



15

Major Studies





MAJOR STUDIES

Introduction

This chapter includes information developed from various MRPC studies and/or reports as well as local plans and studies. Data compiled from local master plans and studies is limited to transportation and transit issues.

MRPC Studies

During the timeframe of the completion of the 2007 Montachusett RTP and this update, the MRPC has conducted several studies in response to local technical assistance requests from member communities. Identified projects and recommendations are summarized below. Other studies/reports are incorporated into other chapters in this RTP, i.e. Safety, etc. Additionally, some projects from the prior RTP are included.



Fitchburg - Electric Avenue from Franklin Road to Rollstone Road Traffic Study

Electric Avenue at Franklin Road/Clarendon Street

- Improvement alternatives include realigning Franklin Road southwest approach to a 'T' (90 degrees) intersection, signalization, installing flashing beacons, limiting access to the commercial properties by installing curbing and sidewalks, and/or constructing a roundabout.

Electric Avenue at Rollstone Road

- Improvement alternatives include adding left turn auxiliary lanes on Electric Avenue, remove sight distance obstructions, installing flashing beacons, and/or constructing a roundabout.

Electric Avenue Road Segment

- Further crash and safety analysis recommended

Groton - Fitch's Bridge Restoration

Restoration and rehabilitation of Fitch's Bridge. The project focuses on four main goals:

1. To restore the current bridge to a state suitable for pedestrian, bicycle, and equestrian use.
2. To create a transportation connection directly linking Groton, West Groton, and Pepperell, and indirectly linking Townsend and Ayer through existing and proposed rail trails in the vicinity.
3. To rehabilitate a significant Groton landmark.
4. To guarantee that the bridge will be dedicated to non-motorized transportation options.

Estimated Cost: \$562,000



Groton - Route 119 / Townsend Rd. / Proctor Rd. Traffic Study and Signal Warrant Analysis

- Improve sight distance through cut back of foliage, improving the grade at Townsend Rd. and or moving or removing telephone poles and fence posts and/or flashing beacons at the minor approaches or across the intersection as a whole
- Improve driver awareness of intersection as viewed from the intersection approaches through; improvements in the reflective properties of the existing pavement markings, especially the stop bars and or adding pavement markings with supplementary messages such as STOP AHEAD on the minor approaches could be appropriate at this location; improved signage, i.e. adding highly visible signs indicating an intersection ahead at all approaches; and where other measures have not been effective, rumble strips.
- Installation of a traffic control signal at the intersection of Rte. 119/Townsend Rd./Proctor Rd.

Templeton - Templeton Common Traffic Study

Recommendations include:

- Increased parking on South Street and Fire Department Road
- Geometric improvements at all intersections
- Assign Fire Department Road as “For Emergency Vehicles Only”
- Traffic flow options at Patriots Road and Dudley Road
- The removal of South Street, north of Dudley Road
- Widen some intersections to accommodate truck traffic
- Assign Wellington Road (between Patriots Road and Dudley Road) as a two-way street

Templeton - Intersection of Patriots Road (Route 2A/101) & Gardner Road (Route 101) at North/South Main Street

To improve the traffic flow and safety conditions at this intersection, the following improvements are recommended:

- Short term recommendation: Remove vegetation and dumpster and restrict parking at the corner of Patriots Road and North Main Street to improve sight distance for vehicles trying to enter the intersection.
- Long term recommendation: Convert the intersection into a modern roundabout. Operational analyses shows that the intersection will operate under capacity at least until 2020 and that safety will improve.

Sterling – Princeton – Westminster - Route 140 Corridor Profile

Recommendations and preferred alternatives to address identified safety and operational issues include:

Westminster

- Rte. 2A / Rte. 140
 - Left Turn Lanes to 3 approaches and Left Turn signalization to each approach.
- Rte. 140 / Mile Hill Rd.:
 - Install flashing beacon over center of intersection
 - Install 250' of guardrail along Worcester Rd and 1050' along Mile Hill Rd
 - Add left turn lane on Route 140 nb approach & Mile Hill Rd. approach
- Rte. 140 / Gatehouse Rd.:
 - Install flashing beacon over center of intersection



- Remove roadside vegetation
- Segment between Mile Hill Rd. to Gatehouse Rd.:
 - Raise profile of road and replace culverts as necessary between Mile Hill Rd and Gatehouse Rd
- Rte. 140 / Honeybee Lane:
 - Improve drainage across from intersection
 - Remove vegetation
 - Adding 250' of guardrail southeast of intersection approach
- Segment between Rte. 140 / Rte. 2a / Rte. 2 Intersections to Patricia Rd.
 - Remove roadside vegetation at various locations
 - Improve drainage at various locations
 - Upgrade signage/pavement markings/guardrails to reflect existing standards for road segments
- Segment between Rte 140 / Patricia Rd. to Princeton TL
 - Remove roadside vegetation at various locations
 - Improve drainage at various locations
 - Upgrade signage/pavement markings/guardrails to reflect existing standards for road segments
- Total Estimated Cost: \$5,900,000 to \$7,900,000

Sterling

- Rte. 140 / Rte. 62
 - Convert intersection to roundabout
- Rte. 140 / Fox Run / Crowley Rd.
 - Align Crowley Rd to the North directly across Fox Run Rd
 - Remove Vegetation on North side of Fox Run Rd
 - Improve drainage
- Rte. 140 / Beaman Rd
 - Convert to "T" (90 degree) intersection
 - Improve drainage & selectively remove vegetation
 - Consider opening roadway to two-way traffic
- Rte 140 / Still River Rd
 - Remove vegetation on North side of approach
- Rte. 140 / Burpee Rd.
 - Convert to "T" (90 degree) intersection
 - Convert to one way Westerly
- Rte. 140 / Johnson Rd. (North)
 - Convert to "T" (90 degree) intersection
 - Remove Vegetation on opposite side of Johnson Rd. approach
- Rte. 140 / Johnson Rd. (South)
 - Convert to "T" (90 degree) intersection
 - Improve drainage
 - Remove Vegetation on North side of intersection
- Rte. 140 / John Dee Rd.
 - Convert to "T" (90 degree) intersection
 - Improve drainage & culvert
- Rte. 140 / Clemence Ave
 - Convert to one way Eastbound (Enter Only)
 - Clear vegetation to improve sight distance
- Segment between Rte. 140 Princeton TL to Princeton TL
 - Remove roadside vegetation at various locations
 - Flatten/ lower sideslopes along various locations
 - Improve drainage at various locations
 - Upgrade signage/pavement markings/guardrails to reflect existing standards for road segments and intersections



- Improve bus turnaround
- Apply Access Management techniques at 140 Club and lower road grade to Antique Plants
- Segment between Rte 140 from Princeton TL to Dana Hill Rd. intersection
 - Remove roadside vegetation at various locations
 - Flatten/ lower sideslopes along various locations
 - Improve drainage at various locations
 - Upgrade signage/pavement markings/guardrails to reflect existing standards for road segments and intersections
- Total Estimated Cost: \$13,000,000 to \$13,500,000

Ashburnham – Route 101

This study considered the operational and safety conditions of the intersections along the Corridor and discussed possible intersection improvement alternatives and recommendations.

