutes. Accidents, Traffic Signals and train malfunctions seem to have a much lower impact. Of the written comments, weather, distracted drivers, and lack of public transportation options/times were the most mentioned. These responses continue to align with responses received from the 2020 Regional Transportation Plan survey.

Question 9 - If you drive alone to your job, are there any other commuting options currently available to you? (select all that apply)

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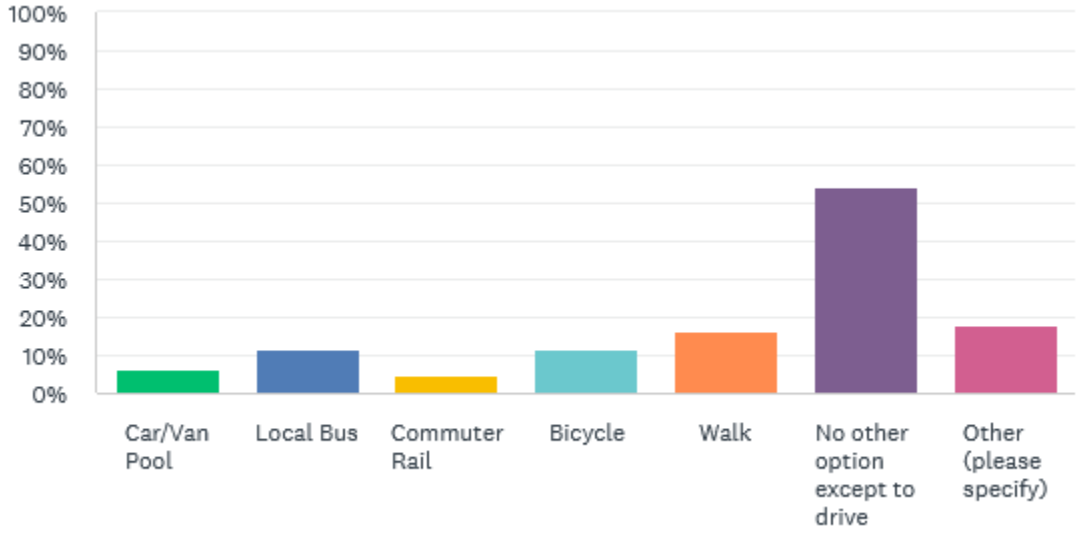
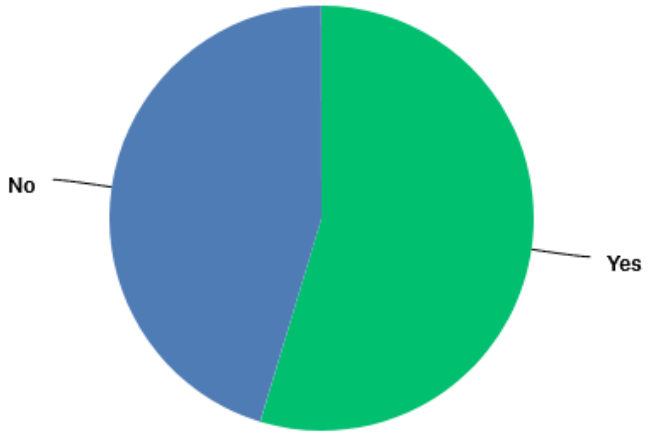
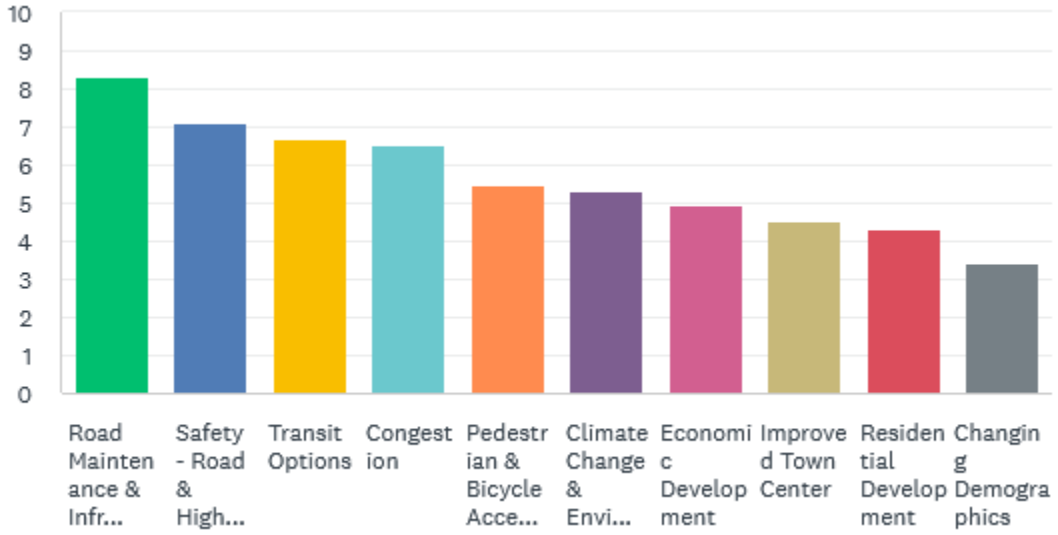




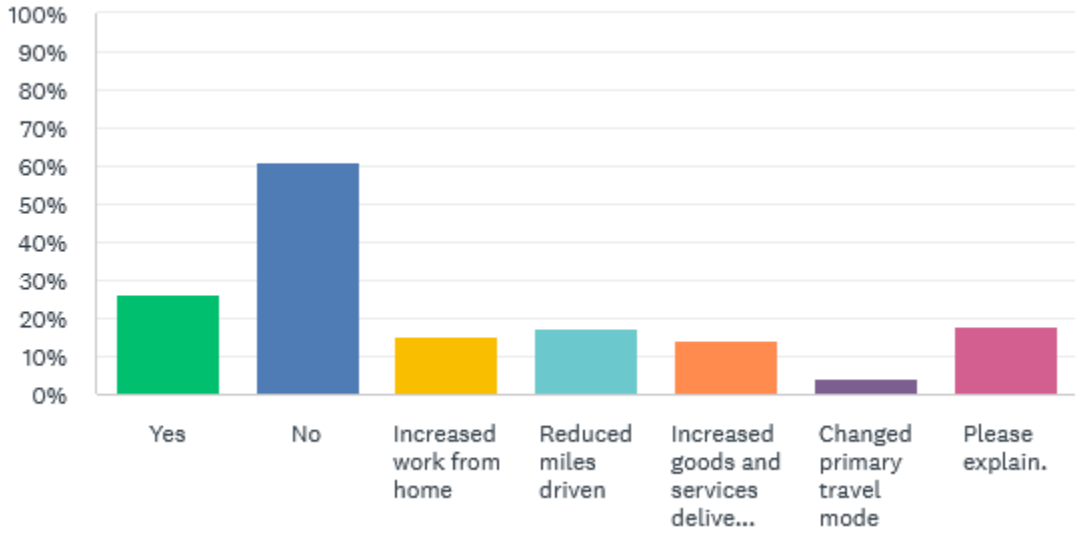
The responses for this question were almost evenly divided. Slightly more people (55%) indicated that they would use other transportation options if they were available as opposed to 45% responding that they would not.

Question 11 - Rank in importance the following issues that need to be addressed in your travels over the next 25 years.



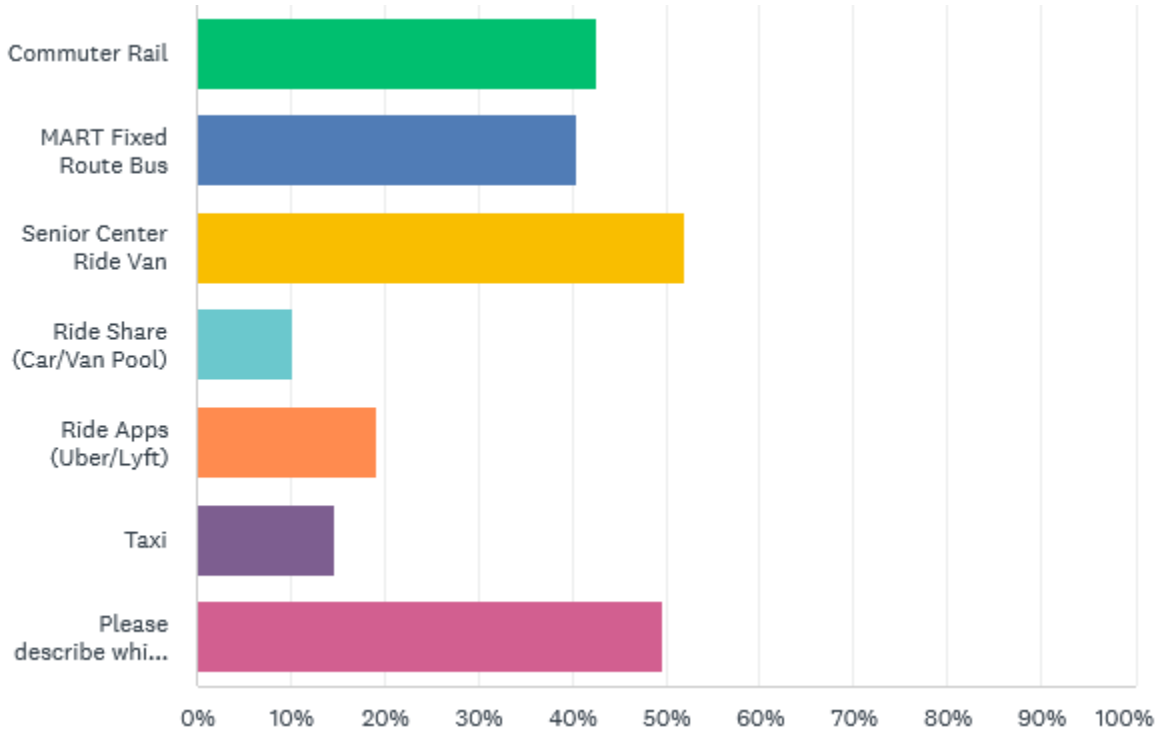
This question involved ranking the responses from most important to least important. The options that ranked the most important were Road Maintenance & Infrastructure, Safety – Road & Highway, Transit Options, and Congestions. Changing Demographics and Residential Development were ranked as the least important.

Question 12 - Are your travel habits significantly different compared to pre-pandemic times? (select all that apply)



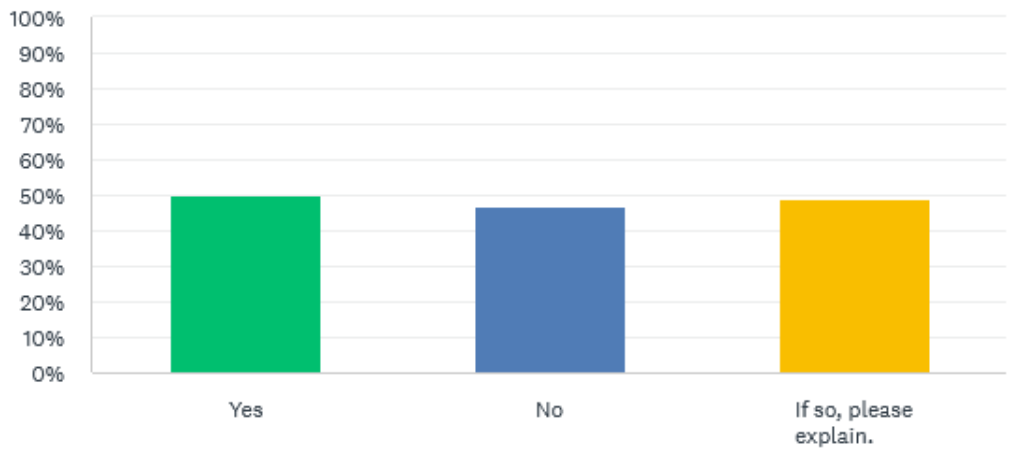
Most people (61%) responded that their travel habits have not changed since the pandemic. 17% said that they reduced their miles driven, 15% increased work from home and 14% increased goods and services delivered to home.

Question 13 - Are you aware of any of the following transportation services being offered in your community, and if so, do you utilize them? (select all that apply)



Over half (52%) of the survey respondents were aware of the Senior Center Ride Van followed by Commuter Rail (43%), and MART Fixed Route Bus (40%). Many people mentioned not needing transportation alternatives or that there was a need but nothing was available in their area of the region. Cost was also mentioned as a transportation barrier.

Question 14 - The Commonwealth of Massachusetts has set a goal to significantly reduce greenhouse gas (GHG) emissions in the Clean Energy and Climate Plan for 2050. Due to a large proportion of GHG emissions originating from the transportation sector, do you take any measures in your travel habits to reduce GHG?



This question was almost split 50/50 with the yes answers being slightly more. The written explanations indicated that most people try to consolidate trips, purchase hybrid vehicles, and walk/bike whenever possible.

Trends

Overall, the bulk of the survey respondents did not have a significant change in their transportation habits in relation to pre vs post pandemic and there were a lot of respondents who were seniors and/or retired so this may have impacted the outcome. Each community seems to have unique transportation needs. A lot of the survey responses focused on the need for more transportation infrastructure improvements, concerns with safety and improvements/increased transit options. It seems that transportation alternatives are still needed and the ones that currently exist may not meet the needs of most of the survey respondents. Based on feedback that we received from the Meeting in a Box forum, there are a lot of folks who use the senior center vans because they are a convenient door-to-door service. The issue is that there is not enough capacity to provide services to all residents.

Recommendations

Even though the outreach that was conducted for this Regional Transportation Plan was extensive, more attention could be considered to the special population groups in order to continue with the equity needs and goals of the Montachusett Region. It is also clear that further analysis should be done for transportation alternatives such as senior services and on demand transportation services.

Action Items

- Continue to include various special populations and groups in the outreach efforts to ensure that a broad range of needs are identified and met
- Continue to expand on the outreach efforts by further developing the outreach contact lists

6

Transportation Equity

6. Transportation Equity

Introduction

Transportation and social equity, Title VI and Environmental Justice all play a key role in the quality of life in the region by shaping access to jobs, housing, services and recreational opportunities and is essential to addressing poverty, unemployment and other equal opportunity goals.

- **Transportation and social equity** is a civil and human rights priority and major goal for the Montachusett Region. It requires making investments that provide all residents - regardless of age, race, color, national origin, income or physical agility - with opportunities to work, shop, be healthy, and play.
- **Title VI** was enacted as part of the landmark Civil Rights Act of 1964 and prohibits discrimination on the basis of race, color, sex and national origin in programs and activities receiving federal financial assistance.
- **Environmental Justice** is based on the principle that all people have a right to be protected from environmental pollution, and to live in and enjoy a clean and healthful environment. Environmental justice is the equal protection and meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies and the equitable distribution of environmental benefits" (www.mass.gov) . In Massachusetts a community is recognized as an Environmental Justice community if any of the following are true:

  - Block group whose annual median household income is equal to or less than 65 percent of the statewide median; or
  - 25% or more of the residents identifying as minority; or
  - 25% or more of households having no one over the age of 14 who speaks English only or very well - Limited English Proficiency (LEP)

  EJ neighborhoods where more than one criterion is met may be at an even greater risk of exposure to environmental and health hazards.

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 the most recent TIP, i.e. FFY 2024-2028. The

second involves a five year "look back" at prior TIP projects. For this analysis that would include projects from FFY 2019 to 2023.

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 (EJ) and/or Title VI populations. Staff then assessed the project locations relative to the identified populations.

Source: 2017-2021 ACS 5-Year Estimates
By Block Group

Variable	2017-2021 ACS Table No.
Total Population	B03002
Majority Population	B03002
Poverty Determined Population	B17021
Below Poverty Population	B17021
Population 65 Years or Older Population	B09020
Median Household Income	B19013
Limited English Proficiency (LEP) Households	C16002

Source: 2017-2021 ACS 5-Year Estimates
By Census Tract

Variable	2017-2021 ACS Table No.
Total Population	DP02
Foreign Born	DP02
Individuals with Disabilities	DP02
Percent Household Limited English Proficiency (LEP)	DP02
Percent Language Spoken at Home – Non-English	DP02

Environmental Justice (EJ) and Title VI populations are defined differently by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). In addition, EJ analysis is based on different criteria, ex. poverty based on the statewide median income rather than the regional median income. The tables below define the Title VI and EJ criteria utilized in the regional analysis.

Environmental Justice and Title VI Definitions for Analysis

Environmental Justice Block Groups	Analysis Criteria
1. Block group whose annual median household income is equal to or less than 65 percent (%) of the statewide median ($81,215 in 2019);	Statewide Median Income: $89,026 65% of Median Household Income: ***$57,867*** Geography: ***Block Group***
2. Twenty-five percent (25%) or more of the residents identifying as minority;	Minority Population Equal or Greater Than ***25%*** Geography: ***Block Group***
3. Twenty-five percent (25%) or more of the households having no one over the age of 14 who speaks English as their primary language or have a limited ability to read, speak, write, or understand English - Limited English Proficiency (LEP).	Limited English Proficiency Equal or Greater Than ***25%*** Geography: ***Block Group***

FTA Title VI Communities	Analysis Criteria
1. Minority – Percent of population including Hispanic or Latino of any race that is considered non-white and is higher than the regional average	Regional Average: ***20.96%*** Geography: ***Block Group***
2. Low Income - Percent estimated below poverty level that is higher than the regional average	Regional Average: ***8.30%*** Geography: ***Block Group***

FHWA Title VI Communities	Analysis Criteria
1. Elderly – Percent of Total Population > 65 that is higher than the regional average	Regional Average: ***16.45%*** Geography: ***Block Group***
2. Individuals with Disabilities – Percent of population with a disability that is higher than the regional average	Regional Average: ***12.30%*** Geography: ***Census Tract***
3. Minority – Percent of population including Hispanic or Latino of any race that is considered non-white and is higher than the regional average	Regional Average: ***20.96%*** Geography: ***Block Group***
4. Foreign Born – Percent of population that is Foreign Born and is higher than the regional average	Regional Average: ***8.80%*** Geography: ***Census Tract***
5. Language – Percent of Population Spoken Language Other than English that is higher than the regional average	Regional Average: ***15.70%*** Geography: ***Census Tract***

A. FFY 2024-2028 Target Eligible Projects

To assess the possible benefits or burdens of the projects within the FFY 2024-2028 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 16 target eligible projects in the Montachusett Region, listed by their calculated TEC score as well as their anticipated FFY year listing for this TIP. Projects without a TIP year are 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 2024-2028 Target Eligible Projects

TIP Year	MassDOT ID #	Community	Description	TEC	Est Cost FFY 2021 Dollars
	609227	Ayer	Ayer- Roadway Rehabilitation on Route 2A/111 (Park Street and Main Street)	38	$4,800,000
2024-25'	604499	Leominster	Leominster- Resurfacing and Related Work on Rt 12 (Central St)	38	$21,444,970
2028	612242	Fitchburg	Reconstruction of John Fitch Highway	37	$9,174,115
	612771	Winchendon	Winchendon- Intersectin Improvements at Blair Square: Front Street, C	33	$3,129,916
2026-27'	609213	Harvard	Harvard- Resurfacing and Box Widening on Ayer Road, from Route 2 to the Ayer Town Line	32	$11,171,079
2027	610681	Clinton	Clinton- Reconstruction of Sterling Street (Route 62), from Willow/Lawrence Street to Main Street	31	$4,715,060
2027	608415	Athol	Athol- Intersection Improvements at Route 2A and Brookside Road	30	$1,544,720
2028	612612	Sterling	Sterling - Intersection Improvements at Route 140 and Route 62	30	$3,117,500
	606640	Ayer	Ayer- Resurfacing & Related Work on Rt 2A (Fitchburg Rd & Park St)	25	$2,400,000
2025	609244	Ashburnham	Ashburnham- Roadway Rehabilitation on Rt 101	25	$8,556,417
	611989	Athol	Athol - Sidewalk Installation along Templeton Road (Route 2A) 0.9 mil	23	$2,590,300
	608832	Lancaster	Lancaster- Interchange Improvements at Route 2 Exit 34 (Old Union Turnpike)	23	$6,060,800
	608177	Ashby	Ashby - Reconstruction of Route 119 (Townsend Road) from Bernhardt Road to Route 31.	21	$6,727,500
2026	608424	Templeton	Templeton- Reconstruction of Route 68, From King Phillip Trail (Route 202) North to the Phillipston Town Line (2.65 Miles)	18	$6,063,291
	608879	Winchendon	Winchendon- Resurfacing & Related Work on Maple Street (Route 202), From Vine Street to Glenallen Street (1.36 Miles)	15	$1,680,444
	607604	Sterling/West Boylston	Sterling/West Boylston - Improvements on Route 140 at I-190	14	$3,647,110

B. FFY 2024-2028 Target Eligible Projects Equity Analysis

An analysis of the geographic distribution of the nine projects within the 2024-2028 TIP resulted in an understanding of the percentage of TIP projects and TIP funds allocated within Environmental Justice and Title VI geographic areas. The results of this analysis are as follows:

- The total regional population was determined, along with the population of each identified Environmental Justice and Title IV group (Row 1), from which the percentage of total population was determined for each group (Row 2).
- Of the 9 projects analyzed based on EJ and Title VI identified populations, a dollar amount which was programmed within each geographic area was determined (Row 3). It was then determined what percent of total funds were spent within each group (Row 4)
- Row 5 displays the comparison of the percentage of total population to the percentage of funding spent.

FFY 2024-2028 TIP Target Eligible Projects Equity Analysis Summary

		Total Regional Population	EJ Block Groups			FTA Title VI Block Groups		FHWA Title VI Block Groups		FHWA Title VI Census Tracts		
			Income**	Minority	LEP HH*	Minority	Low Income**	Elderly	Minority	Disabilities	Foreign Born	Language***
1	Population	249,749	20,040	52,337	2,950	52,337	20,040	41,075	52,337	29,901	21,952	37,190
2	Percent of Total Regional Population	100%	8.02%	20.96%	1.18%	20.96%	8.02%	16.45%	20.96%	11.97%	8.79%	14.89%
3	Total Cost of TIP Projects	$92,058,010	$21,839,441	$22,457,139	$13,283,024	$31,013,556	$43,336,627	$44,267,899	$31,013,556	$19,275,252	$37,309,042	$45,865,459
4	Percent of Regional Cost of Projects	100%	23.72%	24.39%	14.43%	33.69%	47.08%	48.09%	33.69%	20.94%	40.53%	49.82%
5	Difference in % Cost and % Population	0.00%	15.70%	3.44%	13.25%	12.73%	39.05%	31.64%	12.73%	8.97%	31.74%	34.93%

* Percentage of Total Montachuset Region Households (96,748)

** Percentage of Poverty determined Montachuset Population (241,423)

*** Percentage of Montachuset Region Total Population Five Years and Older (236,131)

The following table identifies 16 projects for the Montachusett Region implemented in the last five years, i.e. from FFY 2019 to FFY 2023. All projects appeared in a prior TIP and were advertised for construction, initiated construction, or completed construction prior to the development of this TIP.

FFY 2019-2023 TIP Five Year Look Back Projects

TIP Year	MassDOT ID #	Community	Description	Est Cost
2019	608728	Winchendon	Resurfacing & Related Work on Route 202, From the Templeton Town Line to Main Street (3.1 Miles)	$1,795,875
2019	604961	Clinton	Resurfacing & Related Work on Route 110 (High Street)	$3,153,674
2019	607848	Hubbardston	Resurfacing & Related Work on Route 68, From Williamsville Road to the Gardner C.L.	$4,190,296
2019	607446	Westminster	Intersection Improvements, Route 2A at Route 140	$2,139,574
2020	605651	Leominster	Reconstruction on Route 13, From Hawes Street to Prospect Street	$5,994,626
2020	607902	Ayer	Reclamation & Related Work on Route 2A, From Harvard Road to Main Street	$3,837,875
2021	607431	Westminster	Westminster - Resurfacing & Related Work on Route 140, From Route 2A to Patricia Road	$1,668,791
2021	608548	Winchendon	Winchendon- Improvements & Related word on Central Street (Route 202), from Front Street to Maple Street (0.5 Miles)	$4,900,253
2021	608657	Lunenburg	Lunenburg- Bridge rehabilitation, L-17-009, Route 2A over Pearl Hill Brook	$1,755,772
2021	608888	Gardner	Gardner- Reclamation and related work on Pearson Boulevard	$1,264,648
2021	608891	Gardner	Gardner- Resurfacing and rumble strip installation on Route 140	$1,791,202
2022	608779	Lancaster	Lancaster- Intersection Improvements on Route 117/Route 70 at Lunenburg Road and Route 117/Route 70 at Main Street	$5,747,806
2022	608793	Hubbardston	Hubbardston- Highway Reconstruction of Route 68 (Main Street), from 1,000 ft North of Williamsville Road to Elm Street	$5,241,283
2023	607432	Westminster	Westminster - Rehabilitation & Box Widening on Rt 140, From Patricia Rd to the Princeton T.L.	$6,375,205
2023	609279	Gardner	Gardner- Roundabout Construction at Elm Street, Pearl Street, Central Street and Green Street	$2,571,433
2023	608784	Templeton	Templeton- Roundabout Construction at The Intersection of Patriots Road, South Main Street, North Main Street and Gardner Road	$2,037,795

1. 2019-2023 Projects Five Year Lookback Equity Analysis

An examination of projects funded over the last five TIPs, identified 16 individual projects with an estimated total cost of $54,466,108. As with the current Target Projects, a geographic distribution of these 16 projects against those areas categorized as Environmental Justice (EJ) or Title VI areas resulted in the following:

- The total regional population was determined, along with the population of each identified Environmental Justice and Title IV group (Row 1), from which the percentage of total population was determined for each group (Row 2).
- Of the 15 projects analyzed based on EJ and Title VI identified populations, a dollar amount which was spent within each geographic area was determined (Row 3). It was then determined what percent of total funds were spent within each group (Row 4)
- Row 5 displays the comparison of the percentage of total population to the percentage of funding spent.

