



Merrimack Valley  
Planning Commission  
*plan \* develop \* promote*

**MERRIMACK VALLEY METROPOLITAN  
PLANNING ORGANIZATION**

**FEDERAL FISCAL YEAR 2012  
UNIFIED PLANNING WORK PROGRAM**

**Final REPORT**

**Prepared by the  
MERRIMACK VALLEY PLANNING COMMISSION**

**September 14, 2011**

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Serving the communities of:

Amesbury Andover Boxford Georgetown Groveland Haverhill Lawrence Merrimac Methuen  
Newbury Newburyport North Andover Rowley Salisbury West Newbury



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## INTRODUCTION

The Unified Planning Work Program (UPWP), as mandated under the federal “3C” transportation planning process, describes the transportation planning activities that are to be carried out by a Metropolitan Planning Organization (MPO) during the federal fiscal year (October 1 – September 30). In addition, the most recent federal transportation funding authorization legislation, the Safe, Accessible, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005, requires that MPOs located in Transportation Management Areas (TMAs) prepare a UPWP that discusses the transportation planning priorities established by the MPO, describes the air quality planning activities that are to be conducted in the area, identifies the planning products that are to be produced, and identifies which agency will be responsible for producing these products. Since the Merrimack Valley region has been classified as a TMA by the Federal Department of Transportation (i.e. contains an urbanized area population of more than 200,000), it must therefore meet these requirements.

The FFY 2012 UPWP for the Merrimack Valley Metropolitan Planning Organization (MVMPO) fulfills the above requirement by briefly describing and providing budgetary information for the transportation planning tasks and activities that are to be conducted in the region during this period. The Merrimack Valley Planning Commission (MVPC) will undertake most of these activities in its capacity as the transportation planning staff of the MVMPO. However, this document also includes those significant transportation planning and engineering studies that will be completed in its region by other government entities and organizations.

U.S. Department of Transportation regulations mandate that the UPWP be prepared and endorsed annually by the MPO prior to the start of the planning program period before federal money may be spent on any transportation planning studies and activities in the region. The MVPC, as the transportation planning staff of the MVMPO, has the principal responsibility of maintaining the transportation planning process in the region as outlined in the 2010 Memorandum of Understanding (MOU), which was endorsed by the members of the MPO. In this role, the MVPC is responsible for annually preparing the UPWP for consideration and adoption by the MPO.

### **Merrimack Valley Metropolitan Planning Organization (MVMPO)**

The MVMPO was first created by the Governor of Massachusetts in 1972. Under federal transportation legislation, MPOs are assigned the important task of completing the planning and programming of all federally funded transportation projects and programs in their respective urbanized area.

The MVMPO covers the same 15-community geographic area that defines the MVPC region and the Merrimack Valley Regional Transit Authority service area. The current MVMPO membership is as follows:

- |  |   |                       |
|--|---|-----------------------|
| • Secretary of Massachusetts Department of Transportation (MassDOT)          | - | Richard Davey         |
| • Acting MassDOT Highway Division Administrator                              | - | Francis DePaola       |
| • Chairman of the Merrimack Valley Planning Commission                       | - | Robert Lavoie         |
| • Chairman of the Merrimack Valley Regional Transit Authority Advisory Board | - | Charles Boddy         |
| • Mayor of Haverhill   | - | James Fiorentini      |
| • Mayor of Lawrence  | - | William J. Lantigua   |
| • Representing Region 1 (Amesbury, Newburyport, Salisbury)                   | - | Thatcher W. Kezer III |
| • Representing Region 2 (Newbury, Rowley, West Newbury)                      | - | Robert Snow           |
| • Representing Region 3 (Boxford, Georgetown, Groveland, Merrimac)           | - | Philip Trapani        |
| • Representing Region 4 (Andover, Methuen, North Andover)                    | - | Curt Bellavance       |

Ex officio Members include:

- Federal Highway Administration – Region I
- Federal Transit Administration – Region I
- Rockingham Planning Commission MPO (NH)
- Boston MPO
- Northern Middlesex MPO
- Nashua Planning Commission MPO (NH)

## Organization of FFY 2012 Unified Planning Work Program

The MVMPO's UPWP is structured so that planning tasks are grouped into the following four areas:

- Management and Support of the 3C Planning Process
- Data Collection and Analysis Activities
- Short and Long-Range Transportation Planning Activities
- Other Transportation Studies

## MPO Transportation Planning Priorities

Briefly described below are the important transportation planning accomplishments of the Merrimack Valley MPO under the FFY 2011 UPWP.

### Route 93 Corridor Study/Andover Interchange

MVPC continued to provide technical assistance to The Junction Route 93 Interchange Task Force and participated on the Tri-Town Project Coordinating and Participating Agency Group. Although work on the Route 93 Corridor Study and Route I-93/Lowell Junction Interchange Study was completed in FY 2006, significant related work on these two projects occurred under the FFY 2011 UPWP. During FFY 2011, MassDOT continued preparing the Environmental Impact Statement (EIS) in support of the development of this interchange. When completed, the EIR/EIS will allow MassDOT to complete the necessary environmental and preliminary design work needed to fully assess the environmental impacts and projected cost of a new interchange. Based on the results of this study, a final determination will be made by FHWA and MassDOT as to whether the new interchange should be built.

During FY 2011, the scope of the project was expanded to include the widening of Route 93 between the new interchange and the New Hampshire state line. This was done at the request of the Federal Highway Administration in recognition of the fact that the widening of this section of the roadway would serve a number of important purposes such as reducing congestion in the corridor, eliminating the use of the breakdown lane as a travel lane during peak travel periods and serving to create a uniform cross section along the roadway between Manchester, NH and Somerville, MA.

### Bicycle and Pedestrian Planning

During FFY 2011, the MVMPO continued to focus on the development of the Border to Boston Trail. Transportation Enhancements and CMAQ funding was programmed in the FY 2011 element of the FT 2011-2014 TIP for the construction of a bicycle/pedestrian connection between the northern end of the Gillis Bridge and Salisbury's Old Eastern Marsh Trail. This connection would facilitate the connection of the Old Eastern Marsh Trail with the Clipper City Rail Trail in Newburyport, located at the southern end of the Gillis Bridge.

FY 2011 also saw the beginning of design work on the remaining sections of the Border to Boston Trail through the MPO's *Border to Boston Trail Funding Program*. This program was created to facilitate the continued development of the rail trail in Boxford, Georgetown, Newbury and Salisbury using funding that was earmarked for the project in SAFETEA-LU and local matching funding provided by the communities themselves. It is anticipated that this program will produce 100% design plans for the sections of the trail that have yet to be built.

Merrimack Valley Planning Commission staff also began working with the Essex National Heritage Commission in providing planning assistance to communities in the Merrimack Valley and Northern Middlesex region to support the implementation of the Merrimack River Trail. This effort is focused on identifying and evaluating the most feasible trail segments. Primarily envisioned as a walking trail, it would extend along the Merrimack from Lowell to Newburyport. Funding for this study is being provided through a grant from the Massachusetts Department of Conservation and Recreation

### Merrimack Valley Regional Transit Authority Strategic Plan Update

Working in conjunction with MVPC staff, MVRTA began an update of its Strategic Plan, which was originally prepared in 1999. The Strategic Plan provides a comprehensive examination of the Authority's organizational structure, its existing strengths and weaknesses, the performance of its various fixed route bus and demand response services, and the characteristics and needs of the population that it serves.

The updated Strategic Plan will allow the MVRTA to adjust its policies and strategic goals to reflect the changes to the transportation system that have taken place in its service area since the original document was prepared over a decade ago. These include the findings and recommendations contained in the region's FFY 2009 Elderly Transportation Plan Update, its FFY 2008 Disabled Population Transportation Study, and its FFY 2008 Coordinated Human Service Transportation Plan.

In FFY 2010, the MVPC and MVRTA developed the public outreach process to be used in preparing the document and its overall structure. However, it was subsequently determined by the MVRTA and MVPC that the Strategic Plan would be more effective if it could also consider the findings and recommendations that will be contained in the 2011 RTP. MVPC transportation staff and the MVRTA resumed work on this document late in FY 2011.

### **Merrimack Valley MPO 2012 Regional Transportation Plan**

The MVMPO 2007 RTP demonstrated that there are a number of proposed roadway and bridge projects referenced in the document that no longer appear to be important to officials in the community that proposed them. Unfortunately, these projects, and their associated construction costs, were still being shown in the document and their estimated construction costs were consuming a large proportion of the roadway and bridge funding expected to be available to the MVMPO over the next 23 years. With the costs of completing such projects escalating rapidly and the amount of funding available to build them expected to remain largely the same in the coming years, MPO members realized that steps needed to be taken to remove unneeded/unwanted projects from the RTP and thereby allow limited transportation construction funding to be devoted to developing and programming more important ones.

In FY 2010, MVPC staff continued to work with local officials to identify those roadway and bridge projects that currently reflect their community's transportation priorities. These will be the projects that will be considered first by the MPO as it makes the determination whether the RTP is fiscally constrained as required by federal transportation planning regulations. This process will also allow the MPO to better target its resources in evaluating and developing roadway and bridge projects and thereby better serve the communities in the Valley.

### **Route 114 Corridor Study**

The Route 114 Corridor in Lawrence and northern North Andover is one of the most congested roadways in the Merrimack Valley region. Under the FFY 2011 UPWP, MVPC completed a transportation study of the corridor that considers existing traffic and safety problems, forecasts future travel demand and made a series of recommendations that address the recurrent congestion problems that have plagued the area for many years.

### **Federal Transportation Planning Policies**

In FFY 2010, USDOT released a series of planning initiatives and provided planning guidance to the MPOs in the state that have helped shape the region's FFY 2011 UPWP.

#### **TIGER II/Sustainable Communities**

In May 2010, USDOT and the Department of Housing and Urban Development (HUD) announced the TIGER II Planning/ HUD Sustainable Communities planning grant programs, part of a coordinated effort to provide funding for the planning activities that support the development of projects that integrate transportation, housing and economic development.

TIGER II Planning Grants may be used to plan, prepare or design surface transportation projects that would be eligible for funding under the TIGER II Discretionary Grant program while HUD's Sustainable Communities funding will support local planning projects that promote the creation of affordable, economically vital and sustainable communities.

Under the FFY 2010 UPWP, MVPC pursued implementation of three key recommendations contained in the region's Priority Growth Strategy through these new grant programs. These are the implementation of Bus on Shoulder (BOS) transit service along the Interstate 93 Corridor, providing additional commuter rail service along the MBTA Haverhill Main Line, and improving transit service in the Amesbury/Salisbury/Newburyport area. In each case, MVPC would review the existing land use and zoning in the Community Development Centers that would be affected by these projects and make recommendations as to how these should be changed promote sustainable development and make maximum benefit of these transportation improvements.

MVPC also continued to provide technical assistance to communities that may be considering applying for TIGER II Discretionary Grant capital grants.

### **Climate Change/Livability**

In approving the FFY 2010 Unified Planning Work Programs, USDOT provided guidance to the MPOs in the Commonwealth in considering two important planning areas contained in FHWA's 2010 Strategic Plan: Climate Change and Livability.

FHWA has issued guidance to MPOs in coastal areas to identify those transportation facilities that could be impacted by rising sea levels and from flooding and to develop a program of studies to review both drainage plans and the adequacy of drainage structures in these areas. USDOT also asked these MPOs to address this issue in their 2012 RTPs.

The concept of livability in transportation is really a recognition that the transportation network plays a major role in affecting the quality of life of residents in the area it serves. As noted by FHWA on its website:

The transportation network should provide residents with choices, an effort to tying the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safe streets. This includes addressing safety and capacity issues on all roads through better planning and design, maximizing and expanding new technologies such as ITS and the use of quiet pavements, using Travel Demand Management approaches to system planning and operations, etc.

Notably, MVPC prepared its regional Priority Growth Strategy (PGS) with particular emphasis upon how the region's transportation network impacts livability in cities and towns in the Merrimack Valley. The PGS contains numerous recommendations for improving bicycle, pedestrian and transit transportation to Community Development Centers (CDCs) throughout the Valley. MVPC will continue its efforts to implement these and other recommendations in the PGS in FFY 2012 to support sustainable development principles in the Valley and, in doing so, improving the quality of life.

### **State Policies and Plans**

The Commonwealth of Massachusetts has completed a series of transportation planning activities that will influence transportation planning as well as transportation project programming and development activities across the state. These plans, along with the state's continuing commitment to encourage Sustainable Development, are outlined below and have been considered in the formulation of the region's FFY 2012 UPWP.

#### **State Transportation Restructuring**

On June 26, 2009, Governor Patrick signed Chapter 25 of the Acts of 2009, *An Act Modernizing the Transportation Systems of the Commonwealth*, into law. This legislation is intended to streamline the Commonwealth's transportation bureaucracy and to change certain pension and health benefits to realize substantial cost efficiencies. Key components of the legislation include:

- Creation of the Massachusetts Department of Transportation, which oversees four divisions:
  1. Highway (Including Turnpike, Tobin Bridge, DCR Bridges and most parkways);
  2. Mass Transit (with oversight of the MBTA and the Regional Transit Authorities (RTAs));
  3. Aeronautics, and
  4. Registry of Motor Vehicles.
- Oversight of MassDOT is provided by a five-person Board of Directors.
- Establishment of a Transportation Trust Fund to better manage transportation revenues.
- Requiring forward funding of the RTAs

One of the requirements contained in the legislation under Section 11 calls for the Secretary to publish a comprehensive state transportation plan for the five succeeding state fiscal years.

#### **MassDOT Highway Division Capital Investment Plan**

In May 2010, MassDOT prepared the first of the Capital Investment Plans called for under Section 11 of the transportation reform legislation. The MassDOT Highway Division Capital Investment Plan examines the condition of all bridges in the Commonwealth as well as the condition of all state-maintained roadways and

other facilities and makes recommendations as to how much funding is needed to bring these facilities into a “state of good repair”. The Capital Investment Plan showed that the Highway Division will need significantly more funding in the coming years to bring its facilities into excellent condition.

### **Massachusetts Freight Plan and Rail Plan**

In FFY 2011, MassDOT completed work on the Massachusetts Freight Plan and the State Rail Plan. MassDOT, through its consultant, has completed a comprehensive analysis of freight flows both within Massachusetts and from Massachusetts to other regions in the United States and to foreign markets. MassDOT has also reviewed the state of rail, truck, air and water freight transportation in the Commonwealth and forecast the amount of freight that will be carried by each mode in the year 2030. This analysis determined that freight traffic in Massachusetts will grow by 70 % over the next 20 years with all modes carrying more tonnage than today but with trucking significantly increasing its market share.

The analysis specifically found that in the MVMPO region the existing freight rail network has a number of limitations. The existing tracks do not support 286,000 pound carloads, which is becoming the industry standard and do not provide the 20’8” clearances needed to carry double-stacked containers. In addition to these system-wide problems with the track, the MassDOT analysis cited the poor condition of the Merrimack River Bridge in Haverhill as another factor limiting the growth of freight rail service in the Commonwealth.