Project Name/Location	Recommendation	Project Type	Cost Estimate
Route 101 (Center Street) and South Main Street	Geometric Improvements	Intersection	\$750,000
Route 101 (Central Street) and Willard Road	Geometric Improvements	Intersection	\$750,000
Route 101 (Central Street) and Cashman Hill Road		Intersection	Further Study
Route 101 (Center Street) and South Main Street	Geometric Improvements	Intersection	\$750,000
Route 101 (Water Street) and Corey Hill/Williams Road	Geometric Improvements	Intersection	\$750,000
Route 101 (Central Street) and Main Street	Traffic Signal/Geometric	Intersection	\$950,000

Athol – Main Street

This report evaluates the operational conditions of selected intersections in the Town of Athol and discusses possible improvements. This study resulted in the following project recommendations

Project Name/Location	Recommendation	Project Type	Cost Estimate
Main Street and Chestnut Street	Traffic Signal	Intersection	\$250,000
Main Street and Common/Grove Street	Low cost Improvements	Intersection	\$250,000
Main Street and Lake Ellis Road	Geometric Improvements	Intersection	\$750,000
Main Street and Petersham Road	Traffic Signal	Intersection	\$250,000
Main Street and Pleasant Street	Geometric Improvements	Intersection	\$750,000
Main Street and Spring/Summer Street	Low cost Improvements	Intersection	\$250,000



Fitchburg – John Fitch Highway / Rt. 2A

This particular intersection was recommended by the MassDOT Highway Division District 3 office for a road safety audit due to its high crash rate and its placement on the top 1000 crash sites. This study resulted in the following project recommendations

Project Name/Location	Recommendation	Project Type	Cost Estimate
Route 2A (Lunenburg St) and John Fitch Highway	Low cost Improvements	Intersection	\$250,000

Lancaster – Intersection Analysis

This report evaluated the current traffic and safety conditions at selected intersections in the Town of Lancaster and discusses possible improvements. This study resulted in the following project recommendations.

Project Name/Location	Recommendation	Project Type	Cost Estimate
High Street and Mill Street		Intersection	Further Study
Main Street and Mill Street	Traffic Signal/Geometric	Intersection	\$950,000
Route 117 and Route 70 North	Traffic Signal/Geometric	Intersection	\$950,000
Route 117 and Route 70 South	Traffic Signal	Intersection	\$250,000

The following intersections were part of the Lancaster study and have had projects developed for them and are incorporated into the FFY 2011-2014 Montachusett TIP.

ID	Location	Project Description	Funding Category	Total Estimated Cost	Federal Funds	Non-Federal Match	FFY
605216	Lancaster	Reconstruction on Route 70 (Lunenburg Road) At Old Union Turnpike	STP HSIP	\$713,205 \$445,955	\$570,564 \$401,360	\$142,641 \$44,596	2012
605392	Lancaster	Intersection Improvements @ Five Corners: Route 110 (Bolton Road, High Street Extension), Center Bridge Road, Old Common Road	STP HSIP	\$354,045 \$445,955	\$283,236 \$401,360	\$70,809 \$44,596	2013

Leominster – Merriam Ave/ Rt.2 EB Ramp

This report evaluated the operational conditions of the intersection of Merriam Avenue and the Route 2 Eastbound ramps in the City of Leominster and discusses possible alternatives.

This study resulted in the following project recommendations

Project Name/Location	Recommendation	Project Type	Cost Estimate
Merriam Avenue and Route 2 EB Ramp	Traffic Signal/Geometric	Intersection	Further Study



Winchendon – Blair Square & Tannery Hill Square

This study examined two major intersections in the town that resulted in the following recommendations:

Project Name/Location	Recommendation	Project Type	Cost Estimate
Route 12/Central St/Front St (Blair Sq)	Geometric Improvements	Intersection	\$750,000
Route 12/School St/River St/Front St (Tannery Hill Sq)	Traffic Signal/Geometric	Intersection	\$950,000

Fitchburg/Leominster/Lunenburg Transportation Analysis Project (F/L/L TAP)

The then Massachusetts Highway Department initiated the Fitchburg/Leominster/Lunenburg Transportation Analysis Project (F/L/L TAP) as a result of previous concerns/problems regarding Route 13 in Leominster/Lunenburg and a connection between Route 2 and downtown Fitchburg. As part of a detailed study both the Route 13 and Route 12 corridors were examined. Specific recommendations were developed for each segment. Improvements to Route 12 between Route 2 in Leominster and Bemis Road in Fitchburg were recently completed. These improvements included a newly improved intersection at Route 12 and Bemis Road and additional turn lanes between Benson Street in Fitchburg and State Street in Leominster as well as various intersection upgrades and improvements. Improvements to Route 13 are under review by MassDOT and it is anticipated that projects will be developed to address identified issues.

Long Term Improvements

Based upon the results of the alternative analysis utilizing the evaluation criteria, a series of final recommendations for the study area was developed. The following summary was derived from the Fitchburg/Leominster/Lunenburg Transportation Analysis Project, Executive Summary for the identified corridors/sub areas.

- **Route 12 Corridor**

The first set of components included improving the Route 12 corridor between Erdman Way in Leominster and Main Street in Fitchburg. MassDOT recommended intersection improvements including new signal installation and the addition of turning lanes along Route 12 at Erdman Way, Westland Avenue, State Street, Holman Avenue, and Nichols Street in Leominster, and Benson Street, Old Leominster Road, Bemis Road, in Fitchburg. In addition, MassDOT recommended widening the Route 12 right-of-way to 50 feet between Erdman Way and Bemis Road, and providing visual and lane striping improvements to the corridor between Bemis Road and Main Street.

Recently completed improvements have been implemented to address a significant number of issues along this corridor at a cost of approximately \$8,500,000.



- **Route 13 Corridor**

The second set of components includes improving the Route 13 corridor between Haws Street in Leominster and Route 2A in Lunenburg. Prior MassDOT recommended intersection improvements included new signal installation and/or the addition of turning lanes along Route 13 at Haws Street, Mead Street (including ramp upgrades connecting to westbound Route 2), River Street, Nashua-Hamilton Street, Prospect Street, North Street and Route 2A. The recommendations also included moving forward with the Hamilton Street/Crawford Street intersection improvements in Leominster as designed by MassDOT. In addition, MassDOT recommended widening Route 13 to four lanes of travel (two in each direction) between Haws Street and Prospect Street in Leominster. MassDOT is currently reviewing improvements on this corridor.

- **Bemis Road/John Fitch Highway/Summer Street/ Route 2A**

The third set of components included improving the Bemis Road/John Fitch Highway Corridor between Airport Road and Route 2A in Fitchburg, and the Summer Street corridor between John Fitch Highway and Route 2A (Moran Square) in Fitchburg. MassDOT recommended intersection improvements including new signal installation and/or the addition of turning lanes along Bemis Road/John Fitch Highway at Airport Road, Intervale Road, Summer Street, and Route 2A, and along Summer Street at Harvard Street (5th Street Bridge) and Route 2A (Moran Square) in Fitchburg. Improvements were implemented along the Summer Street and Bemis Road corridors at a cost of approximately \$2,600,000.

The following table summarizes the long term recommendations for the F/L/L TAP that are still to be addressed.

LONG TERM RECOMMENDATIONS, ESTIMATED COSTS AND TIME SCHEDULE

F/L/L Transportation Analysis Project

Corridor	Project	Estimated Cost	Schedule
Route 13 Corridor			
	• Widening from Route 2 to Prospect Street	\$4,500,000	
	• New Ramps from Route 2 along Mead Street	\$450,000	
	• Widening from Route 2 to Haws Street	\$2,500,000	
	• Crawford Street at Hamilton Street	\$200,000	
	• Route 13 at North Street	\$150,000	
	Subtotal	\$7,800,000	3-5 years
Summer Street Corridor			
	• Summer Street at Route 2A (Moran Square)	\$250,000	
	Subtotal	\$250,000	1-3 years
TOTAL COST OF ALL IMPROVEMENTS		\$8,050,000	

Source: Fitchburg/Leominster/Lunenburg Transportation Analysis Project, Executive Summary – DeLeuw Cather & Co., October 1999.



