

Congestion Management Strategies

Demand Management

The Merrimack Valley Planning Commission is not only a member of the MVMPO and is not only the transportation planning staff for the MVMPO, the Merrimack Valley Planning Commission (MVPC), a Regional Planning Agency, is a multi-disciplinary organization which strives to assist the region's communities in the planning areas of transportation, the environment, land use, economic development and GIS mapping. MVPC collaborates with local, State and Federal officials as well as private sector businesses and individuals to ensure consensus in these endeavors. Many of the planning efforts in the disciplines outside of transportation provide an opportunity for Demand Management via Land Use and Economic Development planning. The transportation staff works with other MVPC staff in developing the Regional Land Use Plan, the Comprehensive Economic Development Plan (CEDS), the Regional Housing Plan, and the Multi-Hazard Mitigation Plan as well as working with the Stormwater Mitigation Collaborative and Evacuation Planning.

Smart Growth Land Use Planning and Transit-Oriented Development

The Merrimack Valley Priority Growth Strategy "The Regional Land Use Plan" for the Merrimack Valley Region (MVPGS) (September 2009, updated February 2015) focuses on identifying Priority Development Areas (PDAs) where communities want to encourage growth and Priority Preservation Areas (PPAs) that should be off limits to development to preserve the character of the region and protect environmental services. In developing the MVPGS the MVPC worked with community representatives to identify PDAs as "areas of concentrated development, including a city or town center, consisting of existing and appropriately zoned commercial, industrial, and mixed-use areas suitable for high-density development". Each of these areas is then examined for strengths and weaknesses in terms of land use/zoning, infrastructure, access and environment, the MVPGS then recommends strategies based on "Smart Growth" principles. The MVPGS defines "two overarching goals of "Smart Growth" generally as 1) steer development toward existing developed areas served by public infrastructure and lands designated by local communities as appropriate for new growth and 2) steer development away from designated natural and cultural areas, agricultural lands, and environmentally sensitive zones". The MVPGS states

Neither of these goals can be accomplished satisfactorily unless the resulting development is socially friendly and visually appealing to current – and future – residents. In fact, making better neighborhoods and communities that age

gracefully is one of the best arguments for applying smart growth concepts. For this reason, much of the innovation now being done under the smart-growth banner is aimed at creating places that are more convenient, affordable, aesthetically pleasing, and safe. The goal is to have neighborhoods that are walkable and complete, with our daily needs being attended to close at hand; and neighborhoods and communities that are both distinctive and distinguishable from one another, rather than having a homogeneous, 'one size-fits-all' look and feel. The Merrimack Valley Priority Growth Strategy embraces and supports the concept of smart growth, and advocates for its local and regional implementation through adherence to the ten Massachusetts Smart Growth Principles listed below.

Massachusetts Smart Growth Principles

1. Provide range of housing opportunities for all income levels.
2. Create walkable neighborhoods as desirable places to live, work, learn, worship, and play
3. Encourage community and stakeholder collaboration
4. Foster distinctive, attractive communities with strong sense of place
5. Make development decisions open, predictable, fair, and cost effective
6. Support Integration of mixed uses
7. Preserve open space, farmland, natural beauty, and critical environmental areas
8. Provide a variety of transportation choices
9. Strengthen and direct development toward existing areas already served by infrastructure
10. Promote compact building design

The MVPGS was developed not only with local community input, additionally the draft was presented at forums including MVPC's Annual Regional Planning Day, MVMPO meeting, Merrimack Valley quarterly planning directors meeting, Comprehensive Economic Development (CEDS) Committee meeting and the Merrimack Valley Regional Legislative Caucus. Presentations of the Draft document were also made to community leaders, Boards of Selectmen and Planning Boards throughout the region.

The relatively dense, mixed use development realized under Smart Growth allows for fewer daily trips being made in cars, because stores, services and workplaces are close to housing and therefore people can walk, bicycle or use public transit for many types of daily trips, potentially reducing congestion.

The MVPC works with communities to develop zoning updates to encourage mixed-use developments in city and town centers and assists communities in creating Smart Growth (40R) Districts.

MVPC hosts annual workshops to increase local planning board training on permitting and smart growth presented by Citizen Planner Training Collaborative.

Transportation projects that are in, or near Priority Development Areas (PDAs), receive extra points in the Transportation Evaluation Criteria (TEC) scoring of projects used in developing the Transportation Improvement Program (TIP).