### **Accelerated Bridge Program**

Chapter 233 of the Acts of 2008 provided \$3 billion in bonding authority for the implementation of an Accelerated Bridge Program (ABP) in the Commonwealth. The goal of the program is to accelerate work on repairing/replacing structurally deficient bridges or bridges that are in jeopardy of becoming structurally deficient so as to reduce the number of such bridges in the state in the coming years. The legislation included an emphasis on planning and completing the identified bridge projects in an expedited manner. This infusion of state funding will allow for the completion of many bridge projects much sooner than would otherwise be possible and thereby result in lower construction costs. Bridges owned by MassDOT and the Department of Conservation and Recreation are eligible for this program.

In FFY 2011, the number of Merrimack Valley region bridge repair projects to be funded under the ABP grew to six. These are:

- Replacement of the Route 28 Bridge over the MBTA railroad tracks in Andover;
- Repair of the Route 28 Bridge over the Merrimack River in Lawrence;
- Reconstruction of the Route 125 Connector Bridge over Ferry Road and the MBTA railroad tracks in Haverhill;
- Rehabilitation of the Rocks Village Bridge over the Merrimack River between Haverhill and West Newbury;
- Replacement of the Whittier Bridge, which carries I-95 over the Merrimack River between Amesbury and Newburyport.
- Cleaning and painting of the Gillis Bridge which carries Route 1 over the Merrimack River between Salisbury and Newburyport

The Rocks Village Bridge rehabilitation project will be advertised for construction in FFY 2011. Environmental assessment and preliminary design work for the Whittier Bridge replacement project continued in FFY 2011 and the bridge is expected to be advertised for construction in FFY 2012. Construction work is also under way for the repairs to the Route 28 and Route 1 bridges over the Merrimack River and the Route 125 Connector Bridge over the MBTA tracks and Ferry Road in Haverhill.

### **Sustainable Development Criteria**

The Commonwealth of Massachusetts has established a goal of stewardship for both the built and natural environment through the promotion of what is called “sustainable development.” This strategy relies on the integration of efforts within the state’s energy and environment, housing and economic development, transportation and other programs including policies investments, and regulations. This is to be accomplished through the pursuit of the following sustainable development principles:

1. **Redevelop first.** Support the revitalization of community centers and neighborhoods. Encourage reuse and rehabilitation of existing infrastructure rather than the construction of new infrastructure in undeveloped areas. Give preference to redevelopment of brownfields, preservation and reuse of historic structures and rehabilitation of existing housing and schools.
2. **Concentrate development.** Support development that is compact, conserves land, integrates uses, and fosters a sense of place. Create walkable districts mixing commercial, civic, cultural, educational and recreational activities with open space and housing for diverse communities.
3. **Be fair.** Promote equitable sharing of the benefits and burdens of development. Provide technical and strategic support for inclusive community planning to ensure social, economic, and environmental justice. Make regulatory and permitting processes for development clear, transparent, cost-effective, and oriented to encourage smart growth and regional equity.
4. **Restore and enhance the environment.** Expand land and water conservation. Protect and restore environmentally sensitive lands, natural resources, wildlife habitats, and cultural and historic landscapes. Increase the quantity, quality and accessibility of open space. Preserve critical habitat and biodiversity. Promote developments that respect and enhance the state's natural resources.
5. **Conserve natural resources.** Increase our supply of renewable energy and reduce waste of water, energy and materials. Lead by example and support conservation strategies, clean power and innovative industries. Construct and promote buildings and infrastructure that use land, energy, water and materials efficiently.
6. **Expand housing opportunities.** Support the construction and rehabilitation of housing to meet the needs of people of all abilities, income levels and household types. Coordinate the provision of housing with the location of jobs, transit and services. Foster the development of housing, particularly multifamily, that is compatible with a community's character and vision.
7. **Provide transportation choice.** Increase access to transportation options, in all communities, including land and water based public transit, bicycling, and walking. Invest strategically in transportation infrastructure to encourage smart growth. Locate new development where a variety of transportation modes can be made available.
8. **Increase job opportunities.** Attract businesses with good jobs to locations near housing, infrastructure, water, and transportation options. Expand access to educational and entrepreneurial opportunities. Support the growth of new and existing local businesses.
9. **Foster sustainable businesses.** Strengthen sustainable natural resource-based businesses, including agriculture, forestry and fisheries. Strengthen sustainable businesses. Support economic development in industry clusters consistent with regional and local character. Maintain reliable and affordable energy sources and reduce dependence on imported fossil fuels.
10. **Plan regionally.** Support the development and implementation of local and regional plans that have broad public support and are consistent with these principles. Foster development projects, land and water conservation, transportation and housing that have a regional or multi-community benefit. Consider the long-term costs and benefits to the larger Commonwealth.

#### **District Local Technical Assistance Program**

To support implementation of the Sustainable Development Principles listed above, the legislature created the District Local Technical Assistance Program (DLTA), which provides funding for the regional planning agencies around the state to assist communities with planning services. The Commonwealth's DLTA program was funded for State Fiscal year 2012 and can be used for a variety of purposes including developing shared land use objectives, reviewing and modifying existing zoning and land use and creating municipal partnerships.

#### **Strategic Highway Safety Plan**

SAFETEA-LU included a new "core" program, the Highway Safety Improvement Program (HSIP), which is designed "to achieve a significant reduction in traffic fatalities and serious injuries on all public roads." Funds may be used for projects on any public road or publicly owned bicycle and pedestrian pathway or trail.

Each state must have a strategic highway safety plan that identifies and analyzes safety problems and opportunities in order to use HSIP funds for new eligible activities. The plan is required to include a crash data

system that can perform problem identification and countermeasure analysis. The annual report to the Secretary of Transportation must include a description of not less than five percent of locations exhibiting the most severe safety needs, with an assessment of potential remedies for the identified hazardous locations, estimated costs associated with these remedies, and impediments to implementation other than cost. The funding split for projects developed under this program is 90% federal/10% state, although there are certain activities that can be 100% federally funded.

The Massachusetts State Highway Safety Plan was developed in 2005 and 2006 and endorsed by local and regional stakeholders in September 2006. The document reviewed a range of data regarding crashes that involved fatalities and incapacitating injuries. It revealed that Massachusetts fared worse than the nation in crashes that involved vehicles leaving a travel lane, and crashes involving pedestrians and bicyclists.

During FFY 2011, MVPC transportation staff participated in a Road Safety Audit (RSA) of the intersection of Dascomb Road/Shawsheen Street/East Road, which is located on the Andover/Tewksbury town line. This audit identified a number of signage and sight distance issues that could be contributing to the crash problems observed at this location.

Also in FFY 2011, the Merrimack Valley MPO programmed FFY 2011 HSIP funds in the FFY 2011-2014 TIP for the design of roadway improvements at the Route 125 (Chickering Road)/Massachusetts Avenue intersection in North Andover.

MassDOT also continued work on development of plans for improving the Route 125 (Main Street) corridor in downtown Haverhill, which contains three intersections that experienced a large number of crashes in 2006-2008; Main Street/Winter Street, Main Street/Ginty Boulevard, and Main Street/Water Street. A public meeting was held at Haverhill City Hall in the spring of 2011 where MassDOT presented alternative improvement concept plans for the corridor.

### **Transportation Planning Program Years Covered by This Document**

The transportation planning tasks and activities in the FFY 2012 UPWP were developed by the MVPC and MVRTA in cooperation with FHWA, MassDOT, FTA, and local officials. These activities will be financed in large part with federal planning funds provided by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Funding for the contract between MassDOT and the MVPC will be wholly provided by the Commonwealth, which will later receive 80% reimbursement from US DOT. Transit planning activities will be carried out under the Section 5303 and Section 5307 contracts between MassDOT and the MVPC, and FTA and the MVRTA, respectively.

All planning tasks to be initiated under the FFY 2012 UPWP will be performed by either the MVPC or private consultants through the contracts described above. The time period covered by each of these contracts varies. Tasks funded under Contract #55999 between the Massachusetts Department of Transportation and MVPC will be undertaken between October 1, 2011 and September 30, 2012. Tasks funded under the FTA Section 5303 Contract X005 between MassDOT and the MVPC will be conducted between October 1, 2011 and March 31, 2012. Transit planning tasks for the period from April 1, 2012 through September 30, 2012 will be completed under Contract X006 between MassDOT and the MVPC. Finally, the transportation planning activities funded through the Section 5307 contract between the MVRTA and the MVPC will be funded through a contract that that will be in effect from October 1, 2011 through September 30, 2012.

### **Other Transportation Planning Studies**

In addition to the studies and analyses undertaken by the MVPC, a number of transportation planning studies have been implemented in the region and surrounding areas by other agencies. These include:

- **Route 93 Corridor Planning in New Hampshire:** In 2003, NHDOT completed an EIS in support of their proposal to widen I-93 in southern New Hampshire. The Final EIS recommended that I-93 be widened to four lanes in each direction between the Massachusetts/New Hampshire state line and Route I-293 in Manchester. In addition, the Final EIS recommended that provision be made to provide space in the right of way of the widened I-93 to accommodate future transit service. In FFY 2009, NHDOT completed construction of new park and ride lots along this section of the highway and began to operate commuter bus service to South Station and Logan Airport. During FFY 2011, efforts continued to widen the roadway and to replace the bridges over I-93 to accommodate the wider roadway profile.

- **Route 495 Corridor Study:** MassDOT undertook this study in recognition of the growing congestion that exists along the roadway, especially in the western Merrimack Valley and eastern Northern Middlesex regions and the fact that many of the interchanges along this section of roadway have not been improved since the facility was built in the early 1960s.

The study recommends an array of short and long-term improvements for the corridor. Short-term improvements include the retiming of existing signals at exit and entrance ramps, signaling many of these ramp junctions in the next few years, and restriping the existing roadway to increase the length of many of the substandard acceleration and deceleration lanes. Long-term improvements call for the widening of the roadway between Route 225 in Westford and Route 110 (Exit 49) in Haverhill.

- **Route 110/113 Rotary Study:** Based on the work contained in the Merrimack Valley MPO's Route I-93 Corridor Traffic Study, MassDOT undertook a more detailed study of this location that also included a review of the traffic impacts that are expected to occur from continued development of the residential and industrial commercial areas of western Methuen and northeastern Dracut along the Route 113 Corridor.

EOTPW's study of the area was completed in late 2007. A series of near-term improvements were identified that could reduce congestion and improve safety including cutting back brush, restriping the lanes in the rotary, signaling intersections on the west side of the rotary and widening the ramps. More significantly, the study identified a preferred, long-term interchange reconfiguration project that would largely eliminate the rotary and create a modified cloverleaf alignment.

In September 2008, MassDOT initiated work on the project by developing design plans for the preferred long-term alternative. A Draft EIS/EIR for the project was submitted to MEPA in December 2009 and it was approved as the Final EIS/EIR early in 2010. Design work on the project continued in FFY 2011 and the project could be ready for construction as early as December 2012.

- **I-93 Corridor Transit Investment Study:** This study was undertaken by NHDOT in cooperation with the Massachusetts EOTPW with the goal of evaluating alternative transit services in the corridor between Manchester and Boston and to recommend the implementation of those that show the most promise in relieving congestion and promoting sustainable development.

The consultant working for NHDOT reviewed a number of possible bus and rail services in the corridor. Working in cooperation with the Study Advisory Committee, two options--one rail and one bus--were recommended for further analysis and implementation. The rail option would allow for the institution of commuter rail service along the old Manchester and Lawrence Branch of the former B&M Railroad. The bus alternative would have commuter bus services being provided from many of the communities in the corridor, which would then operate as bus-on-shoulder in the breakdown lane on I-93 in both New Hampshire and Massachusetts.

In FY 2010, the Merrimack Valley Planning Commission contacted MassDOT in an effort to further consider the implementation of this "Bus on Shoulder" option. A draft scope of services for a study of the feasibility of instituting both Bus on Shoulder transportation in the I-93 Corridor and/or expanding the existing High Occupancy Vehicle Lane was developed by MVPC transportation staff in FFY 2011, and a task has been included in this year's FFY 2012 UPWP to complete such analyses. The MVRTA is providing 80% of the funding for this study through FTA Grant MA-90-X610 and the MVPC will be providing the 20% non-Federal match(see Task 3.13)

- **Newburyport Intermodal Parking Facility:** The Merrimack Valley Regional Transit Authority and the City of Newburyport have completed a Preliminary Engineering study to identify the preferred site for this facility and to review local transit needs. In May 2010, the City Council approved the construction of the new facility on Titcomb Street, which is located just behind City Hall. In FFY 2011, the MVRTA worked with city officials to further refine alternative design concepts for this site.

### Transportation Planning Requirements Under SAFETEA-LU

In 1991, the original Intermodal Surface Transportation Efficiency Act (ISTEA) established 16 factors that MPO's were required to consider in developing the plans and programs mandated under the legislation. TEA-21 (1998) consolidated these 16 planning factors into seven broad areas, which were slightly altered with the passage of SAFETEA-LU in 2005 with Transportation Security now a stand-alone factor and the factor relating to the environment expanded to promote consistency of the long-range transportation plan with planned growth and development.

Listed below are each of the eight planning factors identified in SAFETEA-LU along with a brief discussion of how individual transportation planning tasks included in the MVMPO's FFY 2012 UPWP address them.

***(1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;***

Task 2.4 - Congestion Management Process: Identifying congested roadway, bridge and transit facilities in the Valley, as well as measures designed to eliminate or reduce this congestion, will improve the efficiency of the region's economy.

Task 2.5 - Intermodal Connections with the National Highway System: Improving the connectivity of the various transportation modes in the region reduces freight shipping costs and makes the region a more attractive location to do business.

Task 3.3 - Route 1/Merrimack Street Intersection Study: Will help support development of downtown Newburyport by improving access to the area from Route 1.

***(2) Increase the safety of the transportation system for motorized and nonmotorized users;***

Task 2.7 - Bicycle/Pedestrian/Water Trails Planning: This task is intended to promote the development of both an on and off-road bicycle and pedestrian transportation network that supports bicycle and pedestrian transportation in the region. MVPC staff will also continue to coordinate activities under the Safe Routes to School Program.

Task 2.8 - Safety Monitoring System: This system provides a comprehensive review of safety conditions on the regional transportation network by identifying high crash roadway intersection and interchange locations. Locations identified through this analysis will be examined in more detail to develop measures to correct identified safety/capacity problems.

Tasks 3.4 – 3.10: MVPC will review traffic and safety conditions at four intersections in the MVMPO region that have been the frequent site of crashes from the beginning of 2006 through 2008. The recommendations that come from these studies, when implemented, should reduce the crash rates at these high-crash locations.

***(3) Increase the security of the transportation system for motorized and nonmotorized users;***

Task 3.9 – Stormwater Runoff: One of the major objectives of this task is to identify stormwater runoff "choke points" which can cause flooding that impacts pedestrians, bicyclists and motor vehicles. Making improvements to these failing and undersized drainage structures will improve the overall security of the transportation system.

Task 3.11 – Climate Change: Through this task the Merrimack Valley MPO will identify all forms of transportation that could be impacted from changes in climate such as through rising sea levels and from flooding.