Other Potential Long Term Improvements

After the development of this study, members of the Task Force identified two additional improvements for consideration. These improvements are in addition to the report's recommendations:

- A connector road between the Route 2/Mead Street interchange and the intersection of Crawford Street/Hamilton Streets. This connection would remove traffic from Route 13 between the Route 2/13 interchange and Hamilton Street and also reduce the number of turns required to navigate between Route 2 and Crawford Street. In addition, the more direct connection to Crawford Street would improve access to businesses along the Crawford Street and Airport Road corridor. The major drawback from this improvement would be a substantial impact on wetlands north of Route 2. In addition, there would be an increase in the volume of traffic through the Crawford Street neighborhood. Costs for this connector are estimated at just under \$10 million not including environmental and right-of-way acquisition costs.
- A connector road from the Airport Road/Bemis Road intersection to the Moran Square (Route 2A and Summer Street) lower Main Street area. This alternative is commonly referred to as the Fitchburg Downtown Connector. This roadway would provide a new link between Bemis Road and downtown Fitchburg that would reduce traffic along parallel stretches of Route 12 and Summer Street. In addition, this new connection, combined with the previously mentioned connector to Crawford Street, would provide a twenty second travel time savings between Route 2 and downtown Fitchburg as compared with traveling along an upgraded Route 12. The drawbacks from this improvement include construction in a hazardous chemical site, removal of historic buildings at Moran Square, and an estimated construction cost of \$10 million that does not include environmental cleanup or right-of-way acquisition costs.

Although these connectors have support among the local citizens, cost considerations are prohibitive. At the time of the completion of the study, it was the recommendation of MassDOT that the improvements listed in the study proceed in order to address the identified problems within the study area and that further analysis of these two connectors be undertaken. It should also be noted that the design of the recommended improvements would not interfere or preclude the installation of the two connector roads in the future, if so desired or warranted.

2010 Request for funding: John Fitch Highway/Bemis Road Corridor

In 2010 the City of Fitchburg and the Fitchburg Redevelopment Authority sought federal funding assistance for the replacement and improvement of deteriorated infrastructure in the John Fitch Highway/Bemis Road corridor, a major business district and gateway to Fitchburg. These Improvements were estimated to cost \$19,700,000.


FFY 2012-2015 Transportation Improvement Program - Appendix

The FFY 2012-2015 Montachusett MPO Transportation Improvement Program (TIP) contains an appendix entitled “Appendix A – Supplemental List”. This table contains projects within the development process that are not associated with a particular federal fiscal year. These projects therefore, are not listed in the Short Range Element of the RTP but are included in the Long Range Element.

ID	Location	Project Description	Funding Category	Total Estimated Cost	Federal Funds	Non-Federal Match
601957	Ashburnham	Resurfacing & Related Work On Route 101	STP	\$2,160,000	\$1,728,000	\$432,000
606348	Ayer	Resurfacing And Related Work On Route 2A, From Sandy Pond Road To The Littleton Town Line	STP	\$1,200,000	\$960,000	\$240,000
604961	Clinton	Resurfacing & Related Work On Route 110 (High Street)	STP	\$1,500,000	\$1,200,000	\$300,000
604960	Clinton	Resurfacing & Related Work On Water Street And Bolton Road (1.2 Miles)	STP	\$4,067,320	\$3,253,856	\$813,464
606403	Fitchburg	Reconstruction Of Rindge Road, From Route 31 (Ashby State Road) To Ashby T.L.	STP	\$2,800,000	\$2,240,000	\$560,000
97201	Fitchburg/ Leominster/ Westminster	Reconstruction Of Route 2 From Oak Hill Road To Vicinity Of Damon Road	STP	\$20,000,000	\$16,000,000	\$4,000,000
606124	Fitchburg/ Leominster/ Lunenburg	Reconstruction Of Summer Street And North Street	STP	\$6,000,000	\$4,800,000	\$1,200,000
601965	Groton/ Pepperell/ Townsend	Resurfacing & Related Work On Route 119	STP	\$5,000,000	\$4,000,000	\$1,000,000
601366	Harvard	Resurfacing & Related Work On Route 110 (Still River Road) From Bolton T.L. To Route 110/11 Intersection (3.4 Miles)	STP	\$2,500,000	\$2,000,000	\$500,000
605393	Harvard/ Lancaster	Reconstruction & Widening On Route 2 Ramps @ 35, 36 & 38	STP	\$2,080,000	\$1,664,000	\$416,000
606435	Hubbardston	Resurfacing And Related Work On Route 68, From Williamsville Road To The Rutland T.L.	STP	\$3,300,000	\$2,640,000	\$660,000
604928	Leominster	Reconstruction Of Mechanic Street, From Laurel Street To The Leominster Connector	STP	\$2,400,000	\$1,920,000	\$480,000
602340	Leominster	Nashua Trail At Searstown (Enhancement)	STP>CMAQ	\$317,040	\$253,632	\$63,408
604699	Sterling	Intersection Improvements At Route 12 And Chocksett Road	STP	\$1,500,000	\$1,200,000	\$300,000
601220	Townsend	Resurfacing & Related Work On Route 13	STP	\$4,000,000	\$3,200,000	\$800,000
102710	Winchendon	Reconstruction Of Glenallen Street (Route 202) From Maple Street Intersection To Rindge, N.H. State Line	STP	\$5,825,582	\$4,660,466	\$1,165,116

Total \$64,649,942 \$51,719,954 \$12,929,988



Community Studies

Several communities have developed Master Plans that incorporate transportation items or strategies to address specific local needs. The following summarizes data from Lancaster, Petersham and Westminster. In addition, data from the communities of Athol, Ayer, Fitchburg, Groton and Shirley that was listed in the 2007 RTP are maintained and identified in this RTP.

Lancaster Master Plan 2007

The town of Lancaster adopted its first Master Plan in 40 years in 2007. Within the transportation and circulation section of the plan, there are a number of recommendations for improvements as well as goals and objectives and actions to implement the goals.



Intersection	Recommendation for Improvement
Route 117/North Main Street-Route I-190	Actuated traffic signals be installed by 2010 if potential Lunenburg developments have not occurred that could help cover costs. - COMPLETED
Route 70 (Lunenburg Road) and Old Union Road	Signalization and Redesign – PROJECT IN FFY 2011-2014 TIP
Route 70 (Lunenburg Road) and Fort Pond Road	Paint pavement markings on Lunenburg Road on the approaches to Fort Pond Road
Route 70 and Route 117 north and south	Possible signalization, a pedestrian signal cycle and redesign. South may require grade changes one east side to increase visibility.
Route 70, Sterling Road, Mill Street	Possible signalization, pedestrian cycle, street narrowing.
Route 110, Old Common Road, High Street extension, Center Bridge Road, Bolton Road	Possible signalizations, pedestrian cycle only, redesign to reduce five way intersection to four way, sidewalks, reduce curb cuts. – PROJECT IN FFY 2011-2014 TIP
Route 110 (High Street Extension) and Mill Street	Possible signalization, safety study, curbs, sidewalk, traffic calming approaches
Deershorn Road and South Meadow Road/Deershorn Road and Ice House Road/Deershorn Road, Chace Hill Road and Sterling Street/Ice House Road and Sterling Street	These four intersections within close proximity need to be studied as a group for possible redesign, road closings and/or signalization
Route 70 at the Police and Fire Station/Ambulance Building/Perkins School Entrance/Post Office and South Fire Station	Study for possible signalization
Route 62 rail Crossing (Sterling Road)	Installation of reflectorized gates.
Seven Bridge Road (Route 117) rail crossing	Installation of reflectorized gates.
Mill Street and Center bridge Road rail crossings	Installation of reflectorized gates.
Route 62/South Meadow Road and Route 117 rail crossings	Installation of gates and a warning system.
Kilbourn Street Crossing	Installation of a crossing sign be placed on each approach to the crossing
Sterling Road, Old Common Road and Deershorn Road	Truck routing improvements needed.