Transportation Demand Strategies included in MV Comprehensive Economic Development Strategy (CEDS)

The MVPC also develops the Merrimack Valley Comprehensive Economic Development Strategy (MVCEDS). The 2018 to 2023 MVCEDS brought together more than 100 diverse stakeholders from public and private sectors to develop an action plan for growing a regional, collaborative economy. Transportation is one of four themes contained in the CEDS committee's visioning sessions that reviewed trends, identified strengths, opportunities, aspirations, and risks and then developed strategies and an implementation plan for the next 5 years.

The MVCEDS Action Plan includes the following Transportation strategies that fall into the Demand Management category, the CEDS priority rating for each, and the CEDS timeline for each.

Support and advance Complete Streets and Active Transportation. Perform a comprehensive audit of needed connections (sidewalks) and infrastructure (bike racks), with specific emphasis on improvements to the bicycle and pedestrian infrastructure within a ½ mile of town/ city centers. – Medium Priority – MassDOT, RPAs, WalkBoston
Years 2 and 3

Develop a Transportation Toolkit for the Priority Development Areas (PDAs) that identifies ideal transportation elements that should be included in a PDA and coordinate required mapping and planning. – Medium Priority – MVRTA, MassDOT, municipal planners – Years 2 and 3

Increase collaboration with employers in the region to better understand their transportation needs, work with local employers to collect actual data vs. anecdotes to provide solutions to getting employees to work. – Low Priority – TMAs across the state, Chambers of Commerce, Employers, MVWB – Ongoing

Expand and enhance marketing of transit to increase ridership – High Priority – MVRTA - Year 1 and Ongoing

Develop a Bike Share program. This would start with a pilot to determine the best model for a Bike Share Program and how it could be replicated on a regional scale – Medium Priority – Identify a corporate sponsor. – Year 3.

Expand, connect and market local and regional multi-use trail networks, including along the Merrimack River. Provide and market a viable alternative mode of transportation that connects all of the communities along the Merrimack River. – Essex National Heritage Area, Essex County Greenbelt Association, municipal open space committees – High Priority – Years 2 and 3.

Conduct a feasibility study on ways to improve and enhance freight service in the Merrimack Valley. With online retail proliferation, focus on the timely delivery of goods and services along with traditional freight. – MassDOT, private commercial carriers – Low Priority – Year 3.

Land Use and Economic Development is a category in the Transportation Evaluation Criteria (TEC) scoring of projects used in developing the Transportation Improvement Program (TIP) under which projects can receive positive or negative points in 4 areas: A.) Degree of effect on business aspects; B) Degree of effect on sustainable development and proximity to State and/or Regional Priority Development Areas (PDAs); C) Degree of consistency with the Merrimack Valley PGS and CEDs; and D) Effect on job creation.

Transportation Demand Strategies included in MV Housing Production Plan
MVPC has just completed developing Housing Production Plans (HPPs) with 14 of the region's cities and towns with a grant awarded from Governor Baker's Efficiency & Regionalization Program and MassHousing. An HPP is a proactive strategy for planning and developing housing of all types, including affordable housing. It clearly identifies areas that the community feels are appropriate for development by conducting a housing needs assessment, developing affordable housing goals, and creating implementation strategies. There is a housing shortage in eastern Massachusetts, home prices and rents increase at a much faster rate than salaries, resulting in people moving further away for more affordable housing. This leads to greater distances travelled for jobs and more congested roadways. Establishing more affordable housing, likely shortening commutes, also contributes to less congestion.

The MVPC will continue working with communities in implementing the Housing Production Plan strategies. – Ongoing

Community Effects and Support is a category in the Transportation Evaluation Criteria (TEC) scoring of projects used in developing the Transportation Improvement Program (TIP) under which projects can receive positive or negative points in 5 areas: A.) Degree of effect on residential aspects; B) Degree of public and government support; C) Effect on service to minority or low-income neighborhoods (Title VI and EJ); D) Other impacts/benefits to minority or low-income neighborhoods (Title VI and EJ); and E) Effect on development and redevelopment of housing stock.

Transportation Demand Strategies – Promoting Nonmotorized Travel Promoting Complete Streets

MassDOT has a Complete Streets Funding Program that requires communities to pass a Complete Streets Policy and have a Complete Streets Prioritization Plan to receive construction funding.