FFY 2019-2023 TIP Five Year Look Back Projects Equity Analysis Summary

		Total Regional Population	EJ Block Groups			FTA Title VI Block Groups		FHWA Title VI Block Groups		FHWA Title VI Census Tracts		
			Income **	Minority	LEP HH*	Minority	Low Income**	Elderly	Minority	Disabilities	Foreign Born	Language***
1	Population	249,749	20,040	52,337	2,950	52,337	20,040	41,075	52,337	29,901	21,952	37,190
2	Percent of Total Regional Population	100%	8.02%	20.96%	1.18%	20.96%	8.02%	16.45%	20.96%	11.97%	8.79%	14.89%
3	Total Cost of TIP Projects	$54,466,108	$20,712,458	$18,411,188	$0	$22,601,484	$23,469,826	$41,771,061	$18,411,188	$26,355,401	$14,777,377	$13,510,935
4	Percent of Regional Cost of Projects	100%	38.03%	33.80%	0.00%	41.50%	43.09%	76.69%	33.80%	48.39%	27.13%	24.81%
5	Difference in % Cost and % Population	0.00%	30.00%	12.85%	-1.18%	20.54%	35.07%	60.25%	12.85%	36.42%	18.34%	9.92%

* Percentage of Total Montachuset Region Households (96,748)
** Percentage of Poverty determined Montachuset Population (241,423)
*** Percentage of Montachuset Region Total Population Five Years and Older (236,131)

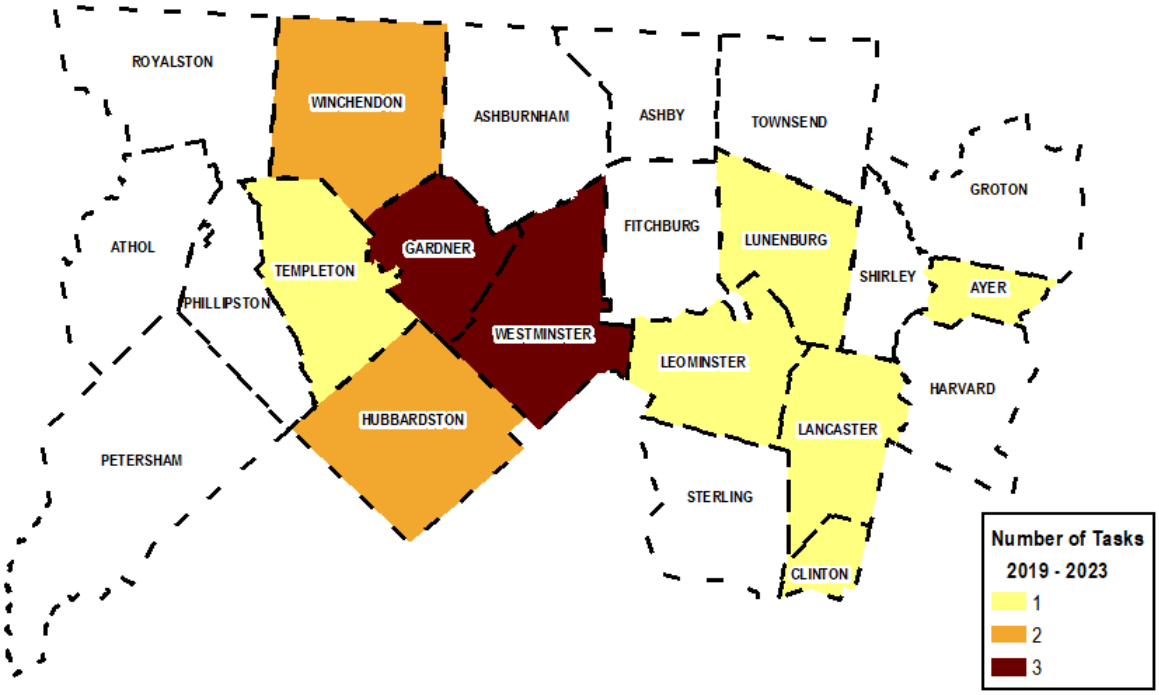
- An examination of Row 5 shows the majority of identified groups benefit disproportionately in these investments when compared to their overall regional population.
- There was one group who saw less total percentage cost than percentage population:
    - The EJ population of Limited English Proficiency (LEP) per Household, in which there is only one such Block Group regionwide

2. Summary of Equity Analysis

The percentage of TIP funds that have been allocated in Environmental Justice and FHWA or FTA areas is greater than the percentage of the region's population that reside in those areas. 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.

3. Summary of Community Distribution

The map below shows the geographic equity analysis that was also conducted based on the projects conducted over the past five years for those specific communities. This map corresponds with the five-year lookback table on the previous page. The darker color shows where the most projects were conducted, and the communities shown in white had no projects that were specific to that community over the past five years (2019 – 2023).



Based upon this analysis and review, it would appear that the Montachusett MPO is making an effort to address transportation planning issues in Title VI and EJ communities in the Region. Projects compiled in the last five years have been developed in an attempt to locate them in communities which either have an Environmental Justice population, FHWA Title VI population, FTA Title VI population, or a combination of all three. Future efforts should focus on the communities in which no funding has been spent in the recent past. Efforts will be made to continue to monitor such trends and encourage communities, especially those which have not been taking advantage of TIP funds, to engage in the process and develop projects for inclusion.

Trends

After analyzing the types of projects being implemented, it seems that the majority of highway projects continue to consist of improvements to already existing infrastructure (ex. roadway resurfacing and rehabilitation, and bridge repair) as opposed to building new facilities and therefor do not bear an undue burden or benefit as compared to the rest of the region. These types of projects allow for smoother navigation through these areas (by personal vehicle, bicycling, walking or public transit) and provide improved access for commuting.

The region continues to make strong connections with Title VI and EJ populations through email communication and meeting attendance. This pattern continues to increase, yet with the pandemic, i public meetings seem to have slowed down. This is both a benefit and a burden where there appears to be more attendance for virtual meetings but participation and public input does not seem to have increased. It is hoped that involvement will show signs of increasing as time goes on.

Recommendations

The MRPC continues to strive to solicit meaningful participation with Title VI and EJ populations through their Public Participation Plan, Limited English Proficiency Plan, and its submittals to MassDOT and the Federal transportation agencies through the Title VI. For this planning

document there was extensive outreach to the EJ and Title VI populations by both daytime and evening meetings with locations along the public transportation routes, contacted public service agencies, online surveys, and were included as meeting topics during other agency meetings. With that being said, there is always room for improvement. These improvements may include the following:

- Advance the outreach process by making stronger connections with Title VI and Environmental Justice type organizations and individuals.
- Continue to coordinate with local communities/organizations/advocates to monitor and address issues as they relate to identified target populations.
- Expand our mailing list to include other Title VI and EJ populations and organizations.
- Continue to monitor and advocate for TIP projects that show a benefit to Title VI and EJ areas.

7

Regional Trends & Recommendations

Regional Trends & Recommendations

Introduction

The following is a summary of all regional trends and recommendations identified above. Determining and monitoring these trends and recommendations is an important factor in making informed decisions for the Montachusett Region (Region). These trends and recommendations will serve as a checkup of the Region's transportation network and improvements and to guide them going forward.

Demographic Trends

Through the development and analysis of the demographics and projections for the Montachusett region, the following trends were identified and noted. Following these trends, a series of recommendations are presented for the region.

- Current growth expected to stall and begin a steady period of decline in future projections.
- The population in the region is aging faster than in the state or nation. This trend is also reflected in the 2030, 2040 and 2050 projections where the overall growth in the population of the region is expected to slow and decline. This aging of a large proportion of the population poses a number of planning challenges for the Region, including accessibility to health care and elderly services, public transportation, senior housing. In addition, there will be generational shifts in employment sectors and the workforce.
- Educational attainment rates are increasing in the regions male and female populations. However, they still remain lower than state averages. Efforts are needed in the Region to retain this increasing educated population and subsequently help to address shifts in the employment sectors.
- Seven Montachusett communities have a higher proportion of residents with a disability than the state as a whole. Athol, Fitchburg, and Gardner top the list. Among other planning considerations, the high percentages of residents with disabilities, coupled

with a steadily aging population, only help to emphasize the importance of multimodal and

functional transportation network.

- Eighteen (18) of the region's 22 communities have a lower per capita income than the state ($48,617), while eight rank below the state when examining median household income.
- An estimated 9.9% of individuals are living in poverty within the Commonwealth of Massachusetts. Six Montachusett communities have a higher concentration of poverty than the state as a whole, with Fitchburg (14.6%) and Gardner (14.1%) also exceeding the national poverty rate of 11.3%. Between 2020 and 2021, poverty rates showed a marginal uptick in the region, rising from 5.9% to 6.4%, still well below the state rate of nearly 10%. In order to reverse these trends, additional opportunities to create a more diverse employment sector is needed. Along with this, is the need for improved access to these jobs at a reasonable cost for those in the lower income strata.
- Based on an analysis of current and past transportation and highway projects versus identified Environmental Justice and Title VI populations, there does not appear to be an undo benefit or burden on these populations.
- Housing in the region trends toward single family homes. This along with a rising median home values can affectively price individuals out of the Montachusett Region. This can be especially harmful to younger, more highly educated individuals, which in turn can exasperate the aging population situation. In order to serve the regions changing population characteristics, i.e. aging, diversified, and low income, affordable housing units (either as single or multiple units) need to be an emphasis for the region's officials. Additionally, where appropriate direct tie ins to available transportation options should be a major factor for local officials in this area.
- Manufacturing continues to remain the largest employment sector in the region (nearly 16% of total employees) and integral to the economic health of many communities. The level of manufacturing-based employment, despite the decline in recent decades, continues to out strip that of both the state and country. While efforts continue toward

diversifying the regional economy into other growing sectors, including the service sectors, the region's comparative advantage of an experienced manufacturing workforce and industrial space will help keep manufacturing as a cornerstone in the region's economy.

- Montachusett Region commuters are more auto-reliant than in the state or the nation. Eighty-five percent (85%) of workers either drive alone or carpool to work as compared to 75% of workers in Massachusetts, and 82% of workers in the country. Montachusett residents are also significantly less reliant upon public transit. The longer commute times and distances of Montachusett individuals tend to put more emphasis on the traditional commuter roads in the region, i.e. Route 2, I-190, Route 117, Route 119, Route 140, Route 12, etc. The potential for increased public transit usage exists if expansion and costs can be implemented in a reasonable fashion. In addition, these segments of commuters are also likely to be impacted by technological changes in travel modes, i.e. autonomous vehicles, rideshare options and alternative energy vehicles. With a greater demand or usage of these technologies, critical support infrastructure is needed from long term parking areas for autonomous vehicles, to charging stations, to incentive programs.

Recommendations

The following is a series of recommendations based upon the identified trends related to the demographic profile of the Montachusett Region. It should not be viewed as a complete and finite list but rather a starting point for the continued review of the needs of the region.

1. The aging of the region's population requires that several issues be addressed:
    a. Expanded transit options to vital services for elderly. Expansion to needed services such as medical and shopping should remain a priority. Additionally, connections between communities should be examined and implemented where feasible.
    b. Upgrades, expansion and improvements to the pedestrian network in the core centers of communities and in and around identified service areas, i.e. medical

facilities, shopping centers, etc. Safer sidewalks and pedestrian corridors will also serve other segments of the population beyond the elderly.

   c. Safety improvements along the road and pedestrian/bicycle networks need to be expanded and prioritized to help deal with the aging population as well as assisting with other segments with their activities.

2. Identification and prioritization are needed for projects that assist the disabled community throughout the region. This would include better sidewalks, improved access to transit options, and eliminating gaps in the network that prevent or discourage usage (ex. incomplete or non-existing sidewalks on fixed route transit lines).
3. Expansion of employment opportunities are needed in order to retain and expand the regional workforce. As the educational level continues to rise in the region, without adequate employment options, the population will continue to age as younger individuals seek better paying jobs outside of the region. Network improvements are needed to assist and encourage employers to remain in the region. This would involve infrastructure improvements to support industries, multiple travel options to bring employees to and from work, and expansion of outreach efforts to all segments of the population. Continued emphasis on maintaining pavement conditions and reducing bridge deficiencies will allow for greater marketing by municipalities of available industrial and commercial areas.
4. Expansion of mode options for commuters needs to also be a priority for the region. This would also involve the region's trail/pedestrian/bicycle networks. These systems can be improved and expanded in order to provide additional walking and biking mode options.
5. Additional planning is needed to address future technological advances in transportation as they occur and become more and more feasible. This would include issues such as:
   a. Autonomous vehicles. Where will they "park" when riders have reached their destinations? Is there a need for special lots or facilities? Are there potential congestion issues at the start and end of work shifts? Will "peak hours" increase

because the autonomous vehicle may be making additional trips to desired locations (i.e. one trip in and one trip out in both the AM and PM (4 trips) as opposed to a driver that has one trip in and one trip out in the AM and PM (2 trips))?

b. Electric vehicles. Where should charging stations be located? How many facilities exist and do they adequately serve the population now? Environmentally, are there any drawbacks associated with batteries, etc., that need to be addressed?

c. Ride share options. Can these systems be expanded to address the needs of the elderly, low income and disabled populations? Can the systems expand to the more rural communities to serve these areas without viable transit options?

6. The population is getting more and more diverse in terms of minority populations and language. Additional efforts are needed to draw these individuals into the transportation planning process to ensure adequate representation and service.

Infrastructure Trends

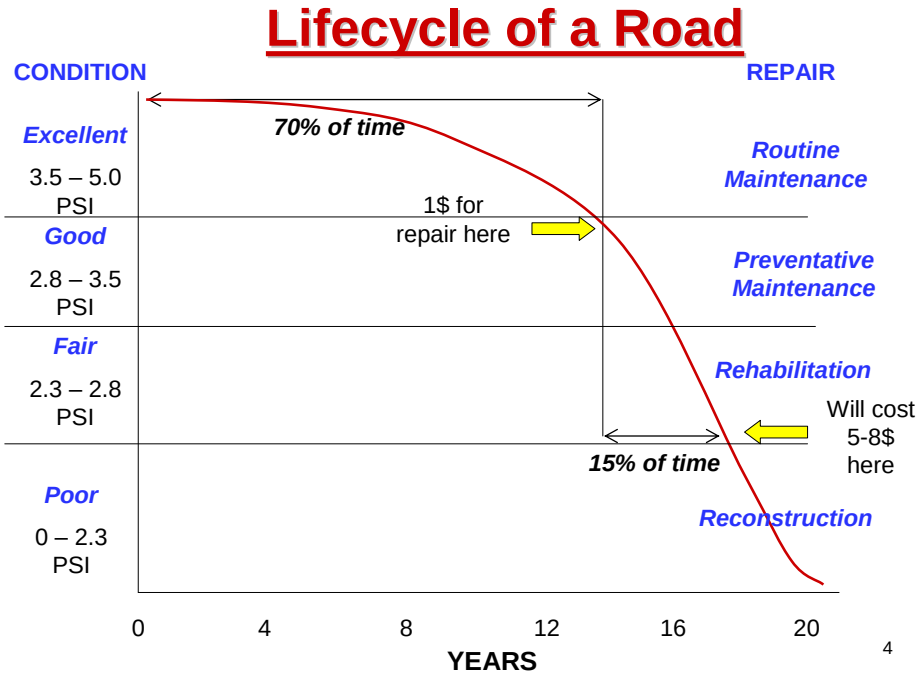
Analysis of roads and bridges in the Region demonstrate a network that is relatively stable, however, in danger of deterioration if proper investments are not maintained. It is important to prioritize maintenance and repair of these existing infrastructures to be able to maximize public funds and allow additional investments for improvements and expansion.

Infrastructure Recommendations

The transportation system in the Region largely consists of roads and bridges. Maintaining these assets are a challenge, however, we must understand the importance of a properly functioning and safe system. Maintaining a state of good repair should be a main priority and in our best interest in order to stretch our investments to the greatest benefits. Ultimately, it is recommended that investments are guided by proven asset management practices and the proper amount of investment is made to assure these assets do not deteriorate.

The figure below displays the concept of pavement lifecycle cost. A pavements lifecycle is the time between reconstruction periods. Lifecycle cost is the total cost spent on maintenance and repairs for a particular pavement section during its lifecycle. One of the main focuses of pavement management is to keep lifecycle cost low to stretch the dollar in what is commonly an ever-decreasing maintenance budget.

Figure 7-1: Lifecycle of a Road



Due to the rising cost of improvements and the declining funds for preserving existing infrastructure it is challenging to make improvements to the pavement network. Building a historical and measurable database of conditions in the Region allows for a snapshot of overall conditions which will allow us to determine how the network changes over time. Maintaining historical databases of bridge and pavement data paired with applying proven methods of asset management is recommended.

Infrastructure Action Items

- Continue to monitor network conditions to determine trends.
- Encourage use of pavement management principals among communities in Region and in decision making.

Safety Trends

Based on a five-year rolling average, roadway Fatalities have trended UPWARD since the 2008-2012 (08'-12') five-year period (Period) when 14 Fatalities occurred. For each Period since the 08'-12' Period, 15 to 16 Fatalities have occurred. No Period experienced less than 15 Fatalities. Two Periods experienced 16 Fatalities, including the 17'-21' Period. Also based on a five-year rolling average, Serious Injuries have trended DOWNWARD since the 08'-12' Period. From the 08'-12' Period to the 14'-18' Period, Serious Injuries decreased steadily from 125 to 97. The 15'-19' Period experienced 100 Serious Injuries followed by 98 each for the 16'-20' and 17'-21' Periods.

The MRPC will work cooperatively and in coordination with MassDOT for the implementation of the 2023 Massachusetts Strategic Highway Safety Plan (Plan). The Plan seeks to improve safety on all public roads in the state. The Plan provides a framework for how the state will work to make its roadways safer for all roadway users in a holistic manner through the Safe System Approach (SSA). The SSA is a system that works by anticipating human mistakes and keeps the kinetic energy of a crash on the human body at a tolerable level. The SSA identifies and mitigates risks on the roadway system to prevent crashes rather than waiting for crashes to occur followed by taking action afterward.

The MRPC was awarded a SS4A Action Plan Grant under the Bipartisan Infrastructure Law (BIL) to develop a Safety Action Plan for the Region. An Action Plan is a comprehensive safety action plan with the goal of developing a holistic, well-defined strategy to prevent Fatalities and Serious Injuries.

The Action Plan that a SS4A grant funds requires the following components:

- Leadership commitment and goal setting
- Planning structure through a committee, task force, or similar body
- Safety analysis of the existing conditions and historical trends
- Engagement and collaboration with the public and relevant stakeholders
- Equity

- Policy and process changes that assess the current policies, plans, and guidelines
- Strategy and project selections that identify a comprehensive set of projects and strategies that will address the safety issues described in the Action Plan
- Progress and transparency methods

Link to further description of the **SS4A Action Plan Components**

Safety Recommendations

Future Safety Improvement Projects

Table 7-1 below lists the top **HCI** from the full **All Mode HCIs Table** for each Member Community where **HCIs** occurred. Please see the Appendix for the full **All Mode HCIs Table**. All 106 locations in the table need safety improvements. However, projects cannot be completed for all of them at the same time. In light of this, the MRPC recommends that Member Communities select at least one to submit as a safety improvement project.

Table 7-1: Top HCIs in Member Communities

COMMUNITIES	Top HCI in each Community 2017 - 2019	Crash Count	1) Fatal &/or Serious Injury	2) Minor &/or Possible Injury	1 & 2 Total	PDO	EPDO	Region Top 5%	Region Top 100	State Top 200 HCI	**
ASHBY	GREENVILLE RD (SR 31) at TURNPIKE RD	17	2	5	7	10	157	Yes			
ATHOL	TEMPLETON RD (SR 2A) at ORCHARD ST	14	0	4	4	10	94		Yes		
AYER	GROTON HARVARD RD at CENTRAL AVE	13	0	5	5	8	113	Yes			
CLINTON	MAIN ST (SR 68) at BROOK ST	10	0	4	4	6	90		Yes		
	STERLING ST (SR 62) at GREELEY ST	10	0	4	4	6	90		Yes		
FITCHBURG	WATER ST (SR 12) at WANOOSNOC RD	50	1	13	14	36	330	Yes		Yes	Yes
GARDNER	TIMPANY BLVD (SR 68) at CONANT ST	19	0	6	6	13	139	Yes			
GROTON	MAIN ST (SR 119) at LOWELL RD (SR 40)	19	0	3	3	16	79		Yes		
HARVARD	JACKSON RD at GIVRY ST	9	0	6	6	3	129	Yes			
LANCASTER	LOWER BOLTON RD (SR 110) at BOLTON RD	28	1	10	11	17	248	Yes		Yes	Yes
LEOMINSTER	NORTH MAIN ST (SR 12) at LINDELL AVE	47	3	9	12	35	287	Yes		Yes	Yes
LEOMINSTER* &	NORTH MAIN ST (SR 12) at BATTLES ST*	23	0	7	7	16	163	Yes			
FITCHBURG*	NORTH MAIN ST (SR 12) at ERDMAN WAY*	22	0	5	5	17	122	Yes			
LUNENBURG	CHASE RD (SR 13) at MASSACHUSETTS AVE (SR 2A)	9	0	5	5	4	109	Yes			
STERLING	PRINCETON RD (62) at REDEMPTION ROCK TRAIL (140)	13	0	4	4	9	93		Yes		
TOWNSEND	MAIN ST (SR 119) at SOUTH ST	16	0	4	4	12	96		Yes		
WESTMINSTER	E MAIN ST (2A) at RAMP-RTS 2 EB/140 SB TO RTS 2A/140	20	1	3	4	16	100	Yes			
WINCHENDON	SPRING ST (SR 12) at GARDNER RD (SR 140)	10	0	4	4	6	90		Yes		

*these 2 HCIs occurred at the City Line **Abuts At-Risk Rd Seg

Tables 7-2-A and **7-2-B** below list one ***At-Risk Rd Seg*** from the full ***At-Risk Rd Segs* Table** for each Member Community where an ***At-Risk Rd Seg*** occurred. Please see the Appendix for the full ***At-Risk Rd Segs* Table**. All 160 locations in the table need safety improvements. However, projects cannot be completed for all of them at the same time. In light of this, the MRPC recommends that Member Communities select at least one to submit as a safety improvement project.

Table 7-2-A: At-Risk Rd Segs in Member Communities

COMMUNITIES	At-Risk Rd Segs	Abuts All Mode HCI*
ASHBURNHAM	MAIN STREET	
ASHBY	MAIN STREET	
ATHOL	MAIN STREET	Yes
AYER	MAIN STREET	
CLINTON	MAIN STREET	
FITCHBURG	MAIN STREET	Yes
GARDNER	MAIN STREET	
GROTON	MAIN STREET	

*Abuts at least 1 HCI

Table 7-2-B: At-Risk Rd Segs in Member Communities

COMMUNITIES	At-Risk Rd Segs	Abuts All Mode HCI*
HARVARD	AYER ROAD	
LANCASTER	MAIN STREET	Yes
LEOMINSTER	MAIN STREET	Yes
LUNENBURG	MASSACHUSETTS AVE	
PETERSHAM	BARRE ROAD	
SHIRLEY	LANCASTER ROAD	
STERLING	MAIN STREET	
TEMPLETON	PATRIOTS ROAD	
TOWNSEND	MAIN STREET	
WESTMINSTER	EAST MAIN STREET	Yes
WINCHENDON	FRONT STREET	Yes

*Abuts at least 1 HCI

Safety Action Items

- To improve safety at **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs***, or any combination thereof, safety improvement projects need to be considered for development based on the strategies and actions found in the Plan.
- Safety project development includes the requirement of conducting a Road Safety Audit (RSA) that will provide safety improvements alternatives before the design is initiated.
- Member Communities may choose to contact the MRPC for the **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs*** that may exist within their community.
- MRPC will contact Member Communities concerning the **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs*** for further study and potential project development.
- **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs*** data is updated by MassDOT which may add locations or subtract existing locations.
- The MRPC maintains Regional **HCIs**; Bike HCLs; Ped HCLs; and ***At-Risk Rd Segs*** **Tables**.
- The MRPC will be conducting an analysis of the Crash Types that are susceptible to Fatal crashes and Serious Injury crashes on road segments in the near future.
- The MRPC will be employing a consultant to assist in the completion of the SS4A Action Plan for the Region.

Bike & Pedestrian Trends

The desire for more multi modal transportation options within the Region has increased significantly over the past few years. More people are seeing the value in having these types of transportation options and are also advocating for the development of new, safer, bicycle and pedestrian facilities throughout the region. Programs such as Complete Streets and Safe Routes to School are gaining support from our communities -

- Complete Streets – 19 out of 22 communities have approved policies, one is registered, and 15 have received funding for multi modal projects
- Safe Routes to School – 18 out of 22 communities are partners with the program.

The State is also contributing financially to trail projects through the MassTrails Grant program. This program provides grants to support recreational trail and shared use pathway projects across the Commonwealth. These grants are reviewed and recommended by the

Massachusetts Recreational Trails Advisory Board and the Commonwealth's Inter-Agency Trails Team. There are two funding sources for the grant –

- Recreational Trails Program (RTP) – these grants are federally funded through the Federal Highway Administration (FHWA), administered at the State level, and provide funding for the development and maintenance of recreational trail projects, both motorized and non-motorized.
- Commonwealth Trails Grants – "These grants are supported by the State's annual Capital Investment Plan (CIP) and aim to help communities design, create and maintain off-road shared-use pathway connections between where Massachusetts residents live, learn, work, shop and recreate, especially by building out the longer distance regional networks of multi-use pathways across the state and filling in critical gaps in existing networks, or overcoming current barriers to connectivity." (www.mass.gov/guides/masstrails-grants)

In 2022, seven communities within the Region received MassTrails funding – Athol, Clinton, Gardner, Groton, Lunenburg, Sterling and Templeton.

Other notable funding sources are the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and Transportation Alternatives Program (TAP). CMAQ provides federal funding for states to support projects and programs intended to improve air quality and reduce traffic congestion. Example projects include – traffic flow improvements, public transit services and facilities, bicycle and pedestrian facilities and programs, rideshare activities, etc. The Twin Cities Rail Trail phase 2 and the North Central Pathway bridge project are currently scheduled in the FY2024-2028 Transportation Improvement Plan. The BIL continues the Transportation Alternatives set-aside from the Surface Transportation Block Grant (STBG) program. Eligible uses of the set-aside funds include all projects and activities that were previously eligible under the Transportation Alternatives Program under the Moving Ahead for Progress in the 21st Century Act (MAP-21). This encompasses 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.
(https://www.mass.gov/doc/statewide-funding-programs-and-categories/download)

Bike & Pedestrian Recommendations

As these multi modal trail and bikeway projects continue to be studies and developed, funding is always a major component. Increasing the existing funding programs and available dollar amounts are always critical to further these regionally significant projects. Additionally, continuing the study and planning of trail related developments in order to identify priority trails and trail connections are also key for alternate modes of transportation.

Bike & Pedestrian Action Items

- Encourage and support all communities to participate in the Complete Streets & Safe Routes to School programs.
- Encourage communities to apply for MassTrails & CMAQ funding for their trail projects.
- Continue to study priority trails and trail connections.
- Continue to support the development of trail projects throughout the Region.

Economic Vitality Trends

The MRPC recognizes that the transportation network plays an important role in the economic growth of the Region. Many sectors of the economy depend heavily on safe and efficient movement of goods and services by truck and rail.

The Economic Vitality section reveals two existing issues that continue to facilitate an increasing trend that hinders growth in economic vitality in the Region:

- Aging railroad bridges, most of which were constructed approximately 100 years ago, are narrow and many have bridge height restrictions. Also, the bridge alignment geometry of many railroad bridges is not aligned with the geometry of the intersecting road creating dangerous S-shaped horizontal curves with poor sight distance

- Many of the Route 2 interchanges, including the ramps, do not have the capacity to meet traffic volume demand. One new interchange in Athol has been proposed

Devens is an **EPA Smartway Affiliate Partner** that has connected numerous businesses directly to active rail lines by installing rail spurs. This helps to improve economic efficiencies and avoids unnecessary truck trips through the Region. Many types of organizations can become a **Smartway Affiliate Partner**.

Devens enforces the state's **Anti-Idling Law** and requires shore and auxiliary power technologies for freight operations. To enforce anti-idling laws, Devens has two requirements:

- It is included as a condition of approval in any development that requires compliance so that it can be enforced locally
- Projects are required to post signage at all loading docks to inform drivers

Devens partners with the State Police (contracted as the Devens Police Force) to assist with enforcement.

Over the past several years seven business in the Region have received project funding from the MassDOT **Industrial Rail Access Program (IRAP)**. On a cyclical basis, MassDOT solicits new candidate projects for funding under IRAP. IRAP accepts applications from freight rail-supported businesses across the state for projects to expand or improve rail or freight access that will support economic opportunity, safety, and job growth. MassDOT manages IRAP and typically solicits new candidate projects in the spring of each year.

Economic Vitality Recommendations

- Improve the narrow road and/or dangerous S-shaped horizontal curves and the height restrictions of the aging railroad bridges
- Improve Route 2 interchanges to meet current design standards and future traffic volume demand

Economic Vitality Action Items

- Encourage organizations in the Region to become EPA Smartway Affiliate Partners to improve freight sustainability
- Encourage organizations in the Region to apply for IRAP funded projects to expand or improve rail or freight access to support economic growth and safety
- Continue to seek to improve freight truck access on the RegionFCs, CUFCs, and CRFCs
- Continue to seek to improve external and internal freight truck access for the 10 Opportunity Zones
- Continue to seek a new interchange on Route 2 at South Athol Road in Athol
- Continue to seek to improve congested roads and bottleneck locations
- Continue to seek to safety improvement at High Crash Intersections and on At-Risk Road Segments
- Continue to seek to improve external and internal access to the regional recreational destinations
- MRPC will continue conducting freight corridor analyses

Congestion Trends

Pre-pandemic counts throughout the region showed a period of increased traffic. The proliferation of remote work and social activities during the pandemic have undoubtably changed future trends in travel. Still, congestion remains throughout the region, especially in areas highlighted in this section. Along with increased traffic comes heavier and more frequent periods of congestion. Many of the highlighted areas in this section have shown congestion for many years, especially during rush hour. It is important to mitigate congestion issues that exist, while continuing to monitor changes in our network.