Task 4.3 – Regional Transportation Security: Under this task, MVPC will review developments in Transportation Security Planning, maintain the region's Multi-Hazard Pre-Disaster Mitigation Plan, and coordinate MVMPO security planning activities with those of the Northeast Regional Advisory Council.

***(4) Increase the accessibility and mobility options available to people and for freight;***

Task 2.4 - Congestion Management Process: Eliminating or reducing congestion on the regional transportation network also reduces the cost of transporting goods and services in the MVMPO region.

Task 2.5 - Intermodal Connections with National Highway System: Improving the connectivity of the various transportation modes in the Valley by definition increases accessibility. This task focuses on improv-

ing/creating connections with the National Highway System roadways in the Valley, the primary movers of both persons and freight.

Task 2.9 – Livability in Transportation: Providing the supporting infrastructure and services to support sustainable development in and around the MVPC region’s Community Development Centers will provide more travel choices to its residents.

Task 3.2 - Transit Planning: MVRTA and MVPC have worked for many years to develop many improvements to the region’s transportation network including the preliminary design and engineering for the Lawrence Transportation Center, Haverhill Intermodal Transportation Center and the Amesbury Transit Center.

***(5) Protect and enhance the environment, promote energy conservation, and improve quality of life;***

Task 2.7 - Bicycle/Pedestrian/Water Trails Planning: Development of the trails identified and supported under this task will promote access to many of the conservation/protected areas in the region and promote bicycle and pedestrian transportation, improve public health, and reduce the use of fossil fuels.

Task 2.9 – Livability in Transportation: Offering people more modes of transportation and tailoring the transportation system to meet the needs of residents and users will improve the overall quality of life in the MVMPO region and reduce our reliance on single occupancy vehicle trips.

Task 3.5: Correcting the congestion problems at Marstons Corner in Methuen will reduce delays, improve air quality and improve the quality of life for those traveling through this intersection, which connects Route 113 with Route 213.

***(6) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;***

Task 1.1 – Management and Support of the 3C Transportation Planning Process and Task 4.2 – Local Technical Assistance: Through these tasks, MVPC has been able to provide such services as technical assistance to the City of Lawrence in support of efforts to improve freight rail access to the Lawrence Industrial Park through the construction of a rail siding either adjacent to or within the Park.

Also under these tasks, MVPC supported efforts to double-track the Haverhill Main Line and upgrade the signal system through the use of ARRA funds. These improvements must be made before the MVMPO region can receive improved levels of commuter rail and freight rail service.

Task 2.5 - Intermodal Connections with the National Highway System: Implementation of the recommended improvements to the NHS connected intermodal facilities in the Valley that will come from the completion of this task will improve the connectivity of the transportation system.

***(7) Promote efficient system management and operation;***

Task 2.1 - Traffic Monitoring Program: Through this task, MVPC staff gathers volume, vehicle classification and speed data on the federal aid roadway network in its region. This data is then used as an input to the region’s Congestion Management Process and in the Pavement Management task.

Task 2.2 – Pavement Management Studies: Pavement management programs are invaluable tools for municipal DPWs, MassDOT, and other agencies/organizations to cost effectively maintain their roadway assets.

Task 2.3 - Geographic Information Systems: The region’s GIS program is critical for providing MPO planners with a platform for viewing and managing multiple data sets. MVPC data layers include the location of bridges, surface condition of roadways, location of TIP projects and location of congested roadways and intersections.

Task 2.4 - Congestion Management Process: This process is used to identify the location of congested locations along the MVMPO’s roadways. Through its implementation, the MPO is able to develop studies and projects that improve the efficiency of the transportation system.

**(8) Emphasize the preservation of the existing transportation system.**

Task 2.2 - Pavement Management Studies: Under this task, MVPC will monitor the condition of the region's federal aid roadway network and develop a program of projects to maintain and improve that network in a cost effective manner. This information will also be used in budgeting resources allocated to the region's resurfacing/reconstruction projects in the Valley. This task also allows MVPC to provide support to Valley communities seeking to implement local pavement management programs.

Task 2.4 - Congestion Management Process: As part of this process, MVPC will be able to identify locations where low-cost improvements can be developed that improve roadway capacity and performance while not requiring expansion of the existing network.

Accelerated Bridge Program: Through this program, MassDOT will replace or repair six Structurally Deficient bridges in the region—the Whittier Bridge, which carries Interstate 95 over the Merrimack River (replacement), the Rocks Village Bridge, which crosses the Merrimack River and connects West Newbury with Haverhill and Merrimac (rehabilitation), the Gillis Bridge, which carries Route 1 over the Merrimack River between Newburyport and Salisbury (repainting), the Route 28 Bridge over the Merrimack River in Lawrence (rehabilitation), the Route 28 Bridge over the MBTA railroad tracks in Andover (replacement), and the Route 125 Connector Bridge over the MBTA railroad tracks and Ferry Road in Haverhill.

### **Other MVPC Planning Studies and Funding Sources**

MVPC's Environmental Planning Department carries out a wide array of professional planning, assessment, and mapping initiatives aimed at enhancing and preserving the region's vital inland, estuarine, and coastal resources. Projects range from Brownfields and stormwater assessment studies to watershed protection plans, open space and recreation plans, and environmental education projects. These activities are funded through a variety of federal and state sources, including the U.S. Environmental Protection Agency (EPA), U.S. Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), MA Department of Environmental Protection (Mass-DEP), MA Department of Conservation and Recreation (DCR), Massachusetts Emergency Management Agency (MEMA), Massachusetts Bays National Estuary Program (MBP), and Massachusetts Coastal Zone Management Office (CZM).

Additional funding is provided through contracts with various non-profit environmental organizations and individual member communities. MVPC environmental initiatives are supported by a complement of high-quality Geographic Information System (GIS) services including data compilation and development, data analysis, and digital mapping. During FFY 2011, MVPC's Environmental and GIS program staff collaborated on the following tasks:

- Administration of Merrimack Valley Regional Brownfields Assessment Program 2009-2012, involving 15 Phase I and II environmental site assessments for hazardous substance and petroleum contaminated properties in Haverhill, Lawrence, Merrimac, and Methuen. Future remediation of these sites will allow for the creation of a public, multi-purpose rail trail along the bank of the Merrimack River; new community gardens and "pocket" parks in several urban environmental justice neighborhoods; and new affordable housing units in a convenient downtown setting;
- EPA-funded *Merrimack Valley Brownfields Cleanup Revolving Loan Fund*, designed to provide low-interest "gap" financing to municipalities, non-profit development corporations, and private for-profit developers for the purpose of cleaning up contaminated properties and returning them to productive use;
- Participation in salt marsh and watershed restoration projects in partnership with Eight Towns & The Bay and nine coastal municipalities;
- Design and implementation of salt marsh research, management, and monitoring program, including field investigation, mapping and control of over 300 stands of emergent and established *Phragmites australis*, an invasive plant threatening the ecological integrity of the Great Marsh Area of Critical Environmental Concern (ACEC);
- Implementation of the *Greenscapes North Shore* Partnership, a regional homeowner education program aimed at reducing stormwater runoff and enhancing water resources protection through individual, parcel-based smart landscaping practices;

- Review and comment on updated Draft Phase II Stormwater Permit, and discussions with EPA on Greenscapes and other program modifications to better assist communities in meeting the new federal requirements for managing municipal separate storm sewer systems (MS4s);
- Technical assistance to communities seeking to update their master plans and open space plans, complete NPDES Phase II Stormwater Management Plans and associated Annual Progress Reports, and implement recommendations of the Executive Office of Energy & Environmental Affairs (EEA) 5-Year Watershed Action Plans for the Ipswich, Merrimack, North Coastal, Parker, and Shawsheen River watersheds;
- Technical and organizational support to the Eight Towns and The Bay Committee, established to help North Shore municipalities implement the recommendations of the Massachusetts Bays Program's *Comprehensive Conservation and Management Plan*;
- In partnership with the Citizen Planner Training Collaborative (CPTC), organization and presentation of educational workshops for municipal officials on subdivision/site planning and land use regulations.

Working collaboratively with numerous private, nonprofit, and public organizations, MVPC continued its wide-ranging economic development planning program. As an Economic Development District recognized and supported by the U.S. Economic Development Administration (EDA), MVPC provides many services to its member communities, including: regional comprehensive strategy development; federal infrastructure grant opportunities; data analysis; economic forecasts; and business marketing.

**Economic Development Master Plan:** The 2010 Merrimack Valley Comprehensive Economic Development Strategy (CEDS) Performance Report was submitted to the U.S. Economic Development Administration (EDA) on June 30, 2010. The Report provides an update on economic development conditions, studies, and initiatives in the region since the release of the 2008 Merrimack Valley CEDS. The 2008 CEDS was a complete update of the regional master plan, featuring a new set of goals, objectives, and action plan. MVPC has worked closely with the private, public, and nonprofit sectors on numerous initiatives reflected in the CEDS, centered on the themes of infrastructure, marketing, green initiatives, and entrepreneurship support.

The CEDS is funded primarily through an annual planning grant from EDA, which is the principal economic development agency of the federal government. EDA requires planning districts to update their CEDS once every five years, with annual Performance Reports in between. The Merrimack Valley has been designated an Economic Development District by EDA since 1986.

**Merrimack Valley Means Business (MVMB):** MVMB ([MVMB.Biz](#)) is a pioneering concept for new and existing businesses in the Merrimack Valley. Developed by MVPC through a grant from the U.S. Economic Development Administration, in partnership with the Merrimack Valley Economic Development Council (MVEDC), regional Chambers of Commerce, and community development departments, MVMB offers a unique and technologically advanced service for prospective and existing businesses looking to market or expand in the region. The only comprehensive, field-based inventory of properties in Massachusetts, the website offers valuable information on over 11,500 businesses and 500 locations for sale or lease in the Valley, using the latest mapping and imaging technologies.

The data-rich, interactive website allows users to conduct qualitative online geographic research on key location factors, including: quality of workforce; consumer buying habits; tax incentives and enterprise zoning; transportation access; and available property attributes, such as building size, alternative energy sources, parking, and realtor contact information. In addition, high resolution, oblique aerial images using MVPC's Pictometry Image Warehouse System is available for each business and property location. This interactive imaging system is a first-of-its-kind tool offered on a business and property information website.

MVMB is the third version of the regional *Means Business* initiative. Through a partnership with the Greater Haverhill Chamber of Commerce and the City of Haverhill, *Haverhill Means Business* was launched in 2004 to promote business opportunities in the city through a cutting-edge, GIS-based property information website. The great success of this groundbreaking, award-winning initiative (winner of a 2006 International Economic Development Council outstanding marketing award) led to a partnership in 2006 with the Merrimack Valley Chamber of Commerce to create a similar website called *Merrimack Valley Means Business* for the communities of Andover, Lawrence, Methuen, and North Andover. Not only have these two previous efforts been combined through MVMB, but the application has also been expanded to the remaining 15 communities in the region, providing a one-stop location for

property information in the Merrimack Valley. MVPC will aggressively promote the site over the coming months and is eager to form additional partnerships to expand the capabilities of the website.

**Brownfields Assessment:** In 2009, MVPC was awarded three EPA grants totaling \$1.4 million for the investigation and cleanup of contaminated industrial and commercial sites, expanding the Merrimack Valley Brownfields Assessment Program, which began in 2003. The Program has performed environmental assessments on a number of projects in the region, including the site of the proposed Lawrence Allied Health and Technology Center. Two \$200,000 grants will fund the continuation of environmental assessment work, while a \$1 million grant is being used to establish a revolving loan fund for the cleanup and redevelopment of assessed sites. The new grant programs began in September, with a kickoff meeting of the Merrimack Valley Brownfield Advisory Committee, a sub-committee of the regional CEDS program. The assessment grants will run for three years, while the revolving loan fund is a five-year program.

**Regional Data Center:** MVPC analyzed and compiled regional economic and demographic data for use by local officials, community-based organizations, businesses, developers, and others. Available on MVPC's website are complete sets of population, labor, and housing statistics.

**Other Economic Development Support:** MVPC reviewed industrial revenue bond proposals through the Massachusetts Development Finance Agency. MVPC offered support to several proposed projects in 2009, including business expansion projects in Lawrence and Haverhill that will create new manufacturing jobs. In addition, MVPC staff handled numerous demographic data inquiries and requests for regional economic development overviews for businesses, individuals, and community officials.



**Summary of Anticipated MVPC Funding  
Resources in FY 2012**

<u>Source - Non Transportation</u>	<u>Amount</u>	<u>% of Total</u>
North American Wetlands Act Cons.	\$4,000	0.2%
Economic Development Administration	100,000	5.3%
Phragmities (DCR)	25,000	1.3%
EDA Revolving Loan Fund	26,000	1.4%
Eight Towns and the Bay (Environmental Protection Agency /Mass. Coastal Zone Mgt.)	65,250	3.5%
Mass. Department of Housing and Community Development (Land Use)	172,713	9.2%
Methuen Open Space	20,000	1.1%
Georgetown & Boxford Stormwater	10,800	0.6%
Pictometry	10,000	0.5%
Mayor's Coalition	20,000	1.1%
EPA Brownfields Contracts	331,193	17.6%
Misc. GIS and Local Contracts	50,000	2.7%
Local Technical Assistance	43,456	2.3%
<b>TOTAL (Non Transportation)</b>	<b>\$878,412</b>	<b>46.7%</b>
<u>Source - Transportation</u>		
FHWA/Mass Highway-PL	\$680,878	36.1%
FTAMVRTA (Section 5307)	145,000	7.7%
FTAMVPC (Section 5303)	106,649	5.7%
Merrimack River Trail (DCR)	7,400	0.4%
In-Kind Services	2,450	0.1%
Local Assessments (Transportation)	62,912	3.3%
<b>TOTAL (Transportation)</b>	<b>\$1,005,289</b>	<b>53.3%</b>
<b>MVPC TOTAL</b>	<b>\$1,883,701</b>	

Source: MVPC FY 2012 Budget (July 1, 2011 – June 30, 2012) with modifications to reflect updated contract information



## Merrimack Valley Planning Commission Staff

(Number in parentheses represents the approximate percentage of staff person's time devoted to transportation planning)

Dennis DiZoglio, Executive Director  
Eugene Amiss, Revolving Loan Fund Coordinator  
Mary Kay Beninati, Senior Transportation Planner (100%)  
George Burnham, P.E. (100%)  
Jennifer Dunlap, Accountant  
Todd Fontanella, Transportation Planner (90%)  
Betsy Goodrich, Transportation Planner (100%)  
Anthony Komornick, Transportation Program Manager (100%)  
Steve Lopez, GIS Specialist (40%)  
Alan Macintosh, Environmental Program Manager (15%)  
Nancy Lavallee, Administration  
Dan Ovale, Data Collection Specialist (100%)  
Michael Parquette, Comprehensive Planning Manager  
Peter Phippen, Environmental Planner (10%)  
Ted Semesnyei, Economic Development Planner (15%)  
James Terlizzi, Senior Transportation Planner (100%)  
Jerrard Whitten, Environmental Planner/GIS Specialist (40%)