Goals and Objectives	Actions
<p>Improved traffic control and flow throughout Lancaster, including better traffic enforcement and controls at key intersections</p> <p>Enhanced mobility for those not able to drive or who chose not to use automobiles.</p> <p>Land use and development being well shaped for compatibility with transportation objectives, and transportation shared to improve, not disrupt, neighborhoods.</p>	<p>Improve both vehicular and pedestrian safety throughout the Town through traffic enforcement, education, exhortation and improved signage with focus on Route 70, Lunenburg Road, Sterling Road and Main Street</p> <p>Consider hiring part of full time traffic officer with costs to be covered from citation revenue.</p> <p>Conduct traffic and redesign studies for key intersection listed in the chapter.</p> <p>Press for installation of railroad crossing gates and signals at identified locations in the plan chapter.</p> <p>Explore the possible establishment of truck routes to direct truck traffic along specific road corridors.</p> <p>Explore possible new road alignments to potentially reduce traffic congestion and neighborhood disturbance issues.</p> <p>Develop and adopt context sensitive road standards for new subdivision roads to provide for road design appropriate to the differing characters of the town areas.</p> <p>Reconsider and potentially revise the existing classification of roads under zoning in light of the new MA classification and the potential use of such classification as one basis for setting intensity of use standards in zoning bylaw.</p> <p>Work the MRPC, Fitchburg, Leominster and Clinton to implement the long proposed Nashua River Bikeway seeking state and federal funding to accomplish this.</p> <p>Prepare a bicycle plan compliant with the new MA Highway Design Guide.</p> <p>Develop paths and trails to connect various conservation lands in Lancaster for both pedestrian and bicycle use.</p> <p>Amend subdivision regulations to require developer participation when land being subdivided contains a portion of such routes.</p> <p>Designate bike lanes on major roads where feasible such as along Routes 70, 117, 110 and 62.</p> <p>Pursue obtaining access to Old Shirley Road through military conservation land for creation of a bike path connecting through Jackson Road and Devens.</p> <p>Conduct traffic and redesign studies for key intersections listed in the chapter to reduce traffic accidents and to enable safe pedestrian crossings.</p> <p>Provide sidewalks along major roads in particular Route 117, 62, and 110, in conjunction with any proposed street reconstruction or where new development occurs on adjacent land. Install benches along these sidewalks to create resting areas for pedestrians.</p> <p>Restore and enhance the Ponakin and Atherton bridge areas to create pedestrian and bicycle opportunities. Possible improvements include creating picnic and fishing areas and bicycle parking. Seek funding through the federally funded Transportation Enhancements program. Administered by MassDOT.</p>



Goals and Objectives	Actions
	<p>Seek town meeting endorsement of a policy that roadway modification should never, on balance, degrade either bicyclist or pedestrian accommodations. Wherever possible, they should improve accommodations for bicyclists and pedestrians by fully as much as they improve auto accommodations.</p> <p>Implement regulatory implementing actions of the land use chapter as a means of reducing in –town traffic over the long term.</p> <p>Revised land use regulations to include trip generation as a criterion for permit approval, using appropriate trip generation standards to ensure that the traffic generated by new development will be consistent with the Plan-intended capacity of the roads being impacted, with those planned capacities in turn being tuned for appropriateness in the different policy areas in Lancaster.</p> <p>Adopt zoning and subdivision regulation amendments ensuring that new developments over a threshold size make provisions for or contributions towards pedestrian and bicycle accommodation, including as appropriate either sidewalks or off-road trails, bicycle racks, and easy pedestrian access into business complexes.</p> <p>Amend zoning's parking controls to better ensure well-designed access between streets and large parking areas.</p> <p>Work with neighboring communities and the MRPC to find solutions to trip reduction, more compact, mixed use land development patterns and expanded public transportation throughout the region.</p> <p>Develop and establish a sponsorship program for parks and intersections ("Adopt-a-street") in Lancaster. Sponsors would provide some minimal landscaping maintenance and improvements such as planting. Install signage at the locations to identify and acknowledge these sponsors.</p> <p>Explore establishment of a program for over time laying out and proposing for acceptance by town meeting those private roads which have been improved to meet standard to be established for such streets. Following acceptance, those streets would then be maintained by the Town and traffic enforcement by the Town would be enabled.</p>

Petersham Master Plan

The Town of Petersham's Master Plan written in 2004 has a number of transportation goals. It also contains a chapter on transportation related issues and possible recommendations to improve them.

GOALS
<p>Protect the rural, scenic, and historic character of Petersham's roads.</p> <p>Maintain and improve the pedestrian friendliness of the town center.</p> <p>If new roads are built in the future, ensure that their design is compatible with the town's character.</p> <p>When roads are repaved or reconstructed, add bicycle accommodations if appropriate.</p> <p>Link and map the Town's off-road pedestrian and bicycle routes to provide a viable alternative to on-road travel.</p>



PROPOSAL	RECOMMENDATIONS
Retain visual character of Town Roads	Adopt a set of guidelines for the management and if necessary improvement of roadways in Petersham. Guidelines should address the following issues: Road design standards, type of road surface, roadside tree management, pedestrian and bicycle accommodations, criteria for placement of future development alongside the road.
Road Discontinuances	Discontinue a few segments of minor roads that are no longer viable for year round public travel and/or are not needed to provide access to public property. The towns should investigate further.
Tailor Parking Requirements	Additional provisions should be included in Petersham's parking requirements. Applicants should be allowed to apply for a waiver or reduction of requirements if they can show the development will need less parking than the town ordinarily requires, because of the development's location, because many trips would be by bike or foot, or because the availability of suitable on-street parking. Within the town center, it might be more desirable to allow a limited amount of on street parking rather than to require new parking lots which might adversely affect the town centers character. The town should also consider whether unpaved parking areas are acceptable under any circumstance.

Westminster Master Plan – Transportation Element 2010

The Town of Westminster worked with the Montachusett Regional Planning Commission to update the Transportation section of their master plan. The chapter is in the process of being adopted by the Town and is listed for informational purposes at this time. Please contact the MRPC or the town regarding adoption.

GOAL
Construct and maintain a safe roadway system that is consistent with the desired small village and rural character.
OBJECTIVE
Maintain a roadway management plan to achieve maintenance oriented roadway network condition and provide a basis for establishing priorities and level of budget allocation.

PROPOSAL	RECOMMENDATIONS
Continue proactive town participation with MRPC	Westminster Board of Selectmen and Planning Board are each responsible for designating a MJTC Westminster Representative who should make every effort to attend monthly MJTC meetings and communicate with MRPC Transportation Staff. Through continued and active involvement in the planning process via the MRPC, the MJTC and the MPO issues and projects important to the town can be discussed heard and acted upon with the town's input and knowledge.
Schedule Traffic Counts with MRPC	Westminster Board of Selectmen should solicit up to five potential locations for traffic counts from Town Boards and Departments on an annual basis. The purpose is to monitor traffic patterns over time in order to anticipate the need for future improvements.
Promote traffic calming efforts	The town is currently using signs in the school zone on South Street to draw attention to the pedestrian crossing areas as well as using temporary radar trailers to help with speeding. Enforcement measurers should be identified and put in place before the local streets become inundated by through traffic. The town can also require developers to implement traffic calming measures in new subdivisions.
Make the neighborhoods, especially the downtown more pedestrian friendly through the construction and rehabilitation of the sidewalks.	This effort could be at least in part be incorporated into a Comprehensive Circulation Study/Plan. Financing for needed roadway and sidewalk repair for the existing local roads include enhancement funds, public/private partnership projects, and Community Development Block Grant funds for potentially eligible areas.