Congestion Recommendations

It is important to prepare for increased traffic and congestion throughout the region. Investments must be well thought out and balanced with other needs such as investments in maintenance and expansion. The following recommendations are made to help prevent the spread of congestion in the region.

- Continue to monitor trends throughout the region.
- Continue to monitor emerging technologies such as autonomous vehicles and ride hailing services and the impact made on congestion throughout the region.
- Continue to profile areas of heavy congestion and make recommendations for improvements.

Congestion Action Items

1. Continue to monitor trends throughout the Region.
2. Continue to monitor emerging technologies such as autonomous vehicles and ride hailing services and the impact made on congestion throughout the Region.
3. Continue to profile areas of heavy congestion and make recommendations for improvements.
4. Work with MART and the MBTA to increase ridership in modes other than automobiles.

Transit Trends

As indicated in the review of the ridership figures during the pandemic years of 2020 to 2022, clearly show and illustrate the negative impacts being felt by MART as well as other RTAs across the nation. Ridership and its corresponding revenue figures have placed a major strain and burden on the transit system from fixed routes to commuter rail. Figures also indicate that trends are beginning to turn around and rebound from the lowest points of the pandemic.

Filling service gaps, meeting service needs, and increasing accessibility to residents continues to be a priority for MART. MART will continue to review its various transit routes and options as well as its facilities and rolling stock.

Transit Recommendations

In order to provide increased mobility for Region residents that do not own automobiles or that choose to be less dependent on a personal vehicle, MART will need to continue to refine and implement public transit programs designed to increase ridership. To accomplish this, it will be

necessary to examine the routes and schedules in order to determine the most efficient and effective services. Overcoming the negative effects of the COVID pandemic will be a continued long-range effort for the transit authority. MART remains open to expanding services wherever possible to fill service gaps, meet unmet regional needs and increase accessibility to health facilities and social services.

Where is becomes apparent that certain services are needed, MART should continue to work with those institutions to examine requests, organizational involvement, and ways to help defray the cost of the additional services. Continued participation of local industries, businesses, major shopping centers and schools in developing appropriate schedules, routes and promotional programs is an important part of this ongoing planning and implementation of services.

Special service provided to the elderly and the disabled will need to be closely monitored to insure continuation of appropriate levels of service. The continuation of brokerage programs with the Department of Public Health, Department of Developmental Services, MassHealth, Department of Mental Health, MRC, and MCB is of major importance and should remain a focal issue.

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. The present vehicle fleet is constantly being replaced with new lift equipped ADA compliant equipment. The Montachusett TIP process should continue to be utilized to upgrade and replace buses and vans for the MART fleet, as well as continue to upgrade maintenance facilities. Opportunities in the Bipartisan Infrastructure Law (BIL) provide an opportunity to replace existing vehicles with electric, net zero and energy efficient vehicles. Additionally, the supporting infrastructure needed to supply these new technologies should also remain a major goal for MART.

It is recommended that MART collaborate with municipalities to lift the age requirement on the Council on Aging public transportation vehicles in order to provide service to a larger

portion of the community. The Council on Aging van services could be expanded to operate on weekends and nights so that those who utilize the service have more scheduling opportunities.

It is recommended that MART continue to increase its social media presence to better promote services and information to the community. MART should continue to collaborate with local municipalities to promote available public transit options on the municipalities' websites and social media pages. It is also recommended that MART continue to disseminate information through traditional media like local newspapers, local access television, and radio while still improving its social media presence. Within the last RTP, it was recommended that MART hold periodic training sessions in order to teach users on how to read and follow bus schedules. The pandemic obviously derailed this initiative. Training videos were developed and placed on the web as part of their outreach efforts. However, in person outreach meetings should return as an outreach effort for the Transit Authority.

Most of the above actions are designed to improve efficiency and lower overall demand on the highway system. There remain several key and identifiable avenues by which the MART system can be both properly maintained and improved. They are:

Table 7-3: Transit Recommendations

RTA Projects Recommendations	Expected FY	Reason for Recommendation	Est Cost
Ridership Demographics Study	2023-2026	A large project involving MART and its Operating company to understand where the ridership is, where they want to go etc. in order to maximize mobility.	N/A
ITC Roof, Concourse & Stair Tower, Main Street - Fitchburg	2023-2024	3 Projects to modernize and rehabilitate the aging Intermodal Transportation Center (ITC)	$1,250,000
Rebranding Campaign	2023-2025	Standardization of agency image (Logo/Colors) across its portfolio of buildings and fleet vehicles	$400,000
Elevator Modernization	2023-2024	Upgrade original elevator components following an assessment. Project will have two phases and cover all 7 elevators/lifts across MART the portfolio.	$500,000
Hydrogen Fueling Station - FTA's Lo-No & Bus-Bus Facility Grant Submission	2024-2025	Infrastructure for Hydrogen Fueling station to make-ready the Water St. Facility for Hydrogen Fuel Cell (HFC) Zero Emission fleet vehicles	$5,000,000
ITC Parking Garage - Structural Repairs, Main Street - Fitchburg	2024-2025	Address original design flaws to ensure structural integrity and safety and to prolong the facility's life expectancy.	$950,000

Fuel Station Upgrades - Systemwide	2024-2025	Final fuel station upgrades so that the system will last through the final rollover of the combustion fleet vehicles as the fossil fuels are phased out for ZEV (Hydrogen & EV).	$235,000
North Main St. Parking Expansion - Leominster	2025	Additional parking at the new 840 North Main St. Facility in Leominster	$480,000
HVAC Replacement 1427R Water Street - Fitchburg	2025	Replace underperforming HVAC system at Administrative offices.	$400,000
EV Vehicle Charing Infrastructure - DOT-FHWA CFI Grant Submission	2025-2026	Infrastructure upgrades for Electric Vehicle Charging Stations, Solar Canopy, Battery Backup, and Utility hookup in order to make-ready the Water St. Facility for Electric Vehicle (EV) Zero Emission fleet vehicles	$8,000,000
ITC Atrium, Main Street - Fitchburg	2026+	Repurpose for public/governmental use the underutilized North Pod Atrium at the Intermodal Transportation Center	$680,000
ITC 2nd Floor 100 & 150 Main Street - Fitchburg	2026+	Refurbish existing open office space, improve layout, floor plan, and space use at the Intermodal Transportation Center.	$900,000
ITC New Garage Lighting & Protection Main Street - Fitchburg	2026+	New garage lighting with anti-bird features at the Intermodal Transportation Center	$200,000
ITC Asphalt Sealing & Restriping, Main Street - Fitchburg	2026+	Topcoat/resealing and striping of asphalt + concrete sealant at the Intermodal Transportation Center	$320,000
Wachusett Station, Fitchburg Commuter Rail Asphalt Resealing + Concrete Sealing & Striping	2026+	Topcoat/resealing and striping asphalt + concrete sealant at the Wachusett Rail Station	$380,000
NL Asphalt + Concrete Sealing & Restriping	2026+	Topcoat/resealing and striping asphalt + concrete sealant	$280,000
Mechanic/Bay Side Update with New Equipment - Gardner Facility	2026+	Update Mechanic Space, Floors, Painting, Wash Bay Epoxy, plus 2 new Post Lifts	$1,100,000
840 North Main St. Facility 2nd Floor Office Renovation - Leominster	2026+	2nd Floor Office Build Out and Refurbishment of Space for Better Utilization; to include Rehab of Bathrooms. An Assessment to determine a better layout to be conducted. Existing layout from a prior car dealership.	$900,000
ITC Generator Replacement, Main Street - Fitchburg	2026+	Replace generator that supports 150 Main Street facility. Old generator installed in 2005 at the Intermodal Transportation Center.	$120,000
840 North Main St. Facility Generator Replacement - Leominster	2026+	Replace generator that supports 150 Main Street facility. Old generator installed in 2005.	$120,000

Transit Action Items

- Continue 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 equipment such as radios, lift equipped trolleys, lift 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 disabled 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;
- Brokerage programs with Department of Public Health, MassHealth, Department of Mental Health, MRC, MCB, and Department of Developmental Services should be monitored for greater coordination and continued use of private enterprises.
- MAP Purchases for Elderly and Disabled Services (Section 5310).

The following are recommendations limited to commuter rail operations that likely effect the identified target populations.

- Increase available parking at the Shirley, Ayer and Littleton commuter rail stations.
- Extend train service to Gardner.
- Improve Handicapped accessibility at Shirley and Ayer Train Stations.
- Explore possibility of a Regional commuter rail facility in the Devens Enterprise Zone.

Environmental Trends

Climate change impacts such as global warming is expected to increase the frequency of precipitation and severity of weather events. It is important to anticipate the impact of such factors on transportation infrastructure.

Environmental Recommendations

The importance of the environment in the Region goes beyond just the moral responsibility to protect our planet. Natural resources and attractions which exist in the Region could also have economic benefits as well. Both the protection of our environment and the efficient connectivity of people to these assets should play a prominent role in transportation decision making now and in the future. Environmental Performance Measures set in this plan will help ensure progress continues to be made.

Environmental Action Items

1. Encourage the development of more projects which qualify for Congestion Mitigation and Air Quality (CMAQ) funds.
2. Maintain the prevalence of environmental factors when reviewing and prioritizing transportation projects.
3. Continue to monitor and assess vulnerable infrastructures.
4. Continue to promote opportunities for infrastructure upgrades through our local, state and federal partners.

Public Outreach Trends

Overall, the bulk of the survey respondents did not have a significant change in their transportation habits in relation to pre vs post pandemic and there were a lot of respondents who were seniors and/or retired so this may have impacted the outcome. Each community seems to have unique transportation needs. A lot of the survey responses focused on the need for more transportation infrastructure improvements, concerns with safety and improvements/increased transit options. It seems that transportation alternatives are still needed and the ones that currently exist may not meet the needs of most of the survey respondents. Based on feedback that we received from the Meeting in a Box forum, there are a lot of folks who use the senior center vans because they are a convenient door-to-door service. The issue is that there is not enough capacity to provide services to all residents.

Public Outreach Recommendations

Even though the outreach that was conducted for this Regional Transportation Plan was extensive, more attention could be considered to the special population groups in order to continue with the equity needs and goals of the Region. It is also clear that further analysis should be done for transportation alternatives such as senior services and on demand transportation services.

Public Outreach Action Items

- Continue to include various special populations and groups in the outreach efforts to ensure that a broad range of needs are identified and met
- Continue to expand on the outreach efforts by further developing the outreach contact lists

Equity Trends

After analyzing the types of projects being implemented, it seems that the majority of highway projects continue to consist of improvements to already existing infrastructure (ex. roadway resurfacing and rehabilitation, and bridge repair) as opposed to building new facilities and therefor do not bear an undue burden or benefit as compared to the rest of the region. These types of projects allow for smoother navigation through these areas (by personal vehicle, bicycling, walking or public transit) and provide improved access for commuting.

The Region continues to make strong connections with Title VI and EJ populations through email communication and meeting attendance. This pattern continues to increase, yet with the pandemic, public meetings seem to have slowed down. This is both a benefit and a burden where there appears to be more attendance for virtual meetings but participation and public input does not seem to have increased. It is hoped that involvement will show signs of increasing as time goes on.

Equity Recommendations

The MRPC continues to strive to solicit meaningful participation with Title VI and EJ populations through their Public Participation Plan, Limited English Proficiency Plan, and its submittals to MassDOT and the Federal transportation agencies through the Title VI. For this planning document there was extensive outreach to the EJ and Title VI populations by both daytime and evening meetings with locations along the public transportation routes, contacted public service agencies, online surveys, and were included as meeting topics during other agency meetings. With that being said, there is always room for improvement.

Equity Action Items

- Advance the outreach process by making stronger connections with Title VI and Environmental Justice type organizations and individuals.
- Continue to coordinate with local communities/organizations/advocates to monitor and address issues as they relate to identified target populations.
- Expand our mailing list to include other Title VI and EJ populations and organizations.
- Continue to monitor and advocate for TIP projects that show a benefit to Title VI and EJ areas.

Identified Infrastructure Needs

Through the development of the previous RTP, several projects or needs were identified. Some of these are relatively large in terms of scope, design and cost. The identified projects in the table below will likely entail several years of study, public outreach and design before implementation.

Table 7-4: Identified Infrastructure Needs

Community	Location	Description
Athol	Route 2 at S. Athol Road Interchange	Access
Athol, Phillipston	Route 2 Lane Addition	Capacity
Fitchburg	Route 31 RR Bridge	Access
	Wachusettn Station Improvements	Complete Streets, access
	Route 2 at Mt. Elam Road	Safety, GHG
Lancaster	Route 117 at Bolton Flats	Drainage upgrades
Leominster	Route 2 at Route 13 Interchange	Safety, GHG

	Route I190 & Route 2 Interchange	Capacity, safety
Leominster/Fitchburg	Merriam Ave/South Street Corridor	Capacity, GHG

Statewide Trends & Recommendations

National Electric Vehicle Infrastructure Program Deployment Plan (NEVI Plan) for Massachusetts

"… is the framework for Massachusetts to expand its electric vehicle (EV) highway fast charging network through the National Electric Vehicle Infrastructure Program established by the Infrastructure Investment and Jobs Act (IIJA). Consistent with the intent of the NEVI Program, this plan focuses on direct current fast charging (DCFC) infrastructure serving long-distance travel corridors, specifically Massachusetts' federally designated EV Alternative Fuel Corridors." Link to the plan: **NEVI Plan for Massachusetts**

Based on the findings established in the *Commission on the Future of Transportation in the Commonwealth, Choices for Stewardship: Recommendations to Meet the Transportation Future Volume 1* report, the following key challenges and recommendations were identified:

- Technology, mainly electrified autonomous vehicles and other transportation technologies, are inevitable. According to the study, these new developments "have the potential to improve safety, speed and efficiency, expand mobility options; and reduce greenhouse gas emissions – if they are harnessed property and managed prudently."
- A population that is growing at a rapid rate and is expected to add 600,000 more residents by 2040 will certainly be a challenge. An increasing aging population, in addition to the overall population growth, is even more challenging.
- The transportation system is inequitable. "Those who do not or cannot own or drive a car – due to youth or age, physical or developmental disability, or financial realities – spend more time and money commuting and sometimes simply cannot get where they need to go, especially in the rural and low-density areas."
- Transportation needs vary across the Commonwealth and its communities.
- More trips are made in personal vehicles in which the driver is the only occupant. To operate more efficiently, the transportation system needs to move more people in

fewer vehicles. Increasing the availability and utilization of public transit and increasing the number of vehicles with more than one passenger would assist in this effort.

- Transportation systems are generally driven by development patterns not vice versa. Addressing development and land use patterns will aid in transportation challenges.
- The transportation sector is the largest and fastest growing contributor of GHGs. The goal of the Commonwealth is to reduce overall GHG emissions 80 percent by 2050 and to do so, transportation must play a key role.
- New transportation infrastructure must be well-thought-out with climate change in mind and existing infrastructure will need to be retrofitted over time to withstand sea level rise, more frequent and violent precipitation, and hotter summers.
- Prioritize and pay for needed investments – the Commonwealth must prioritize maintenance, modernization and expansion of its transportation system in order to create, operate and maintain a 21st century transportation system.

Other Statewide Recommendations

"Grouped into five thematic categories, the Commission has made 18 recommendations for how to best prepare Massachusetts' transportation network for the challenges and opportunities of 2040…"

The five thematic categories are:

1. Modernize existing state and municipal transit and transportation assets to more effectively and sustainably move more people throughout a growing Commonwealth:
2. Create a 21st century "mobility infrastructure" that will prepare the Commonwealth and its municipalities to capitalize on emerging changes in transportation technology and behavior;
3. Substantially reduce greenhouse gas emissions from the transportation sector in order to meet the Commonwealth's Global Warming Solutions Act (GWSA) commitments, while also accelerating efforts to make transportation infrastructure resilient to a changing climate;

4. Coordinate and modernize land use, economic development, housing, and transportation policies and investments in order to support resilient and dynamic regions and communities throughout the Commonwealth; and
5. Make changes to current transportation governance and financial structures in order to better position Massachusetts for the transportation system that it needs in the next years and decades.

The 18 recommendations include –

1. Prioritize investment in public transit as the foundation for a robust, reliable, clean and efficient transportation system.
2. Transform roadways and travel corridors to move more people and support changing travel modes and technologies.
3. Work with multiple stakeholders to better manage today's traffic congestion – and the congestion challenges of the future.
4. Establish a Commonwealth Transportation Technology Transformation Initiative (T3I) to promote solutions to our most complicated transportation issues and build upon our reputation in transportation innovation and technology.
5. Support and accelerate efforts to consume transportation differently.
6. Enable and promote a statewide telecommunications infrastructure to support the availability of real-time transportation information and deployment of connected and autonomous vehicles.
7. Develop a long-term strategy for supporting connected and autonomous vehicles in Massachusetts.
8. Enable and promote a ubiquitous electric charging (and/or alternative fuel) infrastructure to support the widespread deployment of electric and autonomous vehicles.
9. Establish a goal that beginning in 2040, all new cars, light duty trucks, and buses sold in Massachusetts will be electric or use another technology that meets the same emissions standards.

10. Collaborate with other Northeast and Mid-Atlantic states to establish a regional, market-based program to reduce transportation sector greenhouse gas (GHG) emissions.
11. Make all current and future critical state and municipal transportation infrastructure resilient to a changing climate.
12. Ensure that sufficient electric capacity is available to provide reliable, clean, and competitively priced power supplies for all electricity users as electrification of the transportation sector accelerates.
13. Adopt land use policies and practices that support more dense, mixed-use, and transit-oriented development (TOD).
14. Use land use, economic development, and transportation policies and investment to enable Gateway Cities and the regions they anchor throughout the Commonwealth to compete for the growing number of residents and jobs.
15. Coordinate the planned reinvention of the MBTA commuter rail system with local, regional, and state land use and economic development strategies to maximize the ridership and economic benefits of the reinvented system.
16. Provide better mobility options in rural communities through reimagined public transportation, community transportation services, and public/private partnerships.
17. Prepare MassDOT and other transportation-related entities to effectively oversee a changing transportation system.
18. Develop a fiscally sound and responsible transportation resource plan to operate, maintain, and upgrade the transportation system.

8

Planning Scenarios

Planning Scenarios

Introduction

The 2020 Montachusett RTP utilized scenario planning as a method to chart out future expenditure for the region. These scenarios were based on a work undertaken by a state commission on the future of transportation as well as local input derived from past surveys and public workshop feedback. Based on the past success of this type of long-term planning, the scenario planning method will be the focus of this plan.

A past trend comparison will attempt to identify successes or shortcomings since the prior RTP. In addition, feedback from 2022-2023 public survey and workshops will be utilized to support or revise funding assumptions associated with the planning scenarios.

2020 Montachusett RTP Planning Scenarios

A. Commonwealth of Massachusetts

Executive Order No. 579 established the Commission on the Future of Transportation in the Commonwealth. This Commission was charged with examining issues related to transportation in Massachusetts in the year 2040. Five key trends identified for consideration by the Commission included: "changing demographics; a more volatile climate; disruptive technological advances; increased electrification; and a higher level of automation." In response to this Executive Order, the Commission compiled and released a report entitled "*Choices for Stewardship: Recommendations to Meet the Transportation Future*." Based on a review and analysis of trends in the state and in transportation, four scenarios were developed and considered by the Commission. These scenarios are summarized in the following section. For additional information regarding the state and regional planning scenarios, please refer to chapter 8 of the 2020 Montachusett RTP.

1. Scenario 1 – Gridlock

Headline - The fast growth of Boston and its surrounding municipalities has continued, but without expansion of existing transportation capacity.

Summary - Jobs and housing continue to grow primarily in the Greater Boston region (GBR). However, employers are frustrated with Boston's high-density commercial and housing environment, and its residents, who once embraced city-oriented life, are discouraged by traffic congestion and unreliable and inconsistent public transit service…. These issues are causing residents and employers to look for opportunities outside of the GBR and the state in general. Other regional job hubs in the state face the same threats as the GBR…. uneven adoption of transportation technologies and new mobility services exacerbates congestion, GHG emissions, social inequities, and conflicts between public, private, and new mobility transportation services.

2. Scenario 2 – Vibrant Core

Headline - The GBR continues to grow, supported by new transportation technologies and systems that facilitate the success of a vibrant and livable metro region.

Summary - Jobs and housing growth continues primarily in Boston's core and close-in communities, especially those with MBTA service. With employers who still value face-to-face interaction over remote work environments and a society that embraces city-oriented life, the GBR has absorbed most of the state's jobs and population growth while some rural communities located farther away from Boston shrink as they continue to lose population. …the cost of housing and commercial property pushes some people and businesses to more affordable areas farther from the Boston-centric core, …. growing the footprint of the urban core to Rt 495 and beyond. The adoption of technology advances …. support a vibrant, livable, and mobile core on target to meet GHG and related goals. Reliable public transit and micro-mobility options provide trips around the core and beyond.

3. Scenario 3 – Multiple Hubs

Headline - High-density growth takes place in several cities and their regions throughout the Commonwealth. Increased density and expanded mobility options create the opportunity to take advantage of lower cost housing and promotes job creation outside of the GBR core.

Summary - Jobs and housing growth happen in regional hub cities with their own economies, cultural identities, histories, and challenges. This dispersed growth occurs because the GBR and Boston itself is crowded, expensive, vulnerable to extreme weather, and hard to traverse. The commercial and housing development generally concentrates in the core of the regional hub cities and also drives growth in less dense suburbs. …. Outside of these regions, adoption of new transportation technologies and new mobility options is more limited due to longstanding infrastructure challenges and the aging of populations in rural and low-density communities. Because economic development is distributed throughout the state, most rural communities are not far from opportunities for jobs, education, shopping, healthcare, etc.

4. Scenario 4 – Statewide Spread

Headline - Technology has transformed not just transportation but every aspect of people's lives, including work, communication, commerce, and service delivery. This widespread use of technology allows for more choice for those with access to technology, while potentially disadvantaging others.

Summary - Jobs and housing growth are spread across the state in communities of all sizes and types as the importance of physical location has diminished via increased reliance on telecommunications networks. However, reliance on ride and vehicle sharing including… public transit is low outside of the GBR and other regions with a critical mass of people and jobs which is a result of the marginal cost of running transit service remaining high in those areas against increasingly more affordable C/AVs and EVs. …. Climate change makes many areas unviable for residents and businesses, but new connections are forged between regions as population spreads out. Social equity is

an increased concern as many workers displaced by technology face ongoing high rates of unemployment; and seniors and others with more limited mobility options are "stranded" in place, needing access to affordable housing and transportation to critical services and jobs.

B. Montachusett Scenarios

After a review of scenarios developed by the Commonwealth, MRPC staff developed some scenarios based on the general concepts put forward by the Commission but more applicable to the region's trends and communities. From an analysis of the trends identified in the 2020 RTP, the plan's Vision, Goals, Objectives and Strategies, three different regional scenarios were compiled. Along with the broader concepts of each scenario, a list of applicable funding options and concepts were also developed. These funding options are based upon input derived through the outreach process for the 2020 RTP. By tying program funding options to the scenario concepts, a financial plan was developed and evaluated. The Montachusett scenarios are summarized as follows.

Montachusett Scenario Development Process

1. <u>Scenario 1 – Status Quo</u>

Scenario 1 relates to the Statewide Scenario 1 – Gridlock in that growth is expected to continue in the Greater Boston region without any expansion of transportation capacity. Within the Montachusett Region, communities will continue the approach of addressing network problems as they arise. Municipalities lack funding that would allow them to pro-actively identify and implement projects in order to offset impacts associated with the growth in the eastern part of the state. Unable to actively fund the needed designs required as part of the project

development process in a timely fashion, most communities must allocate funds over several years in order to see one project advance. Consequently, deterioration continues across the transportation networks leading to more complicated and costly improvement projects. This scenario assumes that conditions remain as is, i.e. the "Status Quo."

Headline - *Population* and household growth continue while employment continues to decline in the Montachusett Region. No changes or expansions are planned or made to the existing transportation systems.
Description - By 2040 employment has declined across the region as employers find in difficult to attract perspective workers due to limited commercial options. Households increase as a result of the advantages housing costs of the Montachusett Region, and the commuter rail option offered by the MBTA Fitchburg Commuter Rail line. The problems associated with the existing system remain as any growth adds to current congestion, safety and accessibility issues.

2. Scenario 2 – Multiple Hubs

This Scenario assumes that within the Montachusett Region, the municipalities that are the current major commercial, industrial and employment centers continue in that role much like Scenario 3 developed by the MA Future Transportation Commission. As growth spreads from the Boston region, communities expand their housing options and seek to retain their rural, small community characteristics and lifestyles. In order to do this, they will seek to improve and expand their connections to the existing commercial and employment centers or "regional hubs." Thus, the focus is on "inter-community" connections, i.e. longer distance roads and networks that facilitate travel between communities. This assists residents as they seek out employment or goods but still maintain the "laid back" rural lifestyle. Transportation funding under this Scenario puts a greater emphasis on improving and maintaining their long distance, major roads and networks. Roads such as Route 12, Route 119, etc. facilitate the flow of residents to jobs and goods, therefore, the need to keep these "inter-community" networks efficient and viable.

Headline - Growth takes place across the Montachusett Region as well as throughout the Commonwealth. Expanded mobility options create the opportunity to take advantage of housing costs and expanded markets outside of the Greater Boston core which includes Montachusett Region cities and towns. The region's larger, more urban communities, i.e., Fitchburg, Leominster, Gardner, Athol and Clinton, remain the major commercial and employment destinations for the more rural communities. Longer distance commutes to Boston and Worcester continue.
Description - More dispersed growth occurs in the Montachusett Region because Greater Boston, and Boston itself, is crowded, expensive, vulnerable to extreme weather, and difficult travel. Greater Worcester also shares similar traits to a lesser extent. This results in Montachusett Region cities being transformed into regional hub cities and several towns into hub towns. This is also due to the supply of relatively affordable business and residential real estate in relation to Greater Boston and Greater Worcester. As a result, travel between communities and regional hubs are an emphasis area for transportation investments in order to facilitate inter-community movement.

3. Scenario 3 – Strong Community Centers

Scenario 3 assumes that each community within the Montachusett Region would seek to grow and enhance their own particular municipality through the improvement of transportation networks within their boundaries. Emphasis would be place on developing a strong town center area or destination that supports the commercial and employment needs of their citizens. As in the prior scenario, growth spreads from the Boston region and communities seek to expand their housing and employment options in order to attract new residents and retain their current ones. To do this, transportation investments focus on "intra-community" facilities rather than those systems that would take individuals out of the community to shop, work, etc. By prioritizing the travel needs within their existing borders, strong town or community centers can be obtained.

As with Scenario 2, this Scenario would also make use of the preferred emphasis of Montachusett Federal Aid Target funds as outlined above, i.e., the emphasis funding categories and their percentage of emphasis remain the same. To advance the projects that meet the needs of Scenario 3, each of the listed and identified funding strategies are broken down further to ensure a majority of the strategy funds goes towards advancing "intra-community" projects and networks.

Headline - Growth takes place across the Montachusett Region as well as throughout the Commonwealth. Expanded mobility options create the opportunity to take advantage of housing costs and expanded markets outside of the Greater Boston core which includes Montachusett Region cities and towns. The region's communities take advantage of these conditions by seeking to upgrade and improve travel within their communities and in particular to their town centers which are typically the major commercial and employment centers.
Description - More dispersed growth occurs in the Montachusett Region because Greater Boston, and Boston itself, is crowded, expensive, vulnerable to extreme weather, and difficult travel. Greater Worcester also shares similar traits to a lesser extent. This results in Montachusett Region municipalities improving mobility within their communities in order to foster growth in housing, commercial and where appropriate employment centers. Improved, safer intra-community networks result in a more vibrant town center for all populations. Travel within communities is an emphasis area for transportation investments in order to facilitate and continue community growth.