# Merrimack Valley Planning Commission Transportation Studies, Analyses and Technical Assistance

## Local Technical Assistance Projects

Parker St./Merrimack St. Intersection Review (FFY 2011)  
Haverhill Street Light Identification and Mapping (FFY 2011)  
Improving Pedestrian Access to Central Plaza (FFY 2010)  
Broadway/Lake Street Intersection in Haverhill (FFY 2010)  
Analyze traffic and safety issues in Byfield Village (FFY 2010)  
Prepare PNF for Route 133 Project in Boxford (FFY 2010)  
Willow Ave. Widening Review in Haverhill (FFY 2009 UPWP)  
Saratoga Street One-Way Analysis in Lawrence (FFY 2009)  
Guard Rail Feasibility on Pelham St in Methuen (FY 2008)  
Rt. 125/Cushing Ave. Intersection Study, Haverhill (2008)  
Bradstreet Property Trail Mapping, Rowley (2008)  
Lawrence Five Corner Intersection Analysis (2007)  
Merrimac Traffic Impact Study Review (2007)  
Haverhill Lafayette Square Traffic Impact Review (2007)  
West Newbury Four-Way Stop Sign Analysis (2006)  
Storey Avenue Traffic Impacts, Newburyport (2007)  
Lawrence Industrial Park Rail Siding (ongoing)  
Review of Pleasant Valley St. Traffic Study, Methuen (2006)  
Review of Merrimack St. Development, Methuen (2006)  
Chickering St. Signal Warrant Analysis, Lawrence (2005)  
Water Street Traffic and Parking Study, Lawrence (2005)  
E. Haverhill St./Ferry St. Intersection Study, Lawrence (2005)  
Essex St./Milton St. Intersection Study, Lawrence (2002)  
Amesbury Downtown Parking Analysis (2002)  
Reservoir Street Traffic Analysis, Lawrence (2002)  
Georgetown Access Road Technical Support (2001)  
Review of Wal-Mart Traffic Impact Study, Methuen (2001)  
Update to 1997 Haverhill Parking Study, Haverhill (2001)

Merrimack St. Ped. Signal Study, Lawrence (1999)  
Ward Hill Industrial Park Road Signage, Haverhill (2000)  
Ponderosa Hills Traffic Study Review, Methuen (1999)  
Crystal St./Broadway Intersection Study, Haverhill (2000)  
Research on Scenic Roadways Bylaws, Groveland (2000)  
Library Street Traffic Analysis, Georgetown (2000)  
M&L Branch Commuter Rail Cost Estimates (1999)  
Eutaw Street Traffic Analysis, Lawrence (1999)  
Beacon Street/Glen St Intersection, Lawrence (1998)  
Milk St./East St. Intersection, Methuen (1999)  
North Andover/Haverhill Trash Truck Analysis (1999)  
Andover St./Route 28 Intersection Analysis, Lawrence (1999)  
Burnham Road/Route 110 Data Collection, Methuen (1998)  
Haverhill Fire Station Location Analysis (1998)  
Mt. Vernon Street/Route 28 Intersection, Lawrence (1998)  
Osco Drug Traffic Analysis, Methuen (1998)  
Downtown Haverhill Parking Study (1997)  
Shawsheen/Loring Street Intersection, Lawrence (1997)  
Manchester Street Rotary; Lawrence (Ongoing/1999)  
Downtown Newburyport Intersection Analyses (1997)  
Rocks Village Bridge Truck Exclusion, Haverhill (1997)  
Cross Street/Hampshire Road Intersection, Methuen (1997)  
Everett Street/Salem Street Traffic Volumes, Lawrence (1997)  
Marston Corners Intersection Study, Methuen (1996)  
Chestnut Hills Traffic Report Review, Methuen (1996)  
Mill Street Bridge Project Initiation, Merrimac (1996)

## Transportation Studies

Milk St./Route 113 Intersection Study, Methuen (ongoing)  
Andover St./Rte. 114 Intersection Study, Lawrence (ongoing)  
Water St./Broadway Intersection Study, Lawrence (ongoing)  
MVMPO 2012 Regional Transportation Plan (ongoing)  
Winter St/White St. Intersection Study, Haverhill (2010)  
Georgetown Square Intersection Study (2010)  
Route 1/Route 133 Intersection Study, Rowley (2010)  
Merrimac St/Spofford St Study, Newburyport (2010)  
Route 114 Corridor Study, Lawrence/N. Andover (2010)  
Ames Street/Haverhill Street Intersection Study (2009)  
Main St. Corridor Study, Haverhill (2009)  
Chickering Road/Mass. Ave. North Andover (2009)  
Elderly Transportation Plan Update (2009)  
Route 125 Build Out Analysis, North Andover (2008)  
Disabled Transportation Plan (2008)  
MVMPO 2007 Regional Transportation Plan  
Lowell Junction IJS, Andover (2006)  
Route 1/March Road Intersection Study, Salisbury (2005)  
Route 125/Merrimack Street Intersection Study (2005)

Route 93 Corridor Traffic Study (2005)  
MVMPO 2003 Regional Transportation Plan  
MVMPO Environmental Justice Study (2003)  
Northern Essex Community College Study, Haverhill (2002)  
Route 97 Corridor Study, Haverhill (2002)  
MVMPO 2000 Regional Transportation Plan  
Haverhill Intersections Study (1999)  
Congestion Management System (1997) Georgetown Industrial Access Road Update (1997)  
1997 Regional Transportation Plan  
Dascomb Road Traffic Study, Andover (1996)  
Congestion Management System (1995)  
Downtown Lawrence Circulation Study (1995)  
Groveland Pavement Management System (1994)  
1994 Regional Transportation Plan Update  
1993 Regional Transportation Plan  
Major Development Monitor (1993)  
Major Development Monitor (1992)  
Merrimack Valley Roadway Functional Classification (1992)  
Georgetown Pavement Management System (1991)



## Acronyms Used in FFY 2012 UPWP

ADA:	Americans with Disabilities Act	MEPA:	Massachusetts Environmental Policy Act
CAAA:	Clean Air Act Amendments of 1990	MISER:	Massachusetts Institute for Social and Economic Research
CEDS:	Comprehensive Economic Development Strategy	MOU:	Memorandum of Understanding
CEPO:	Capital Expenditure and Programming Off.	MPO:	Metropolitan Planning Organization
CMP:	Congestion Management Process	MVATC:	Merrimack Valley Area Transportation Company Merrimack Valley Metropolitan Planning Organization
CMAQ:	Congestion Mitigation/Air Quality Mitigation Program	MVMPO:	Merrimack Valley Metropolitan Planning Organization
CTPS:	Central Transportation Planning Staff	MVPC:	Merrimack Valley Planning Commission
CTPP:	Census Transportation Planning Package	MVRTA:	Merrimack Valley Regional Transit Authority
DEP:	Department of Environmental Protection	MVTC:	Merrimack Valley Transportation Committee
DCR:	Dept. of Conservation and Recreation	NAAQS:	National Ambient Air Quality Standard
E & D:	Elderly and Disabled	NARC:	National Association of Regional Councils
EDA:	Economic Development Administration	NHS:	National Highway System
EIR:	Environmental Impact Report	NMCOG:	Northern Middlesex Council of Governments
EIS:	Environmental Impact Statement	NTD:	National Transportation Demand
EOTPW:	Executive Office of Transportation and Public Works	PPP:	Public Participation Plan
ENF:	Environmental Notification Form	RIF:	Massachusetts Road Inventory File
EPA:	Environmental Protection Agency	RPC:	Rockingham Planning Commission
FHWA:	Federal Highway Administration	RSPS:	Regionwide Systems Performance Study
FTA:	Federal Transit Administration	RTP:	Regional Transportation Plan
GIS:	Geographic Information Systems	SAFETEA-LU:	Safe Accessible, Flexible, Efficient Transportation Equity Act: A Legacy for Users
HOV:	High Occupancy Vehicle	SIP:	State Implementation Plan
HPMS:	Highway Performance Monitoring System	SPR:	State Planning and Research Program
ISTEA:	Intermodal Surface Transportation and Efficiency Act of 1991	STIP:	State Transportation Improvement Program
ITS:	Intelligent Transportation Systems	STP:	Surface Transportation Program
LEP :	Limited English Proficiency	TEA-21	Transportation Equity Act for the 21st Century
LRTA:	Lowell Regional Transit Authority	TCM:	Transportation Control Measures
MAC:	Massachusetts Aeronautics Commission	TDM:	Transportation Demand Management
MAP:	Mobility Assistance Program	TIP:	Transportation Improvement Program
MAPC:	Metropolitan Area Planning Council	UPWP:	Unified Planning Work Program
MARPA	Mass. Assoc. of Regional Planning Agencies	3C:	Continuing, Comprehensive, and Cooperative (transportation planning process)
MassDOT:	Massachusetts Department of Transportation		



**TASK 1.0 MANAGEMENT AND SUPPORT OF THE 3C TRANSPORTATION  
PLANNING PROCESS**



## Task 1.1 - Program Management and Support

### Description

Management and Support activities include tasks that are necessary to maintain the federally prescribed 3C transportation planning process in the Merrimack Valley region. These include administrative tasks associated with the preparation of transportation plans and programs (i.e. UPWP, TIP, and the RTP), coordination of transportation planning activities with other local, state and regional agencies, contract administration, and staff attendance of seminars and workshops. Also included is staff participation in ongoing transportation studies & analyses being undertaken in the region or in surrounding regions that might impact the Merrimack Valley.

### Previous Work

In previous years, MVPC staff has prepared all necessary financial documents and progress reports for its PL and transit planning contracts with MassDOT and its transit planning contract with the Merrimack Valley Regional Transit Authority. MVPC also prepared newsletters and Annual Reports, and provided information to the press. This task also allows for MVPC staff to attend meetings of the Transportation Program Managers and to review major transportation programs and documents prepared by state, and federal agencies.

In recent years, the MVPC has increasingly used this task to participate in many transportation planning studies that are being conducted in the region. In FY 2011, MVPC staff continued to participate in a number of groups that are supporting the development regionally significant transportation projects. The Commission served as a member of the Route 110/113 Rotary Project and continued to be involved in the development of the Draft EIS/EIR for the I-93: Lowell Junction Interchange project. This included attending meetings of and providing technical assistance to the Tri-Community Planning Task Force for the Lowell Junction area and participating in the Tri-Town Project Coordinating and Participating Agency Group surrounding the implementation of the EIS/EIR for the Lowell Junction Interchange.

### FFY 2012 Activities

Each of the activities described below will be performed by the MVPC since this agency is designated as the transportation planning staff of the Merrimack Valley MPO. A breakdown of Management and Support tasks is shown below:

### Tasks

- 1.1.1 *Review Federal and State Transportation Programs:* Includes staff reviews of federal and state transportation programs, guidelines, circulars and manuals. Review of such documents as the State Rail Plan, Freight Plan, State Transportation Plan and the MassDOT Highway Division's Capital Facilities Plan would also be performed under this task, as would Chapter 40, Section 54A reviews of development projects proposed for abandoned rail lines in the region.
- 1.1.2 *Coordination of Regional Transportation Planning Activities:* The MPO will coordinate all its transportation activities with related activities and programs developed by other agencies and authorities in adjacent regions such as the Rockingham Planning Commission in New Hampshire, Northern Middlesex Council of Governments, Metropolitan Area Planning Council, Nashua Regional Planning Commission, and Lowell Regional Transit Authority. Staff will also stay apprised of and activities being undertaken by the Merrimack Valley TMA and Junction TMO in their efforts to relieve congestion in and around Greater Lawrence and the Lowell Junction area of Andover, respectively.
- 1.1.3 *Preparation of Newsletter Articles and 2012 Annual Report Articles:* Transportation staff will prepare articles for inclusion in Regional Review, the MVPC newsletter, which will be published four to five times during the period, and for the MVPC's 2011 Annual Report. This latter document will be prepared in the period from December 2011 through January 2012.
- 1.1.4 *Contract Administration:* Prepare Section 5303 contract application materials as well as time sheets, progress reports and billings for MVPC's three transportation planning contracts, and perform other contract administration activities necessary to the conduct of the 3C transportation planning process.
- 1.1.5 *CMAQ Consultation Committee:* Under this task, MVPC staff will prepare CMAQ project descriptions and complete mandated Air Quality impact evaluations and attend meetings of the state's CMAQ Consultation Committee.
- 1.1.6 *Attend Meetings of MVPC and MassDOT Highway Department District 4 Staff:* MVPC transportation planning staff will prepare for and attend meetings with Massachusetts Highway Department District 4 person-

nel to discuss the status of roadway projects in the Valley, project programming issues, and other transportation-related topics.

- 1.1.7 *MPO Participation in Other Regional Studies/Analyses:* MVPC staff will also continue to attend meetings of the Tri-Community Planning Task Force, Tri-Town Project Coordinating and Participating Agency Group, and, if needed, the Route 110/113 Rotary Project Committee. In FFY 2012, MVPC will also continue to provide technical and administrative support to the communities of Amesbury, Salisbury and Newburyport in completing a coordinated review of the potential impacts that will arise through the construction of the new bridge to carry Route 95 over the Merrimack River.

**Products/Schedule**

- Tasks 1.1.1-1.1.2 - Ongoing. Resulting products will therefore be produced throughout the FFY 2012 UPWP program period
- Task 1.1.3 - MVPC Newsletters - ongoing
- 2011 Annual Report – December 2011/January 2012
- Task 1.1.6 - Attend Meetings with MassDOT District 4 Highway personnel - Ongoing

Funding for Task 1.1				
Program Management and Support				
Source			Person Hours	Amount
FHWA			842	\$62,000
MassDOT			210	\$15,500
FTA Section 5303			84	\$8,320
FTA Section 5307			46	\$3,920
MVPC			33	\$3,060
<b>TOTAL</b>			<b>1,215</b>	<b>\$92,800</b>

## **Task 1.2 - Public Participation Process**

### **Description**

Federal transportation planning legislation places an emphasis on involving the public in the development of the Regional Transportation Plan and the Transportation Improvement Program. In 1994, the MVMPO developed and adopted what was then referred to as a Public Involvement Process as required under Section 450.316 of federal planning regulations developed under ISTEA. This process was designed to ensure those important public agencies at all levels of government, private and nonprofit organizations and interested citizens are kept apprised of transportation planning milestones in the region. It was also intended to solicit timely input from these groups that can be used to improve the effectiveness of the transportation planning process in the Valley. Key participants are the Merrimack Valley Transportation Committee, Merrimack Valley Planning Commission, Merrimack Valley Regional Transit Authority Advisory Board, and MVPC-sponsored meetings of local elected officials and area legislators. Through meetings of these and other groups and through MVPC website, information concerning the status of transportation planning and construction projects as well as transit services in the region are presented and reviewed.

With the passage of SAFETEA-LU in August 2005 and USDOT's release of the Final Rule for Statewide and Metropolitan Planning on February 14, 2007 came the requirement that a new participation plan be developed by MPOs that would broaden the scope of the public outreach process and which identified a number of specific groups that must now be included. This work was completed by the MPO in the summer of 2007 with the creation and MPO adoption of the region's Public Participation Process. This process was subsequently updated by the MPO in 2010.