The MVPC will continue to assist communities in developing Complete Streets Policies and implementing Complete Streets projects. A Complete Street accommodates all users and modes of transportation, including pedestrians, bicyclists, transit vehicles, and trucks. MVPC has a Regional Transportation Plan Strategy of having all communities incorporating complete streets into planning, design, maintenance and construction projects. Currently Groveland, Lawrence, Merrimac and Salisbury have approved Complete Street Policies and Prioritization Plans.

In support of communities implementing Complete Streets the MVPC has collected sidewalk condition data in 5 communities (Amesbury, Georgetown, Methuen, North Andover and Salisbury) and will continue the sidewalk surveys in Andover and Lawrence. The communities can use this data to identify needs and set priorities for sidewalk repair and construction.

Promoting Development and Implementation of Multi-use Trails

Active Transportation is human-powered transportation, such as bicycling, walking and skateboarding. An active transportation network has interconnected infrastructure allowing people to safely get to different destinations via human-powered transportation. This requires a network of on-road and off-road facilities, such as sidewalks, bike lanes, multi-use trails and cycle tracks that connect.

MVPC published the Active Transportation Plan in 2014 that envisions a region connected by safe, convenient and appealing active transportation corridors that people of diverse ages and abilities can use. MVPC and its communities will achieve this vision by increasing bicycling and walking mode shares to promote environmental sustainability and healthier lifestyles while reducing automobile dependence and

improving air quality. We will connect jobs, housing, civic and recreational activities to strengthen our region's livability and economic vitality.

The MVMPO works continually on developing and implementing multi-use trails throughout the region, many that provide connections to other trails to form networks of trails such as the Border-to-Boston Trail, the Coastal Trails Network, and the Merrimack River Trail.

The 28-mile Border-to-Boston Trail is a multi-use trail that, when completed, will run through Salisbury, Newburyport, Newbury, Georgetown and Boxford in this region, but which will also connect to communities to the south, as well as be part of an interstate trail system, the East Coast Greenway, that reaches from Calais, Maine to Key West, Florida.

Two sections of the Border-to-Boston trail in Newburyport and Salisbury are open to the public. The remaining Salisbury section has been advertised for construction. The two remaining sections, Georgetown-Boxford, and Georgetown-Newbury are programmed into the region's Transportation Improvement Program.

The Coastal Trails Network is noteworthy for its cooperative multi-community dimension and it stands out as the most comprehensive plan that is being actively implemented. The network involves Amesbury, Salisbury, Newburyport, and Newbury. The very active Coastal Trails Coalition advocates and supports the communities through events, fundraisers and trail development. The goal is to connect the cultural, natural, recreational and activity centers in and between these coastal towns with a network of mostly off-road multi-use trails.

In 2011, MVPC in partnership with the Essex National Heritage Commission, undertook a strategic planning project focused on re-imagining the Merrimack River Trail as one of the region's outstanding recreational assets – a 50-mile long bicycle and pedestrian trail along the Merrimack River from Tyngsboro in the Northern Middlesex MPO region to Newburyport. The trail is composed of a combination of on- and off-road bicycle and pedestrian facilities on both sides of the river. Since the publication of the report, communities, as well as MassDOT, have grabbed onto the idea, incorporating the ideas in their projects. The Bradford Rail-Trail in Haverhill, Pemberton Park and Riverfront State Park trails in Lawrence, and Maudslay State Park Trail in Newburyport are all completed sections in the region. The Bradford Rail-Trail Extension in Haverhill is programmed in the TIP.

Each Merrimack Valley Community also has open space trails, or other community trails, that MVPC also provides planning assistance and support for developing and

programming in the TIP. The Lawrence section of the Lawrence-Manchester Rail Corridor is programmed in the TIP, this trail will connect to the Methuen Rail Trail which then extends into New Hampshire where a good portion of the rail trail is complete.

The Groveland Community Trail is also programmed in the TIP.

The MVPC created a Storymap for its website that maps the various trails and trail networks in the region and illustrates whether the trail is open, under construction, or in the design or proposal stage of development.

Promoting Use and Development of Park-and-Ride Lots

Continue to monitor Park-and-Ride lot utilization and make recommendations regarding need for expansion, or transit service. Continue to promote building of additional Park-and-Ride lots in the region.

Promoting Transit Use

Continue support to MVRTA for projects that promote transit use such as real-time bus location app, bike racks on buses, bike racks at transit stations, and producing route and system maps and marketing.