Funding Analysis of Projects vs. Planning Scenarios

A. Scenario Funding Breakdown Across Federal Project Categories

1. Scenario 1 – Status Quo

An examination of Federal Aid eligible Target projects from Montachusett MPO Endorsed TIPs that span FFY 2010 to 2020, when categorized based on 2020 RTP survey descriptions, shows that of the funds programmed, approximately 66% went towards Road Maintenance & Infrastructure, 13% towards Safety and 11% towards Pedestrian & Bicycle Facilities. No funds were defined as supporting Transit Options and Regional or Community Access. This therefore became the funding preference under Scenario 1 – Status Quo.

2020 RTP Scenario 1 Preferred Funding Option

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

Source: Montachusett 2020 RTP - Working Towards the Future

2. Scenario 2 – Multiple Hubs (Inter-Community)

As stated in the 2020 RTP, a preferred emphasis of Montachusett Federal Aid Target funds was identified. To advance projects that would meet the needs of Scenario 2, each of the listed funding strategies were then broken down further to ensure a majority of the strategy funds goes towards advancing "inter-community" projects and networks. This results in a funding strategy breakdown as follows:

2020 RTP Scenario 2 Preferred Funding Option

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

Source: Montachusett 2020 RTP - Working Towards the Future

3. Scenario 3 – Strong Community Centers (Intra-Community)

As with Scenario 2 above, this Scenario would also make use of the preferred emphasis of Montachusett Federal Aid Target funds as outlined in the 202 RTP. The overall emphasis of funding categories and percentage remains the same. However, to advance the projects that meet the needs of Scenario 3, each of the listed and identified funding strategies were broken down further to ensure a majority of the strategy funds would go towards advancing "intra-community" projects and networks. This results in a funding strategy for Scenario 3 similar to Scenario 2. The difference would be seen in the TIP process by the types of projects prioritized and funded.

2020 RTP Scenario 3 Preferred Funding Option

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

Source: Montachusett 2020 RTP - Working Towards the Future

B. Federal Funding Programs vs. 2020 RTP Strategies

Projects or Federal funding categories that can meet the 2020 and 2024 RTP identified strategies include but are not limited to the following types:

Strategy	Project Funding or Type
Road Maintenance & Infrastructure	STBG • Resurfacing • Rehabilitation • Full Depth Reconstruction • Box Widening • Geometric Improvements
Safety	HSIP • Signal Installation/Upgrade • Roundabout Construction • Pavement Markings/Signage • Guardrails • Geometric Improvements
Pedestrian & Bicycle Facilities	TAP • Trail Construction - On & Off Street • Sidewalks • Benches & Bike Racks/Shelters • Trail Signage & Markings

Strategy	Project Type
Congestion Relief	• Intersection Improvements • Corridor Improvements • Interchange Upgrades • Signal Re-Timing
Transit Options	• On Street Bus Cutouts • Sidewalk Improvements on/to Bus Routes • Sidewalk Improvements on/to Commuter Rail • ADA Access Improvement • Rolling Stock (Bus/Van)
Regional Access	• Major Highway Resurfacing/Improvements • Signage Upgrades • Accel/Deccel Lane Improvements

Strategy	Project Funding or Type
Complete Streets	STBG • Widening for Bike & Ped Lanes • Sidewalks • Crosswalks • Ped Signals • ADA Upgrades & Improvements
Climate Change & Environment	CMAQ • Congestion Reduction • Air Quality Improvements • Signal Re-Timing • Stormwater Runoff • Drainage Improvements • Catch Basin Installation

Strategy	Project Type
Community Access	• Signage Upgrades • Resurfacing • Geometric Improvements • Sidewalks
Other	• Safe Routes to School

Source: Montachusett 2020 RTP - Working Towards the Future

C. Project Review from TIP FFYs 2020 to 2027

Target projects were reviewed from the individual TIPs that covered the time frame from FFY 2020 to 2027. This review showed the following breakdown by funding category along with their estimated project costs. It should be noted that many of the examined projects cross several improvement categories. Road Maintenance and Infrastructure projects will often include improvements that can be identified or categorized as Complete Streets, Pedestrian & Bicycle Facilities, Safety, Congestion Relief, etc. improvement. This type of micro-analysis was not done due to the difficulty in identifying such elements within a larger project as well as trying to assign a cost factor to such work. Therefore, the TIP project description and federal funding category were used as the determining factor for assignment to a Planning Scenario category.

FFY 2020 to FFY 2027 Project Categorization Analysis

	Federal Funding Program				
	STBG	CMAQ	HSIP	TAP	Total
FFY 2020-2024 Target Breakdown	$45,180,825	$3,635,255	$2,653,189	$1,165,335	$52,634,604
Percent of Total $	*85.84%*	*6.91%*	*5.04%*	*2.21%*	
FFY 2021-2025 Target Breakdown	$43,593,630	$5,059,681	$3,858,312	$253,701	$52,765,324
Percent of Total $	*82.62%*	*9.59%*	*7.31%*	*0.48%*	
FFY 2022-2026 Target Breakdown	$49,507,429	$2,299,122	$3,446,775	$143,458	$55,396,784
Percent of Total $	*89.37%*	*4.36%*	*6.53%*	*0.27%*	
FFY 2023-2027 Target Breakdown	$58,063,768	$0	$1,243,291	$138,144	$59,445,203
Percent of Total $	*97.68%*	*0.00%*	*2.09%*	*0.23%*	
FFY 2020-2027 TOTALS	**$196,345,652**	**$10,994,058**	**$11,201,567**	**$1,700,638**	**$220,241,915**
Percent of Total $	***89.15%***	***4.99%***	***5.09%***	***0.77%***	

Source: MPO Endorsed TIPs Covering FFY 2020 to FFY 2027

D. Programmed TIP Projects from FFY 2010 to 2027versus 2020 Planning Scenarios

1. <u>2024 RTP Scenario 1 – Status Quo Analysis</u>

An examination of Federal Aid eligible Target projects from Montachusett MPO Endorsed TIPs that span FFY 2010 to 2027, when categorized based on 2020 and 2024 RTP survey descriptions, shows that of the funds programmed, approximately 79% went towards Road Maintenance & Infrastructure, 8% towards Safety and 5% towards Pedestrian & Bicycle Facilities. No funds were defined as supporting Transit Options, Regional Access or Community Access. The total programmed funds include the amounts shown in the above Section 1. A. Scenario 1 - Status Quo and Section C. Project Review from TIP FFYs 2020 to 2027.

2024 RTP Scenario 1 Status Quo Funding Option

Average Percent of Total Funding Per Category FFY 2010 to FFY 2027		
Road Maintenance & Infrastructure	$304,011,816	79.21%
Safety (High Crash Locations)	$32,200,851	8.39%
Pedestrian & Bicycle Facilities	$19,092,880	4.97%
Complete Streets	$9,744,916	2.54%
Climate Change & Environment	$15,242,946	3.97%
Congestion Relief	$3,494,626	0.91%
Transit Options		
Regional Access		
Community Access		
Totals	**$383,788,035**	**100.00%**

Source: MPO Endorsed TIPs Covering FFY 2010 to FFY 2027

This revised funding breakdown shown in the above table therefore becomes the 2024 RTP funding preference identified as Scenario 1 – Status Quo.

2. 2024 RTP Scenario 2 – Multiple Hubs (Inter-Community) and 2024 RTP Scenario 3 Strong Community Centers (Intra-Community) Analysis

Looking back at the results of the 2024 RTP Public Survey, and in particular, Question 11 that asked respondents to "Rank in importance from 1 (most important) to 10 (least important), the following issues that need to be addressed in your travels over the next 25 years.", the ranking of the issues changed from what was determined by the 2020 RTP survey.

In 2020, survey responses placed the issues in the following order of importance:

2020 RTP Survey Response Results

Issue	2020 RTP Rank
Road Maintenance & Infrastructure	1
Transit Options	2
Pedestrian & Bicycle Facilities	3
Safety - High Crash Locations	4
Climate Change & Environment	5
Congestion Relief	6
Complete Streets	7
Regional Access	8
Community Access	9
Other	10

Results from the 2024 RTP survey, placed the identified issues in the following order of importance:

2024 RTP Survey Response Results

Issue	2024 RTP Rank
Road Maintenance & Infrastructure	1
Safety - (Road & Highways)	2
Transit Options	3
Congestion	4
Pedestrian & Bicycle Facilities	5
Economic Development	6
Climate Change & Environment	7
Residential Development	8
Improved Town Center	9
Changing Demographics	10

For a direct comparison of the two survey results, please note that issue titles are not completely identical between the surveys. They can be matched up based on the overall assumption of the issue or strategy. Therefore, please refer to the table listing below.

2020 RTP Survey vs. 2024 Survey Response Results

Rank	2024 Issue Label (2020 Issue Label)	2020 RTP Rank	2024 RTP Rank	Change
1	Road Maintenance & Infrastructure	1	1	NC
2	Safety - Road & Highways (High Crash Locations)	4	2	+2
3	Transit Options	2	3	-1
4	Congestion (Relief)	6	4	+2
5	Pedestrian & Bicycle Accessibility (Facilities)	3	5	-2
6	Economic Development (Regional Access)	8	6	+2
7	Climate Change & Environment	5	7	-2
8	Residential Development (Community Access)	9	8	+1
9	Improved Town Center (Regional Access)	7	9	-2
10	Changing Demographics (Other)	10	10	NC

The most significant changes can be seen in the ranking of Safety, Congestion, and Economic Development. Each issue moved up in importance 2 slots from the 2020 survey. Similarly, Pedestrian & Bicycle Accessibility, Climate Change & Environment and an Improved Town Center dropped 2 slots in importance. Most significant when discussing the Planning Scenarios

for this RTP is the increased focus and importance to users of the transportation network on Safety and Congestion.

3. 2024 RTP Planning Scenario Adjustments

Based upon the planning survey results, adjustments were made to the preferred funding option ranking, however, the actual percentage splits remained unchanged.

2024 RTP Scenario 2 Multiple Hubs (INTER - Community) Preferred Funding Option

	Funding Percentage Per Strategy Federal Aid Target Funds Scenario 2 – Multiple Hubs	Total Allocation % to Funding Category	Allocated % Funding Towards INTER Community Network	Allocated % Towards Remaining Projects
1	Road Maintenance & Infrastructure	40%	30%	10%
2	Safety - Road & Highways	14%	10%	4%
3	Transit Options	12%	10%	2%
4	Congestion	9%	7%	2%
5	Pedestrian & Bicycle Accessibility	6%	4%	2%
6	Economic Development	4%	3%	1%
7	Climate Change & Environment	5%	3%	2%
8	Residential Development	5%	5%	0%
9	Improved Town Center	4%	4%	0%
10	Changing Demographics	1%	1%	0%

2024 RTP Scenario 3 Strong Community Centers (INTRA - Community) Preferred Funding Option

	Funding Percentage Per Strategy Federal Aid Target Funds Scenario 3 – Strong Community Centers	Total Allocation % to Funding Category	Allocated % Funding Towards INTRA Community Network	Allocated % Towards Remaining Projects
1	Road Maintenance & Infrastructure	40%	30%	10%
2	Safety - Road & Highways	14%	10%	4%
3	Transit Options	12%	10%	2%
4	Congestion	9%	7%	2%
5	Pedestrian & Bicycle Accessibility	6%	4%	2%
6	Economic Development	4%	3%	1%
7	Climate Change & Environment	5%	3%	2%
8	Residential Development	5%	5%	0%
9	Improved Town Center	4%	4%	0%
10	Changing Demographics	1%	1%	0%

2024 RTP Planning Scenarios

From the review and analysis conducted above, three viable Planning Scenarios for this 2024 version of the Montachusett Regional Transportation Plan (RTP) can be summarized as follows.

A. Scenario 1 – Status Quo

Distribution of funds are based upon infrastructure needs as they develop through the TIP process with no particular emphasis on one transportation issue over another. Funds are programmed based upon status and not through planning options developed by the regional communities.

2024 RTP Planning Scenario 1 – Status Quo

Funding Percentage Per Strategy Federal Aid Target Funds Based on Prior TIP Covering FFY 2010 to FFY 2027	Total Allocation % to Funding Category	
Road Maintenance & Infrastructure	79%	79.21%
Safety - Road & Highways	8%	8.39%
Pedestrian & Bicycle Accessibility	5%	4.97%
Climate Change & Environment	4%	3.97%
Improved Town Center	3%	2.54%
Congestion	1%	0.91%
Transit Options		
Economic Development		
Residential Development		
Changing Demographics		

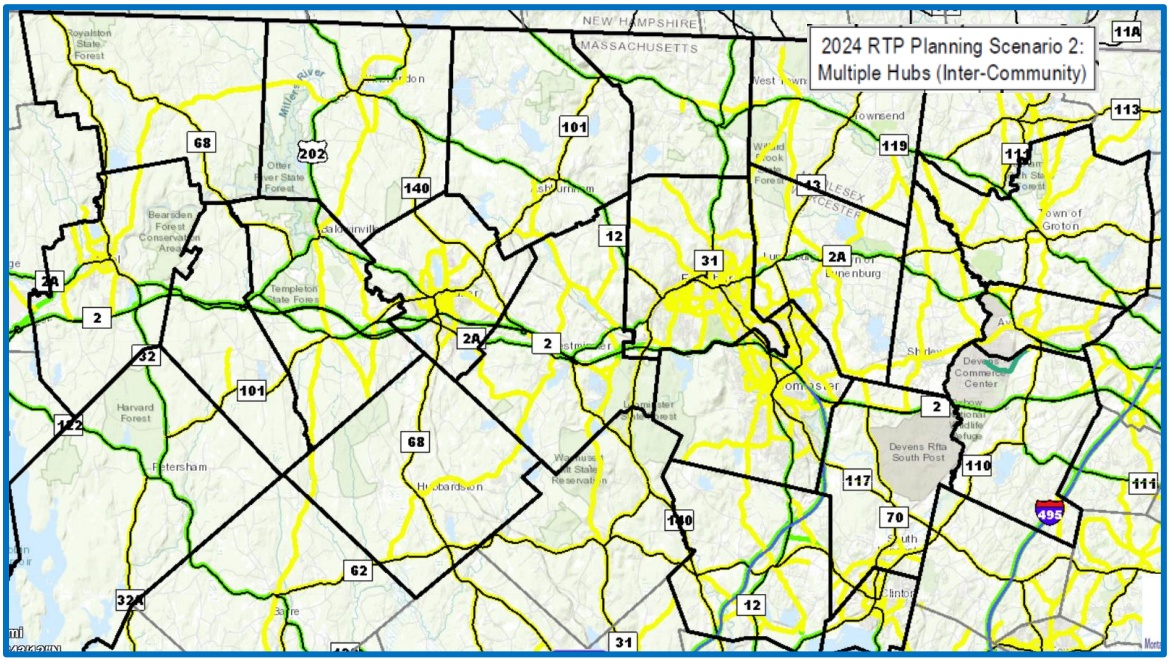
B. Scenario 2 – Multiple Hubs (Inter-Community)

Funding distribution is based on a community that wishes to maintain and improve connections between communities. This advances the concept of traditional residential, industrial, commercial, etc. centers that exist across the region maintain those characteristics. Communities are comfortable with their current role and are looking to make access to needed services outside of the town borders easier and more efficient for their residents. To advance this strategy, funding options should follow the following breakdown:

2024 RTP Scenario 2 - Multiple Hubs (INTER - Community)

Funding Percentage Per Strategy Federal Aid Target Funds Scenario 2 – Multiple Hubs	Total Allocation % to Funding Category	Allocated % Funding Towards INTER Community Network	Allocated % Towards Remaining Projects
Road Maintenance & Infrastructure	40%	30%	10%
Safety - Road & Highways	14%	10%	4%
Transit Options	12%	10%	2%
Congestion	9%	7%	2%
Pedestrian & Bicycle Accessibility	6%	4%	2%
Economic Development	4%	3%	1%
Climate Change & Environment	5%	3%	2%
Residential Development	5%	5%	0%
Improved Town Center	4%	4%	0%
Changing Demographics	1%	1%	0%

2024 Planning Scenario 2 Multiple Hubs (INTER - Community) Illustration



C. Scenario 3 Strong Community Centers (Intra-Community)

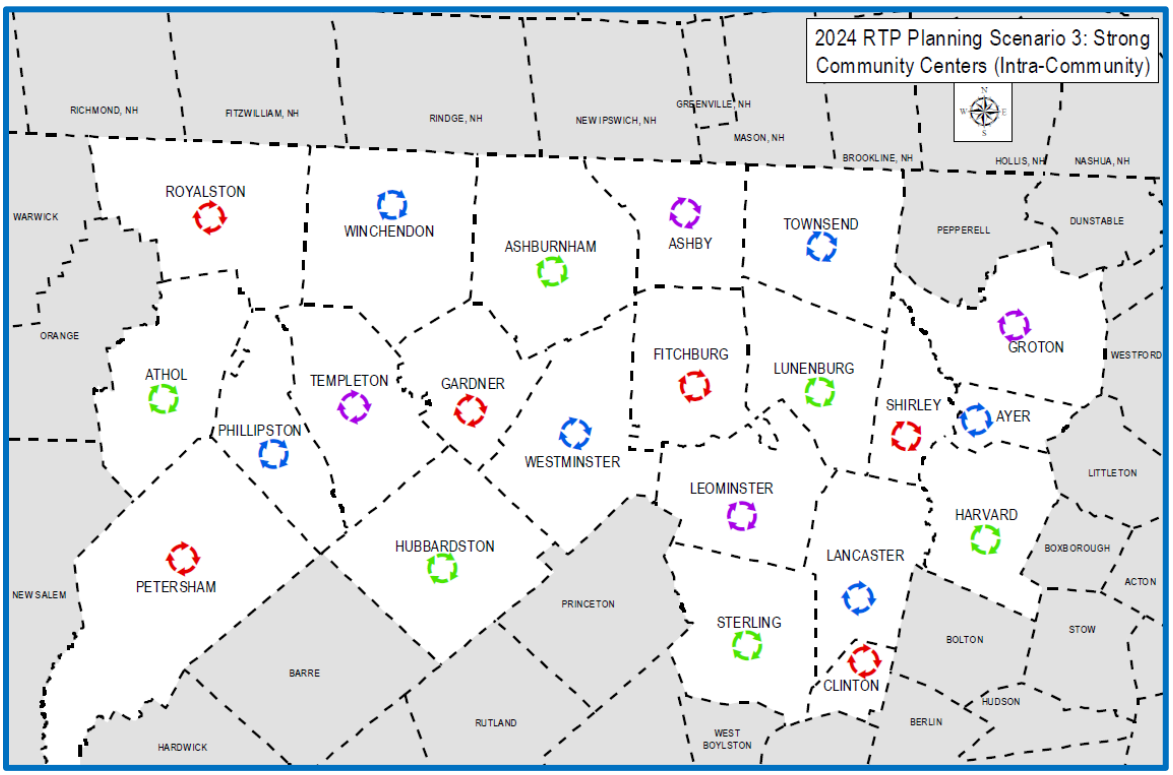
For this planning scenario, communities are interested in the expansion of all services within their town boundaries that can and will serve the needs of their residents. Access within the municipality is emphasized in order to attract or maintain commercial, industrial, residential,

etc. development. The overall goal of this scenario is to allow communities to provide their residents with all of the services they require.

2024 RTP Scenario 3 - Strong Community Centers (INTRA - Community)

Funding Percentage Per Strategy Federal Aid Target Funds Scenario 3 – Strong Community Centers	Total Allocation % to Funding Category	Allocated % Funding Towards INTRA Community Network	Allocated % Towards Remaining Projects
Road Maintenance & Infrastructure	40%	30%	10%
Safety - Road & Highways	14%	10%	4%
Transit Options	12%	10%	2%
Congestion	9%	7%	2%
Pedestrian & Bicycle Accessibility	6%	4%	2%
Economic Development	4%	3%	1%
Climate Change & Environment	5%	3%	2%
Residential Development	5%	5%	0%
Improved Town Center	4%	4%	0%
Changing Demographics	1%	1%	0%

2024 Planning Scenario 3 Strong Community Centers (INTRA - Community) Illustration



D. Example Projects That Support Preferred Planning Scenarios

The following is a listing of roadways, intersections, trails, sidewalks, etc. that could support one of more of the identified concepts of Scenarios 2 and 3. This listing is based upon data from this RTP but is not to be considered complete. They are identified as a way to provide a municipality with an idea of what type of project would be beneficial to the community if they wished to advance the Multiple Hubs (Inter-Community) or Strong Community Center (Intra-Community) Planning Scenario.

1. 2024 RTP Funding Scenario 2

Infrastructure projects that would support the planning scenario of Multiple Hubs would, as defined earlier, promote and enhance travel from one municipality to another, i.e., Inter-Community travel. These would tend to be larger, more heavily traveled roads that cross community boundaries (or multiple communities) and are in most cases federal aid eligible. Bridges would be located along these same roads while intersections with congestion or safety issues that were left unattended would cause problems with access from one town to another.

Example roadways include:

State Numbered Inter-Community Roads and the Communities They Connect	
Route 2A	Athol, Phillipston, Templeton, Gardner, Westminster, Fitchburg, Lunenburg, Shirley, Ayer
Route 12	Sterling, Leominster, Fitchburg, Westminster, Ashburnham, Winchendon
Route 13	Leominster, Lunenburg, Townsend
Route 31	Westminster, Fitchburg, Ashby,
Route 32	Petersham, Athol, Royalston
Route 62	Hubbardston, Sterling, Clinton
Route 68	Royalston, Phillipston, Templeton, Gardner, Hubbardston
Route 70	Clinton, Lancaster
Route 101	Petersham, Phillipston, Templeton, Gardner, Ashburnham
Route 110	Sterling, Clinton, Lancaster, Harvard, Ayer
Route 111	Harvard, Ayer, Groton
Route 119	Ashburnham, Ashby, Townsend, Groton
Route 140	Sterling, Westminster, Gardner, Winchendon

Other Federal Aid Eligible Inter-Community Roads and the Communities They Connect	
South Street/New Westminster Road	Westminster, Hubbardston
Barre Road/Burnshirt Road	Templeton, Hubbardston
East Road/Mountain Road	Westminster, Princeton
Chestnut Hill Avenue/Athol Road	Athol, Royalston
Winchendon Road/River Street	Royalston, Winchendon
Baldwinville Road/Bridge Street	Winchendon, Templeton
Williams Road/South Ashburnham Road	Ashburnham, Westminster
Lunenburg Road/West Townend Road	Townsend, Lunenburg
Chicopee Row/Groton Street	Groton, Dunstable
Front Street/West Main Street	Shirley, Ayer
Greeley Street/Parker Street	Clinton, Lancaster
Stow Road/East End Road	Harvard, Bolton

Intersection locations in need of safety and/or congestion improvements that would contribute to the improvement of Inter-Community connections can be found in the Safety and Congestion chapters of this RTP.

2. 2024 RTP Funding Scenario 3

As stated, Scenario 3, Strong Community Centers, would focus and promote those infrastructure projects that enhance mobility within a municipality's boundaries. The community would look to address those roads that allow residents to access goods and services in the town in order to promote a more vibrant and diverse locality, i.e., Intra-Community travel. These types of roads would also tend to be federal aid eligible facilities as they would provide the biggest benefits to users. Intersection improvements would focus on safety and congestion at locations that directly impede traffic flow in the community.

As with Scenario 2, the example state numbered roadways listed above are federal aid eligible roads, however, project limits would be focused on sections completely within town boundaries. These projects would likely be smaller in length and cost than projects developed

under Scenario 2. Scenario 3 Intra-Community projects would also likely incorporate complete streets elements in order to meet the overall goal of access within the town.

The following table is a list of federal aid eligible road sections within a community that can lend support to the planning goal of a strong community center.

Other Federal Aid Eligible Intra-Community Roads and the Community They Serve	
Ashburnham	Corey Hill Road, Williams Road, South Main Street
Ashby	Turnpike Road, South Road
Athol	South Athol Road, Hapgood Street, Chestnut Street, Riverbend Street, Schol Street, Pleasant Street, Tunnel Street, Exchange Street, North Orange Road, Crescent Street, Lenox Street, Chestnut Hill Avenue, Pequoig Avenue
Ayer	Groton Shirley Road, Washington Street, Groton Harvard Road, West Main Street, Central Avenue, Sandy Pond Road, Westford Road, Willow Road, Harvard Road
Clinton	Greeley Street, Woodlawn Street, Pine Street, New Harbor Road, Beacon Street, Franklin Street, Green Street, Branch Street, Vale Street, Oak Street, Cameron Street, Berlin Street, High Street
Fitchburg	Depot Street, Fairmount Street, Reingold Avenue, Franklin Road, Electric Avenue, Oak Hill Road, Pratt Road, Saint Joseph Avenue, Clarendon Street, Beech Street, Rollstone Road, Mount Elam Road, Pine Street, South Street, Heywood Street, Canton Street, Wanoosnoc Road, Abott Avenue, Benson Street, Airport Road, Crawford Street, Bemis Road, Intervale Road, Summer Street, John Fitch Highway, Boutelle Street, Townsend Street, Pearl Street, North Street, Blossom Street, High Street, Boulder Drive, Main Street
Gardner	Union Street, Minott Street, Pearson Boulevard, Betty Spring Road, Matthews Street, Green Street, Woodland Avenue, Park Street, Eaton Street, Clark Street, Racette Avenue, Sand Street, Coleman Street, Waterford Street, Baker Street, Greenwood Street, Nichols Street, Pleasant Street, Main Street, Logan Street, Elm Street, Chestnut Hill Avenue, Pine Street, Cross Street
Groton	Townsend Road, Pepperell Road, Broadmeadow Road, Chicopee Row, Nashua Road, Longley Road, Sandy Pond Road
Harvard	Littleton Road, Stow Road
Hubbardston	Barre Road, Elm Street, Brigham Street, New Westminster Road, Burnshirt Road
Lancaster	Bolton Road, High Street Ext., Lower Bolton Road, Center Bridge Road, George Hill Road, Mill Street, Parker Road, Deershorn Road, Sterling Road,
Leominster	Wachusett Street, Pleasant Street, Litchfield Street, Willard Street, Union Street, Elm Hill Avenue, Viscoloid Avenue, Mechanic Street, Sixth Street, Pond Street, West Street, Whitney Street, Water Street, Mill Street, Walnut Street, Merriam Avenue, Grove Avenue, Washington Street, Blossom Street, Exchange Street, Kingman Drive, Granite Street, Lindell Avenue, Hamilton Street, Abbott Avenue
Lunenburg	Summer Street, Whalom Road, Lakefront Avenue, Prospect Street, Leominster Road, Lancaster Avenue, Pratt Street, White Street, Main Street, Highland Street, Northfield Road, West Townsend Road, New West Townsend Road, Leominster Shirley Road
Petersham	Popple Camp Road, New Salem Road
Phillipston	Petersham Road, Queen Lake Road
Royalston	Warwick Road, Athol Road, Winchendon Road
Shirley	Center Road, Leominster Road, Main Street, Front Street, Lancaster Road, Walker Road, Parker Road, Townsend Road, Lawton Road

Sterling	Heywood Road, Rowley Hill Road, Meetinghouse Hill Road, Greenland Road, Muddy Pond Road, Boutelle Road, Gates Road, Campground Road, Squareshire Road, Chace Hill Avenue, Swett Hill Road, Kendall Hill Road, Maple Street, Bridge Street, Redstone Hill Road, Pratts Junction Road
Templeton	Baldwinville Road, Bridge Street, Main Street, Depot Road, North Main Street, South Main Street, Cross Road, Hubbardston Road, Barre Road,
Townsend	Wheeler Road, New Fitchburg Road, Mason Road, Lunenburg Road, South Street, Warren Road, Shirley Road
Westminster	South Ashburnham Road, Oakmont Avenue, North Common Road, Bacon Street, West Main Street, South Street, Minott Road, Mile Hill Road, Gatehouse Road, East Road, Stone Hill Road, Narrows Road, Depot Road, Bean Porridge Hill Road
Winchendon	High Street, Central Street, Glenallen Street, Hall Road, River Street, Baldwinville Road

Please note that the above should not be viewed as a comprehensive list. For more information on whether a particular road is federal aid eligible, please consult the MRPC online mapping program, MrMapper (https://mrmapper.mrpc.org/).