PROPOSAL	RECOMMENDATIONS
Regional Trail Network	Work with the neighboring communities and regional entities to establish a regional trail network that would ultimately link Westminster to various recreational opportunities outside the town. The town may also wish to identify, prioritize and implement additional trail opportunities with the community.
Comprehensive Circulation Study/Plan	The town may seek to establish a comprehensive circulation study/plan of non-motorized user that could identify major travel routes, crosswalks, sidewalks, appropriate pavement markings and signage, etc. The plan could identify links to the towns overall trail/bike network.
Update Census Data	The Westminster Planning Department should update relevant sections of the Transportation Element of the Master plan when 2010 Census Data is released.
Funding of repairs to bridges	Encourage the State to further investigate the structure, function, and scour ratings of key bridges and to make these bridges a funding priority.
Maintain culverts	Conduct and maintain an inventory of culverts within the community and seek to identify a mechanism to clean, repair and update the structures as needed.
Strengthen public transportation	The town should open a dialogue with its regional transit authority regarding its current and relevant programs, and the possibility of having a commuter shuttle in Westminster.
Analyze Traffic Crash Data	Analyze traffic crash data for crashes on major roads and intersections to determine the patterns and causes. Seek potential projects to address identified issues at major crash locations. Work with the regional planning agency and MassDOT highway division office on projects and funding opportunities.
Protect the towns investment in roads and other public facilities commensurate with its level of assets.	Through the pavement management system the town should seek local and federal funding assistance on eligible roads and should work with its regional planning agency and MassDOT highway division office on projects and funding opportunities.
Review town's curb cuts.	Numerous curb cuts in the downtown area increase the number of potential conflict points between pedestrians and vehicles as well as vehicles and vehicles. The town should conduct a review of existing curb cuts to determine if consolidation, removal, etc. may be appropriate. The town could also review its Site Plan Review bylaw and if it warrants include additional language that would limit curb cuts.

Athol Master Plan

The following is a list of recommendations as developed for and listed in the Athol Master Plan. Specific projects were not always identified.

Recommendations
<ul style="list-style-type: none"> • Work cooperatively with other communities in the North Quabbin Region, particularly in development of the CTS/G-Link Services. Ensure inclusion on the agendas of the Montachusett Joint Transportation Committee. • Continue support for Route 2 improvements, and participation on the Route 2 task force to plan for the long range objectives of the widening, the South Athol Road Interchange and the suggested bicycle path component. • Analyze traffic accident data for accidents on Main Street to determine the patterns and causes. Incorporate accident mitigation solutions into the design of the Main Street Improvement Project. • Consider working with the Design Engineer and MassDOT to break the Main Street Improvement Project down into smaller components to phase the project and apportion costs over time. • Consider developing a pavement management system to assess existing pavement conditions and plan for needed maintenance and repairs while obtaining the maximum life with cost effective investment.



Recommendations

- Seek financing for needed roadway and sidewalk repair for Athol's existing local roads. Examples could include Enhancement funds, public/private partnership projects, CDBG for eligible areas.
- Canvas local residents for perceptions of roadway congestion. Consider conducting travel-time and delay surveys if residents indicate there is congestion. Monitor the segment of Route 2A (Main Street/South Main Street) from the Orange Town Line to Petersham Road. (Mainly unsignalized intersections lacking gap opportunities on side streets and at driveways).
- Conduct an Assessment of Stormwater / Meltwater Drainage Design. Include the following components.
 1. Investigate stormwater management design on roads nearest water bodies to determine if the design is effective or deteriorating, or in need of upgrade.
 2. Determine discharge points for existing stormwater management systems. If stormwater discharge directly to waterbodies, consider redesigning to redirect water for filtering before discharging to receiving waters.
 3. Investigate areas showing scour and siltation for evidence of habitat loss and road/vehicle related chemical residue.
 4. Conduct water quality monitoring to assess potential impacts from storm water run off and snow melt.
 5. Devise a management plan and determine costs of improving storm water/melt water design using best management practices as described by EPA, DEP, Mass Highway.
 6. Investigate unpaved roads under Town jurisdiction to assess level of storm water impact and implement best management practices for unpaved roads defined in the Massachusetts Unpaved Roads BMP Manual, by the Berkshire Planning Commission and described on page 6-10.
- Explore the potential of the Rail Stations on the Freight Main Line (Vermont and Massachusetts) to serve as a regional transloading facility to support economic growth goals and revitalize the downtown district.
- Analyze the market segments and potential demand for CTS and G-Link services when the Census Transportation Planning Package is made available in December, 2002.
- Update relevant sections of the Master Plan when the Census Transportation Planning Package is released in FY 2003.
- Explore financing options for continuing and developing CTS and G-Link services to serve Eco-Tourism objectives.
- Encourage the North Quabbin Ecotourism Task Force to contact Vermont Transit and Peter Pan Bus Company and discuss the ridership potential of eco-tourist industry in the North Quabbin Region.
- Explore financing options for installation of signal systems at Main Street/Pleasant Street, and Main Street at Crescent Street, which will improve pedestrian safety and provide gap opportunities for side street traffic.
- Encourage the State to further investigate the structure, function, and scour ratings of key bridges in Athol, and to make these bridges a funding priority.
- Improve the supply of parking by acquiring the Bachelder Lot on Island Street
- Examine the feasibility of revitalizing the Municipal Parking Garage and parking lot south of Main Street adjacent to the garage.
- Acquire appropriate properties in the downtown area to establish additional public access points to the Millers River that meet the criteria of the Public Access Board to create parking for between four to six cars and safe access in and out of the water body. Assign a responsible authority willing to maintain the site (e.g.: Town Department of Public Works).
- Link scattered conservation and recreation areas through the establishment of a continuous greenway network.
- Make the neighborhoods, especially the downtown, more pedestrian-friendly through the construction and rehabilitation of sidewalks. (Department of Public Works, ongoing) Incorporate current design standards for ADA compliance.
- Launch efforts to make recreation areas and facilities handicapped-accessible. (Handicap Coordinator, Department of Public Works, ongoing)
- Recruit volunteers, including the boy scouts, to improve facilities in the Bearsden Conservation Area. A low-impact loop trail, additional picnic areas, privies, and a metal observation tower at the Round Top summit would enhance recreational opportunities there. (Conservation Commission, ongoing)
- Work with neighboring communities and regional entities to establish a regional trail net-work that would ultimately link Athol to recreational opportunities in Orange and Petersham. (Greenway Committee, ongoing)
- Evaluate the potential illustrated by the recent EOEa Buildout Analysis to determine the impacts on future town budgets, and the capacity of future tax revenue to accommodate this level of development. Adjust zoning bylaws and subdivision regulations accordingly (for example: reduce frontage requirements and increase Open Space set asides to encourage infrastructure friendly development patterns).