Condition, Mobility, and Safety and Security are three categories in the Transportation Evaluation Criteria (TEC) scoring of projects used in developing the Transportation Improvement Program (TIP) under which projects can receive positive or negative points for effects on alternative modes of transportation: In the Condition Category B) Magnitude of improvement of other infrastructure: In the Mobility Category B) Effect on travel time and connectivity/ access; and C) effect on other modes using the facility: In the Safety and Security Category B) Effect on bicycle and pedestrian safety.

Public Transportation Strategies

Public Transportation Operations Strategies

The MVRTA has implemented several strategies in the last few years to improve transit operations, which should make transit a more attractive alternative, all of which are congestion management strategies.

In February of 2018 the MVRTA implemented real time transit location available to the public on a transit app for mobile devices.

In FY 2014 the MVRTA added Sunday service and four holidays' service.

The MVRTA has updated its website with a trip planner.

The MVRTA system started accepting the Massachusetts Bay Transportation Authority's (MBTA's) stored value Tap & Ride (Charlie Card) payment system, and offers a discounted fare on the MBTA system and transfers to the MBTA system.

The MVRTA has on-board security cameras.

The MVRTA monitors its transit service schedules and stop locations to make transfer connections work well in the system.

If funding were available the MVRTA could make additional improvements identified in the 2104 MVRTA Regional Transit Plan for the Fixed Route Service such as extending evening span of service to 9:00 PM on weekdays, extending evening span of service to 7:00 PM on Saturdays, increase weekend frequencies on all Haverhill based Routes to 60 minutes with clock face schedules similar to weekday service.

Public Transportation Capacity Strategies

In FY 2016 the Haverhill routes' weekday 90-minute frequency was replaced with a 60-minute clock face schedule.

The Merrimack Valley Comprehensive Economic Development Strategy (MVCEDS) includes the following strategies:

Improve upon existing transit infrastructure to create faster, efficient, and frequent connections across the region and outside of the region. This would include studying an east/west connection within the region, second track in Ballardvale, and reverse commute options. – High Priority – MBTA, MassDOT, communities in the region – Years 2-5.

Explore the feasibility of using the Merrimack River for public transportation. Use the Greater Haverhill Foundation study to initiate a feasibility study of having a ferry boat

operate between Newburyport and Haverhill- High Priority – MVRTA, TNCs, Greater Haverhill Foundation – Years 1 and 2.

Public Transportation Accessibility Strategies

In FY 2019 the MVRTA will be making its buses more accessible to bicyclists by adding front of bus racks to its buses and additional bicycle racks at the Lawrence Buckley and McGovern stations with funding “Flexed” from the MVMPO region’s FY 2018 to 2022 TIP STP funding to FTA.

For the communities that participated, MVPC will look at the recently completed sidewalk condition surveys to determine which ones provide access to transit stops and may need to be improved.

The MVMPO CMP will continue to monitor ridership to measure how these strategies may be influencing ridership. The MVRTA is tracking On-time performance and may make changes to improve On-time performance if necessary. Of course, many of the recent improvements to the system listed above should increase On-time performance.

Road Capacity Strategies

NHS Interstates

The results of the congested roadways screening on the interstates are not unexpected, the most congested interstate segments, in both the morning and evening peak periods, surround the intersection of two interstate highways, I-93 and I-495. There are also major employers at the exits just north and south of this intersection on I-93, and just east and west on I-495. In addition, many commuters from southern New Hampshire accessing these regional employers, as well as, employment along Route 128 and in Boston, traverse this intersection. A corridor study of I-93 was completed in 2005 and a corridor study of I-495 was completed in 2008, in both cases it was recommended that a lane be added in each travel direction.

I-495 Corridor Study

A 2008 MassDOT study of the I-495 corridor in the Northern Middlesex COG Region and the MVPC Region from Exit 32 in Westford to the junction of I-495 and I-95 in Salisbury determined that Transportation Demand Management strategies would not do enough to reduce congestion along this corridor and that an additional lane is needed in both directions from Exit 32 in Westford to Exit 50 in Haverhill.

The 2008 MassDOT study of the I-495 Corridor Study states:

“The potential effects of promoting land uses with reduced trip generation rates, additional Park & Ride lots, and improvements to public transportation have been examined with regard to their ability to negate the need for or at least postpone the need for capacity increases on I-495 itself and at its intersections with the local street system. It has been determined that these types of strategies will not by themselves be able to negate this need.