Conclusion

These examples are provided for illustrative purposes. If a community wishes to initiate a infrastructure improvement project in their community that supports one of the Planning Scenarios, the MRPC is available to discuss any proposal and to assist in the project development process.

If any municipality has a question regarding what roads or intersections may be eligible for Federal Aid assistance, please contact the MRPC or visit the online data mapping site, MrMapper. An interactive map of road classifications and eligibility can be found here.

The following is a listing of pavement conditions on federal aid eligible roads in the region, along with cost estimates to bring or maintain these roads to "excellent" condition. Additional information regarding pavement conditions can be found in the Infrastructure chapter of this RTP. These federal aid miles are further broken down by local and state jurisdiction. Typically, state jurisdiction roads are higher classified arterials and interstates which connect population centers over long distances, while local jurisdiction roads consist of lower classification connectors within a community and its direct environs.

2022 REGIONWIDE	Condition	State			Local			Combined			
		Miles	Sq. Yards	Cost	Miles	Sq. Yards	Cost	Repair Category	Miles	Sq. Yards	Total
	Excellent	87.48	1231774	$923,830	137.16	1931232	$1,448,424	Routine Maintenance	224.65	3163006	$2,372,254
	Good	92.32	1299862	$11,048,830	94.41	1329253	$11,298,654	Preventative Maintenance	186.73	2629116	$22,347,484
	Fair	50.92	716941	$12,904,936	81.22	1143605	$20,584,898	Rehabilitation	132.14	1860546	$33,489,834
	Poor	11.13	156711	$7,052,015	156.53	2203943	$99,177,455	Reconstruction	167.66	2360655	$106,229,469
	Total	241.85		$31,929,611	469.32		$132,509,432	Total	711.17		$164,439,042

While there is a need to invest in both state and local jurisdiction roads, it is reasonable to assume that increased investment in *state jurisdiction* infrastructure would promote focus on Inter-Community connections and thus align with Scenario 2 – Multiple Hubs. Increased investment in *local jurisdiction* infrastructure would promote focus on Intra-Community connections and thus align with Scenario 3 – Strong Community Centers.

9

Air Quality Conformity

Air Quality Conformity Determination

Montachusett MPO

Montachusett Regional Transportation Plan "Journey to 2050"

This section documents the latest air quality conformity determination for the 1997 ozone National Ambient Air Quality Standards (NAAQS) in the Montachusett Region. It covers the applicable conformity requirements according to the latest regulations, regional designation status, legal considerations, and federal guidance. 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. Clean Air Act (CAA) section 176(c) (42 U.S.C. 7506(c)) requires that federally funded or approved highway and transit activities are consistent with ("conform to") the purpose of the State Implementation Plan (SIP). Conformity to the purpose of the SIP means that means Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals are given to highway and transit activities that will not cause or contribute to new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS or any interim milestones (42 U.S.C. 7506(c)(1)). EPA's transportation conformity rules establish the criteria and procedures for determining whether metropolitan transportation plans, transportation improvement programs (TIPs), and federally supported highway and transit projects conform to the SIP (40 CFR Parts 51.390 and 93).

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.

Legislative and Regulatory Background

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 (NOx), the two major precursors to ozone formation to achieve attainment of the ozone standard

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 designated as attainment/unclassified for the 2008 standard. On March 6, 2015, (80 FR 12264, effective April 6, 2015) EPA published the Final Rulemaking, "Implementation of the 2008 National Ambient Air Quality Standards (NAAQS) for Ozone: State Implementation Plan Requirements; Final Rule." This rulemaking confirmed the removal of transportation conformity to the 1997 Ozone NAAQS and the replacement with the 2008 Ozone NAAQS, which (with actually a stricter level of allowable ozone concentration than the 1997 standards) classified Massachusetts as "Attainment/unclassifiable" (except for Dukes County).

However, on February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in *South Coast Air Quality Mgmt. District v. EPA* ("*South Coast II*," 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone NAAQS and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. Conformity determinations are required in these areas after February 16, 2019. On November 29, 2018, EPA issued *Transportation Conformity Guidance for the South Coast II Court Decision* (EPA-420-B-18-050, November 2018) that addresses how transportation conformity determinations can be made in these areas. According to the guidance, both Eastern and Western Massachusetts, along with several other areas across the country, are now defined as "orphan nonattainment areas" – areas that were designated as nonattainment for the 1997 ozone NAAQS at the time of its revocation (80 FR 12264, March 6, 2015) and were designated attainment for the 2008 ozone NAAQS in EPA's original designations rule for this NAAQS (77 FR 30160, May 21, 2012).

Current Conformity Determination

After 2/16/19, as a result of the court ruling and the subsequent federal guidance, transportation conformity for the 1997 NAAQS – intended as an "anti-backsliding" measure – now applies to both of Massachusetts' orphan areas. Therefore, a conformity determination was made for the 1997 ozone NAAQS on the 2020-2040 Regional Transportation Plans. This conformity determination was finalized in July 2019 following each MPO's previous endorsement of their regional transportation plan, and approved by the Massachusetts Divisions of FHWA and FTA on October 15, 2019. This conformity determination continues to be valid for the Montachusett FFY 2023-2027 Transportation Improvement Program, and Massachusetts' FFY 2023-2027 STIP, as each is developed from the conforming 2020-2040 Regional Transportation Plans.

The transportation conformity regulation at 40 CFR 93.109 sets forth the criteria and procedures for determining conformity. The conformity criteria for TIPs and RTPs include: latest planning assumptions (93.110), latest emissions model (93.111), consultation (93.112), transportation control measures (93.113(b) and (c), and emissions budget and/or interim emissions (93.118 and/or 93.119).

For the 1997 ozone NAAQS areas, transportation conformity for TIPs and RTPs for the 1997 ozone NAAQS can be demonstrated without a regional emissions analysis, per 40 CFR 93.109(c). This provision states that the regional emissions analysis requirement applies one year after the effective date of EPA's nonattainment designation for a NAAQS and until the effective date of revocation of such NAAQS for an area. The 1997 ozone NAAQS revocation was effective on April 6, 2015, and the *South Coast II* court upheld the revocation. As no regional emission analysis is required for this conformity determination, there is no requirement to use the latest emissions model, or budget or interim emissions tests.

Therefore, transportation conformity for the 1997 ozone NAAQS for the Montachusett FFY 2023-2027 Transportation Improvement Program and 2020-2040 Regional Transportation Plans can be demonstrated by showing that remaining requirements in Table 1 in 40 CFR 93.109 have been met. These requirements, which are laid out in Section 2.4 of EPA's guidance and addressed below, include:

- Latest planning assumptions (93.110)
- Consultation (93.112)

- Transportation Control Measures (93.113)

- Fiscal Constraint (93.108)

Latest Planning Assumptions:

The use of latest planning assumptions in 40 CFR 93.110 of the conformity rule generally apply to regional emissions analysis. In the 1997 ozone NAAQS areas, the use of latest planning assumptions requirement applies to assumptions about transportation control measures (TCMs) in an approved SIP (See following section on Timely Implementation of TCMs).

Consultation:

The consultation requirements in 40 CFR 93.112 were addressed both for interagency consultation and public consultation. Interagency consultation was conducted with FHWA, FTA, US EPA Region 1, MassDEP, and the Massachusetts MPOs on March 6, 2019 to discuss the latest conformity-related court rulings and resulting federal guidance. Regular and recurring interagency consultations have been held since on an (at least) annual schedule, with the most recent conformity consultation held on JApril 27, 2022. This ongoing consultation is conducted in accordance with the following:

- Massachusetts' Air Pollution Control Regulations 310 CMR 60.03 "Conformity to the State Implementation Plan of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 USC or the Federal Transit Act"

- The Commonwealth of Massachusetts Memorandum of Understanding among the Massachusetts Department of Transportation, Massachusetts Department of Environmental Protection, Massachusetts Metropolitan Planning Organizations, and Regional Transit Authorities, titled The Conduct of Air Quality Planning and Coordination for Transportation Conformity (dated September 16, 2019)

Public consultation was conducted consistent with planning rule requirements in 23 CFR 450.

"Journey to 2050" has been or will be discussed at the following scheduled meetings:

- January 5, 2023 – MRPC Meeting

- January 11, 2023 – MJTC Meeting
- January 28, 2023 – Montachusett MPO Meeting
- February 2, 2023 – MRPC Meeting
- February 7, 2023 – TIP Readiness Day
- February 8, 2023 – MJTC Meeting
- February 15, 2023 – Montachusett MPO Meeting
- March 2, 2023 – MRPC Meeting
- March 8, 2023 – MJTC Meeting
- March 15, 2023 – Montachusett MPO Meeting
- April 12, 2023 – MJTC Meeting
- April 19, 2023 – Montachusett MPO Meeting
- May 4, 2023 – MRPC Meeting
- May 10, 2023 – MJTC Meeting
- May 17, 2023 – Montachusett MPO Meeting
- June 1, 2023 MRPC Meeting
- June 14, 2023 MJTC Meetin
- June 28, 2023 MPO Meeting
- July 6, 2023 MRPC Meeting
- July 12, 2023 MJTC Meeting

- July 26, 2023 MPO Meeting

Title 23 CFR Section 450.324 and 310 CMR 60.03(6)(h) requires that the development of the TIP, RTP, and related certification documents provide an adequate opportunity for public review and comment. Section 450.316(b) also establishes the outline for MPO public participation programs. The Montachusett MPO's Public Participation Plan was formally adopted in 2019. The Public Participation Plan ensures that the public will have access to the RTP and all supporting documentation, provides for public notification of the availability of the RTP and the public's right to review the document and comment thereon, and provides a 21-day public review and comment period prior to the adoption of the RTP and related certification documents.

The public comment period for this conformity determination commenced on July 3, 2023. During the 21-day public comment period, any comments received were incorporated into this Plan. This allowed ample opportunity for public comment and MPO review of the draft document. The public comment period closed on July 24, 2022 and subsequently, the Montachusett MPO endorsed this air quality conformity determination on July 26, 2022.These procedures comply with the associated federal requirements.

Timely Implementation of Transportation Control Measures:

Transportation Control Measures (TCMs) have been required in the SIP in revisions submitted to EPA in 1979 and 1982. All SIP TCMs have been accomplished through construction or through implementation of ongoing programs. All of the projects have been included in the Region's Transportation Plan (present or past) as recommended projects or projects requiring further study.

Fiscal Constraint:

Transportation conformity requirements in 40 CFR 93.108 state that TIPs and transportation plans and must be fiscally constrained consistent with DOT's metropolitan planning regulations at 23 CFR part 450. The Montachusett 2023-2027 Transportation Improvement Program and 2020-2040 Regional Transportation Plan are fiscally constrained, as demonstrated in this document.

In summary and based upon the entire process described above, the Montachusett MPO has prepared this conformity determination for the 1997 Ozone NAAQS in accordance with EPA's and Massachusetts' latest conformity regulations and guidance. This conformity determination process demonstrates that the FFY 2023-2027 Transportation Improvement Program and the 2020-2040 Regional Transportation Plan meet the Clean Air Act and Transportation Conformity Rule requirements for the 1997 Ozone NAAQS, and have been prepared following all the guidelines and requirements of these rules during this time period.

Therefore, the implementation of the Montachusett MPO's FFY 2023-2027 Transportation Improvement Program and the 2020-2040 Regional Transportation Plan are consistent with the air quality goals of, and in conformity with, the Massachusetts State Implementation Plan.

Evaluation and Reporting of Statewide Greenhouse Gas Reductions in Transportation

This section documents recent progress made by MassDOT and the MPOs in working to help achieve greenhouse gas (GHG) reduction goals as outlined in state regulations applicable to Massachusetts. This "progress report" estimates future carbon dioxide (CO_2) emissions from the transportation sector as part of meeting the GHG reduction goals established through the Commonwealth's Global Warming Solutions Act (GWSA).

GWSA Transportation Status: Future Carbon Dioxide Emissions Reductions

The Global Warming Solutions Act of 2008 requires statewide reductions in greenhouse gas (CO2) emissions of 25 percent below 1990 levels by the year 2020, and 80 percent below 1990 levels by 2050.

The Commonwealth's thirteen metropolitan planning organizations (MPOs) are involved in helping to achieve greenhouse gas reductions mandated under the GWSA. The MPOs work closely with the Massachusetts Department of Transportation (MassDOT) and other involved agencies to develop common transportation goals, policies, and projects that would help to reduce GHG emission levels statewide, and meet the specific requirements of the GWSA regulation – *Global Warming Solutions Act Requirements for the Transportation Sector and the*

Massachusetts Department of Transportation (310 CMR 60.05). The purpose of this regulation is to assist the Commonwealth in achieving their adopted GHG emission reduction goals by:

- Requiring each MPO to evaluate and report the aggregate GHG emissions and impacts of both its Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP).
- Requiring each MPO, in consultation with MassDOT, to develop and utilize procedures to prioritize and select projects in its RTP and TIP based on factors that include GHG emissions and impacts.

Meeting the requirements of this regulation is being achieved through the transportation goals and policies contained in the Federal Fiscal Year (FFY) 2024 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 evaluation and reporting processes enable the MPOs and MassDOT 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. This approach is consistent with the greenhouse gas reduction policies of promoting healthy transportation modes through prioritizing and programming an appropriate balance of roadway, transit, bicycle and pedestrian investments; as well as supporting smart growth development patterns through the creation of a balanced multi-modal transportation system. All of the MPOs and MassDOT are working toward reducing greenhouse gases with “sustainable” transportation plans, actions, and strategies that include (but are not limited to):

- Reducing emissions from construction and operations
- Using more fuel-efficient fleets
- Implementing and expanding travel demand management programs
- Encouraging eco-driving
- Providing mitigation for development projects
- Improving pedestrian, bicycle, and public transit infrastructure and operations (healthy transportation)
- Investing in higher density, mixed use, and transit-oriented developments (smart growth)

Regional GHG Evaluation and Reporting in RTPs

MassDOT coordinated with MPOs and regional planning agency (RPA) staffs on the implementation of GHG evaluation and reporting in development of each MPO's 2016 and 2020 RTPs. This collaboration has continued in developing the MPOs' FFY 2024 RTPs and FFYs 2024-28 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, as a supplement to the FFY 2024 RTPs. Using the newly updated statewide travel demand model, GHG emissions have been estimated for 2019 (base) conditions, and for 2050 base ("no-build" including existing and committed projects) and build (action) conditions (see the chart in this section for the results of this modeling).

- All of the MPOs have addressed GHG emission reduction projections in their RTPs (including the statewide estimates in the chart that follows), along with a discussion of climate change and a statement of MPO support for reducing GHG emissions from transportation as a regional goal.

MassDOT's statewide estimates of CO_2 emissions resulting from the collective list of all recommended projects in all Massachusetts RTPs combined are presented in the table below. Emissions estimates incorporate the latest planning assumptions including updated socio-economic projections consistent with the FFY 2024 RTPs:

Massachusetts Statewide Aggregate CO_2 Estimated Emissions Impacts from Transportation

(all emissions in tons per summer day)

Year	CO_2 Action Emissions	CO_2 Base Emissions	Difference (Action – Base)
2019	75,113.6	75,113.6	n/a
2050	53,772.5	53,781.4	-8.9

This analysis includes only those larger, regionally significant projects that are included in the statewide travel demand model. Many other types of projects that cannot be accounted for in the model (such as bicycle and pedestrian facilities, shuttle services, intersection improvements, etc.), are covered in each MPO region's RTP with either "qualitative" assessments of likely CO_2 change, or actual quantitative estimates listed for each project.

As shown above, collectively, all the projects in the RTPs in the 2050 Action scenario provide a statewide reduction of nearly 9 tons of CO_2 per day compared to the base (existing and committed projects) case.

These results demonstrate that the transportation sector is expected to continue making positive progress in contributing to the achievement of GHG reduction targets consistent with the requirements of the GWSA. MassDOT and the MPOs will continue to advocate for steps needed to accomplish the Commonwealth's long-term goals for greenhouse gas reductions.

10

Financial

Financial

Introduction

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

Expected Funding – Highway

To assist in the development of the financial component of the RTP, the Massachusetts Department of Transportation (MassDOT) Office of Transportation Planning (OTP) developed highway funding estimates to the year 2044. Federal and state highway funding estimates were developed in five-year increments. Data was provided for the entire Commonwealth as well as for each particular MPO. Refer to Table 10-1 below.

Table 10-1: Massachusetts Funding Estimates FFY 2024 to 2044

	Base OA in today's dollars w/ 2% increase starting in 2029	August redistribution	Base OA + August Redistribution	GANs repayment	Funding less GANs repayments	Funding w/ non-federal match	Statewide Items	Funding available for MPOs
								MARPA formula ►
2024	$ 753,409,685	$ 50,000,000	$ 803,409,685	$ 93,985,000	$ 709,424,685	$ 886,780,856	$ 582,717,759	$ 304,063,097
2025	$ 768,478,798	$ 50,000,000	$ 818,478,798	$ 122,185,000	$ 696,293,798	$ 870,367,248	$ 571,469,513	$ 298,897,735
2026	$ 783,849,292	$ 50,000,000	$ 833,849,292	$ 133,620,000	$ 700,229,292	$ 875,286,615	$ 583,701,455	$ 291,585,160
2027	$ 799,527,245	$ 50,000,000	$ 849,527,245	$ -	$ 849,527,245	$ 1,061,909,056	$ 700,859,977	$ 361,049,079
2028	$ 815,517,790	$ 50,000,000	$ 865,517,790	$ -	$ 865,517,790	$ 1,081,897,237	$ 714,052,177	$ 367,845,061
								1st five years ►
2029	$ 831,828,146	$ 50,000,000	$ 881,828,146	$ -	$ 881,828,146	$ 1,102,285,182	$ 727,508,220	$ 374,776,962
2030	$ 848,464,709	$ 50,000,000	$ 898,464,709	$ -	$ 898,464,709	$ 1,123,080,886	$ 741,233,385	$ 381,847,501
2031	$ 865,434,003	$ 50,000,000	$ 915,434,003	$ -	$ 915,434,003	$ 1,144,292,503	$ 755,233,052	$ 389,059,451
2032	$ 882,742,683	$ 50,000,000	$ 932,742,683	$ 15,000,000	$ 917,742,683	$ 1,147,178,354	$ 757,137,713	$ 390,040,640
2033	$ 900,397,536	$ 50,000,000	$ 950,397,536	$ 10,000,000	$ 940,397,536	$ 1,175,496,921	$ 772,437,663	$ 403,059,258
								2nd five years ►
2034	$ 918,405,487	$ 50,000,000	$ 968,405,487	$ 30,000,000	$ 938,405,487	$ 1,173,006,859	$ 770,801,404	$ 402,205,455
2035	$ 936,773,597	$ 50,000,000	$ 986,773,597	$ 30,000,000	$ 956,773,597	$ 1,195,966,996	$ 785,888,874	$ 410,078,122
2036	$ 955,509,069	$ 50,000,000	$ 1,005,509,069	$ 30,000,000	$ 975,509,069	$ 1,219,386,336	$ 801,278,094	$ 418,108,243
2037	$ 974,619,250	$ 50,000,000	$ 1,024,619,250	$ 30,000,000	$ 994,619,250	$ 1,243,274,063	$ 816,975,098	$ 426,298,965
2038	$ 994,111,635	$ 50,000,000	$ 1,044,111,635	$ 30,000,000	$ 1,014,111,635	$ 1,267,639,544	$ 832,986,042	$ 434,653,503
								3rd five years ►
2039	$ 1,013,993,868	$ 50,000,000	$ 1,063,993,868	$ 30,000,000	$ 1,033,993,868	$ 1,292,492,335	$ 849,317,205	$ 443,175,130
2040	$ 1,034,273,745	$ 50,000,000	$ 1,084,273,745	$ 30,000,000	$ 1,054,273,745	$ 1,317,842,182	$ 865,974,991	$ 451,867,191
2041	$ 1,054,959,220	$ 50,000,000	$ 1,104,959,220	$ 30,000,000	$ 1,074,959,220	$ 1,343,699,025	$ 882,965,933	$ 460,733,093
2042	$ 1,076,058,405	$ 50,000,000	$ 1,126,058,405	$ 35,000,000	$ 1,091,058,405	$ 1,363,823,006	$ 896,189,719	$ 467,633,287
2043	$ 1,097,579,573	$ 50,000,000	$ 1,147,579,573	$ 35,000,000	$ 1,112,579,573	$ 1,390,724,466	$ 913,867,095	$ 476,857,371
								4th five years ►
2044	$ 1,119,531,164	$ 50,000,000	$ 1,169,531,164	$ 25,000,000	$ 1,144,531,164	$ 1,430,663,955	$ 940,111,967	$ 490,551,989
								5th five years ►
							$ 24,707,093,625	

Assumptions used in compiling this data were as follows:

1. Federal funding and state match for the period of 2024 – 2028 reflect current TIP allocations;

2. Beginning in 2029 a 2% growth rate (average of last 4 yrs. Of BIL) is applied to the federal funding amounts;

3. August redistribution of Federal Funds is assumed to be $50million per year through to 2044;

4. GANs (Grant Anticipation Notes) repayment is currently expected to stop in 2027, and continue in 2032

5. Funding available for MPO Target Programming is approximately one-third (1/3) of the total Federal Aid and Non-Federal Aid funding. These funds are those that the MPO has discretion on project priorities through the Transportation Improvement Program (TIP).

The remaining available statewide figures are then separated out into funding programs, which are attached to specific improvement such as bridges and interstate maintenance. These statewide expenditures are under the discretion of MassDOT to be spent as they prioritize, not necessarily as a percentage in each region, but as statewide needs and management plans inform. These funding estimates are as follows:

Table 10-2: Massachusetts Funding Estimates FFY 2024 to 2044 by Statewide Categories

	Statewide Bridges	Interstate Pavement	Non-Interstate DOT Pavement	Remaining SW Programs
	Bridges	Lane Miles	Lane Miles	MARPA formula
2024	$183,898,219	$42,748,349	$72,703,533	$205,594,982
2025	$176,617,938	$42,748,349	$72,703,533	$223,095,613
2026	$183,898,219	$42,748,349	$65,000,000	$234,008,890
2027	$255,592,933	$42,748,349	$72,703,533	$166,091,396
2028	$282,726,401	$42,748,349	$72,703,533	$145,998,028
	$1,082,733,710	$213,741,745	$355,814,132	$974,788,910
2029	$288,380,929	$43,603,316	$74,157,604	$146,726,465
2030	$294,148,548	$44,475,382	$75,640,756	$147,366,783
2031	$300,031,519	$45,364,890	$77,153,571	$171,666,256
2032	$306,032,149	$46,272,188	$78,696,642	$176,966,061
2033	$312,152,792	$47,197,631	$80,270,575	$255,669,181
	$1,500,745,936	$226,913,407	$385,919,148	$898,394,745
2034	$318,395,848	$48,141,584	$81,875,987	$261,239,256
2035	$324,763,765	$49,104,416	$83,513,506	$266,949,458
2036	$331,259,040	$50,086,504	$85,183,776	$272,803,221
2037	$337,884,221	$51,088,234	$86,887,452	$278,804,062
2038	$344,641,905	$52,109,999	$88,625,201	$284,955,583
	$1,656,944,778	$250,530,737	$426,085,922	$1,364,751,580
2039	$351,534,743	$53,152,199	$90,397,705	$291,261,471
2040	$358,565,438	$54,215,243	$92,205,659	$297,725,504
2041	$365,736,747	$55,299,548	$94,049,772	$304,351,549
2042	$373,051,482	$56,405,539	$95,930,768	$311,143,567
2043	$380,512,512	$57,533,649	$97,849,383	$318,105,612
	$1,829,400,922	$276,606,178	$470,433,288	$1,522,587,704
2044	$388,122,762	$58,684,322	$99,806,371	$325,241,838
	$6,457,948,108	$1,026,476,390	$1,738,058,860	$5,085,764,777

Regional Highway Needs

A. Bridge Needs

As illustrated in the Infrastructure section of this RTP, the number of Structurally Deficient (SD) bridges in the Montachusett Region has trended slightly upward from thirty two in 2018 to thirty five in 2022. Overall, there has been a significant reduction in SD bridges from 2006, a decrease of some 17 bridges. This is due to the emphasis placed on bridges through the Accelerated Bridge program. In order to prevent any "backsliding" within the region, it is important to maintain an emphasis on repairing SD bridges by the Commonwealth as bridge priorities fall under the responsibility of MassDOT.

While it may be difficult to determine what will be the appropriate investments for bridges, the following points should be considered:

- As SD bridges are repaired, it is appropriate to assume additional bridges will deteriorate over time and become SD. There must be a consistent and focused investment in bridge infrastructure moving forward.
- A Performance Measure has been set through this RTP that states "Decrease the number of identified "Structurally Deficient" bridges within the region compared to what was reported in the 2024 RTP".
- Bridge infrastructure projects vary in cost a great deal, depending on what is required for repair. Costs for bridges currently scheduled for repair in the region range over $20,000,000 ($4,265,492 to $24,583,505).
- As important as adequate funding, is consistent bridge inspection and asset management tools to highlight trends and inform where and what needs exist
- While it is difficult to determine a dollar amount needed to prevent backsliding in the number of SD bridges, it is important to forecast if projected funding will be sufficient to maintain current overall network conditions.

From a review of projected Federal Bridge funds compared to historical allocations, it is reasonable to assume that there is enough funding to maintain current network conditions. It should be noted, however, that there is no "acceptable" amount of structurally deficient bridges in a network, but it is crucial to ensure that overall network condition does not deteriorate, spiraling to a level where it would be difficult to stop.

B. Pavement Needs

The region contains a mix of state and local jurisdiction federal aid eligible roads. In addition, those roads classified as NHS are eligible for Interstate Maintenance (IM) and NHS funding. Those roads are under the purview of MassDOT and are assumed to be funded from statewide NHS/IM allocations. These are approximately 222 miles (or 33%) of the total regional federal aid roads in this category. That leaves approximately 67%, or 445 miles, of roads that are eligible to be funded with regional discretionary, or target, funding, although many projects on these roads are also funded through categories under MassDOT discretion.

When determining what is needed to maintain a state of good repair on these roads the following points should be considered:

- It is important to maintain an accurate inventory of road conditions to monitor trends over time. Analyzing these trends is an important component in determining needs.
- A Performance Measure has been set through the RTP that states "Increase the percentage of categorized "Good" to "Excellent" federal aid eligible roadway miles within the region over a 10-year period dating back to 2016".

Analysis conducted in the Infrastructure section of this plan reported condition trends in the federal aid pavement network. Trends indicated that the performance measure listed above is being met. From 2017 to 2022 there has been an increase in the percentage of roads categorized "Good" to "Excellent". This is an indication that adequate funding is being allocated to maintain a state of good repair on these roadways. Much like SD bridges, there is no

acceptable level of "Poor" condition roadways to have on a network, but it is important to make sure overall network condition does not deteriorate.

C. Non-Funded Major Infrastructure Projects

Through the development of this RTP, several projects or needs were identified. Some of these are relatively large in terms of scope, design or possibly cost. These projects are not incorporated into the financial plan of the RTP as these are still concepts with little analysis and subsequently, no cost estimates. These have been identified as "Major Infrastructure" projects. They will likely entail several years of study, public outreach and design before implementation.

- Route 2 at South Athol Road: The town of Athol has presented a project to construct a new interchange with Route 2 at South Athol Road. This new interchange would help the town improve access to Route 2 for commercial and passenger vehicles, thus relieving congestion on smaller local roads, extending the pavement life of those roads, expanding the town's economic base and provide quicker emergency response times.

- Route 2 Lane Addition from Phillipston to Athol: The town of Athol has raised the question of a possible expansion of Route 2 from its current two-lane configuration to four lanes. The project limits start from the Phillipston town line to approximately Route 202 near the Athol/Orange town line.

- Route 2 at Mt. Elam Road: For a number of years, the state has tried to address a safety, access and environmental issue along Route 2 in the vicinity of Mt Elam Road. Bordering the Notown Reservoir, the state must address an environmental issue related to runoff into the city of Leominster's drinking supply. Additionally, a traffic signal currently exists at the Route 2/Mt Elam Road intersection that is the site of many vehicular crashes.