Ayer Master Plan

The following project recommendations were taken out of the Ayer Master Plan

Transportation Projects Identified in the Ayer Master Plan

Location	Problem / Issue	Type	Recommendation/ Cost Estimate
Bishop Road/Park Street		Intersection	
Carlton Rotary	Redesign/ signal installation feasibility analysis	Intersection	Further Study
Park Street/Main Street		Intersection	
Willow Road/Littleton Road (Route 2A/110)		Intersection	
Bishop Road	Corridor Upgrade, Possible bypass route	Roadway	Further Study
MacPherson Road	Corridor Upgrade, Possible bypass route	Roadway	Further Study
Snake Hill Road	Roadway Improvements	Roadway	
Parking Garage		Transit	Further Study
Sandy Pond Road	Truck Route Improvements	Truck Route Improvements	
Westford Street	Truck Route Improvements	Truck Route Improvements	
Willow Road	Truck Route Improvements	Truck Route Improvements	

Fitchburg Vision 2020

The City of Fitchburg released in December 1998, a master plan entitled Vision 2020. The plan addressed several areas of concern for the City including; Open Space and Recreation, Land Use, Housing, Economic Development, Information Technology, Capital Facilities and Services, Natural Cultural and Historic Resources, and Transportation and Circulation. Goals and objectives for each section as well as actions to be taken were developed.

Within the Transportation and Circulation section of the Vision 2020 Master Plan, a number goals and recommendations were identified. Specific projects are not listed but rather general descriptions for improvements are given. The following tables outline the goals and objectives and recommendations of the Vision 2020 master plan.



TRANSPORTATION AND CIRCULATION GOALS AND OBJECTIVES
City of Fitchburg Vision 2020 Master Plan

AREA	GOALS & OBJECTIVES
GATEWAYS	<p>Improve the entries into Fitchburg to serve as dignified attractive, welcoming and efficient gateways into the community.</p> <ul style="list-style-type: none"> • Repair and maintain the roadways, sidewalks, and curbs. • Minimize the number and presence of billboards. • Create a system of clear, information, uncluttered directional and street signs which identifies routes and destinations, and enhances the appearance of the area. • Involve residents, business, and property owners along the gateways in planning and implementing improvements.
CIRCULATION	<p>Improve the circulation of cars, pedestrians, bicycles, and public transportation, including cross street circulation and intersections, with minimal negative impacts to residents.</p>
ALTERNATIVE FORMS	<p>Encourage the use of alternative forms transportation including bicycle and public transit, to reduce traffic, alleviate parking demands, improve air quality, and enhance public safety.</p> <ul style="list-style-type: none"> • Provide an alternative system of access between the downtown's of Fitchburg and Leominster. • Work at the local, regional, and state level to encourage the integration of cleaner and safer technologies into the existing transportation system. • Encourage connections between various modes of travel. For example, establish safe routes for residents to walk or bicycle to catch the commuter train. • Improve commuter rail service to and from Fitchburg. • Work with private concerns to implement improved modes of transportation. • Increase use and awareness of MART among city residents and students at Fitchburg State College.
SAFETY AND EMENITY	<p>Improve the safety and amenity of public streets for vehicular and pedestrian travel.</p> <ul style="list-style-type: none"> • Investigate traffic calming techniques in areas with known hazards due to inappropriately high vehicular speeds. • Redesign problem areas and intersections when necessary. • Establish, maintain, and improve sidewalks in areas of pedestrian and vehicular conflict. • Encourage pedestrian-friendly design in new developments. • Improve the appearance and utility of directional and street signs throughout the city. • Work with business and property owners to improve the appearance and placement of private signs so as to decrease confusion and clutter. • Improve coordination of parking and traffic enforcement. • Investigate methods of enhancing snow removal procedures. • Examine the impacts of current street alignment on access and internal circulation in Downtown, and implement improvements when needed. • Reduce the speed of travel on Main Street. • Schedule and conduce the repair of bridge so as to create the least disruption of traffic flow possible. • Promote the use of public transportation, and take advantage of the opportunities it provides for adding vitality to the Intown area. • Investigate improvements that can be made to the existing pedestrian infrastructure and alternative modes of pedestrian travel.
ACCESS	<p>Provide better access to Intown Fitchburg.</p> <ul style="list-style-type: none"> • Improve the connections between Route 2 and downtown. • Identify and prioritize the problems with the current system of access, and the desired benefits of a new system. • Promote alternative access routes into the city.
PARKING	<p>Implement and enforce parking plans in neighborhoods with parking deficiencies to provide sufficient spaces for local residents, visitors, and business people; enhance pedestrian amenities; and provide for the safe and efficient movement of vehicles. Investigate methods of decreasing the usage of on-street parking spaces by Fitchburg State college students.</p> <p>Support the development of alternative revenue sources at Fitchburg Municipal Airport, consistent with the 1990 Airport Master Plan.</p> <p>Provide adequate staffing for transportation needs.</p>

Source: Vision 2020, Fitchburg's Master Plan – City of Fitchburg, December 1998



TRANSPORTATION AND CIRCULATION RECOMMENDATIONS
City of Fitchburg Vision 2020 Master Plan

RECOMMENDATION	ITEMS
<ul style="list-style-type: none"> Produce a Gateway Plan 	<ul style="list-style-type: none"> a. Define the gateway into the city and establish priority gateways. b. Adopt site plan review for the gateway to improve the appearance of the main corridors into the City and to improve access into the City. c. Develop a streetscape plan for gateways. d. Establish property maintenance standards, and initiate a program of beautification awards. e. Replace existing signage. New signage should identify routes to specified locations, and enhance the appearance of the streetscape. f. Investigate updating the timing and placement of traffic signals. g. Where practical, eliminate overhead wiring in high-visibility locations. h. Investigate the construction of a Downtown Connector. Any construction by state agencies should take place as part of a coordinated plan, in order to assure that the maximum benefit is achieved with minimal negative impact to residents and businesses.
<ul style="list-style-type: none"> Revise the sidewalk requirement in the city's subdivision regulations. 	<ul style="list-style-type: none"> a. Require the installation of sidewalks and other pedestrian amenities in the new developments which connect to existing sidewalks. b. Allow the installation of the off-site sidewalks of improvement of existing sidewalks instead of requiring sidewalks within the subdivision, at the discretion of the Planning Board.
<ul style="list-style-type: none"> Lobby the MBTA to provide an express route for commuter service from the Intermodal Transportation Center to North Station along the Fitchburg route of the Commuter Rail. 	
<ul style="list-style-type: none"> Replace the winter parking ban with a snow emergency ordinance. Install signage designating "No Parking During Snow Emergency." 	
<ul style="list-style-type: none"> Increase penalties for multiple violations of parking ordinances. 	
<ul style="list-style-type: none"> Increase enforcement of regulations reserving parking spaces for the disabled. 	
<ul style="list-style-type: none"> Utilize the city's Geographic Information System to advise City council in clear and concise methods of transportation issues. 	
<ul style="list-style-type: none"> Increase the involvement of the Department of Public Works in planning transportation projects. Have the Commissioner of Public Works or his designee attend MRPC and MPC meetings, as well as other pertinent meetings. 	
<ul style="list-style-type: none"> Develop a network of bike ways, including a recreational and commuter route between the downtown's of Fitchburg and Leominster 	



TRANSPORTATION AND CIRCULATION RECOMMENDATIONS (cont.)