But, as noted earlier, these types of actions should not be dismissed for this reason. Rather, they should be viewed as key components of a total package of strategies to reduce vehicle demand, particularly of single occupancy vehicles. And, they should be recognized for the many other benefits that they provide to individual users and to society as a whole.”

The estimated cost of implementing all the recommendations identified in the MassDOT Corridor Study (i.e., from Route 225 in Westford to I-95 in Salisbury and adjusted to FFY 2020 dollars is \$287,000,000.

I-93 Corridor Study

The 2005 Route I-93 Corridor Traffic Study in Andover and Methuen recommended widening I-93 to 4 lanes in each direction with full inside and outside shoulders with a cost of \$192,000,000 in FFY 2020 dollars.

I-93 High Occupancy Vehicle Lane/ Bus on Shoulder Feasibility Study

In 2014 the MVPC and MVRTA completed a Draft I-93 High Occupancy Vehicle Lane/ Bus-on-Shoulder Study that recommends Bus on Shoulder as the most sensible and effective near-term corridor transportation improvement.

NHS Non-Interstates

The Non-Interstate NHS roadways with congestion affecting the most number of vehicles in the morning are Route 114 EB from I-495 in Lawrence to Route 125/ Andover Street in North Andover, Route 125 SB from Plaistow Road to Rosemont Street in Haverhill, Route 125 SB from New Hampshire Stateline to Main Street in Haverhill, Route 213 WB from Route 28 to I-93 in Methuen, Route 114 EB/ Route 125 SB from Route 125/ Andover Street to Route 125 Bypass in North Andover.

The Non-Interstate NHS roadways with congestion affecting the most number of vehicles in the evening are Route 125 NB from I-495 to Rosemont Street in Haverhill, Route 114 EB from I-495 in Lawrence to Route 125/ Andover Street in North Andover, Route 28 NB from Salem Street to Route 110 (Haverhill Street), Route 114 WB/ Route 125 NB from Route 125 Bypass to Route 125/ Andover Street in North Andover, Route 28 SB from Route 110 (Haverhill Street) to Salem Street in Lawrence, Route 97 NB from Route 133 (Andover Street) to Georgetown Square.

Generally, the roadways with congestion affecting the most number of vehicles are congested in the direction of the general commute, southbound in the morning, northbound in the evening, however one of the most congested roadways in the region is severely congested in the same direction in both the morning and the evening.

Route 114 from I-495 in Lawrence to Route 125/ Andover Street in North Andover

Route 114 eastbound from I-495 in Lawrence to Route 125/ Andover Street in North Andover ranks as the non-interstate NHS roadway with congestion affecting the most number of vehicles in the morning and the second most in the evening. Similarly, the westbound direction from Route 125/ Andover Street to I-495 ranks eighth in the morning and fifth in the evening as the non-interstate NHS roadway with congestion affecting the most number of vehicles. Route 114 is one of the most heavily traveled roadways in the Merrimack Valley region with certain segments in North Andover carrying more than 40,000 vehicles daily. There is also a bottleneck located in this

segment where the roadway goes from 4 lanes to 2 lanes from I-495 to Waverly Road. Because Route 114 ranked as one of the most congested roadways in the region in previous Congestion Management Plans MVPC conducted a Route 114 Corridor Study in 2010.

The study recommends that Route 114 should be widened from its current cross-section, between a location just east of the I-495 northbound ramps up until Waverly Road, to two travel lanes in each direction plus room in the middle for exclusive left-turn lanes at the intersections with the driveways of the land uses fronting the roadway. The cross-section should consist of 5-foot wide sidewalks on both sides of the roadway. To prevent encroachment of wetlands along the south side, the widening should take place nearly all along the north side. This will require some land taking by the Department for a highway layout that can accommodate this recommended cross-section.

reconstruction of the bridge over the Shawsheen River must also take place to accommodate the cross-section.

To enhance the flow of the throughput volume along this section of the Route 114, it is further recommended that two full access and egress points be provided for the largest traffic generator along this section, the North Andover Mall. An additional access point will remove a significant volume of traffic off of a large section of Route 114 eastbound. The traffic signal at the access point opposite the Riverpointe Apartments driveway will also have the added benefit of greatly reducing delay to traffic exiting the Riverpointe Apartments driveway.

Additionally, improvements with the objective of reducing single occupancy vehicles should be made by way of providing facilities for alternate modes of transportation, including bus stops for transit service, sidewalks for pedestrian mobility, and bike lanes and paths for bicycle travel.