- Wachusett Station Improvements: Wachusett Station is a new commuter rail parking lot and train station on the Fitchburg Commuter Rail Line. Built to house over 400 vehicles, this station is the start and end point for this line into Boston. The need for a

solution to the current railroad underpass on Route 31 located just north of the station which constricts all modes of traffic in that area, and bicycle and pedestrian accommodations should be considered.

D. Remaining Regional Needs

The remaining project needs identified in this RTP include various safety improvements at intersections or along corridors, congestion improvements, pedestrian/bicycle improvements, etc. The funding for these improvements is assumed to be derived from the statewide funding as well as through the discretionary MPO Funding ("Target") amounts.

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

Funding estimates in the following table column labelled "Montachusett MPO Targets" represent the funds that are utilized in the development of the annual Transportation Improvement Program (TIP). By providing these "Target" funding levels, the MPO's are able to develop fiscally constrained TIP's for each Federal Fiscal Year (FFY). These funds are also considered discretionary in that the MPO has direct input into the types of projects that are prioritized and funded. In addition to typical road projects, bicycle and pedestrian projects, site specific intersection projects, congestion relief projects, safety improvement projects, and projects with air quality benefits are funded through these targets.

Table 10-3: Montachusett MPO Projected Target Funds

	Funding available for MPOs	Montachusett MPO Target Funds
	MARPA formula ►	4.46%
2024	$304,063,097	$13,559,998
2025	$298,897,735	$13,329,643
2026	$291,585,160	$13,003,532
2027	$361,049,079	$16,101,345
2028	$367,845,061	$16,404,418
	1st five years ►	$72,398,936
2029	$374,776,962	$16,713,553
2030	$381,847,501	$17,028,871
2031	$389,059,451	$17,350,495
2032	$390,040,640	$17,394,252
2033	$403,059,258	$17,974,831
	2nd five years ►	$86,462,003
2034	$402,205,455	$17,936,754
2035	$410,078,122	$18,287,844
2036	$418,108,243	$18,645,955
2037	$426,298,965	$19,011,229
2038	$434,653,503	$19,383,808
	3rd five years ►	$93,265,590
2039	$443,175,130	$19,763,838
2040	$451,867,191	$20,151,469
2041	$460,733,093	$20,546,853
2042	$467,633,287	$20,854,574
2043	$476,857,371	$21,265,931
	4th five years ►	$102,582,666
2044	$490,551,989	$21,876,656
	Total ►	$376,585,851

Expected Funding - Transit

The following table summarizes anticipated needs by the Regional Transit Authority over the life of this plan. Currently the only identified needs are within the time period of the 2024-2028 TIP. These first five years are shown along with available funding from each fund category. Years 2029-2044 in Table 10-13 show estimated funding levels which will be fully utilized by MART for capitol and operating needs. Funding for years 2029-2044 are estimates only and assume the same 2% increase in funding per year that was used for highway funding.

Table 10-4: Transit Funds Programmed in 2024 -2028 TIP

Funding Category	FFY 2024	FFY 2025	FFY 2026	FFY 2027	FFY 2028	Total FFY 2024-2028
Bond Cap | State | 100% State	$3,600,360	$3,157,000	$3,172,500	$3,153,777	$3,194,600	*$16,278,237*
Federal | FTA | Section 5307	$5,701,440	$4,528,000	$4,590,000	$4,515,108	$4,678,400	*$24,012,948*
Federal | FTA | Section 5309	$0	$0	$0	$0	$0	*$0*
Federal | FTA | Section 5310	$0	$0	$0	$0	$0	*$0*
Federal | FTA | Section 5337	$0	$0	$0	$0	$0	*$0*
Federal | FTA | Section 5339 Non-Competitive	$600,000	$0	$0	$0	$0	*$600,000*
Federal | FTA | Section 5339 Small Urban	$0	$0	$0	$0	$0	*$0*
Federal | FTA | Section 5339 Statewide	$0	$0	$0	$0	$0	*$0*
Federal | FTA | Other Federal Transit	$0	$0	$0	$0	$0	*$0*
Operating | Additional State Assistance | State Contract Assistance	$0	$0	$0	$0	$0	*$0*
Other | Municipal and Local | Transit	$0	$0	$0	$0	$0	*$0*
VW Mitigation Funds	$3,000,000	$0	$0	$0	$0	*$3,000,000*
Federal | FHWA | Transportation Development Credits	$0	$0	$0	$0	$0	*$0*
Subtotal	$12,901,800	$7,685,000	$7,762,500	$7,668,885	$7,873,000	*$43,891,185*

Table 10-5: MART Projected Transit Funds

Estimated Funds	2024-2028	2029-2033	2034-2038	2039-2043	2044	Total
TOTAL	$43,891,185	$48,280,303.50	$53,108,333.85	$58,419,167.24	$12,852,217	$216,551,206.38

In the first 5 years of the RTP (2024-2028) fiscal constraint was demonstrated through the projects listed on the 2024-2028 TIP and available funds. As with the highway network, any additional available funds for the transit system will be utilized in an attempt to further expand options available to the region. Several needs have been identified within this RTP that highlight the potential to broaden the reach and use of transit to serve multiple purposes from medical to commercial.

Fiscal Constraint Conclusion

It is necessary that a financial analysis in this plan demonstrates fiscal constraint. Recommendations within the sections of the Plan, along with the Goals and Performance Measures set through the Plan, have been considered in relation to the projected funding detailed in this chapter. Although it is difficult to forecast needs and available funding through the lifetime of the RTP, it is determined that our regional highway and transit needs will be satisfied with projected funding. This is primarily proven by analysis detailed in the infrastructure section. A major factor in future financial planning in the region will continue to be the monitoring of assets such as bridges and pavements and needs such as safety improvements and congestion relief. As the conditions of these assets and needs change so must resources allocated to these factors.

Appendix A
Acronyms

#	
3C	Continuing, Cooperative and Comprehensive Transportation Planning

A	
AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ABP	Accelerated Bridge Program
ADA	Americans with Disabilities Act (1990)
ADT	Average Daily Traffic
AMPO	Association of Metropolitan Planning Organizations
ANR	Approval Not Required Plans
APA	American Planning Association
APTA	American Public Transportation Association
ATR	Automatic Traffic Recorder
AVL	Automatic Vehicle

B	
BIL	Bipartisan Infrastructure Law
BMP	Best Management Practice
BMS	Bridge Management System

C	
CAAA	Clean Air Act Amendments of 1990
CDBG	Community Development Block Grant
CEDS	Comprehensive Economic Development Strategy
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
CMAQ	Congestion Mitigation and Air Quality
CMS	Congestion Management System
CRFCs	Critical Rural Freight Corridors
CRP	Carbon Reduction Program

CSS	Context Sensitive Solutions
CUFCs	Critical Urban Freight Corridors

D

DEP	Department of Environmental Protection
DHV	Design Hour Volume
DLTA	District Local Technical Assistance
DRS	Demand Responsive Service

E

EDA	Economic Development Administration
EIR	Environmental Impact Report
EIS	Environmental Impact Study/Statement
EJ	Environmental Justice
ENF	Environmental Notification Form
EOEEA	Executive Office of Energy and Environmental Affairs
EPA	Environmental Protection Agency
EPDO	Equivalent Property Damage Only

F

FAST Act	Fixing America's Surface Transportation Act (2015-2020)
FASTLANE	Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies Grants Program
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FFY	Federal Fiscal Year (begins October 1)
FHWA	Federal Highway Administration
FO	Functionally Obsolete
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FFY	Federal Fiscal Year (October 1st to September 30th)

FY	Fiscal Year (July 1st to June 30th)

G

GANs	Grant Anticipation Notes
GIS	Geographic Information System
GPS	Global Positioning System
GVW	Gross Vehicle Weight

H

HAZMAT	Hazardous Material
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HOV	High Occupancy Vehicle
HPMS	Highway Performance Monitoring System
HPP	High Priority Project
HSIP	Highway Safety Improvement Program
HTF	Highway Trust Fund

I

I/M	Inspection and Maintenance
IM	Interstate Maintenance
ISTEA	Intermodal Surface Transportation Efficiency Act (1991-1997)
ITC	Intermodal Transportation Center
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation System

J

JARC	Job Access Reverse Commute

L

LOS	Level of Service

LRT	Light Rail Transit
LRTP	Long-Range Transportation Plans

M

MAP	Mobility Assistance Program
MAP-21	Moving Ahead for Progress in the 21st Century (2012-2015)
MARPA	Massachusetts Association of Regional Planning Agencies
MART	Montachusett Regional Transit Authority
MARTA	Massachusetts Association of Regional Transit Authorities
MBTA	Massachusetts Bay Transportation Authority
MassDOT	Massachusetts Department of Transportation
MEMA	Massachusetts Emergency Management Agency
MIS	Major Investment Study
MJTC	Montachusett Joint Transportation Committee
MMPO	Montachusett Metropolitan Planning Organization
MOE	Measures of Effectiveness
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MRPC	Montachusett Regional Planning Commission
MSA	Metropolitan Statistical Area
MUTCD	Manual on Uniform Traffic Control Devices

N

NAAQS	National Ambient Air Quality Standards
NARC	National Association of Regional Councils
NEPA	National Environmental Policy Act
NFA	Non-Federal Aid
NHFN	National Highway Freight Network
NHFP	National Highway Freight Program
NHPP	National Highway Performance Program
NHS	National Highway System

NHTSA	National Highway Traffic Safety Administration
NSBP	National Scenic Byways Program
NTP	Notice to Proceed
NTS	National Transportation System

O

OA	Obligational Authority
OTP	Office of Transportation Planning

P

PHF	Peak Hour Factor
PHFS	Primary Highway Freight System
PL	Planning Funds
PMS	Pavement Management System
PMT	Personal Miles Traveled
PMUG	Pavement Management User's Group
PPP	Public Participation Program
PRC	Project Review Committee
PS&E	Plans, Specifications & Estimates
PWED	Public Works/Economic Development

R

RABA	Revenue Aligned Budget Authority
RFP	Request for Proposals
RFQ	Request for Quotes
RFR	Request for Referrals
ROW	Right of Way
RPAs	Regional Planning Agencies
RPOs	Rural Planning Organizations
RRF	Request a Release of Funds
RTA	Regional Transit Authority

RTP	Regional Transportation Plan

S

SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005-2009)
SEIR	Supplemental Environmental Impact Report
SIP	State Implementation Plan
SPR	State Planning and Research Funds
SOV	Single Occupant Vehicle
STBGP	Surface Transportation Block Grant Program
STIP	Statewide Transportation Improvement Program

T

TCM	Transportation Control Measure
TCSP	Transportation and Community System Preservation
TDM	Travel Demand Management
TDP	Transit Development Plan
TE	Transportation Enhancement
TEA-21	Transportation Equity Act for the 21st Century (1998-2003)
TIGER	Transportation Investment Generating Economic Recovery
TIGGER	Transit Investment in Greenhouse Gas and Energy Reduction
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TMC	Turning Movement Count
TOD	Transit Oriented Development
TSM	Travel/Transportation System Management

U

UPWP	Unified Planning Work Program
UZA	Urbanized Areas

V

V/C	Volume to Capacity Ratio
VMS	Variable Message Sign
VMT	Vehicle Miles Traveled
VOCs	Volatile Organic Compounds
VPH	Vehicles Per Hour

Appendix B

TEC Scoresheet

Montachusett Regional Planning Commission

TRANSPORTATION EVALUATION CRITERIA (version 4.0 (2018))

Community		Info as of:	
MassDOT Project No.	Est Cost:		
Design Status			
Est Ad Date			
			Max. Score
Category	**Line Item #**		**66**

Condition

1 What is the magnitude of impact to the pavement condition? Based on PCI (MRPC) — 0

Poor to Excellent (4)		(4)
Fair to Excellent (3)		(3)
Good to Excellent (2)		(2)
Excellent to Excellent or No Change (0)		(0)

2 What are the impacts of other infrastructure elements, i.e. traffic control devices, roundabouts, other geometric design changes, sidewalks, bike lanes, drainage, utilities, etc? — 0

Traffic Control Devices, Roundabout, other Geometric Changes		(1)
Existing Bike/Ped/Sidewalk Upgrades		(1)
Drainage (Culverts & Sewers)		(1)
Utilities		(1)

3 What is the Average Daily Traffic (ADT) of the Road and/or Intersection — 0

Rural	Less than 1,000 ADT (1)		(1 to 4)
	1,001 to 2,000 ADT (2)		
	2,001 to 5,000 ADT (3)		
	Greater than 5,000 ADT (4)		
Urban	Less than 5,000 ADT (1)		(1 to 4)
	5,001 to 10,000 ADT (2)		
	10,001 to 15,000 ADT (3)		
	Greater than 15,000 ADT (4)		

4 Does the project incorporate Complete Street concepts? — 0

Yes/NEW Shared Bike/Ped/Vehicle Elements		(1)
Yes/New Separate Bike Elements		(1)
Yes/New Separate Ped Elements		(1)

Mobility	5	**Does the project have an impact to any known congestion issue?**			0
		Roadway Congestion		(1)	
		Intersection Congestion		(1)	
	6	**Does the project have an impact to regional travel time and/or connectivity to the regional roadway network?**			0
		Reduction in Travel Time		(1)	
		Improve Network Connectivity		(1)	
	7	**Does the project have an impact to any other mode such as transit, that utilize the facility?**			0
		Transit Service Impact - Fixed Route		(1)	
		Transit Service Impact - Other		(1)	
	8	**Does the project promote reductions in SOV (single occupant vehicles)?**			0
		Park & Ride Lot Construction (0 to 1)		(1)	
		Park & Ride Lot Access (0 to 1)		(1)	
		Transit Facility Access (0 to 1)		(1)	
		Other (0 to 1)		(1)	

Safety	9	**Does the project address a known safety issue on a facility that is on the Region's Top 5% Crash Locations list?**			
		Yes - Top 1%		(5)	0
		Yes - Top 2% to 3%		(3)	
		Yes - Top 4% to 5%		(1)	
	10	**Does the project have an effect on the crash rate and/or the crash severity of the facility?**			
	Crash Rate	Yes		(1)	0
		No		(0)	
	Crash Severity	Yes		(1)	
		No		(0)	
	11	**Does the project have an effect on bicycle or pedestrian safety on the facility?**			
		Yes		(1)	0
		No		(0)	
	12	**Is the facility within the state's Top 200 Intersection Locations for Crashes?**			0
		Yes - Locations 1 to 50		(5)	
		Yes - Locations 51 to 100		(3)	
		Yes - Locations 101 to 200		(1)	

Community Effects and Support	**13**	**Is there any impact or change (positive or negative) to residential areas or neighborhoods related to noise, aesthetics, cut-through traffic, or the development/redevelopment of any housing stock?**		0
		Noise/aesthetics	**(-1 to 1)**	
		Traffic flow	**(-1 to 1)**	
		Housing stock	**(-1 to 1)**	
	14	**Does the project have an effect (positive or negative) on any services (i.e. transit, infrastructure, utilities, jobs, etc.) to Title VI or Environmental Justice populations as defined by either FHWA or FTA ?**		0
	Title VI Populations	Yes	(-1 to 1)	
	EJ Populations	Yes	(-1 to 1)	
	15	**Is there support for the project from local, regional, legislative governments and the general public?**		0
		Local governments	(1)	
		Multiple Local governments	(1)	
		Legislative government	(1)	
		General public	(1)	
	16	**Is there active participation from the community in the MPO, MRPC and MJTC?**		0
		MPO	(1)	
		MRPC	(1)	
		MJTC	(2)	

Land Use and Economic Development	**17**	**Is there any impact or change (positive or negative) to business (commercial and/or industrial) areas related to general access, noise, traffic, parking, or freight?**		0
		General Access	(-1 to +1)	
		Noise/Aesthetics	(-1 to +1)	
		Traffic Flow/Parking	(-1 to +1)	
		Freight Access	(-1 to +1)	
	18	**Is the project in conformance with local concepts and plans?**		0
		Yes	(1)	
	19	**If Yes, is the project specifically identified in the plan?**		0
		Yes	(1)	
	20	**Does the project have any effect on job creation or job access?**		0
	Job Creation	Yes	(1)	
	Job Access	Yes	(1)	
	21	**Is the project part of or located on any transportation security or evacuation route or provide access to any major emergency facility?**		0
		Local evacuation route	(1)	
		Regional evacuation route	(1)	
		Access to emergency facilities	(1)	

Appendix C

Comments

1. Massachusetts Department of Transportation (MassDOT) Comments and Responses

Comments from MassDOT Office of Transportation Planning		
Completeness		
Review Item	Comments	MPO Response
MPO self certification statement is included.	Please include a self certfication statement for endorsement.	Certification Added
GHG certification is included.	Please include a GHG certification statement for endorsement.	Certification Added
Charts, tables, and maps are legible and properly annotated.	Please provide a legend to help readers with Figure 4.7-2 and Figure 4.7-4 to clarify what the colors represent. In Ch 4.9, some of the question figures do not appear to match the corresponding narrative, such as Question 5. Please double check to make sure the narratives are next to the appropriate questions and figures.	Clarification added, corrections made
Document is available in relevant languages per the MPO's Title VI Plan.	Please include the "Notice of Nondiscrimation Rights and Protections to Beneficiaries" before beginning the narrative.	Notice added
List of MPO members is current.	Please include a list of MPO signatories. This can be copied directly from the TIP document.	List of signatories added
Signatory sheet is included and accurate. Update Gina Fiandaca as Secretary/CEO of MassDOT.	Please include a signatory sheet for endorsement of the RTP.	Endorsement sheet added
Acronyms and partner agency lists are up to date.	Please include an acronyms list in the appendix. This can be directly from the TIP and UPWP.	Added to appendix
Narrative		
Review Item	Comments	MPO Response
RTP outlines MPO institutional organization.	Please consider including a brief description of the MPO organization. This can be pulled directly from the UPWP.	Description added
RTP links to BIL planning emphasis areas.	Please add the BIL Planning Emphasis Areas in Chapter 3 where appropriate.	Content added
RTP discusses evaluation scoring.	Please consider including, or providing a link to, the TEC discussed in Chapter 3.	Content added
RTP references projects that are considered to be regionally significant. **If RTP lists "regionally significant" projects in a financially constrained manner, please notify the Manager of MPO Activities**.	Please include the statement from the 'GHG Results for GWSA - FFY 2024 RTPs' in the Air Quality Conformity chapter as well. Document attached via email for reference.	Statement added
RTP describes funding sources accurately and notes new funding sources in BIL.	The link to statewide funding programs in Chapter 4.4 is not up to date. Please consider adding a funding sources section in the appendix, which can be copied from the FFY 2024-2028 TIP document, or update the link to the below site that describes the funding categories. https://www.mass.gov/doc/stip-ffy-2023-2027-appendix-funding-category/download	Information updated, appendix added
Project Listing and Program Development		
Review Item	Comments	MPO Response
If projects are listed, they use MassDOT ProjectInfo TFPCs.	In the Table on Page 4 of Chapter 6, please update the TFPC for 609213 to match the TFPC in the Development TIP.	Information updated
Impact Analysis		
Review Item	Comments	MPO Response
Social equity analysis considers Title VI / language access.	Please consider including as an appendix item, can be copied directly from TIP/UPWP.	Appendix added
Social equity analysis considers EJ populations, including both federal and state definitions.	Please consider including as an appendix item, can be copied directly from TIP/UPWP.	Appendix added
Public involvement and comment are explicitly documented and in line with MPO's Public Participation Plan.	Please include an item in the appendix that documents or summarizes comments received during the draft RTP review period.	Comments included in Appendix

2. Montachusett Regional Transit Authority (MART) Comments and Responses

Comment	Response
MART provided a letter to the MRPC that outlined several points of information as well as additional clarification related to their operation. The full letter is treated as a direct comment regarding the RTP coverage of transit projects and operation. See following section for full letter.	Information provided was added and sections updated to Chapter 4.7 Transit as appropriate in order to reflect comments.

3. Groton Sustainability Commission and the North Central Climate Change Coalition Comments and Responses

The Groton Sustainability Commission and the North Central Climate Change Coalition presented several comments that were similar in nature. The table below lists the individual comments, which organization made the comment and then the response that addresses that comment.

No.	Comment	Source	Response
1	…performance measures for the GHG reduction goal are vague and short-lived; neither the metric of increasing alternative fuel vehicles in transit fleets or the metric of increasing electric vehicle (EV) charging infrastructure specify amounts of increase and both goals end in 2025. Could reasonable amounts of increase be specified, and could the timeline of increase extend beyond 2025? …there is a missed opportunity to enhance EV charging planning by including use data associated with existing stations to understand optimal placement for maximal usage.	Groton Sustainability Commission	MRPC fully supports and conforms to MassDOT regulations and requirements as they relate to GHG reduction goals. Annual GHG analysis is conducted by MassDOT for the TIP as well as the RTP to determine Air Quality Conformity on a statewide basis. MRPC provides input and consultation to this analysis on a regular basis. In addition, project specific analysis is conducted during the TIP development process for identified projects. Regarding EV charging infrastructure, MRPC will work to support the state National Electric Vehicle Infrastructure (NEVI) Program Deployment Plan (referred to as the "NEVI Plan"). This is the framework for Massachusetts to expand its electric vehicle (EV) highway fast charging network through the National Electric Vehicle Infrastructure Program established by the Infrastructure Investment and Jobs Act (IIJA). Consistent with the intent of the NEVI Program, this plan focuses on direct current fast charging (DCFC) infrastructure serving long-distance travel corridors, specifically Massachusetts' federally designated EV Alternative Fuel Corridors. As these projects come online, the MRPC will work to ensure implementation in accordance with the state. (https://www.mass.gov/service-details/deployment-plan-for-massachusetts) Transit goals are derived from MART's capital program that established goals for 2025 at the time of the plan's development. As these plans are updated, we will work to revise our measures as necessary. These metrics are also a measure limited to federally eligible facilities and infrastructure and are outside of any local development plans. Where applicable, the MRPC can work to encourage EV charging station implementation.
	Goal 7 - Reduce Greenhouse Gas (GHG) and Promote Environmental Practices and Sustainability. However, the lack of detail and planning related to the goal is very concerning. There are no robust strategies and performance measures to support the goal. The two metrics used for GHG emissions (increasing alternative fuels in transit fleets and EV charging infrastructure) end in 2025, just one year into the 2024 update. There needs to be additional goals set for 2030 at the very least.	North Central Climate Change Coalition	
2	In addition, providing information on and grant writing support for incentives for EV chargers such as MassEVIP Public Access Charging Incentives and Educational Campus Charging Incentives would help achieve the goal of increasing the number of chargers throughout the region.	Groton Sustainability Commission	The MRPC has and always will offer services to our member communities with grant writing and support. Many communities have successfully made use of MRPC personnel to obtain grants of various types. Communities need to reach out to staff for input, assistance and support. Additionally, staff has written grant applications for programs that would cover multiple regional communities. Staff regularly forwards to communities, announcements related to numerous federal and state grant opportunities. In addition, this information is also placed on the MRPC website under "Announcements". Recent examples are provided in a following table.
	In addition, providing information on and grant writing support for incentives for EV chargers such as MassEVIP Public Access Charging Incentives and Educational Campus Charging Incentives would help achieve the goal of increasing the number of chargers throughout the region.	North Central Climate Change Coalition	

			These announcements and flyers are also a regular presentation at the monthly MJTC meetings. Meetings are open to the public. Please contact staff to be included in any future mailings. MJTC Meetings are held on the 2nd Wednesday of the month at 2:30PM and MPO Meetings are held the 3rd Wednesday at 1:00PM, both virtually with sign up access through mrpc.org
3	We urge the MRPC to devote more attention in its planning to assisting member towns with catching up with or exceeding state averages for alternative fuel vehicle adoption, thereby reducing overall transportation-related GHG emissions in the region.	Groton Sustainability Commission	The MRPC works to support federal and state programs, projects and goals as needed and appropriate. This includes notification of programs to assist communities with vehicle fleet conversion as well as supporting infrastructure. It is not within our purview to lobby for the private purchase of EV vehicles. MRPC will maintain a review of data through the MA Vehicle Census (https://geodot-homepage-massdot.hub.arcgis.com/pages/massvehiclecensus) in order to help communities understand their profile data, but staff cannot lobby specifically for their purchase.
	The 2023 Massachusetts vehicle census data shows that 15 out of the 23 municipalities in the region have a proportion of zero-emission and hybrid registered vehicles at or below 3%, compared to the state average of 4.4% (MassDOT, 2023). We urge the MRPC to devote more attention in its planning to assisting member towns with catching up with or exceeding state averages for alternative fuel vehicle adoption, thereby reducing overall transportation-related GHG emissions in the region.	North Central Climate Change Coalition	
4	A recent estimate from the Department of Ecological Restoration cited more than half of culverts and small bridges in the state are undersized to handle the extreme rainfall events associated with climate change (MassDER, 2019). The MRTP would benefit from similar analysis of road culvert size and condition across the region to help prioritize upgrades. Moreover, the MRTP could facilitate needed upgrades in member towns by connecting them with available funding for these projects, such as the state Culvert Replacement Municipal Assistance Grant Program.	Groton Sustainability Commission	The MRPC has previously worked to develop an online app to assist communities with state mandated stormwater runoff regulations. The app is provided at no cost to town officials along with hands on training. To date, very few communities have made use of this application. Additionally, a survey of culvert data in the region would be a significant undertaking for staff. Funding restrictions would also prioritize federal aid eligible roadways. Staff can investigate the potential development of such a census for future Unified Planning Work Programs. Staff does regularly pass onto communities, information related specifically to culvert programs. These notices are emailed and posted to the MRPC website as well as mentioned at MJTC meetings. Please see the following table for specific past announcements related to culvert programs.
	In addition, a recent estimate from the Department of Ecological Restoration cited more than half of culverts and small bridges in the state are undersized to handle the extreme rainfall events associated with climate change. The MRTP would benefit from similar analysis of road culvert size and road condition across the region to help prioritize upgrades. Moreover, the MRTP could facilitate needed upgrades in member towns by connecting them with available funding for these projects, such as the state Culvert Replacement Municipal Assistance Grant Program.	North Central Climate Change Coalition	
5	Transportation Plan for the region must address … by beginning to explore mobility and transit solutions for all our communities. The plan needs mobility strategies and performance measures related to providing alternatives to personal vehicles. ,,, The Rural	North Central Climate Change Coalition	The Ridership Demographics Study is planned to be conducted by MART and will utilize new fare collection systems that will provide increased data on ridership, boarding locations and payment type. Data will be collected over the upcoming fiscal years. It should be noted that ridership levels are

	Policy Plan for the Commonwealth of MA has some transportation recommendations that might be useful for the many rural communities in the MRPC service area and could be incorporated into the plan. … the Journey to 2050 needs to have more information about the Rider Demographics Study. How will that be completed in an equitable way that addresses both rural and urban needs? What will it cost? When will it be completed?		still lower than pre-pandemic figures. Information collected may therefore be limited due to smaller sample sizes. As the program continues, a stronger database will result and provide better number for analysis.
6	…strongly recommend that the MRTP Journey to 2050 includes an examination of opportunities to address transit and mobility solutions that cross Regional Planning Agency boundaries. … Adjoining communities are often in different RPAs. This complicates our ability to address regional solutions. … We noticed that comments at one of the public input sessions addressed a request for intercity transit between Fitchburg and Lowell as well as Fitchburg and Worcester. RPAs and Transit Authorities need to work together and begin to plan for these much needed services which could help reduce GHG emissions.	North Central Climate Change Coalition	The MRPC regularly works with MART on transit services, needs and projects. Several Transit Development Plans have been developed in the past that helped MART address changing demographics and needs. This will continue to be the case. MART, under new leadership, is undertaking a review of its services with the overall goal to implement and expand services to areas of need. In addition, the MRPC is planning to conduct a Transportation Management Area (TMA) study in the next FFY to help address issues such as micro transit and improved services. From this study, it is hoped that some of these issues in rural communities can be addressed in a positive manner. Additionally, MRPC transportation and transit staff meet on a regular basis with other RPAs to discuss numerous issues and to liaison on work projects. This is an open line of communication that provides us with insight and knowledge of what is occurring outside of our planning areas.