City of Fitchburg Vision 2020 Master Plan

RECOMMENDATION	ITEMS
<ul style="list-style-type: none"> Implement custom parking plans for neighborhoods when a consensus exists among area residents, businesses and the city that the proposed plan adequately addresses parking, safety, snow removal, and circulation needs. 	
<ul style="list-style-type: none"> Establish Priority Snow Removal Routes for neighborhoods located on steep slopes. 	
<ul style="list-style-type: none"> Investigate how to provide safe pedestrian routes to the intermodal Center and the Central Plaza. An important first step will be improving the pedestrian way across Lower Main Street at North Street. 	
<ul style="list-style-type: none"> Provide shelters at all bus stops. 	
<ul style="list-style-type: none"> Improve coordination between parking enforcement and snow removal activities. 	
<ul style="list-style-type: none"> Make improvements to existing gateway to improve access to Intown Fitchburg. Utilize signage to designate a beltway from Route 2 past the downtown area and back. 	
<ul style="list-style-type: none"> Create and fund the position of Traffic Specialist to coordinate parking and traffic enforcement, the planning and designing of improvements, and other activities related to the circulation of vehicles. 	
<ul style="list-style-type: none"> Work with Fitchburg State College to create a transportation plan for the college neighborhood. The scope of this plan should include the following: 	<ol style="list-style-type: none"> Identify the parking needs of residents, on-campus students, commuter students, students who reside in the neighborhood, faculty, and visitors. Develop policies by the city, MART, and FSC to increase awareness and use of public transportation by students living on campus, in other parts of the city, and outside of Fitchburg. Including promotion of MART busses during orientation is a vital first step. Produce a policy for the provision and retention of parking spaces as the college expands. Identify needs at the college which can be provided by MART. Pursue funding for MART from FSC in exchange for needed services. Expand MART's student discount to include FSC students, or provide free service for them.
<ul style="list-style-type: none"> Acquire the Conrail right-of-way and protect easements to provide for alternative transportation systems between the downtowns of Fitchburg and Leominster. 	
<ul style="list-style-type: none"> Develop a pavement management plan. This plan should include a system for announcing upcoming improvement to affected residents. Involve neighborhood groups in publicizing these announcements. 	

Source: Vision 2020, Fitchburg's Master Plan – City of Fitchburg, December 1998

Groton – 2020 Comprehensive Plan

The Town of Groton completed development of a master plan that outlines goals, objectives and plans to address transportation issue within the community. The following is a summary of those items as outlined in the comprehensive plan:



GOAL	OBJECTIVES
To provide Groton residents with safe, convenient transportation routes while protecting the small town character of the community and the character of the neighborhoods.	<ol style="list-style-type: none"> 1. To initiate regional efforts to decrease traffic congestion. 2. To make local efforts to decrease traffic congestion and improve traffic safety. 3. To decrease commuter traffic flows along side roads and through neighborhoods. 4. To provide Groton residents with easy access to the villages. 5. When considering alternative traffic routes, maintain adequate traffic flows through business areas so as to support local businesses. 6. To leave open options for future mass transit. 7. To expand and connect a trail and pathway system in town. 8. To ensure adequate emergency access throughout the town. 9. To prepare and implement a long term road improvement plan that improves road safety while also working to protect neighborhood character and environmental quality. 10. To provide street patterns that allow Groton residents the ability to avoid the congestion in the Center. 11. To plan for managing regional traffic on the existing Route 119 rather than a bypass.

ALTERNATIVE PLANS	ACTIONS
<ol style="list-style-type: none"> 1. Current Plan - Protect existing road systems and neighborhoods by making minimal roadway improvements, reducing the number of through streets in future developments and by routing most traffic through the Center. 2. Improve Overall Roadway System, Do Not Direct commuter Traffic Along Side Roadways - Make steady improvements throughout town. Balance improvements with neighborhood protection. Direct most traffic through the Center. Make through street connections to ensure emergency access. 3. Develop New Road System - Develop a new system of roadways to handle future traffic flow by planning for a bypass to the Center, planning for a bypass to West Groton and planning for new east-west streets between Longley and Route 40, and Route 40 and Route 119. 	<p>T1. Adopt Alternative Plan #2, Improve Overall Roadway System, Do Not Direct Commuter Traffic Along Side Roadways.</p> <p>T2. Do not plan for or construct a bypass around Groton Center. The bypass should be not considered for the following reasons: Analysis indicates that there are no favorable routes to the east of Route 119. A bypass route to the west of Route 119 will not alleviate the significant amounts of traffic moving from the Center to the east or north. There are wetlands along or in the path of every potential route. Any bypass will involve the purchase of many acres of land and the crossing of many properties. The bypass will have a negative impact on the neighborhoods and intersecting streets surrounding the Center. Improvements in Groton Center traffic management can assist in improving congestion during commuter hours. Energy and attention should be turned to seeking regional solutions to this problem.</p> <p>T3. Develop and implement a long term roadway improvement plan for the entire town that improves safety throughout Groton.</p> <p>T4. Make improvements to Groton Center intersections, as recommended by the Montachusett Regional Planning Commission.</p> <p>T5. Use traffic police officers to manage commuting hour traffic flows. Place a priority on easing the impacts of commuter flow on the residents and businesses of Groton Center.</p> <p>T6. Improve traffic safety and provide greater pedestrian access to roadways by widening shoulders where possible.</p> <p>T7. Reconstruct a road along the railroad tracks in the Center to provide alternative access to the Center for Residents.</p> <p>T8. Consider areas for parking and rail station use in West Groton.</p> <p>T9. Encourage park and ride options.</p>



ALTERNATIVE PLANS	ACTIONS
	<p>T10. In conjunction with the Open Space and Recreation Direction of the Plan, work toward linking a comprehensive network of trails through the town.</p> <p>T11. Work toward developing bikepath links with the state bikepath.</p> <p>T12. Contact adjoining towns and support regional traffic solutions. Consider the creation of a compact with adjoining towns to seek such solutions.</p> <p>T13. Expand and provide information about transportation options for elders.</p> <p>T14. Work with the Highway Department and Conservation Commission to define standards or procedures for evaluating the wetlands impacts of correcting deteriorating and unsafe roads.</p> <p>T15. Enhance pedestrian access throughout Groton Center.</p> <p>T16. Develop a planned system of sidewalks along public ways.</p> <p>T17. Mark trails and paths.</p> <p>T18. Incorporate consideration of wildlife movement patterns when considering trails and street improvements.</p>

Shirley Master Plan

The Shirley Master Plan was updated in December 1999 and includes the following transportation project recommendations.

Transportation Projects Identified in the Shirley Master Plan

Location	Problem / Issue	Type	Recommendation/ Cost Estimate
Davis Road/Front Street	RR Crossing study	At Grade Rail Crossing	
Catacunemaug Road/ Leominster Road		Intersection	
Harvard Road/Main Street		Intersection	
Harvard Road/Shaker Road		Intersection	
Lancaster Street/Main Street/ Leominster Road/Center Road		Intersection	
Leominster Road/ Main Street		Intersection	Further Study
Townsend Road /Groton Road (Rt. 225)		Intersection	
Walker Road/Front Street/Patterson Road		Intersection	
Catacunemaug Road	Roadway improvements due to new development	Roadway	Further Study
Center Road	Corridor Study, Sharp Curves	Roadway	Further Study
Chapel St.	Parking on both sides, narrow roadway	Roadway	Further Study
Holden Road	Roadway improvements	Roadway	Further Study
Lancaster Road	Corridor sight improvements	Roadway	Further Study



Transportation Projects Identified in the Shirley Master Plan (cont.)

Location	Problem / Issue	Type	Recommendation/ Cost Estimate
Leominster Road	Corridor sight improvements, parking on street	Roadway	Further Study
Main Street	Curb Cut analysis	Roadway	Further Study
Mill Street	Parking on both sides, narrow roadway	Roadway	Further Study
Nashua Street	Increase roadway width	Roadway	Further Study
Shaker Road	Increase roadway width	Roadway	Further Study
Fixed Route Bus Service - MART		Transit	
Increase Parking for MBTA	Parking overflow onto local side streets	Transit	Further Study



Executive Order 418

In January 2000, then Governor A. Paul Celluci issued Executive Order 418, an initiative to assist communities in addressing housing needs and to develop a Community Development Plan. The MRPC, as one of the 13 RPA's in the Commonwealth, participated in Executive Order 418 by providing technical and administrative support for those interested communities. Fourteen (14) MRPC communities developed transportation elements that addressed issues ranging from local intersection problems to trail planning and Pavement Management Systems (PMS). The following table lists those communities and the scope of work for their transportation element.