### **Previous Work**

Under the FFY 2011 UPWP, staff prepared numerous public notices and press releases for local newspapers and boards announcing MPO meetings, MPO Working Group meetings, public meetings and the availability of documents for review and comment. In addition, large mailings of required MPO documents and their amendments were prepared throughout the year.

MVPC staff continued to support its Mayor's and Managers Coalition in hosting meetings of the mayors as well as meetings of a subcommittee of DPW Directors. MVPC staff was very involved in assisting this latter group in developing an Invitation For Bids (IFB) in support of joint purchasing of selected highway services and equipment.

Transportation staff also continued to develop a number of draft Memorandums of Understanding between the MVMPO and the MVRTA as well as neighboring MPOs as recommended by USDOT in its 2008 Certification Review of the region's transportation planning process.

Staff also continued to review materials provided by and attend selected meetings held by of the Northern Middlesex MPO, Rockingham MPO and the Boston MPO's Traffic and Safety Committee.

Also in FFY 2011, staff from MVPC and MassDOT made minor modifications to the MPO's Transportation Project Evaluation Criteria by making more explicit reference as how the region's PGS should be considered in the project scoring process.

### **FFY 2012 Activities**

Staff will continue to support the implementation of the Public Participation Plan in the region and the tasks described above. In addition, MVPC will work to implement the other planning-related requirements contained in SAFETEA-LU that apply to this task.

### **Tasks**

- 1.2.1 *Continued Analysis of the Implementation of the Public Participation Plan:* During the year, staff will continue to evaluate the effectiveness of specific components of its new Public Participation Plan.
- 1.2.2 *Continued Monitoring of MVTC and Stakeholder Outreach Lists:* Additional groups and organizations will be added as warranted and non-participating parties will be removed upon their request. This task expanded in FY 2009 as there were many stakeholder email address changes.
- 1.2.3 *Implement Public Involvement Process:* Prepare mailings, newspaper announcements, public notices, and public service announcements outlined in the MPO's Public Involvement Process.

- 1.2.4 *Distribute Required Documents:* MVPC staff will distribute TIP, RTP, and UPWP documents as well as any amendments to all state and federal agencies and, in general, act as the secretariat for the Merrimack Valley MPO.
- 1.2.5 *Host Meetings of Merrimack Valley Mayors and Managers Coalition and Area Legislators:* MVPC staff will host meetings to discuss important transportation issues. This task will also contain some staff time devoted to supporting the DPW Directors Subcommittee of the Mayors and Managers' Coalition.
- 1.2.6 *Merrimack Valley Transportation Committee/MPO Working Group:* Provide for and actively encourage public and private participation in the 3C planning process through the Merrimack Valley Transportation Committee (MVTC) and the Merrimack Valley MPO Working Group. Includes scheduling of meetings, preparation of agendas and meeting materials.
- 1.2.7 *Hold Meetings of the Merrimack Valley MPO:* MVPC will provide administrative and technical support to the Merrimack Valley MPO and host meetings of the organization. Includes scheduling of meetings, preparation of agendas and meeting materials.
- 1.2.8 *Attend MPO and Transportation Committee Meetings for Surrounding MPOs:* Under this task, MVPC staff will attend selected meetings of the Boston, Northern Middlesex, Rockingham and Nashua MPOs including policy and technical committee meetings. Staff will also attend meetings of other MPOs within the Boston UZA, although it is anticipated that this will occur on a less frequent basis. It will also allow MVPC staff to review the materials prepared by these MPOs to ensure the coordination of all transportation-planning activities.
- 1.2.9 *Review/Revision of Project Evaluation Criteria:* The MPO's Transportation Project Evaluation Criteria have been applied over the past few years with little or no change in terms of weighting of the existing criteria or the addition of new criteria. With the completion of the Priority Growth Strategy, MVPC staff has talked about ways to better integrate the findings and recommendations in this document into the transportation planning process. MVPC staff will continue to work with MPO and MVTC members to assess the effectiveness of the current criteria and, if necessary, begin the process of modifying them to better suit the transportation priorities of the region.
- 1.2.10 *Adoption of New MOU's:* MVPC staff will continue the process, begun under the FY 2010 UPWP, of developing agreements with NHDOT, the Rockingham MPO, and the MVRTA as recommended in the MPO's 2008 Certification review from USDOT.

**Products/Schedule**

- Tasks 1.2.1–1.2.4 - Prepare public announcements; present and distribute documents – Ongoing
- Task 1.2.5 - Meetings with Chief Elected Officials and Legislators – Ongoing
- Task 1.2.7 - MVTC Meeting packets and Committee newsletters as needed
- Task 1.2.8 - Revised Project Evaluation Criteria – January - February 2012
- Task 1.2.9 - New MPO MOUs as Recommended by USDOT – October 2011 - January 2012

Funding for Task 1.2				
Public Participation Process				
Source			Person Hours	Amount
FHWA			399	\$33,840
MassDOT			100	\$8,460
FTA Section 5303			99	\$6,640
FTA Section 5307			0	\$0
MVPC			25	\$1,660
<b>TOTAL</b>			<b>623</b>	<b>\$50,600</b>

### Task 1.3 – Unified Planning Work Program

#### Description

The Unified Planning Work Program describes all transportation planning activities to be undertaken within the region in the coming federal fiscal year. Most of these activities will be conducted by the transportation staff of the Merrimack Valley Planning Commission within that agency's role as the transportation staff for the Merrimack Valley MPO. However, this document must also include descriptions of significant transportation planning studies in the Valley that are to be undertaken by other agencies using federal transportation funds.

#### Previous Work

MVPC produced draft and final versions of previous Merrimack Valley MPO Unified Planning Work Programs.

#### FFY 2012 Activities

Under this task in the coming program year the MVPC, in accordance with responsibilities defined in the Memorandum of Understanding for the Merrimack Valley MPO, will prepare the FFY 2013 UPWP for the region. The MVPC will also amend the FFY 2012 document as needed to reflect changes that may occur during the course of the program year.

#### Tasks

- 1.3.1 Develop FFY 2013 Unified Planning Work Program: MVPC will develop the FFY 2013 UPWP for the region which describes all transportation planning activities anticipated to be undertaken in the next program year including, to the extent feasible, those state and locally funded activities which are to be conducted by the MVPC, National Transit, Inc. or other parties.
- 1.3.2 Amend FFY 2012 UPWP: Performed as necessary.

#### Products/Schedule

- Task 1.3.1
  - Draft FFY 2013 UPWP - April - June 2012
  - Endorsed FFY 2013 UPWP - July 2012
- Task 1.3.2
  - Amendments to FFY 2012 UPWP - As necessary

Funding for Task 1.3				
Unified Planning Work Program				
Source			Person Hours	Amount
FHWA			223	\$10,760
MassDOT			56	\$2,690
FTA Section 5303			46	\$3,520
FTA Section 5307			0	\$0
MVPC			12	\$880
TOTAL			337	\$17,850



## Task 1.4 - Transportation Improvement Program (TIP)

### Description

The TIP is a multi-year document that lists and briefly describes all federally funded transportation projects that are programmed for implementation in the region. Any project that is to be implemented using federal funding must appear in this document and any project that is to be implemented in the coming fiscal year must appear in what is known as the Annual Element. In addition to this listing, it must be demonstrated in the document that there is sufficient funding available to construct the projects and that the existing transportation infrastructure is being maintained. Per the requirements contained in SAFETEA-LU, the Merrimack Valley MPO's TIP covers four federal fiscal years.

### Previous Work

MVPC produced numerous amendments to the region's FY 2011-2014 Transportation Improvement Program (TIP). MVPC staff also worked in cooperation with MassDOT Highway Division District 4 and the Office of Transportation Planning to produce the Draft FY 2012-2015 TIP. MVPC staff and MassDOT again worked cooperatively to apply the Transportation Evaluation Criteria that were developed by the Executive Office of Transportation and Public Works to roadway projects in the region.

In FY 2011, MVPC staff updated its database of roadway and transit projects that were used to develop the region's Draft FY 2012-2015 TIP and successor documents, but can also be edited to provide reports that contain a variety of information tailored to the needs of the user. Also in FY 2011, the Office of Transportation Planning released a new TIP project listing format that is to be used by all MPOs in preparing their TIPs. The new format includes the change in statewide policy that now mandates that current year estimated project construction costs must be inflated at an annual rate of 4% to reflect the year that the project is anticipated to be advertised for construction. This new format will be applied by the Merrimack Valley MPO in preparing the final version of the FY 2012-2015 document.

### FFY 2012 Activities

MVPC will work with state and federal officials in preparing a four-year TIP in accordance with the provisions of the MOU to Define, Develop and Monitor a Balanced Statewide Road and Bridge Program. This will include the continued application of the transportation evaluation criteria that were established earlier this year.

MassDOT and the other members of the MPO will continue to work cooperatively to develop a regional priority list of federal aid and non-federal aid transportation projects that will serve as the basis of the FY 2013-2016 TIP.

MVPC will also assist MassDOT's Office of Transportation Planning in performing any required air quality conformity determinations for the TIP using procedures outlined in the Final Rule for air quality conformity for Transportation Plans, Programs, and Projects developed by EPA and state regulations adopted by DEP in 2005. A key new development in this regard for FFY 2013 is that the Merrimack Valley MPO will be responsible for conducting analyses of the impacts that each project will have on the emissions of Greenhouse Gases.

### Tasks

- 1.4.1 *MPO Endorsement of FY 2013-2016 TIP:* MVPC staff will prepare a Draft 2013-2016 TIP in the late spring of 2012. This document will go to public review that summer and should be adopted by the MPO in July 2012.
- 1.4.2 *Develop Four-year Program of Projects:* In developing the Draft FY 2013-2016 TIP, staff will update the list of all transit, highway or air quality projects that are expected to require federal transportation funds for planning and engineering, construction or purchase during the period. In addition to this list of federally-funded projects, the TIP will include:
  - For informational purposes, all projects proposed to be funded with Federal funds other than from FHWA and FTA, and
  - For informational purposes, all regionally significant projects proposed to be funded with Non-Federal funds, including non-exempt Air Quality projects. This four-year list of projects shall include the following information:
    - a. Project title;
    - b. Project description;

- c. Project evaluation score based on MPO's application of Transportation Project Evaluation Criteria;
- d. Project Type (i.e. Construction, Operating, or Maintenance);
- e. Estimated total cost in the year that the project is to be advertised;
- f. Amount of federal funds proposed to be obligated during each program year;
- g. Proposed source of Federal and non-federal funds;
- h. Identification of the recipient/subrecipient and state and local agencies responsible for carrying out the project;
- i. Identification of those projects that are identified as TCM's in the SIP;

Project descriptions shall be of sufficient detail to permit air quality analysis in accordance with the U.S. EPA conformity requirements and, for the most part, should match the descriptions shown on MassDOT's project information web page. In addition, the total costs of projects seeking Federal funds in each program year shall be comparable to the anticipated level of federal funding expected to be available to the MPO.

1.4.3 *Preparation of Draft 2013-2016 Transportation Improvement Program for the Merrimack Valley Region:* The following tasks and procedures will be performed by the MVPC transportation planning staff in developing the Draft FY 2013-2016 TIP:

- Insure early involvement of local legislators, chief local officials and citizens through the Public Involvement Process (see Task 1.2);
- Provide technical assistance to municipalities and private interests in developing projects and priorities, and
- Work with the MassDOT Highway Division District 4 Project Engineer, MVRTA Administrator, MassDOT Transit Administrator, and the Office of Transportation Planning developing project information.

The Draft FY 2013-2016 TIP will also include sections on:

- a. The relationship of the TIP to the RTP;
- b. Funding categories and amounts of federal funds proposed to be obligated during each program year;
- c. Previously funded projects and programs, their status, and an explanation of any significant delays in the planned implementation of major projects. The region will specifically identify "investments in pedestrian walkways and bicycle transportation facilities" as required in SAFETEA-LU;
- d. The criteria and process for prioritizing projects;
- e. Air quality significance and relationship of the TIP to the State Implementation Plan;
- f. Progress in implementing any required TCM's, including reasons for any significant delays in the planned implementation and strategies for ensuring their advancement;
- g. Projects found to conform in a previous TIP and are now part of the base-case for the purpose of air quality conformity analyses;
- h. The Financial Plan that compares revenue needs to revenue sources for highway and transit programs;
- i. Evaluation of how the region is programming transportation funding for the purpose of maintaining the existing transportation network, and
- j. Description of the transit funding provisions in SAFETEA-LU, or its successor.
- k. The Greenhouse Gas emissions associated with each project appearing in the FY 2013-2016 elements of the document

1.4.4 *Air Quality Conformity Determination:* MVPC staff will prepare all documentation necessary for an air quality consistency determination to be performed by the Merrimack Valley MPO as required by EPA's "Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, Projects funded or Approved under Title 23 U.S.C. or the Federal Transit Act." This will include a quantitative air quality analysis of all non-exempt projects including regionally significant projects. Non-exempt air quality projects, as defined by EPA and DEP, are generally those that change vehicular

speed or affect travel delay. This analysis will utilize a methodology endorsed by the State Air Quality Task Force and will be performed by the Office of Transportation Planning.

- 1.4.5 *Amendments to MPO's FY 2012-2015 TIP:* The Merrimack Valley MPO will endorse amendments to the region's FY 2012-2015 TIP as needed throughout FY 2012.
- 1.4.6 *State Bridge Program/Accelerated Bridge Program:* Projects identified for implementation in the Merrimack Valley region through these two programs will be programmed in the TIP if they are to require the use of future federal funds (e.g. Federal aid Bridge funding) to reimburse MassDOT for its up front commitment of state funding to advertise projects for construction.
- 1.4.7 *Review Reports on Advertised Projects:* MassDOT will provide quarterly reports to the Massachusetts Association of Regional Planning Agencies concerning the status of planned and advertised road and bridge projects. This report will include information on project funding source, amount, cash expenditures for that fiscal year, and other data. The information in these reports will be reviewed and analyzed by MVPC staff under this task. This information must also be made available on the MVPC website by December 31 for the preceding federal fiscal year.

**Products/Schedule**

- Task 1.4.1 - Final FY 2013-2016 TIP including a quantitative air quality analysis of regionally significant major construction projects, consistent with the SIP – June - July 2012
- Task 1.4.2 - Develop four year program of projects – April – June 2012
- Task 1.4.3 - Release notice of development of FY 2013-2016 TIP - April 2012
- Task 1.4.5 - Amendments to MPO's FY 2012-2015 TIP – As needed

<b>Funding for Task 1.4</b>				
<b>Transportation Improvement Program</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			309	\$23,500
MassDOT			77	\$5,480
FTA Section 5303			58	\$4,160
FTA Section 5307			0	\$0
MVPC			14	\$1,040
<b>TOTAL</b>			<b>458</b>	<b>\$32,600</b>



## Task 1.5 - Updating Transportation Web Pages

### Description

The transportation pages of the MVPC website have been developed to provide citizens of the Valley and surrounding areas with access to the latest information on the transportation planning process. They have rapidly become the primary means by which local officials and the public access information on the transportation planning process in the Merrimack Valley.