Sample of Announcement Postings Regarding Available Grant Programs

Culvert Program Announcements – 2019 to 2023

January 24, 2019 - Announcement

Notice of Grant Opportunity - Culvert Replacement Municipal Assistance Grant Program

POSTED ON: JANUARY 24, 2019 - 1:20PM

UNPUBLISHED

Notice of Grant Opportunity
Culvert Replacement Municipal Assistance Grant Program

The Division of Ecological Restoration (DER), Massachusetts Department of Fish and Game, is seeking proposals from Massachusetts municipalities interested in replacing an undersized, perched, and/or degraded culvert located in an area of high ecological value. The purpose of this funding is to encourage municipalities to replace culverts with better designed crossings that meet improved structural and environmental design standards and climate resiliency criteria. **Total funding available for all projects selected in FY22 is anticipated to be $750,000-$1,500,000.**

February 27, 2020 - Announcement

Culvert Replacement Municipal Assistance Grants – Now Accepting Applications!

POSTED ON: FEBRUARY 27, 2020 - 11:26AM

UNPUBLISHED

Notice of Grant Opportunity
Culvert Replacement Municipal Assistance Grant Program

Culvert Replacement Grant – GRANT DEADLINE EXTENDED to April 15!

On March 10, the Baker-Polito Administration declared a State of Emergency for the Coronavirus (COVID-19). DER realizes municipalities across the Commonwealth are taking steps to prevent and mitigate the spread of the disease, including needing to dedicate municipal staff and operations to coordinate local response. To provide municipalities additional time for preparation and submittal of grant applications, DER has extended the grant application deadline until 5:00 PM, April 15, 2020.

January 21, 2021 - Announcement

Notice of Grant Opportunity - Culvert Replacement Municipal Assistance Grant Program

POSTED ON: JANUARY 21, 2021 - 10:24AM

UNPUBLISHED

Notice of Grant Opportunity
Culvert Replacement Municipal Assistance Grant Program

The Division of Ecological Restoration (DER), Massachusetts Department of Fish and Game, is seeking proposals from Massachusetts municipalities interested in replacing an undersized, perched, and/or degraded culvert located in an area of high ecological value. The purpose of this funding is to encourage municipalities to replace culverts with better designed crossings that meet improved structural and environmental design standards and climate resiliency criteria. **Total funding available for all projects selected in FY22 is anticipated to be $750,000-$1,500,000.**

February 14, 2022 - Announcement

Culvert Replacement Municipal Assistance Grant Accepting Applications

POSTED ON: FEBRUARY 14, 2022 - 3:24PM

UNPUBLISHED

Culvert Replacement Municipal Assistance Grant - Now Accepting Applications!
Notice of Grant Opportunity

The Division of Ecological Restoration (DER), Massachusetts Department of Fish and Game, seeks proposals from Massachusetts municipalities interested in replacing undersized, perched, and/or degraded culverts located in areas of high ecological value. The purpose of this funding is to encourage municipalities to replace culverts with better designed crossings that meet improved structural and environmental design standards and climate resiliency criteria. In general, **individual awards have ranged from $25,000 to $400,000 for single culvert replacements**, depending on the project phases and work proposed. Awards over $200,000 are anticipated for construction projects only.

October 12, 2022 – Announcement

National Culvert Removal, Replacement, and Restoration Grants (Culvert AOP) Program

POSTED ON: OCTOBER 12, 2022 - 9:11AM

UNPUBLISHED

Notice of Funding Opportunity (NOFO) for the National Culvert Removal, Replacement, and Restoration Grants (Culvert AOP) Program.

Eligible activities for the program include projects to replace, remove, or repair culverts that would meaningfully improve or restore fish passage for anadromous fish; [§ 21203(a); 49 U.S.C. 6703(b)] and projects to replace, remove, or repair weirs that would meaningfully improve or restore fish passage for anadromous fish. Anadromous fish species are born in freshwater such as streams and rivers, spend most of their lives in the marine environment, and migrate back to freshwater to spawn, like salmon, sturgeon, river herring, striped bass, and other species.

Eligible applicants include states, local governments, and recognized Indian tribes; applications are due **2/26/23**.

March 6, 2023 - Announcement

Notice of Grant Opportunity: Culvert Replacement Municipal Assistance Grant - Now Accepting Applications!

POSTED ON: MARCH 6, 2023 - 11:08AM

UNPUBLISHED

Culvert Replacement Municipal Assistance Grant:
Application Deadline Extended to: Tuesday, April 4, 5pm
COMMBUYS has been experiencing intermittent outages today. As a result, the deadline for CRMA grant applications has been extended to Tuesday, April 4 at 5pm. We have also included a copy of all application materials on our website here:
https://www.mass.gov/how-to/culvert-replacement-municipal-assistance-grant-program

Electric/Alternative Vehicle Replacement Program Announcements – 2021 to 2023

January 11, 2021 - Announcement

Massachusetts Electric Vehicle Incentive Program

MassDEP Announces New Program and Enhancements to Existing Programs

POSTED ON: JANUARY 11, 2021 - 11:26AM

UNPUBLISHED

The Massachusetts Department of Environmental Protection (MassDEP) is pleased to announce a new electric vehicle charging infrastructure program and enhancements to three existing programs under the Massachusetts Electric Vehicle Incentive Program (MassEVIP) banner!

MassDEP has added a new DC Fast Charging Station Program.

The Direct Current Fast Charging Program (DCFC) is a competitive grant with an **application deadline** of **March 19, 2021.** This program is open to property owners or managers of non-residential locations that are accessible for use by the general public 24 hours per day, or to educational campuses with at least 15 students on site and available to all students and staff. The program provides hardware and installation costs (up to $50,000 per charging station) as follows:

June 30, 2022 - Announcement

MassDEP Announces Diesel Emission Reduction Act Electric Solicitation Grant

POSTED ON: JUNE 30, 2022 - 3:11PM

UNPUBLISHED

The Massachusetts Department of Environmental Protection (MassDEP) is pleased to announce a new funding opportunity for private, public, and non-profit entities to replace eligible diesel vehicles and equipment with zero emission technologies. Through the federal Diesel Emissions Reduction Act (DERA) program, Massachusetts is conducting a competitive electric-only Solicitation with an application deadline of 5 PM **August 24, 2022**. This is an early replacement program designed to accelerate the retirement of less efficient and more polluting diesel vehicles and equipment. See the website for more information and to apply: https://www.mass.gov/how-to/apply-for-a-diesel-emissions-reduction-act-dera-electric-solicitation-grant.

July 27, 2023 - Announcement

VW and Refuse Truck Electric Solicitation Grant Announced By MassDEP

POSTED ON: JULY 27, 2023 - 3:50PM

The Massachusetts Department of Environmental Protection (MassDEP) is pleased to announce a new funding opportunity for private and public entities to replace eligible diesel vehicles and equipment. Through the VW settlement, MassDEP is allocating $7.5 million for zero-emission technologies. As part of the initiative in the 2030 Solid Waste Master Plan, funded by the Climate Protection and Mitigation Expendable Trust (CMT), MassDEP is allocating $4 million to replace municipal waste-serving refuse trucks with more efficient options.This competitive Solicitation has an application deadline of **5 PM September 26, 2023**. See more details in our guidance document.

Eligible projects

1. VW Projects

To be eligible for VW funds, existing equipment must meet the engine model year, usage, emission tier, and other requirements of each eligible mitigation action (EMA) listed below:

Mobility Program Announcements – 2021 to 2023

November 30, 2021 - Announcement

Webinar on Funding for Open Space, Trails, and Active Transportation

POSTED ON: NOVEMBER 30, 2021 - 11:48AM

UNPUBLISHED

Looking to create more green space and parks, recreational trails and bike lanes, and sidewalks in your community? Learn about state and private funding sources to help make this happen. Join us for a webinar to discuss funding opportunities across the Commonwealth.

Speakers

Allison Burson - Program Manager at the Lawrence & Lillian Solomon Foundation

Melissa Cryan - Grant Programs Supervisor, Division of Conservation Services at MA Executive Office of Energy and Environmental Affairs

Matt Genova - Transportation Improvement Program Manager - Central Transportation Planning Staff at Boston Region Metropolitan Planning Organization

January 5, 2022 - Announcement

Mobility Management in Massachusetts Webinar February 3rd, 10 am to noon

POSTED ON: JANUARY 5, 2022 - 11:15AM

UNPUBLISHED

Save the date for a virtual forum!

Mobility Management in Massachusetts
February 3, 10am-noon

Register here

Navigating community transportation options can be confusing for older adults, people with disabilities, and others in need of a ride. Through using **mobility management** strategies, you can facilitate mobility - by working directly with consumers to help them become aware of and learn to use the options available to them, and/or by working with transportation providers and other stakeholders to coordinate and expand mobility options.

May 24, 2023 - Announcement

Virtual Workshop: Quabbin Area Transportation Needs

POSTED ON: MAY 24, 2023 - 6:44AM

UNPUBLISHED

VIRTUAL TRANSPORTATION WORKSHOP
FOR MUNICIPAL AND COMMUNITY ORGANIZATION STAKEHOLDERS

JUNE 14, 1PM

Central Mass Regional Planning Commission, in partnership with the Health Equity Partnership of N. Central MA and the Montachusett Regional Planning Commission, is conducting a study of transportation options and needs for the Quabbin region.

May 9, 2023 - Announcement

MassDOT's FY24 Community Transit Grant Program is Now Accepting Applications

POSTED ON: MAY 9, 2023 - 3:30PM

UNPUBLISHED

MassDOT's FY24 Community Transit Grant Program is now accepting applications for operating and mobility management projects that expand mobility for older adults and people with disabilities!

If you are interested in applying, reach out to request application forms and application training. You can reach MassDOT at Rachel.L.Fichtenbaum@dot.state.ma.us or (857) 368-8584. We look forward to working with you!

Applications are due June 23, 2023. Start early to ensure you have plenty of time. Applications for wheelchair-accessible vehicles will open later this year.

Climate Change & Other Federal Program Announcements – 2018 to 2023

May 3, 2018 - Announcement

Chemical Safety & Climate Change Preparedness Resources

POSTED ON: MAY 3, 2018 - 10:33AM

UNPUBLISHED

Over the last six months, two Training Workshops were held regarding Chemical Safety and Climate Change Preparedness Training in partnership with the Massachusetts Office of Technical Assistance and Technology. These training workshops were well-attended by municipal emergency personnel and local businesses and were highly informative.

Click this link for presentations and handouts.

http://www.mrpc.org/comprehensive-planning/pages/ma-chemical-safety-and-climate-change-preparedness-training

May 12, 2022 - Announcement

Federal and State Funding Opportunities

For More Information See the Program and Webinar Announcements

POSTED ON: MAY 12, 2022 - 1:25PM

UNPUBLISHED

USDOT and MassDOT Funding Programs Announced.

The U.S. Department of Transportation (DOT) and the Massachusetts Department of Transportation (MassDOT) annouce upcoming webinars and Programs related to funding opportunities through the federal Bipartisian Infrastructure Law (BIL) and a state public/private partnership program.

- The U.S. Department of Transportation will host a webinar for potential applicants to get ready for the forthcoming **Reconnecting Communities Pilot** (RCP) discretionary grant program on **Thursday, May 19 from 1:30pm – 2:30pm EDT**. The RCP was created under the Bipartisan Infrastructure Law and will provide up to $1 billion over the next 5 years. The program's funds can

July 19, 2022 - Announcement

Federal Funding Grants and Programs from the BIL

POSTED ON: JULY 19, 2022 - 2:37PM

UNPUBLISHED

The Bipartisan Infrastructure Law (BIL) has initiated a number of new funding opportunities for local communities, transit authorities, regional planning agencies and Metropolitan Planning Organizations (MPOs). Each program has different applications, project eligibility requirements and deadlines. The Notice of Funding Opportunity (NOFO) for these various programs contain the necessary information to complete and submit an application for funding.

The programs covered in this announcement include:

- **Safe Streets for All (SS4A)** - The purpose of SS4A grant program is to improve roadway safety by

April 4, 2023 - Announcement

FHWA Planning and Grant Program Updates

POSTED ON: APRIL 4, 2023 - 10:46AM

The Federal Highway Administration (FHWA) announces the following programs and grant opportunities that may be of interest to local communities, organizations, etc.

USDOT Announces Wildlife Crossings Pilot Program
The Notice of Funding Opportunity (NOFO) for the *Wildlife Crossings Pilot Program* opened for Fiscal Years 2022 and 2023 in the amount of $111.85 million. The program helps carry out projects by certain Federal, Tribal, State, and local governments, including municipalities, counties, and others that reduce wildlife-vehicle collisions and improve habitat connectivity for terrestrial and aquatic species. The funding may be used for construction and non-construction projects and the maximum share of project costs that may be funded with grant funds will typically be 80 percent of project

U.S. Department of Transportation
Federal Highway Administration

4. Carolyn Sellars Letter Comments and Responses

Comment from Carolyn Sellars, Private Citizen	
Comments	MPO Response
A comment was received from Carolyn Sellars, private citizen. The comment was extensive and covered a range of topics from climate change, outreach, equity, trends etc. It made reference to a variety of other plans and their findings, along with the findings of other planning exercises in the region. Aside from general comments on the RTP itself, specific references to proposed changes were made in the following sections: Executive Summary; Chapter 2-Vision Statement, Strategies and Objectives; Chapter 3-Performance Measures; Chapter-4.1 Demographics; Chapter 4.5-Economic Vitality; Chapter 4.6-Congestion; Chapter 4.7-Transit; Chapter-4.8 Environment; Chapter 5-Public Outreach; Chapter 6-Transportation Equity; Chapter 7-Regional Trends; Chepter 8-Planning Scenarios. This comment is included in its entirety in the appendix of this RTP.	MPO staff appreciates your detailed review and feedback and has taken your comments into consideration. Your full comment will be included in an appendix to the final document. Please note that the creation of this RTP occurred alongside a robust public engagement process, which had begun in the Spring of 2022 and was designed to get feedback from both public officials and the general public. For example, the development of our Goals, Objectives, Strategies and Performance Measures culminated from extensive presentation, discussion, and feedback from our MJTC and MPO over the course of 10 months. This information has also been posted on our RTP website, available to the public from April of 2023. Although we will not incorporate every suggestion at this time, this plan will serve as a living document and be updated every five years. Below are some items mentioned in your comment which we have considered feasible to include at this time.
	Add reference to the following plans and their analysis:
	o 2022 MA Climate Assessment
	o Clean Energy and Climate Plan
	o Rural Policy Plan
	o DER reporting on culverts
	o National Electric Vehicle Infrastructure (NEVI) Program Deployment Plan
	o MA Vehicle Census
	o Global Warming Solutions Act
	* Add additional narrative to the history of the region to include Indigenous American settlements and the role they played in the creation of the modern transportation network.
	We would also like to mention our role in supporting the many funding opportunities originating out of the above plans and others. We frequently promote these opportunities to our member communities through our public meetings, emails, hosting presentations and our website. Goal 7 in this RTP is to *Reduce Greenhouse Gas (GHG) and Promote Environmental Practices and Sustainability* . We may not have the capacity or jurisdiction to plan and fund projects supporting this goal, but we are an active partner in promoting avenues to help accomplish this goal.We truly value your input and appreciate the need to improve climate and mobility issues which exist in the network. We look forward to working together to make improvements to the regional transportation system in the future.

Montachusett Regional Transit Authority – Comment Letter

The Montachusett Regional Transit Authority (MART) operates the fixed route transit system in the region. As has been the case since the authority was started in 1978, fixed route services are mainly concentrated within the urban cities of Fitchburg, Leominster, Gardner and to a lesser degree – Westminster, Lunenburg and Lancaster. Over the past ten years, service has expanded slowly into neighboring rural communities. The expansion has been driven both by requests by local communities, as well as the need for services to integrate with redesigned fixed routes and schedules.

MART has also worked with communities to develop micro transit services to support expanded business opportunities and a growing number of regional attractions in its service area. Over the past three years, MART has endeavored to accomplish many of the goals that were set established in the 2020 RTP, albeit within the numerous and unprecedented challenges presented by the pandemic, some of which are still presenting limitations on the ability to provide expanded services, primarily workforce expansion and funding limitations. Below are some bullets points on the many changes and growth experienced over the last four years.

<u>Current Transit Capital Improvements</u>

1. MART has purchased and deployed a fleet of mini buses (Arbocs) which were purchased and deployed to significantly reduce:
    - Fleet acquisition costs
    - Operational costs
    - Maintenance costs

    The mini buses will be used to:
    - Operate fixed routes with ridership that does not warrant a large frame bus
    - Establish feeder routes between unserved and under-served areas of the fixed route communities and the current fixed routes; and
    - Develop shuttle routes between rural communities and the fixed route communities for access to fixed route services.

2. MART has purchased and is utilizing recently acquired GPS-based transit technologies:
    - Genfare Fare Collection System
        - Provides Multiple Purchase Options
            - Mobile devices
            - Internet
            - On-vehicle
            - Ticket Vending Machines
        - Provides Internal Data Collection and Trend Analysis
            - Ridership
            - Boarding location
            - Payment methodology
    - Passio Go! System
        - Provides passengers w/ estimated arrival time at stops.
        - Provides transit staff w/ operational vehicle tracking.
        - Automated Passenger Counters
        - Provides transit staff w/ On-Time Performance capabilities for analyzing and improving fixed route and paratransit system performance.

<u>Current Transit Operational Improvements</u>

The Athol Shuttle route and schedule was modified in December 2022, increasing the service area and improving the route timing. Ridership has increased by 6% through June 2023.

The Advisory Board of the Transit Authority recently voted to approve several key fare policy changes:

- Full fares were reduced from $1.25 to $1.00.
- School age students ride free.
- No cost transfers for inter-city regional routes.

MART has also recently launched two new micro transit services:

- Sterling, Lancaster, and Lunenburg service (funded by MassDevelopment Taxi/Livery grant)
- Bolton, Boxboro, Littleton and Stow service (funded by MAPC Community Connections grant)

Future Transit Improvements

The following transit improvements are currently in process or will be getting underway during FY24:

- The Gardner fixed routes are being assessed for:
  - Service area improvements
  - Improvements to the route schedules for commuter and local businesses
- Assessing and analyzing Fitchburg / Leominster fixed routes to enhance routing and schedules.
- Purchasing a facility within Devens to establish a satellite operations center to improve the ability to develop fixed route services to Devens, as well as to provide services in the eastern portion of our service area.
- Launching transit dashboards for improved access to information

Transit Challenges

1. MART and its operating companies are still experiencing significant financial and operational impacts resulting from increased costs related to supply chain shortages, as well as a challenging workforce and labor participation environment.
2. Capital projects continue to be negatively impacted, due to significantly higher costs, contractor responsiveness and supply chain product availability.
3. All MART commuter rail garage facilities continue to generate substantially less parking fare revenue than the pre-pandemic period.
4. Although ridership continues to recover, both fixed route and paratransit ridership are still below pre-pandemic levels.

Human Service Transportation Brokerage Improvements

MART responded to a Request for Proposals issued by the Executive Office of Health and Human Services for Human Service Transportation (HST) Brokerage Services in June of 2020 and was subsequently awarded two of the three newly defined regions for brokerage services to commence on July 1, 2021. MART now manages more than eighty-two percent (82%) of the HST brokerage for the Commonwealth of Massachusetts.
To enhance the management of the brokerage services, MART developed and deployed additional technologies and reporting systems including:

- **Technologies**
  - MassHealth Member Trip Booking Portal
  - Facility Trip Booking Portal
  - Call Center w/ Integrated Voice Response (IVR)
  - Real-time notifications to customers for vehicle arrivals
  - Web portals for Complaint and Service reporting
  - GPS vehicle tracking
  - Vendor Contract Management and Credentialing Portal
  - Integration w/ Lyft

- **Reporting Dashboards**
    - Trip volume reporting (by agency, trip type, region, etc.)
        - Distribution by Company, driver, vehicle type, etc.
        - On-time performance
    - Expenditure reporting (by agency, trip type, region, city/town/etc.)
        - Total cost of trips
        - Average cost per trip
    - Call Center Metrics
        - Call Volume
        - Answered vs. Abandoned Calls
        - Call Duration
        - Available agents (by hour, region, agency, etc.)
    - Complaints
        - Complainant Information
        - Transportation Provider Information
        - Complaints by category
        - Time to resolve and notification to consumer.
        - By Agency, region, date, etc.

The significant enhancement to the technologies used to manage the brokerage operations, as well as the enhanced and upgraded dashboard reporting has substantially improved the customer experience and the abilities of MART and the HST office to manage the expanding needs and growth of the HST brokerage.

For FY23, MART provided nearly 5.8 million trips with a budget of $235 million. The trips continue to increase post-COVID and MART is continuing to increase the pool of transportation providers providing services. The new integration with Lyft will greatly improve the increasingly frequent need to provide same day / next day trips, as well as non-emergent hospital trips and releases.

Sustainability Commission

Letter to the Montachusett Regional Planning Commission regarding comments on the Draft 2024 Montachusett Regional Transportation Plan

To: Montachusett Regional Planning Commission

Cc: Groton MRPC Representatives Peter Cunningham and Russell Burke, the Groton Select Board

Dear Commission Members,

After reviewing the Draft 2024 Montachusett Regional Transportation Plan (MRTP), the Groton Sustainability Commission has several comments to address insufficient attention and planning with regards to climate change mitigation and adaptation related to transportation.

First, while the Sustainability Commission applauds the inclusion of a goal of reduction of greenhouse gas (GHG) emissions related to transportation in the region, the goal is poorly supported throughout the remainder of the plan. For example, performance measures for the GHG reduction goal are vague and short-lived; neither the metric of increasing alternative fuel vehicles in transit fleets or the metric of increasing electric vehicle (EV) charging infrastructure specify amounts of increase and both goals end in 2025. Could reasonable amounts of increase be specified, and could the timeline of increase extend beyond 2025?

Furthermore, in subsequent sections the MRTP acknowledges the need for additional planning to understand where EV charging stations should be located. The plan also tracks existing charging stations across the region. However, there is a missed opportunity to enhance EV charging planning by including use data associated with existing stations to understand optimal placement for maximal usage. In addition, providing information on and grant writing support for incentives for EV chargers such as MassEVIP Public Access Charging Incentives and Educational Campus Charging Incentives would help achieve the goal of increasing the number of chargers throughout the region.

2023 Massachusetts vehicle census data shows that 15 out of the 23 municipalities in the region have a proportion of zero-emission and hybrid registered vehicles at or below 3%, compared to the state average of 4.4% (MassDOT, 2023). Furthermore, most of those towns have average daily mileage per registered vehicle of less than 30 miles, which is the current average range for plug-in electric hybrid vehicles and far below the current median range for all-electric vehicles (MassDOT, 2023). We urge the MRPC to devote more attention in its planning to assisting member towns with catching up with or exceeding state averages for alternative fuel vehicle adoption, thereby reducing overall transportation-related GHG emissions in the region.

Sustainability Commission, Groton Town Hall, 173 Main St., Groton, MA 01450
sustaining@townofgroton.org · (978) 448-1111

Finally, the impacts of climate change are imminent: the recent flooding in Vermont, New York and western Massachusetts illustrates the unprecedented nature of these impacts and underscores the urgent need for regional climate change adaptation planning and implementation, especially related to extreme rainfall events. While the MRTP lays out a thorough analysis of threatened dams and bridges, it insufficiently addresses the issue of undersized culverts. A recent estimate from the Department of Ecological Restoration cited more than half of culverts and small bridges in the state are undersized to handle the extreme rainfall events associated with climate change (MassDER, 2019). The MRTP would benefit from similar analysis of road culvert size and condition across the region to help prioritize upgrades. Moreover, the MRTP could facilitate needed upgrades in member towns by connecting them with available funding for these projects, such as the state Culvert Replacement Municipal Assistance Grant Program.

Thank you for considering these comments on the MRTP.

Respectfully submitted,

The Groton Sustainability Commission

References:

1. Massachusetts Department of Transportation. (2023). Massachusetts vehicle census. MassVehicleCensus | GeoDOT (arcgis.com)
2. Massachusetts Division of Ecological Restoration (2019). DER's 10th Anniversary: Helping municipalities relace outdated and undersized culverts. DER's 10th Anniversary: Helping Municipalities Replace Outdated and Undersized Culverts | Mass.gov

North Central Climate Change Coalition

July 24, 2023

To: Montachusett Regional Planning Commission Members

Re: Comments on Draft 2024 Montachusett Regional TransportationPlan,Journey to 2050

Dear Commission Members,

Thank you for the opportunity to review the Draft 2024 Montachusett Regional Transportation Plan, Journey to 2050 (MRTP). The North Central Climate Change Coalition (NC4) has several concerns we would like addressed before the plan is finalized.

NC4 is composed of municipal and civic leaders working on the frontlines of climate change resistance, resilience and adaptation. Our geographic coverage area includes communities in or adjoining the MA 3rd Congressional District. This includes most of the MRPC planning area and MART service areas.

The Transportation sector accounted for 42% of MA Greenhouse Gas (GHG) emissions in 2019, according to the MA Clean Energy and Climate Plan. It's critical that our regional transportation plan addresses ways we reduce these emissions locally.

We greatly appreciate the inclusion of Goal 7 - **Reduce Greenhouse Gas (GHG) and Promote Environmental Practices and Sustainability.** However, the lack of detail and planning related to the goal is very concerning. There are no robust strategies and performance measures to support the goal. The two metrics used for GHG emissions (increasing alternative fuels in transit fleets and EV charging infrastructure) end in 2025, just one year into the 2024 update. There needs to be additional goals set for 2030 at the very least.

The first transportation strategy in the MA Clean Energy and Climate Plan is to "Promote Alternatives to Personal Vehicle Travel." Our 2050 Transportation Plan for the region must address this by beginning to explore mobility and transit solutions for all our communities. The plan needs mobility strategies and performance measures related to providing alternatives to personal vehicles. We understand this will be a challenge. North Central MA has had underfunded public mobility needs for many decades. Yet, we also know that we need to start planning now to explore what might help us enjoy healthier and safer communities in the future. The Rural Policy Plan for the Commonwealth of MA has some transportation recommendations that might be useful for the many rural communities in the MRPC service area and could be incorporated into the plan. At the very least, the Journey to 2050 needs to have more information about the Rider Demographics Study. How will that be completed in an equitable way that addresses both rural and urban needs? What will it cost? When will it be completed?

1 of 2

The 2023 Massachusetts vehicle census data shows that 15 out of the 23 municipalities in the region have a proportion of zero-emission and hybrid registered vehicles at or below 3%, compared to the state average of 4.4% (MassDOT, 2023). We urge the MRPC to devote more attention in its planning to assisting member towns with catching up with or exceeding state averages for alternative fuel vehicle adoption, thereby reducing overall transportation-related GHG emissions in the region. In addition, providing information on and grant writing support for incentives for EV chargers such as MassEVIP Public Access Charging Incentives and Educational Campus Charging Incentives would help achieve the goal of increasing the number of chargers throughout the region.

NC4 also advocates for measures to address changes already happening in our communities due to greenhouse gas pollution. We appreciate the discussion on threatened dams and bridges in the 100 year flood areas. Please note that the FEMA mapped 100 year flood areas do not reflect the more frequent, short intense storms we now experience. The Washington Post reported that "FEMA officials have testified to Congress that over 40 percent of the NFIP claims made in 2017-2019 were for properties outside official flood hazard zones, or in areas the agency had yet to map." The MRTP should minimally acknowledge this fact to initiate plans across member towns to understand the full threat of climate change-related impacts. In addition, a recent estimate from the Department of Ecological Restoration cited more than half of culverts and small bridges in the state are undersized to handle the extreme rainfall events associated with climate change. The MRTP would benefit from similar analysis of road culvert size and road condition across the region to help prioritize upgrades. Moreover, the MRTP could facilitate needed upgrades in member towns by connecting them with available funding for these projects, such as the state Culvert Replacement Municipal Assistance Grant Program.