Community	Transportation Scope
Clinton	Intersection Analysis; Truck Exclusion Investigation; Rail Expansion
Townsend	Intersection Analysis; Trail Plan
Fitchburg	Trail Plan
Hubbardston	Pavement Management System (PMS)
Leominster	Trail Plan
Sterling	Intersection Analysis
Royalston	Improvements Map; Bylaws
Templeton	Intersection Analysis; Pavement Management System (PMS); Trail Plan
Ashburnham	Intersection Analysis; Trail Plan
Gardner	Road Status; Intersection Analysis
Westminster	Road Status
Lancaster	Intersection Analysis; Trail Plan
Phillipston	Intersection Analysis
Winchendon	Intersection Analysis; Trail Plan

These recommendations are contained within this RTP as they still represent relevant issues due to their potential for development into additional studies and/or projects.

Ashburnham

Traffic engineering investigation of the operational conditions of the intersections of Main Street (Route 12)/Central Street (Route 101S), Main Street (Route 12)/Water Street (Route 101N) including possible alternatives to rerouting Route 101 through the town center and, additionally, a trail plan that could be utilized by the Town in the development of multi-purpose trails within the community.

Project Name/Location	Recommendation	Project Type	Cost Estimate
Route 101 (Water Street) and Main Street	Traffic Signal/Geometric	Intersection	\$950,000
Route 101 (Central Street) and Main Street	Traffic Signal/Geometric	Intersection	\$950,000
Route 101 Relocation		Intersection	Further Study
Ashburnham Rail Trail	Additional trail spurs & parking areas	Trail Development	\$1,716,000



Clinton

Traffic engineering investigation of the unsignalized intersections of Sterling Street/Brook Street and Sterling Street/Greeley Street; an examination of truck traffic and truck routes/routing and the possible creation of truck exclusion routes within the community; and the examination of commuter options between Clinton and Leominster/Fitchburg and Marlboro.

Project Name/Location	Recommendation	Project Type	Cost Estimate
Sterling Street and Brook Street	Geometric Improvements	Intersection	\$750,000
Sterling Street and Greeley Street	Geometric Improvements	Intersection	\$750,000
Union Street and Chestnut Street	Geometric Improvements	Intersection	\$750,000
Union Street and Mechanic Street	Geometric Improvements	Intersection	\$750,000

Fitchburg/Leominster

Trail plan related to the development of the Twin City Rail Trail. This rail trail would follow a former railroad right of way that parallels Route 12 between the two cities. The plan examined the route as well as compiled information on access points, areas of interest, etc. with associated maps.

Project Name/Location	Recommendation	Project Type	Cost Estimate
Twin City Rail Trail	Purchase of rail line, continued involvement from trail advocacy groups	Trail Development	\$5,940,000

Gardner

Intersection deficiency investigation and analysis; and a review and update of an official road map.

Project Name/Location	Recommendation	Project Type	Cost Estimate
Elm Street and Howe Street	Low cost Improvements	Intersection	\$250,000
Union Square and Howe Street	Low cost Improvements	Intersection	\$250,000
Elm Street/Union Square and Pearson Boulevard	Traffic Signal Upgrade/ Geometric	Intersection	\$850,000
Elm Street and Howe Street	Low cost Improvements	Intersection	\$250,000

Harvard

MRPC was not involved in the town of Harvard's EO 418 study, the report that was conducted indicated that Harvard conduct a corridor study for Ayer Road to examine and choose the



most effective roadway improvements, intersection controls and traffic calming measures to manage speed, reduce accidents and discourage truck traffic.

Project Name/Location	Recommendation	Project Type	Cost Estimate
Ayer Road Corridor		Road Segment	Further Study

Lancaster

Comprehensive traffic engineering investigation of the operational conditions of the intersections of North Main Street (Route 117) /I-190 on and off-ramps, Lunenburg Road (Route 70)/Fort Pond Road, and Lunenburg Road (Route 70)/Old Union Turnpike and additionally, a trail plan that can be utilized by the Town in the development of multi-purpose trails within the community.

Project Name/Location	Recommendation	Project Type	Cost Estimate	Notes
Lunenburg Road and Fort Pond Road	Low cost Improvements	Intersection	\$250,000	
Lunenburg Road and Old Union Tpke	Traffic Signal/Geometric	Intersection	-	PROJECT IN FFY 2011-2014 TIP
Route 117 and I-190 Off Ramps (2 locations)	Traffic Signal	Intersection	-	Signals Completed
Nashua River Bikeway	Increased public involvement	Trail Development	Further Study	

Phillipston

As part of the EO418 Program, the Montachusett Regional Planning Commission (MRPC) prepared a scope of work for the Town of Phillipston to conduct a comprehensive traffic engineering investigation of the unsignalized intersection of State Road (Rt 2A) and Highland Avenue/Athol Road. This investigation includes an assessment of the existing conditions, a capacity analysis, and a signal warrant study.

This program resulted in the following project recommendations

Project Name/Location	Recommendation	Project Type	Cost Estimate
Route 2A and Highland Ave and Athol Road	Traffic Signal/Geometric	Intersection	\$950,000



Sterling

Comprehensive traffic engineering investigation of the operational conditions and safety of selected segments of Route 12, Route 62, and Chocksett Road and discusses possible alternatives.

Project Name/Location	Recommendation	Project Type	Cost Estimate
Clinton Rd and Chocksett Rd	Geometric Improvements	Intersection	\$750,000
Leominster Rd and Chocksett Rd	Geometric Improvements	Intersection	\$950,000
Leominster Rd/Clinton Rd and Main St	Geometric Improvements	Intersection	\$750,000
Leominster Rd/North Row/Pratts Junction Rd	Traffic Signal/Geometric	Intersection	\$950,000
Clinton Rd and Chocksett Rd	Geometric Improvements	Intersection	\$750,000

Templeton

Comprehensive traffic engineering investigation of the operational conditions of the intersection of Patriots Road (Route 2A)/Gardner Road (Route 101)/North and South Main Streets in East Templeton. In addition, a Pavement Management System (PMS) for town roads was examined to assist local officials and a trail plan that can be utilized by the town in the development of multi-purpose trails within the community.

Project Name/Location	Recommendation	Project Type	Cost Estimate
Route 101/Rt 2A/N Main St/S Main St	Geometric Improvements	Intersection	\$750,000
Ware River Rail Trail	Crossing Rt.2, trail head development	Trail Development	Further Study

Townsend

Comprehensive traffic engineering investigation of the operational conditions of the intersections of Main Street (Route 119)/Elm Street (Route 13), Route 13/Highland Street/School Street and Route 13/Highland Street and additionally, a trail plan that can be utilized by the Town in the development of multi-purpose trails within the community.

Project Name/Location	Recommendation	Project Type	Cost Estimate	Notes
Squannacook River Rail Trail	Include additional trail spurs and trail heads	Trail Development	\$12,408,000*	Under Design & Development
Route 119/ Route 13	Geometric Improvements	Intersection	\$750,000	
Route 13/Highland St/School St	Geometric Improvements	Intersection	\$750,000	
Route 13/Highland St/Brookline St	Geometric Improvements	Intersection	\$750,000	

* Project needs further study of scope



Summary

The recommendations and potential projects identified within the various studies and plans highlighted in this chapter range from intersection improvements to trail development to maintenance of the existing network. Combined with improvements to parking, access to local businesses and areas of interest and improved transit options for all, these recommendations relate to and fit in with the various goals, policies and strategies contained in chapter 1 of this RTP.