MVPC has maintained additional transportation pages on its website. These pages contain information about the MVPC's transportation planning activities such as significant traffic studies and important planning documents such as the Regional Transportation Plan, Unified Planning Work Program and the Transportation Improvement Program. This includes posting notices of upcoming meetings (MVTC/MPO Working Group, MPO, Trails Committee, etc.), copies of important planning documents such as the RTP, TIP and the UPWP, as well as copies of key reports or other data used by MPO staff and local officials in making transportation planning decisions in the Valley.

### Previous Work

In 2011, MVPC completed a comprehensive upgrade its website, including the addition of a number of new transportation planning pages. These include:

<i>Transportation Links</i>	<i>Transportation Data Viewer</i>
<i>Teleworking</i>	<i>Complete Streets</i>
<i>Merrimack Valley MPO</i>	<i>Project Development</i>
<i>Toolkit</i>	<i>Project Spotlight</i>

MPO documents such as draft and final versions of amendments to the region's FY 2011-2014 TIP appeared along with notices of MPO public meetings, the availability of the MassDOT – Highway Division 2011-2015 Capital Investment Plan.

Staff also maintained a Facebook page for transportation.

### FFY 2012 Activities

Under this task, MVPC transportation staff will continue to update and maintain the transportation web pages (including the new Facebook page).

### Tasks

- 1.5.1 *Update Transportation Web Pages of MVPC Website:* Information shown on this page will be updated to reflect progress made through the end of the FFY 2012 UPWP. MVPC also anticipates either creating a new web page or posting information on its existing pages promoting telecommuting in the region.

### Products/Schedule

Task 1.5.1 - Update Transportation Web Pages - Ongoing

Funding for Task 1.5			
Updating Transportation Web Pages			
Source		Person Hours	Amount
FHWA		52	\$5,000
MassDOT		13	\$1,250
FTA Section 5303		35	\$3,160
FTA Section 5307		0	\$0
MVPC		9	\$790
<b>TOTAL</b>		<b>109</b>	<b>\$10,200</b>



## **Task 1.6- Regional Transportation Plan**

### **Description**

The Merrimack Valley MPO Regional Transportation Plan (RTP) is the most important element in the region's 3C planning process. The RTP comprehensively examines the existing transportation network in the region, identifies those issues and problems that either require or will require improvement, and outlines possible courses of action designed to facilitate these improvements. It considers all major forms of transportation in the region and is developed so that it is consistent with the region's comprehensive, long-term land use plans as well as any social, economic, environmental, and energy conservation goals and objectives.

### **Previous Work**

During FFY 2011, the Merrimack Valley MPO completed a comprehensive update to the 2007 Regional Transportation Plan (RTP). The new document, the Merrimack Valley Metropolitan Planning Organization 2012 Regional Transportation Plan, marked a significant departure from previous RTPs in terms of organization and content. It is focused on how the region's transportation network and its transportation planning process support the attainment of the Goals and Objectives contained under the new Vision Statement, which were both approved by the MPO early in the RTP development process.

Key actions undertaken by the MPO staff in FFY 2011 included the identification of a listing and preliminary schedule of key transportation projects, which were included in the document to show that the RTP was fiscally constrained—i.e., that the region expected to have sufficient funding available over the next 24 years to address both its transit needs and to construct those locally initiated roadway projects that could be completed using discretionary funding that will be available during that period. Staff also developed new sections of the document that addressed how the transportation planning process in the Valley would consider such issues as the impact of the transportation network on the generation of Greenhouse Gases and Climate Change, and how the transportation system could be modified to improve the quality of life ('livability') in the region rather than continuing to be perceived as an impediment to this pursuit.

MVPC also completed a large-scale effort to collect road surface condition information for the non-interstate federal aid roadways in the Valley, which was used to project anticipated roadway maintenance needs in the region out to the year 2035. High crash intersections and interchanges in the Valley were also identified based on MassDOT crash data for the years 2006-2008 and the results of this analysis played a large role in identifying the traffic and safety studies that will be undertaken by MVPC on behalf of the MPO under the FFY 2012 UPWP (see Task 3.0 – Short and Long Range Transportation Planning Studies) .

### **FFY 2012 Activities**

With the anticipated MPO adoption of the 2012 Regional Transportation Plan later this summer, work on this task in FFY 2012 will focus on MVPC staff performing selected outreach activities to provide citizens and local officials with additional information concerning the document. This will be done through staff presentations to be made at local meetings. Staff will also continue to examine new options and opportunities for presenting the information contained in the 2012 RTP so as to support further improvements to the document when it is updated again in 2016.

### **Tasks**

- 1.6.1 *RTP Outreach:* Staff will meet with local public officials and citizen groups to present additional information about the 2012 RTP and its findings and recommendations. Specifically, it is anticipated that these forums will allow staff to directly address local concerns and questions regarding specific issues in their communities and thereby facilitate the implementation of the projects and programs that support the MPO's transportation planning Goals and Objectives.
- 1.6.2 *Development of Additional Visualization/ Presentation Techniques;* To further improve upcoming editions of the RTP, MVPC will survey plans from other MPOs to identify any presentation techniques, document distribution ideas, etc. that could be applied in the development of the MPO's 2016 document.

**Products/Schedule**

Task 1.6.1  
Task 1.6.2

- RTP Outreach Meetings – November 2011 – September 2012  
- Identification of Visualization/Presentation Techniques – Ongoing

<b>Funding for Task 1.6</b>				
<b>Regional Transportation Plan Update</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			134	\$10,000
MassDOT			34	\$2,500
FTA Section 5303			256	\$19,200
FTA Section 5307			0	\$0
MVPC			64	\$4,800
<b>TOTAL</b>			<b>488</b>	<b>\$36,500</b>

## **TASK 2.0 - DATA COLLECTION AND ANALYSIS ACTIVITIES**



## Task 2.1 - Traffic Monitoring Program

### Description

Traffic volume count data is the most widely used and easily understood method to monitor and measure activity on our roadways. The MVPC has annually gathered traffic volume information on roadways throughout the region since 1983. These counts are taken for a number of important transportation planning purposes including the calculation of accident rates on links and at intersections, for use in MVPC corridor and intersection studies, in refining the regional traffic model, and in response to community requests for traffic counting information. These community requests often call for data on vehicle classification and vehicle speed to be collected. Counts are also taken at MassDOT-specified coverage locations to aid the state in obtaining data on vehicle miles traveled by road type. This information is submitted to the FHWA each year and is used, in part, to determine the amount of federal highway funding that will be made available to Massachusetts.

### Previous Work

Under the FFY 2011 UPWP, MVPC completed approximately 100 traffic counts. Many of these counts were taken at locations needed to better calibrate the regional traffic model.

In FY 2010, MVPC successfully incorporated its traffic counting database into its website to provide the public with an improved method of accessing traffic count information. This is done through the MVPC's *Transportation Viewer*. The Viewer allows public to access traffic count data that has been collected by the MVPC over the years, locate the count locations using Google Maps and view aerial and ground level images of the count station using Pictometry and Google Earth, respectively. MVPC Geocoding of this information also makes it possible to incorporate volume data into the state's road inventory file and other GIS data layers.

### FFY 2012 Activities

Under this year's UPWP, MVPC again anticipates conducting approximately 110 traffic counts.

### Tasks

- 2.1.1 *Conduct MVPC Counts:* Conduct counts throughout the region in order to refine and update the traffic database with emphasis on those locations added as a result of adding new links to the traffic model. The MVPC plans to conduct 60 counts for these purposes in FY 2012.
- 2.1.2 *Conduct MassDOT Coverage Counts:* Take additional counts at MassDOT coverage count locations on undivided highways in the region. The MVPC will conduct 10 such counts this year for MassDOT to assist in their efforts to estimate the number of vehicle miles traveled on various classes of roadways in the Commonwealth. MassDOT will be submitting this information to FHWA and it will be one of the data sources used to determine the state's highway funding allocation.
- 2.1.3 *Community Requests:* Member communities often request traffic counting information (vehicle classification, volume, or speed counts) at specific locations in anticipation of future developments, to address citizen concerns, etc. The MVPC anticipates conducting 10-15 of these counts under this UPWP.
- 2.1.4 *Count Library:* Maintain a library of traffic counts to be made available to the public. Staff annually updates its library of volume counts by including new information collected by MVPC, MassDOT, and by consultants as part of any traffic studies conducted in the Valley.
- 2.1.5 *Traffic Monitoring System:* Each year, MVPC conducts traffic volume counts at 25 locations in an effort to measure changes in traffic levels. This data, along with volume data collected by MassDOT at the permanent count stations in the region, serves to quantify regional volume growth factors.
- 2.1.6 *Data Submittal:* Forward all counts taken by the MVPC in FY 2012 to MassDOT's Office of Transportation Planning on a monthly basis.
- 2.1.7 *Community Reports:* Prepare and distribute reports summarizing the traffic counting activities for each community in the region. Paper copies of these reports will be distributed to the chief elected officials, MVPC Commissioners and DPW Directors of each community. Electronic versions of the reports will be emailed to other local officials.
- 2.1.8 *Traffic Monitoring System:* Each year, MVPC conducts traffic volume counts at 25 locations in an effort to measure changes in traffic levels. This data, along with volume data collected by MassDOT at the permanent count stations in the region, serves to quantify regional volume growth factors.

**Products/Schedule**

- Tasks 2.1.1- 2.1.3 - Conduct traffic volume, classification counts - October 2011 – November/December 2011; April 2012 – September 2012
- Task 2.1.4 - Update MVPC Count Library – December 2010 - January 2011
- Task 2.1.5 - Submittal of Data to MassDOT - October 2011 – November/December 2011; April 2012 – September 2012
- Task 2.1.6 - Community reports summarizing 2011 regional traffic counting activities – February - April 2012

<b>Funding for Task 2.1</b>				
<b>Traffic Monitoring Program</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			640	\$39,457
MassDOT			160	\$9,864
FTA Section 5303			0	\$0
FTA Section 5307			0	\$0
MVPC			0	\$0
<b>TOTAL</b>			<b>800</b>	<b>\$49,321</b>

## **Task 2.2 - Pavement Management Studies**

### **Description**

Pavement management programs are designed to provide officials with a comprehensive tool to both evaluate the condition of their roadways and cost-effectively program roadway improvement projects. These programs have proven to be persuasive and effective tools in educating the public on road maintenance issues and obtaining funding necessary to support a comprehensive road maintenance program.

In recent years, many communities have expanded their pavement management programs to include other community-owned infrastructure that is usually found in the road right of way. These typically include water and sewer lines, streetlights, fire hydrants, storm drains and, in some cases, even electric boxes.

### **Previous Work**

Under the FY 2010 UPWP, MVPC worked with the City of Haverhill to implement a pavement management program and continued to provide technical support to the Town of North Andover as that community continued to implement its own Infrastructure Management program, one that was originally developed in cooperation with MVPC. During FY 2011, MVPC collected information on the condition of pavement on federal aid arterial and collector roadways in the region as a basis for identifying the resources needed to maintain the quality of these facilities. This information is reflected in the region's 2012 Regional Transportation Plan. This road surface condition information is also used by MPO staff in evaluating the magnitude of the improvement to pavement quality that will occur through the implementation of planned or proposed roadway and intersection improvement projects, one of the criterion used in the Transportation Project Evaluation process.

### **FFY 2012 Activities**

With the regional federal aid roadway surface condition database largely updated through late 2010/early 2011, staff will spend time in FY 2012 in providing community DPW Directors with this information.

Staff will also continue to review/refine the pavement repair decision matrices that were used in estimating the cost of improving or perhaps even just maintaining the overall condition of the region's federal aid roadway network.

And, as has been the case for many years, MVPC will continue to work with communities to develop local pavement management programs.

### **Tasks**

- 2.2.1 *Community Assistance:* Continue to assist communities in the region seeking to establish pavement management programs. This assistance will consist of technical support and, if necessary, data collection.
- 2.2.2 *Distribute Pavement Condition Information:* MVPC will distribute information on the condition of the non-interstate federal aid roadways in the region to local DPW Directors and City/Town Engineers. It is hoped that this information will be used by localities in developing their own road maintenance programs.
- 2.2.3 *Collect Other Data on Federal Aid Road System:* In addition to collecting road surface condition data with its staff, MVPC will continue to coordinate efforts with DPW directors/engineers from other communities in the region that have pavement management programs.
- 2.2.4 *Attend Meetings of the Pavement Management Users Group:* Staff will attend meetings of the Pavement Management Users Group.

**Products/Schedule**

- Task 2.2.1 -Provide assistance to interested communities in developing pavement management systems - Ongoing
- Task 2.2.2 -Distribute non-interstate federal aid roadway pavement condition information to local DPW Directors and City/Town Engineers– October 2011 – November 2011
- Task 2.2.4 - Attend meetings of Pavement Management Users Group – Ongoing

<b>Funding for Task 2.2</b>				
<b>Pavement Management Studies</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			244	\$15,000
MassDOT			61	\$3,750
FTA Section 5303				
FTA Section 5307				
MVPC				
<b>TOTAL</b>			<b>305</b>	<b>\$18,750</b>

## Task 2.3 - Geographic Information Systems

### Description

The Merrimack Valley Planning Commission makes extensive use of its Geographic Information Systems (GIS) in all phases of its comprehensive planning program. This is especially true of its transportation planning activities where virtually all map and geographical information used in its transportation planning studies and analyses is now produced and transmitted in digital format. Consequently, it is imperative that MVPC and all RPAs in the Commonwealth continue to have state of the art GIS programs in place to support their own planning studies and analyses and to provide technical assistance to their constituent communities.

### Previous Work

Under recent UPWPs, MVPC GIS and transportation staff worked cooperatively on a number of transportation-related issues:

- Development of a *Traffic Viewer* for the MVPC website
- Creation of a process to develop intersection and roadway improvement plans in GIS-compatible formats
- Maps used in MPO's 2012 Regional Transportation Plan
- Creation of off-road trail maps in the Valley
- Maps showing the location of sidewalks in the region
- Location of stormwater outfall pipes along public roadways
- Maps showing scenic vistas in the region
- MVRTA route and system maps
- Maps/diagrams used in local and regional transportation studies
- Updated digital aerial imagery used in regional transportation studies

In FY 2007, MVPC staff met with staff from the Executive Office of Transportation and Public Works to discuss the MVPC's role in updating the data shown in the state's Roadway Inventory File (RIF). This listing of roadways in each community serves as the basis for the development of street maps and other databases used by MVPC as well as the 15 cities and towns in the region.

Also in FFY 2008, MVPC staff worked with communities in obtaining new digital aerial photography through Pictometry, Inc. of Rochester, NY and establishing/installing the aerial imagery in libraries that reside on the computer systems of participating cities and towns. Thirteen of 15 MVPC cities and towns have purchased Pictometry images through MVPC as has the Town of Plaistow, NH. Along with this imagery, MVPC has continued to assist communities by installing accompanying Windows-based software that can be used, among many purposes, to derive accurate ground measurements from the imagery.