Finally, we strongly recommend that the MRTP Journey to 2050 includes an examination of opportunities to address transit and mobility solutions that cross Regional Planning Agency boundaries. Our NC4 target communities, the MA 3rd Congressional District, are represented by five different Regional Planning Agencies (RPAs). Adjoining communities are often in different RPAs. This complicates our ability to address regional solutions. For example, the adjoining communities of Littleton, Groton and Pepperell are in three different RPAs. We noticed that comments at one of the public input sessions addressed a request for intercity transit between Fitchburg and Lowell as well as Fitchburg and Worcester. RPAs and Transit Authorities need to work together and begin to plan for these much needed services which could help reduce GHG emissions.

Thank you very much for the opportunity to comment. Please let me know if you have questions or need clarification on anything. Our NC4 meetings have included representatives of NMCOG in the past and we would warmly welcome MRPC at one of our future NC4 meetings. We meet virtually at 7 pm on the third Wednesday of each month.

Respectfully submitted,
Tony Beattie, NC4 Chair, Pepperell Selectboard and representative on NC4

cc: Selectboards/Mayors of Ashburnham, Ashby, Ayer, Clinton, Fitchburg, Gardner, Groton, Harvard, Hubbardston, Lancaster, Leominster, Littleton, Lunenburg, Royalston, Shirley, Sterling, Templeton, Townsend, Westminster, Winchendon

2 of 2

C. Sellars – Comment Letter

July 24, 2023

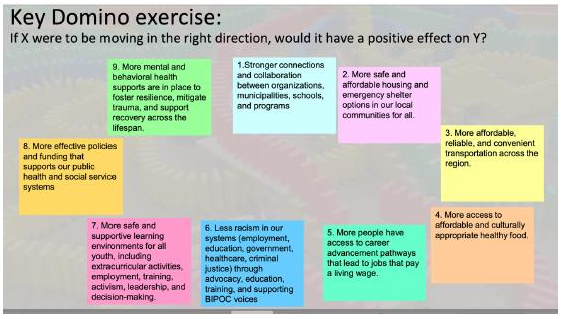
Re: Comments on the Journey to 2050, Regional Transportation Plan for the Montachusett Region

Dear Members of Montachusett Regional Planning Commission and staff,

Thank you for the opportunity to provide comment on the 2024 update to the ***"Journey to 2050"*** Regional Transportation Plan (RTP) for the Montachusett Region. I greatly appreciate the time and expertise put into the document.

The RTP must adequately reflect and quantify (as much as possible) all mobility needs for our region. We need to actively envision and plan what we want our region to be in the future and then plan a mobility program that will help realize that future. As described in the announcement of the comment period, "The RTP also serves to provide a basis for any federally financed transportation and transit project, program, or study." We must be ready to access and use any funds available to serve all our region's mobility needs including those that may be related to reducing Greenhouse Gas (GHG) emissions.

Earlier this year the Health Equity Partnership of North Central MA (CHNA9) undertook a series of Community Charrettes to provide input for our region's Community Health Improvement Plan (CHIP). By partnering with trusted local organizations and providing, food, childcare and a variety of times, more than 160 people came to one of the five 3-hour meetings. About one quarter of the participants used the translation services (Spanish, Portuguese, and Haitian Creole) provided. After spending time envisioning what a healthy North Central MA would look like in ten years, participants participated in a Key Domino Analysis. This involved looking at various identified goals to determine which ones were most likely to drive change.



The key dominos identified during the Charrettes are:

- Less Racism
- Stronger Connections and Collaboration
- More Effective Policies and Funding
- More Affordable, Reliable and Convenient Transportation

1

Transportation was a key domino which had a positive influence on many goals and was identified as critical to the success of other goals. Stronger Connections and Collaboration is one of the key drivers supported by better transportation. Stronger Connections and Collaboration support Less Racism and More Effective Policies and Funding which in turn support better transportation. These four goals are inextricably intertwingled. This underscores the need for a comprehensive transportation plan which addresses all our region's needs.

I have been supporting the Health Equity Partnership of North Central MA in their efforts in integrate Climate Justice into their work. I attended and helped facilitate all but one of the charettes. I know the region and the needs well. We chose to raise our family hare and have decided to stay here in our retirement. I have spent much of the past 40 years helping to make North Central MA a great place to live as a volunteer, municipal official, and at several non-profits.

I have several significant concerns about the report which I would like to see addressed before it is endorsed as a final document. Major concerns include:

- Coverage of climate justice issues including the need for more robust transit plans to help with greenhouse gas emission reductions.
- Lack of details on mobility and transit planning
- Population projection assumptions and how these assumptions relate to the plan.

My specific comments on the document have more detail about all three concerns. I want to highlight a few important ones here at the beginning.

Coverage of other plans including recent climate and rural issues planning

Throughout the report, there were multiple references to the Covid Pandemic's impact in the region. This is appropriate since it occurred after the initial 2020 Plan was completed. It would have been nice to also see some discussion of what we learned from the Covid experience such as identifications of critical workers, where they live and needed to be, and any unmet transit needs they had.

The report did not provide information or detail on other important developments since the original 2050 plan was produced in July 2019. Over the past few years, the Commonwealth has produced several reports relating to climate issues that should be addressed in our regional transportation plan. This includes the 2022 MA Climate Assessment and the Clean Energy and Climate Plan. The Commonwealth's Rural Policy Plan released in late 2019 also contains recommendations for improving mobility in rural areas in the state which can be incorporated into the plan. Most of the MART communities are classified as rural.

Also not covered explicitly in the Plan is the One North Central A Roadmap for Regional Prosperity published in 2021 by the Chamber of Commerce which stated:

> "Transportation connectivity, reliability, and safety are critical to the long-term economic vitality of the region. The Chamber should work with local and regional partners to advocate for transportation improvement projects that will open access to developable areas, ease congestion, improve safety, advance multi-modal access, and address transportation equity issues. "

Covering climate in a regional transportation plan requires much more than a discussion of Electric Vehicles and culvert replacements. We need to address the mobility issues that will help decrease vehicle miles traveled in all our communities. We also need to address climate resiliency which not only includes brick and mortar issues such as replacing undersized culverts but also addresses people's transit needs in climate emergencies. How do people without access to vehicles get to cooling centers in summer or evacuation or warming centers during ice storms in winter?

2

Lack of Details on Mobility and Transit Planning

The vagueness around climate and transit goals stand in stark contrast to many of the specific dollar amounts for roads, bridges, garages, and office facilities. (See Table 7-3.) A Ridership Demographics Study would be key to helping develop an effective transportation plan for the region that could help reduce GHG emissions as well as provide much needed services to all our residents. Yet there is not even a very rough estimate on what that might require. The document lists N/A. Does that mean Not Available? Not Applicable? Every other item in the table has a very specific dollar figure. The plan needs to have a rough cost (even a broad range) on this much needed Ridership Demographics Study. To truly serve our region's needs, this study must be inclusive with extensive input from the people living in our region. Projected cost should include funds for participation, transportation, translation, and childcare for people to participate.

Another interesting thing about this table (7-3) is that it is labeled as "Transit Recommendations" but only the top one (with the N/A cost) is related to directly providing transit services to people. The others relate to transit facilities for parking, offices, fuel stations including one for electric vehicle recharging. Where are the costs for new buses and other transit vehicles? Where are the costs for software programs that might be needed to address the issues raised in the demographic study?

Population projections and how they relate to the plan

The specific comments below address issues raised by population projections included in the report. It is unclear how MART and others use these population projections in their planning work. Please note that the Rural Policy Plan has as a top priority boosting population in rural areas of the state. Also note the 2022 Climate Assessment identified Central MA as a receiving area for in state and out of state climate migrants. It would be a shame if the decreasing population figures quoted in the report were to negatively influence the public investment needed to address our very real needs.

The rest of these comments include recommendations and suggestions for specific parts of the document. Please let me know if you have any questions or need clarification.

Executive Summary

The Executive Summary should pull out the highlights and conclusions from each chapter so that policy makers, residents, and businesses have an easy to access and understand summary of the plan without diving deep into each chapter. Much of the current Executive Summary just describes what is covered in each chapter and requires the reader to wade through the chapters to find the information on their own. Making the Executive Summary more complete and user friendly will enhance the effectiveness of the plan.

On page 1 of the Executive Summary document, there is a mistake which is repeated other places in the report.

> *"The Region was settled as early as the 17th Century and began as small settlements that moved from an era of agrarianism into the age of industrialization and now into the era of information and communications. "*

This statement erases the history of Indigenous Americans who established settlements and made trail connections in the region 10,000 to 12,000 years prior to the colonization by Europeans in the 17th century. Some of their descendants still live in the region today. It's estimated that prior to the 15th century, there were about 100,000 Native Americans in New England. The Indians initially followed deer trails but also created other trails to connect communities to each other as well as hunting areas and sources of water. European colonizers used these trail networks. Some of the trails have become our roadways. (https://www.umass.edu/greenway/NETrails/5NET-his1.html).

3

A quick fix to the report could be to replace "settled" with "colonized by Europeans." A more inclusive fix would be to acknowledge the members of the Abenaki and Wabanaki Confederacy that lived in the region, set up the original trail connections and provided many of the place names we still use in the region.

Rather than provide detailed comments on other parts of the Executive Summary I will focus my comments on the associated chapters in the main report.

Chapter 2 – Vision Statement, Strategies and Objectives

The vision statement on page 1 is excellent. The region needs the aspirational outlook to enable the much-needed planning, investment, and implementation to achieve this vision, hopefully, much sooner than the 2050 timeframe identified.

Vision Statement: Aspirational view of the regional transportation system in 2050

> *" The Montachusett Metropolitan Planning Organization seeks to provide a multimodal and inclusionary transportation system that is safe, secure, efficient and affordable to all individuals while supporting and encouraging environmentally- sustainable economic development, growth, and revitalization in the Montachusett Region."*

Goal 2 on page 2 (**Goal 2 - Reduce Congestion and Improve Mobility**) **Add a third bullet point to Objective** i. *(Monitor and promote and identify projects that address congested roadways within the Region.)*

***Explore public mobility options that will help limit the number of single occupant vehicles.**

Add a second bullet point to Objective ii: *(Increase travel options within the region through the promotion of trails, Complete Streets, transit, land use and their interactions.)*

*** Facilitate cooperative projects that address mobility issues across municipal lines**

Goal 3 on page 3. These goals, objectives and strategies are all excellent and much needed in our region. I particularly the last bullet in Objective 2.

- **Actively examine options such as micro transit, Transportation Management Associations, etc. that can expand services to more remote areas.**

Goal 4 on page 3. Add a bullet point to the 2nd objective (ii. Encourage communities to seek funding and implementation of projects through the Transportation Improvement Program (TIP) process as well as other applicable federal and state programs.)

***Facilitate communication and planning for regional projects that many cross municipal and/or Regional Planning Organization boundaries.**

Goals 5 to 7 on page 4 are also excellent and much needed in our region.

4

In goal 5 Strategy 1, you should add "transit" and "access to cultural resources" to reflect the growing wealth of cultural institutions in our region that would benefit from better connections.

*** Establish and prioritize major trail and transit connections for commuters, access to cultural resources and recreational purposes throughout the region and beyond.**

In Goals 6 and 7, it's important to note that these two strategies are critical in helping communities reduce their Greenhouse Gas emissions.

- Goal 6, Strategy 3: * Promote and encourage a shift from single occupant vehicles to transit, bicycle and pedestrian modes through improved transit, van/car pool and trail options.
- Goal 7, Strategy 3: * Promote programs and projects that support the reduction of single occupant vehicles.

Chapter 3 Performance Measures

It would be very helpful to have a table that shows the Goals, Objectives and Strategies from Chapter 2 and adds a column for Performance Measures. This would enable readers to better connect the measures to the intended strategies. This table should be created and pulled out into the Executive Summary as well.

I would like to see more specific performance measures that would support climate and justice goals and objectives identified. If there aren't specific performance measures, these objectives risk being left unaddressed.

Page 4-5, add a Performance Measure for both Goal 2 (Reduce Congestion and Improve Mobility) and Goal 3 (Promote and Seek Equitable Transportation for All).

***Draft Ridership Demographic Study completed by ____.**

On Page 5, Goal 5, another performance measure could address the issue of tourism. Here's one example of what could be added:

***Review and analyze at least 3 transit corridors that could connect commuter rail to cultural and recreational tourism destinations in the region**

Another Performance Measure should be added to page 5, Goal 7 to reflect the real need to reduce Green House Gas (GHG) emissions on a regionwide basis.

***Analyze GHG emissions on a regionwide basis and track changes periodically (every 2-3 years?)**

Chapter 4.1 Demographics

On page 2 the wording needs to acknowledge Native American as the original settlers of the area as described in the Executive Summary chapter.

Thank you for pulling together all the population and demographic projections. I was a bit surprised to see the leveling off and then decreasing population across the region for 2050. I know much of our region lost population in the 2000–2010-time frame. As the report identifies, the 2010 to 2021 period showed a 5.6%

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growth. I do not have time to look up and understand the assumptions the Donahue Institute used in their projections. It would be good to better understand those so we can be sure we are adequately planning for future population growth. The Donahue Institute has this disclaimer on their website:

> *In general, projections for small geographies and distant futures will be less predictive than projections for larger populations and near terms. Like all forecasts, the UMDI projections make assumptions about how past or recent trends will continue into the future.*
> https://donahue.umass.edu/business-groups/economic-public-policy-research/massachusetts-population-estimates-program/population-projections

Since we are a "small geography" and our planning timeframe is a "distant future," it would be prudent to seek funding or a partnership to better understand the expected population growth in the region. I noticed the One North Central study completed by Chamber of Commerce referred to a current growth rate of 4% which they expected to level. That study did not mention a decline.

Please note that the MA Climate Assessment predicts that Central MA will likely be a receiving area for instate and out of state climate migrants. That study region is larger than our MRPC area, but we know that previous waves of migrants settled in the small urban areas (Gateway Cities) in our region (Fitchburg, Leominster, Gardner). We also know that our region has already seen climate migrants in the last twenty years. Please also note that the Commonwealth's Rural Policy Plan has as a top priority boosting population in rural areas of the state. There needs to be some discussion about these reports.

On page 10, you reported on the demographic changes based on race in the 2000-2021 period.

- The number of Hispanic residents grew from 15,672 to 30,156 (+92.4%)
- The number of residents who self-identified as Black or African American alone grew from 6,127 to 13,082 (+113.5%)
- The number of Asian residents grew from 4,098 to 8.368 (+40.1%)
- The number of residents who identified as two or more races increased from 4,127 to 14,575 (+65.4%) "

On page 28, the report states, *"An important counterpoint to the very likely possibility of future changes in migration, however, is that the strongest predictor of future population in almost all places is the population residing there today;"* Since Hispanics, African and Asian people are expected to be some of the most affected by climate impacts in the Global South and Island Nations, it's important to include climate migration in the report.

Other topics that should be covered in the demographic profile include:

- The regeneration of old mill buildings and other underutilized properties into housing, particularly in the Gateway cities.
- A movement to the region from places in Eastern MA due to the affordability of single-family homes in the region or a desire for a better quality of life.
- Location of existing and potential shelters and transitional living spaces.
- Location of existing and plans for additional aged 55+ developments.
- Transformation of cottages and seasonal homes into year-round living.

6

Another piece of demographic data that would be very interesting to see is the number of driver license holders and car owners by age category and community and how that has changed over time. It seems more and more younger people are choosing not to drive and/or own cars. On the other end of the age spectrum, seniors often decide to stop driving at a certain age. Both of these age groups can suffer from problems due to isolation so it would be helpful to know this piece of demographic information as well.

In the discussion of Employment, it would be good to understand not only the Employment by Industry in the Region (Table 4.1-17) but also the **location** of employment by community in the region. Additionally, it would be good to know the location of higher education, employment and training programs as well. **Our 2050 plan must address getting people to where the jobs education, and training currently exist now and where they will exist in the future.** Access to health care facilities is another key issue that needs to be analyzed. What new demands will the proposed closing of the Labor and Delivery Unit at Leominster Hospital put on our already stressed system?

Finally, it would be useful to understand the location (and hours of operation if appropriate) for cultural organizations, farms, and other recreational opportunities. This would provide data on where people from outside the region may want to visit as well as where locals may find employment in this sector.

The Recommendations on page 35 leave out two critical groups:

- **Low-income residents**
- **Non-drivers**

As the data presented earlier in the chapter indicated, the region has significant low-income needs.

- 18 of the region's 22 communities have a lower per capita income that the state ($48,617) and 8 (Athol, Clinton, Fitchburg, Gardner, Leominster, Petersham, Phillipston and Winchendon) rank below the state in median household income (Fig 4.1-9)
- 6 Communities have a higher concentration of poverty than the state (9.9%) as a whole. Fitchburg (14.6%), Gardner (14.1%), Winchendon (11.4%) and Athol (11.1%) are near or above the National average of 11.3%. (Fig. 4.1-10)
- 3 Communities (Clinton, Fitchburg, and Gardner) have more renter occupied units than the state and federal averages. (Fig 4.1-13)
- More than 25% of owner occupied households are cost burdened in 18 of the 22 communities. (Fig. 4.1-6)
- More than 25% of renter-occupied households are cost burdened in 19 of the 22 communities. In 9 of those communites, more than 50% of the renter-occupied households are cost-burdened. (Fg 4.1-6)

Owning and operating a car is a big expense. People living in areas with reliable and affordable transit options can save money by not owning a car or in the case of two income households, owning just one car. I'd suggest adding two additional recommendations after #2 on page 35 to address these needs:

> ***Identify and prioritize projects that assist low-income members of the community throughout the region. This would include better sidewalks, improved access to transit options, and eliminating gaps in the network that prevent or discourage usage. Initial focus could be on the communities which rank highest in identified income-based need (Athol, Clinton, Fitchburg, Gardner, Leominster, Petersham, Phillipston and Winchendon)**

> ***Identify and prioritize projects that assist non drivers in communities throughout the region. This would include an analysis of car ownership and license holding by age in the communities.**

Finally in Recommendations number #4 on page 35, please add "transit options" after bicycle networks:

> ***Expansion of mode options for commuters needs to also be a priority for the region. This would also involve the region's trail/pedestrian/bicycle networks and transit options. These systems can be improved and expanded to provide additional walking and biking mode options.**

Chapter 4.5 Economic Vitality

It was interesting to see such a focus on "access to freight" in the discussion of the 10 Opportunity Zones in our region, particularly for the Opportunity Zones situated in core in-town neighborhoods. Movement of goods (freight) is only one piece of the economy. **Movement of people is also critical.** What have the Opportunity Zone communities identified as important? More importantly, what do the people living in the Opportunity Zones want? Have any of the 10 Opportunity Zones in our region done any planning about these issues?

There also needs to be an expanded section on tourism. It would be helpful to better understand the existing location of potential tourism destinations that might be served by better access. This should our wealth of natural, historical, and cultural resources. The openings of the Groton Hill Music Facility in the eastern part of our region and the Winchendon Amphitheatre in the west are just two recent examples of the investment in culture in our region. Many more examples exist.

I would suggest edits to two of the recommendations to address these concerns. (Red edits)

- **Continue to seek to improve external and internal freight truck access for the 10 Opportunity Zones where appropriate and desired. Also explore other transit and mobility needs in the 10 Opportunity Zones.**
- **Continue to seek to improve external and internal access to the regional recreational destinations including parks, farms, festivals, historical sites, and cultural institutions.**

Chapter 4.6 Congestion

Removing single occupant vehicles from roadways is a congestion remedy which will also help address our GHG emission reduction needs.

Add a recommendation on page 23-24.

> *** Proactively study areas of high congestion to determine possible mobility options that might help reduce congestion by decreasing the number of single occupant vehicles.**

Chapter 4.7 Transit

I strongly agree with this statement in the first paragraph of this chapter: "Expansion and continued improvements to the transit system will continue to be a major factor in the overall goal of reducing the number of single occupant vehicles (SOV)"

I was surprised to learn on page 2 that a private for-profit management company operates the fixed route, paratransit, and subscription services for our region. The MA Secretary of State's listing for Management of Transportation Services, Inc. shows only one officer for the company based in Arizona. There is a local agent listed with an address of MART's Water Street location. Why does MART use a private for-profit firm which appears to be based in Arizona?

I was also surprised to see no mention in the report of two regional services that started this year:

- Service from Townsend to Fitchburg
- Service in Lancaster, Lunenburg, and Sterling

The needs identified that led to these services should be covered.

The page 18 recommendation to lift the age requirement and expand service hours to make better use of existing Council on Aging vehicles could be one way to help provide better service in communities. More discussion is needed about other constraints related to their use and how these can be addressed.

The recommendation to expand MART's communication strategies is a good one. In addition to building its presence on traditional and social media, MART should reach out to schools, churches, health care facilities and community centers to offer outreach and training on accessing services. Outreach should be available for all the major languages spoken in our region.

Table 4.7-20: Recommended Programs/Projects starting on page 19 raises several comments and concerns.

A Ridership Demographic Study is much needed in the region. To be truly effective and help drive the changes in the system our region needs, the study must go beyond where the existing ridership is and where they want to go. It should also involve much more than "MART and its Operating Company." As I've indicated in the comments on Demographics, Economic Vitality and Congestion sections, there are unaddressed future needs we must better understand. A Ridership Demographics Study would be key to helping develop an effective transportation plan for the region that could help reduce GHG emissions as well as provide much needed services to all our residents. This study should involve a broad range of participants and be guided by an outside firm with expertise in this work.

It's very concerning that the table lists the cost of this study as N/A. Does that mean Not Available? Not Applicable? Some research into regions who have done this work or a few calls to consultants who did their studies could provide some sort of ballpark estimate to include in the plan. Every other item in the table has a very specific dollar figure. The plan needs to have a rough cost (even a broad range) on this much needed Ridership Demographics Study. To truly serve our region's needs, this study must be inclusive with extensive input from the people living in our region. Projected cost should include funds for participation, transportation, translation, and childcare to enable people to participate.

Another interesting thing about this table is that it is labeled as "Transit Recommendations" but only the top one (with the N/A cost) is related to directly providing transit services to people. The others relate to transit facilities for parking, offices, fuel stations including one for electric vehicle recharging. Where are the costs for

new buses and other transit vehicles? Where are the costs for software programs that might be needed to address the issues raised in the demographic study?

I was surprised to see the requested funds for $5 million for a Hydrogen Fueling Station at the MART Water Street Facility. What is the status of this project? Why would we spend funds for Hydrogen Fueling rather than moving to an all-electric vehicle fleet? There are increasing climate concerns about the use of hydrogen fuels. It's also worth noting that the MART Water St. Facility is in the middle of an EJ neighborhood. I'd like to see more information provided on this project including expected increased traffic and emissions in the EJ neighborhood.

Chapter 4.8 Environment

Thank you for highlighting the climate impacts our region is likely to face. As pointed out, our region will experience more frequent damaging floods such as those in Fitchburg last week. It was nice to see the discussion and maps of potential dams, roads and bridges in the 100-year flood areas identified. There are many more potentially threatened resources. The plan should make note that the FEMA mapped areas do not reflect the more frequent, short intense storms we are now experiencing. Also, the Department of Ecological Restoration has raised the concern that more than half of culverts and small bridges in the state are undersized to handle the extreme rainfall events associated with climate change. This plan should include discussion on both these issues.

Addressing environmental and climate concerns requires more than a focus on Electric Vehicle (EV) Charging Stations. While EV's will be an important part of our clean energy future, we also need to address strategies to provide alternatives to personal vehicles. The first transportation strategy in the MA Clean Energy and Climate Plan is to "Promote Alternatives to Personal Vehicle Travel." As was recently reported in The Atlantic, EV's still contribute particulate matter from brake and tire wear, so it would be prudent to reduce EV miles traveled as well.

The Transportation sector accounted for 42% of MA Greenhouse Gas (GHG) emissions in 2019, according to the MA Clean Energy and Climate Plan. Our plan needs to address mobility strategies and performance measures related to providing alternatives to personal vehicles. The Rural Policy Plan for the Commonwealth of MA has some transportation recommendations that might be useful for the many rural communities in the MART service area.

Chapter 5 – Public Outreach

Thank you for providing the notes and information on the public outreach provided. I participated in the February 16th Meeting. I may have participated in others if I had known about them. In the recommendation section on page 22, I agree that more outreach and analysis must be done to fully address the goals of the Montachusett Region. I would suggest adding more specific action items that would address how and when MRPC will identify, contact, and engage the various groups needed to provide input into a comprehensive transportation plan.

Chapter 6 – Transportation Equity

As described on Page 1,

- **Transportation and social equity** is a civil and human rights priority and major goal for the Montachusett Region. It requires making investments that provide all residents - regardless of age, race, color, national origin, income or physical agility - with opportunities to work, shop, be healthy, and play.

Measuring this requires more than an analysis of where road and bridge expenditures occur. What about an analysis of transit routes and ridership? Access to walking trails and sidewalks to transit facilities?

In the recommendations on page 10, I'd suggest again adding more specific action items that would address how and when MRPC will identify, contact, and engage the various groups needed to provide input into a comprehensive and equitable transportation plan. An additional action item should address how MRPC will help address language and other barriers that may exist.

Chapter 7 – Regional Trends and Recommendations

My previous comments suggested changes to trends and recommendations from each of the previous chapters. My comments on Table 4-7.20 are applicable to Table 7-3. These should be included in this chapter as applicable.

I provided comments about the Ridership Demographics Study in my comments on Chapter 4.7 Transit. The entire region would benefit from a broader mobility study that addresses **transportation and social equity** which is a "civil and human rights priority and major goal for the Montachusett Region." This would look at current and future housing in the region and how residents will have access to "opportunities to work, shop, be healthy, and play." It should also address how we provide opportunities to work, shop, be healthy, and play for people who may travel to our region.

The discussion of "marketing effort" on page 19 reminded me of an old comparison of marketing vs. selling: "selling is getting rid of what you have while marketing is having something that people want to have." Using this example, I view the Action Item of a marketing effort to "inform the public of transit availability and efficiency" as a selling of what we have. The much-needed Ridership Demographics study which I'm suggesting we expand could help provide our region with a transit system our residents want to use.

On page 20, under Environmental Action Items, it would be helpful to better understand what "environmental factors" are considered when "reviewing and prioritizing transportation projects." Also, the plan should add action items related to monitoring and reducing transportation related GHG emissions across the region.

On page 20-21, it is hard for me to judge "extensive outreach" without better understanding what specific outreach activities were undertaken. Stating that "a lot of the respondents who were seniors and/or retired so this may have impacted the outcome," illustrates that the outreach was not broadly successful. In discussions on transportation needs at the CHNA9 Community Charettes I attended (Clinton, Townsend, Winchendon, Leominster) I did not hear "unique transportation needs" from people from each of the participating communities (which included not just those communities but surrounding areas). I heard some general needs for more rural areas (where there is almost no public transit) compared to urban areas where there is some existing transit. For example, people in more rural communities want to be able to access places in their own communities as well as reach the transportation hubs in the more urban areas. This statement on page 20 is a good summary of our situation here in North Central MA.

> *It seems that transportation alternatives are still needed and the ones that currently exist may not meet the needs of most of the survey respondents.*

Or challenge is creating systems that meet the needs of all our residents.

Pages 24-26 provide some great information on statewide transportation trends and recommendations. It's unclear to me how these relate to and have been incorporated into the plan.

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Chapter 8 – Planning Scenarios

I would like to suggest another Planning Scenario which is a hybrid of Multiple Hubs and Strong Community Centers. This seems to be what most desire based on my recent listening experience at the CHNA9 Charrettes as well as my many decades of lived experience in the region. People want strong opportunities to connect in their own communities as well as ways to connect to regional hubs of activities. It's also important to note that people want all mobility connections (walking, biking, transit, cars) within and between communities.

Thank you very much for taking the time to read these long comments. We are at an important point in our history. We need to address problems today to create the healthy and safe region we desire for 2050. In MA, 42% of our GHG emissions are transportation related so our 2050 Transportation System will be a critical part of reaching our 2050 NetZero goals. I plan on attending the Wednesday MPO meeting and would be happy to address any questions you may have there.

Kind regards,
Carolyn Sellars

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