Key developments under the FFY 2011 UPWP were the expansion of the MVPC's Traffic Volume Viewer to also shown information on the number of crashes that have taken place at intersections/interchanges on the region's roadway network and the selection of software and development of a process by which transportation improvement concept plans can be quickly developed and integrated into the agency's GIS.

MVPC GIS staff also prepared a series of maps that were used in the development of the MPO's 2012 Regional Transportation Plan.

### FFY 2012 Activities

MVPC will continue to review any new road centerline files or Road Inventory Files developed by MassDOT and will continue using its GIS in geocoding newly accepted roadways that have been submitted to the state for inclusion in the RIF.

MVPC will continue to provide technical support to communities that have purchased the Pictometry digital aerial imagery through the MVPC. This support will include offering additional workshops intended to familiarize new staff persons from participating cities and towns with the use of the Pictometry imagery and software as well as to answer the questions of persons who have had a chance to work with the product.

GIS staff will also continue to update the region's on-road and off-road trail maps based on georeferenced data and information received from the communities.

**Tasks**

- 2.3.1 *Maintain Transportation Database:* MVPC will continue to upgrade its highway planning and transit planning data layers for its GIS. MVPC will continue to work closely with the Office of Transportation Planning, Massachusetts Highway Department, Merrimack Valley Regional Transit Authority, MassGIS, and other public and private agencies to incorporate any information they may have into our transportation database.
- 2.3.2 *Monitor Status of Road Inventory Line File Updates:* Staff will continue to monitor and evaluate MassDOT's progress in developing roadway line files that match up with available orthophotographs.
- 2.3.3 *Attend Regional Data Center and State User Group Meetings:* Staff will participate in preparing for Regional Data Center meetings and will attend meetings of the MassGIS User Group.
- 2.3.4 *Pictometry Data and Software Technical Support:* MVPC staff will assist staff from participating member communities in managing their Pictometry digital aerial image libraries and in the use of the Electronic Field Study software that is used to access and interpret the digital image database.
- 2.3.5 *Pictometry Workshops:* MVPC staff will hold workshops for local officials on how to use both the Electronic Field Study software to access and manage the community and neighborhood level imagery provided through Pictometry.
- 2.3.6 *MVRTA Bus Route Data Layer:* Any changes in the structure of the MVRTA's fixed route system will need to be reflected in a revised bus route data layer. GIS staff will complete any such revisions under this year's UPWP.
- 2.3.7 *New and Revised Bike Trails Map:* Under previous UPWPs, MVPC developed a Regional Off-Road Trail Map that shows the locations of key trails on publicly accessible land throughout the region. Working with local trails groups and enthusiasts, MVPC will continue to add new trails to this map under this year's UPWP.
- 2.3.8 *Maintain/Update Traffic Counting Viewer:* GIS staff will update the MVPC's Traffic Count Viewer with traffic count data collected in FFY 2011.
- 2.3.9 *Transportation Mapping Support:* Provide GIS support and map creation for transportation studies, plans, Environmental Justice, and other transportation planning activities as becomes necessary.

**Products/Schedule**

- Task 2.3.2 - Road Inventory File Updates - Ongoing
- Task 2.3.7 - New and Revised Trails Maps – Ongoing

Funding for Task 2.3				
Geographic Information Systems				
Source			Person Hours	Amount
FHWA			888	\$76,400
MassDOT			222	\$19,100
FTA Section 5303			136	\$12,000
FTA Section 5307			0	\$0
MVPC			34	\$3,000
<b>TOTAL</b>			<b>1,280</b>	<b>\$110,500</b>

## Task 2.4 - Congestion Management Processes

### Description

The Intermodal Surface Transportation and Efficiency Act of 1991 created Transportation Management Areas (TMA's) in those urbanized areas of over 200,000. Within these areas, MPO's were given the primary responsibility to develop and implement a Congestion Management System. This requirement was slightly modified in SAFETEA-LU, but its general intent remains the same. The newly defined "Congestion Management Processes" in Transportation Management Areas must "provide for effective management and operation" to address congestion issues."

### Previous Work

This region's Congestion Management Process (CMP) relies on the regional traffic model and existing traffic and transit usage data to identify congested highway, transit, and park-and-ride facilities in the Valley. MVPC staff also employs staff knowledge of the region, the results of traffic studies/reports to identify congested roadways and intersections while ridership data from the MBTA and the MVRTA was used to identify congested transit services/facilities. Additional field data is then collected to confirm and quantify congestion at those locations. From here, specific recommendations are proposed to solve some of these congestion problems. Such recommendations often include a call for a transportation study of the problem. In such cases, the study is included in the region's Unified Planning Work Program. The Route I-93 Corridor Study, Route I-495 Corridor Study, Route 114 Corridor Study were all undertaken or initiated largely based on the findings and recommendations generated by the CMP.

In FFY 2011, MVPC updated the region's CMP to reflect changes in the status of planned or proposed improvement projects that are intended to address congested intersections and roadways in the region.

### FFY 2012 Activities

MVPC will continue to update and calibrate its TransCAD traffic simulation model (see Task 2.6) and apply the output to the region's CMS. MVPC staff will then continue work on the transportation planning activities required to maintain and update the CMS.

### Tasks

2.4.1 *Data collection:* MVPC staff will continue to collect the following data on those corridors identified as being severely congested in the Merrimack Valley CMP:

- Travel time and delay runs in each identified corridor
- Monitoring usage at park and ride lots throughout the region
- Ridership information on congested transit routes/services



### Products/Schedule

Task 2.4.1

- Data Collection – Ongoing

Funding for Task 2.4				
Congestion Management Processes				
Source			Person Hours	Amount
FHWA			117	\$8,000
MassDOT			29	\$2,000
FTA Section 5303			44	\$3,160
FTA Section 5307			0	\$0
MVPC			11	\$790
<b>TOTAL</b>			<b>201</b>	<b>\$13,950</b>



## **Task 2.5 - Intermodal Connections with National Highway System**

### **Description**

With its three interstate highways and many other NHS roadways such as Route 213 and sections of Routes 1A, 28, 97, 110, 113, 114 and 133, the Merrimack Valley region offers a number of existing and potential intermodal connection opportunities. The region is also served by four rail lines, two of which provide freight rail access to local businesses and one line that carries a substantial amount of interstate freight as well as passenger service. A fourth line currently supports commuter rail service. Existing intermodal facilities include park and ride lots for commuter bus, commuter rail, and transit services as well as a number of trucking terminals.

Potential intermodal projects could include new rail and airfreight terminals in the Valley or connections via the NHS to such facilities, existing or planned, nearby in adjacent regions. The continued economic growth of the Valley and surrounding regions has created a situation where the construction of new intermodal facilities becomes more feasible in both the economic and transportation sense.

### **Previous Work**

In FFY 2011, MassDOT completed construction of the expansion of the Newburyport Park and Ride Lot, which is located at the interchange of Routes 113 and 95. MassDOT also completed work on the expansion of the Dascomb Road Park and Ride Lot, which is located adjacent to Route 93 in Andover. This project doubled the capacity of the lot and included the construction of numerous amenities that were either substandard or lacking at the old facility.

In FY 2011, the MVRTA and the City of Newburyport continued with preliminary design work for the construction of a parking facility on Titcomb Street that will include a transit component. This site is located just north of Route 1A (High Street), which is an NHS roadway.

MVPC also completed an analysis of the condition and usage of the intermodal facilities in the region with a focus on the park and ride facilities and transit stations located on or near NHS roadways. MVPC also assessed the adequacy of the connections to NHS roadways from truck freight terminals in the region. This analysis considered such factors as the physical condition of the facilities and whether there was peak period congestion on the roadways that connect them to the NHS system. The study also makes recommendations for addressing any of the deficiencies identified.

Also in FFY 2011, MassDOT completed both the State Freight Plan, which considers all modes of freight movement, and Statewide Freight Plan, which will focus on rail infrastructure and operations for passenger as well as freight service. Both plans should be completed shortly. Significant findings and recommendations for the Merrimack Valley region are that the railroad tracks on the Haverhill Main Line cannot support 286,000 pound freight cars, which is becoming the new industry standard, and that this line does not have the necessary bridge clearances to allow the passage of double stacked container cars. The study also noted that the Merrimack River Bridge in Haverhill is in poor condition, which limits the speed of both freight and passenger trains using the facility.

### **FFY 2012 Activities**

MVPC will undertake the following tasks in support of improving intermodal connections in the Valley:

#### **Tasks**

- 2.5.1 *Development of NHS Projects:* Based on the recommendations contained in the MVPC's NHS Facilities Inventory, MVPC will work with its communities and MassDOT to develop improvement projects that will improve access between key transportation facilities and the region's NHS roadway network.

**Products/Schedule**

Task 2.5.1

- Development of NHS Projects – ongoing

<b>Funding for Task 2.5</b>			
<b>Intermodal Connections with NHS</b>			
<u>Source</u>		<u>Person Hours</u>	<u>Amount</u>
FHWA		82	\$5,000
MassDOT		21	\$1,250
FTA Section 5303		22	\$1,360
FTA Section 5307		0	\$0
MVPC		6	\$340
<b>TOTAL</b>		<b>131</b>	<b>\$7,950</b>

## **Task 2.6 - Regional Transportation Model**

### **Description**

Regional transportation simulation models play a prominent role in the 3C transportation planning process. They are the primary tools used to determine whether a region's TIP and RTP meet the requirements of the Clean Air Act Amendments of 1990 and they are also used to estimate the traffic impacts that will be generated by projected economic and population growth in the region. In the Merrimack Valley region, the regional traffic model plays a critical role in the screening process to identify congested transportation facilities as part of the Congestion Management Process.

The MVPC uses the TransCAD transportation modeling software package, as do virtually all of the MPOs in the Commonwealth. The most recent version of the Merrimack Valley regional traffic simulation model currently consists of over 3,000 roadway links, over 375 internal traffic analysis zones, and 43 external zones that link the region with neighboring areas of Massachusetts and New Hampshire. The number of zones will continue to grow over the years as the MVPC completes more regional traffic studies, which generally require the creation of smaller traffic zones to achieve the desired level of accuracy needed to complete project-level link and intersection analyses.

### **Previous Work**

Under the FFY 2009 UPWP, MVPC continued to calibrate and refine its TransCAD traffic simulation model. This largely involved the addition of new centroid connectors for internal traffic zones and the creation of additional traffic zones in areas that were too large to provide accurate/realistic traffic assignment.

Staff also developed the TAZ-based 2035 population and employment projections.

### **FFY 2012 Activities**

The principal focus of transportation staff in FY 2012 will be the creation of a new base year (2010) for the regional traffic model. Population and household information that has become available from the 2010 US Census will serve as the primary source of data that will support this effort. In addition, staff will continue to revise the zonal employment data in the model as additional information becomes available. MVPC intends to purchase 2011 employment data for businesses in the region through an agreement with Metropolitan Area Planning Council.

In addition, MVPC will continue the task of creating smaller, census block-based zones in those parts of the Valley where block groups are too large to allow for reasonable assignment of traffic to the network. In most cases, such zones are in the more rural areas in the eastern part of the region where there is little or no employment.

### **Tasks**

- 2.6.1 *Creation of 2010 Base Year Model Network:* This network will include the completion of regionally significant transportation projects as well as population and employment projections by traffic analysis zone.
- 2.6.2 *Model Calibration and Refinement:* Staff will continue to perform tasks as part of the model calibration and refinement process. The most important task in this regard will be the continued refinement of the model network.
- 2.6.3 *Model Coordination:* Planning areas surrounding the Merrimack Valley have also developed transportation simulation models. Traffic zone data and/or volume data from roadways entering the region will be incorporated into the MVPC regional traffic model, as necessary.
- 2.6.4 *Collect Intersection Data and Automatic Traffic Recorder (ATR) Counts:* The TransCAD model package can incorporate signal timing information when assigning vehicle trips. To take advantage of this important model feature, staff will continue to collect sample turning movement and signal timing data at key signalized intersections throughout the Valley. Staff will also continue to integrate ATR count data into the model to assist in the model calibration process.

**Products/Schedule**

Task 2.6.1  
Task 2.6.4

- 2010 Base Year Model Network– October 2011 - February 2012  
- Intersection Data Collection – Ongoing

<b>Funding for Task 2.6</b>			
<b>Regional Transportation Model</b>			
<u>Source</u>		<u>Person Hours</u>	<u>Amount</u>
FHWA		284	\$24,000
MassDOT		71	\$4,090
FTA Section 5303		34	\$2,960
FTA Section 5307		0	\$0
MVPC		8	\$740
<b>TOTAL</b>		<b>397</b>	<b>\$24,150</b>

## **Task 2.7 -- Bicycle/Pedestrian/Water Trails Planning**

### **Description**

Interest in creating a non-motorized off-road and on-road network has been growing in the region to the point where nearly every community in the Valley has a trail project either in the planning or development stage. The 2009 ribbon cutting for the Haverhill Riverwalk and the 2010 ribbon cutting of the Salisbury Ghost Trail and Newburyport Clipper City Rail Trail added to the list of trails and were the culmination of over 10 years of effort to build these facilities.

Each of the above facilities was funded for design and/or construction through the Merrimack Valley MPO as were the Powow Riverwalk in Amesbury and a section of the Haverhill Riverwalk. The MVMPO will continue to be an active partner with MassDOT and our member communities to continue expanding this bicycle and pedestrian trail network.

### **Previous Work**

In 2006, with a Recreational Trail Program grant, MVPC staff worked with member communities to develop off-road trail maps. These maps can be found on the MVPC web site. This work continued over the past few years with GIS work to help Haverhill and Georgetown develop off-road trail guidebooks.

During FY 2010, in an effort to help our member communities access High Priority Project funding for the Border to Boston Trail, MVPC staff, in partnership with MassDOT, created and managed a competitive funding program. The communities successfully came together to propose one project to develop 100% design of the remaining corridor in the MVPC region for the roughly \$718,000 plus local match. Design for this trail will begin by the end of September 2010 and will wrap up by the end of 2012.

In 2010, MVPC received a Recreational Trails Grant from the Department of Conservation and Recreation and partnered with the Essex National Heritage Commission and the Northern Middlesex Council of Governments to examine and map a possible route for the Merrimack River Trail. Also in 2011, MVPC conducted a trail feasibility study of the Old Georgetown Railroad right-of-way to connect the Bradford Rail-Trail to the Border to Boston Trail in Georgetown.

MVPC produced a full color web-map that delineates the watershed boundaries and includes the nine watershed communities of Boxford, Georgetown, Groveland, Ipswich, Newbury, Newburyport, North Andover, Rowley and West Newbury. The map presents a wealth of information important to the non-motorized boating public, including: major roadways and crossings, town boundaries, hydrology and estuarine channels, public access sites to the waterways, key historical and natural landmarks, publicly owned lands, navigation information for canoeing and kayaking, and scenic vistas. The map is housed on the web site of the Eight Towns and the Bay Committee ([www.8tb.org](http://www.8tb.org)).

To support the needs of our communities, MVPC has participated in meetings for the development of the Whittier Bridge project and advocated for bicycle and pedestrian connections across the bridge and at either side of the bridge. The replacement of this structure represents a unique opportunity to make improvements that otherwise will be out of reach for the next 50 years.

### **FFY 2012 Activities**

MVPC staff will continue to provide assistance to the Border to Boston communities to develop the trail. Additionally, staff will work with communities in their efforts to develop both on- and off-road bicycle and pedestrian facilities and connections. In doing so, staff will work with communities to begin addressing pedestrian and safety issues within the region. Staff will continue the coordination and technical support that the Commission provides to member communities and interested citizens and groups regarding bicycle and pedestrian issues.

MVPC, in partnership with its environmental affiliate, Eight Towns and the Bay, will continue to work with the Parker River Clean Water Association to gather data necessary to refine and update the water trails guide for the Parker River Watershed, which covers 82 square miles and encompasses all or parts of nine Essex County communities. Kayakers and canoeists can now access an interactive, web-based map, which includes photographs and descriptions of unique ecological, geological, and historical features, boat access locations, scenic routes, estimated travel times, boating safety considerations, and environmental attributes.

**Tasks**

- 2.7.1 *Program Review:* MVPC staff will continue to review any local, regional, state and national policies/reports as they pertain to multi-use, pedestrian, bicycle, and equestrian trails. Staff will also continue to use various reference materials such as the newly released 1999 AASHTO Guide for the Development of Bicycle Facilities, and the 1999 MHD Building Better Bicycling Manual when making community recommendations for bicycling and walking.
- 2.7.2 *Bicycle and Pedestrian Data Gathering:* MVPC will continue to work with local trails groups and interested citizens to gather information on the location and attributes of new off-road trails in the region. We will begin to map bike routes and bike lanes as part of the on-road bicycle and pedestrian system. We will also revisit old off-road trail maps to update the information and reformat the maps.
- 2.7.3 *Provide Support to the Development of the Border to Boston Trail:* MVPC will continue to work with local trails groups and interested citizens to gather information on the location and attributes of new off-road trails in the region. We will begin to map bike routes and bike lanes as part of the on-road bicycle and pedestrian system.
- 2.7.4 *Attend Meetings of the Coastal Trail Coalition and Other Local Bicycle, Pedestrian and Water Trail Groups:* MVPC staff will attend meetings of the Coastal Trails Coalition, Haverhill Trails Committee and other local and/or regional groups in an effort to foster coordination between the various bicycle and pedestrian planning efforts across the region and to provide technical assistance and advice to groups and organizations as they seek to implement improvement projects.
- 2.7.5 *Promote safer bicycle and pedestrian access:* MVPC will provide support to MassDOT in implementing the Safe Routes to School Program in the Merrimack Valley region. In addition, MVPC will work with communities to examine possible pedestrian safety concerns and identify possible improvements.
- 2.7.6 *Merrimack River Trail:* Once the MRT project is complete, MRT staff will make the information public through the internet and follow up with communities on recommendations in the document.
- 2.7.7 *Water Trail Planning:* Staff will continue to work with the Ipswich Watershed Councils in supporting the on-line water trails guide and trail network that may be accessed on the Eight Towns and the Bay Committee website ([www.8tb.org](http://www.8tb.org)).

**Products/Schedule**

- Task 2.7.2 - Bicycle and Pedestrian Data Gathering – October – December 2011, April – September 2012
- Task 2.7.3 - Border to Boston Trail Support – Ongoing
- Task 2.7.6 - Merrimack River Trail Meetings – October 2011 - May 2012

<b>Funding for Task 2.7</b>			
<b>Bicycle/Pedestrian/Water Trails Planning</b>			
<u>Source</u>		<u>Person Hours</u>	<u>Amount</u>
FHWA		137	\$13,340
MassDOT		34	\$3,335
FTA Section 5303		0	\$0
FTA Section 5307		0	\$0
MVPC		0	\$0
<b>TOTAL</b>		<b>171</b>	<b>\$16,675</b>

## Task 2.8 - Safety Monitoring System

### Description

This task is designed to provide the MPO with a comprehensive planning analysis of traffic and transit safety conditions on the transportation network. SAFETEA-LU includes a requirement that metropolitan transportation plans should maximize the safety and mobility of people and goods. It also included the Highway Safety Improvement Program, which earmarks federal funding for safety-oriented projects that support the goals and objectives of a state's Highway Safety Improvement Program.

### Previous Work

Under last year's UPWP, MVPC acquired crash data from MassDOT for the year 2008, which was used in reviewing safety conditions at a number of intersections under study and will be used to identify high crash locations in the Safety section of the 2012 RTP. As part of this process, MVPC created a GIS-based framework for identifying crash locations that is based on the coordinate data for most crashes that was been provided by CTPS for MassDOT. Staff also reviewed the MassDOT crash summary data for 2006-2008 and assigned crashes locations even if they were lacking coordinate information but there was enough data to make a determination of the event.

In FFYs 2009 and 2010, MVPC staff also participated in three Road Safety Audits (RSAs) in the Valley. These involved the intersection of Route 125 and Massachusetts Avenue in North Andover, various roadways in the Byfield Village section of Newbury, and at three intersections along Main Street (Route 125) in Haverhill. These audits were organized by MassDOT and included representatives from the Merrimack Valley Planning Commission, the City of Haverhill, Massachusetts State Police, and MassDOT, and the Federal Highway Administration.

Under the FY 2011 UPWP, staff participated in an RSA that was held for the Dascomb Road/Shawsheen Street/East Road intersection, which is bisected by the Andover/Tewksbury town line. The RSA identified a number of sight distance and signage problems that might be contributing to the high crash rate at this location.

### FFY 2012 Activities

MVPC will continue to assign crashes to their proper location within the MVPC's crash database. Much of this work will be accomplished using the MassDOT crash data summaries and geospatial information provided through our GIS. Staff will also assign geospatial coordinates to crash summaries where staff feels that enough information is contained in the summary (often placed in the wrong field) data that has been provided by MassDOT. Additional information for identifying crash locations will come from reviewing copies of police reports where more detailed crash information is usually provided. Finally, staff will continue efforts to develop crash rates for intersections in the Valley where large numbers of crashes have taken place. This information is necessary to allow the MPO to identify which locations pose a greater crash risk to the public and is needed in developing projects to be funded in whole or in part under the HSIP funding earmark. MVPC will also continue to monitor data from the Federal Railroad Administration to identify safety problems at the active railroad/roadway crossings in the region.

### Tasks

- 2.8.1 *Obtain Most Recent MassDOT and Local Police Crash Data:* Staff believes that crash data from 2010 will be available late in early 2012 and facilitate creation of an analysis period of 2008-2010.
- 2.8.2 *Edit MassDOT 2009 and 2010 Crash Data:* MassDOT crash data must be reviewed and edited by MVPC to make sure that all accidents are assigned to their correct location. Previous experience with the MassDOT crash database has shown that different descriptions of the same intersection or roadway resulted in accidents being classified improperly. These inconsistencies will be corrected by MVPC staff based on our knowledge of the different names for roadways and intersections in the region.
- 2.8.3 *Establish Crash Rates:* Relying on traffic volume data collected by MVPC, MassDOT and through consultants' traffic impact studies, the MVPC regional traffic model, and other sources, MVPC staff will generate estimated accident rates (accidents per million entering vehicles) at high crash intersections as identified in the analysis of the region's high crash locations for 2007-2009. During FFY 2011, staff developed estimated Average Daily Traffic volumes for all federal aid roadways as part of its Pavement Management task. These will serve as the foundation for developing estimated intersection crash rates.
- 2.8.4 *Identification of High Crash Rate Locations:* Based on the results obtained from the completion of Task 2.8.3, MVPC will develop a listing of locations with the highest accident rates in the region.

- 2.8.5 *Review State's Crash List:* MassDOT often releases a listing of its top crash locations. This list considers a number of factors such as severity of accidents, but does not consider accident rates. Nevertheless, this list provides valuable information on crash locations across the Commonwealth and will be reviewed by MVPC staff when it is released.
- 2.8.6 *Implement the Strategic Highway Safety Plan:* MVPC staff will continue to work with MassDOT to implement the recommendations contained in the Massachusetts Strategic Highway Safety Plan. This would include development of projects that would reduce the number of lane departure crashes in the region along with efforts to develop projects to address safety problems at high-crash locations.
- 2.8.7 *Safety User's Group:* MVPC Staff will attend meetings of the State's Safety Users Group. Participation in this group will ensure that the data and findings generated through the Strategic Highway Safety Plan are reflected in the region's Safety Monitoring System.
- 2.8.8 *Road Safety Audits:* MVPC will conduct RSAs in the Merrimack Valley region, as needed. Most of these RSAs will take place as part of the intersection/interchange traffic and safety studies that will be undertaken by MVPC during this federal fiscal year.

**Products/Schedule**

- Task 2.8.2 - Edit MassDOT Crash Data from 2010 – February - April 2012
- Task 2.8.4 - Identify High Crash Rate Locations – Ongoing

<b>Funding for Task 2.8</b>				
<b>Safety Monitoring System</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			115	\$7,000
MassDOT			29	\$1,750
FTA Section 5303			28	\$1,717
FTA Section 5307			0	\$0
MVPC			7	\$429
<b>TOTAL</b>			<b>179</b>	<b>\$10,896</b>

## Task 2.9 – Transportation and Livability

### Description

U.S. Department of Transportation Secretary Ray LaHood has defined Livability as meaning “being able to take your kids to school, go to work, see a doctor, drop by the grocery or Post Office, go out to dinner and a movie, and play with your kids at the park -- all without having to get in your car.”

The concept of influencing the quality of life of Americans through changes and improvements to the transportation network has been described in many ways and indeed has been an important consideration in the transportation planning process since the enactment of SAFETEA-LU back in 2005. (see Page 5 – Sustainable Development Criteria). What is new are the federal government’s recent efforts to coordinate the actions of three key Departments to make this a reality.

In 2009, USDOT, the Department of Housing and Community Development (HUD), and the Environmental Protection Agency (EPA) formed the Interagency Partnership for Sustainable Communities “to help improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” These agencies then established the following *Six Principles of Livability* to attain this goal:

- **Provide more transportation choices** to decrease household transportation costs, reduce our dependence on oil, improve air quality and promote public health.
- **Expand location- and energy-efficient housing choices** for people of all ages, incomes, races and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- **Improve economic competitiveness of neighborhoods** by giving people reliable access to employment centers, educational opportunities, services and other basic needs.
- **Target federal funding toward existing communities** – through transit-oriented development and land recycling – to revitalize communities, reduce public works costs, and safeguard rural landscapes.
- **Align federal policies and funding** to remove barriers to collaboration, leverage funding and increase the effectiveness of programs to plan for future growth.
- **Enhance the unique characteristics of all communities** by investing in healthy, safe and walkable neighborhoods, whether rural, urban or suburban.

These six principles are intended to guide these three federal agencies to work in concert in considering and evaluating capital investments..

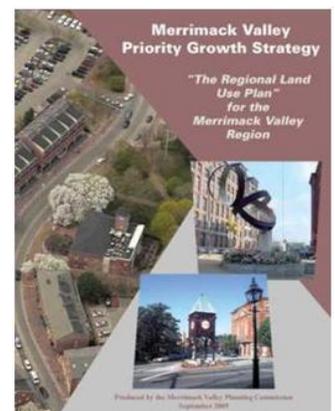
### Previous Work

In 2009, the Merrimack Valley Planning Commission completed its Priority Growth Strategy, which serves as the Regional Land Use Plan for the Merrimack Valley. A fundamental goal of the Commission in preparing this document was that it should support Sustainable Growth principles as appropriate throughout the region. As noted in the document, the PGS is intended to serve as a tool to realize a shared vision of “... a region that promotes development in the right place that generates good jobs, new tax revenues, creates affordable housing, stimulates the economy and creates a sense of place. A region that balances growth with preservation, maintains open space and the character of the region, and is served by an effective transportation system...”

The PGS contains numerous recommendations for transportation improvements that will improve the quality of life in the Valley including improving bicycle and pedestrian transportation to Community Development Centers, implementing transit services where needed to also serve these areas and relieving roadway congestion that both slows economic growth, degrades the quality of our air and generates greenhouse gases that may have a dramatic impact on our climate.

Late in FY 2011, the Merrimack Valley Planning Commission will host a series of workshops designed to assist local officials in both understanding the various transportation options that are available to improve livability and to provide support in their implementation. The items to be discussed in these workshops will include:

- Traffic calming measures and their applicability, strengths and weaknesses



- Instituting Truck Exclusions
- Modifying zoning and land use
- Parking supply and controls
- Lowering speed limits
- Reviewing acceptable roadway design elements
- Stormwater runoff and treatment
- Identifying Appropriate levels and types of public transit services
- Alternative methods for providing bicycle and pedestrian access

The Merrimack Valley MPO's 2012 Regional Transportation Plan also contains many recommendations

**FFY 2012 Activities**

MVPC staff will focus its efforts on assisting communities with implementing the recommendations contained in the PGS and at the same time to further educate Valley officials and residents on both the benefits of providing a livable community and the various tools that can be used to accomplish this.

**Tasks**

2.9.1 *Provide Technical Assistance to Communities Implementing Recommendations Contained in the PGS:*  
 MVPC Staff will assist communities in implementing the transportation livability recommendations contained in the region's Priority Growth Strategy.

**Products/Schedule**

Task 2.9.1

- Technical Assistance to Communities – Ongoing

Funding for Task 2.9				
Transportation and Livability				
Source			Person Hours	Amount
FHWA			182	\$10,720
MassDOT			45	\$2,680
FTA Section 5303			50	\$3,520
FTA Section 5307			0	\$0
MVPC			13	\$880
<b>TOTAL</b>			<b>290</b>	<b>\$17,800</b>

**TASK 3.0 - SHORT AND LONG-RANGE TRANSPORTATION PLANNING  
ACTIVITIES**



## **Task 3.1 -- Elderly and Disabled/ADA Planning**

### **Description**

The Merrimack Valley Regional Transit Authority has traditionally been a leader in the Commonwealth in providing reliable, inexpensive transportation for the elderly and disabled. For example, the MVRTA was the first Authority in the Commonwealth to have a fully accessible fixed route bus fleet.

Continued growth in the elderly population in the region and their demand for non-ADA eligible demand response transportation, coupled with the rapidly increasing demand for mandated ADA-eligible transportation services, continues to create severe budgetary pressures on the Authority. With federal operating subsidies now largely phased out for transit authorities in urbanized areas of 200,000 people or more, the MVRTA must consider a range of options in how to satisfy its obligations under ADA.

### **Previous Work**

Under the FFY 2008 UPWP, MVPC finalized the Coordinated Public Transit-Human Services Transportation Plan for the Merrimack Valley MPO and conducted two rounds of grant applications (January and July/August 2008).

In FFY 2008, MVPC completed an analysis of transportation issues facing the region's disabled population. The study forecasts the region's disabled population to 2030, estimates the demand for transit service that will be generated by this group, and makes recommendations as to the type of transit services that will meet this groups transportation needs.

In FFY 2009, the MVPC completed an update to the Authority's 2004 Elderly Transportation Study that includes an evaluation of the transportation services currently available to older adults in the Merrimack Valley region and contains recommended strategies to meet the goal of increasing senior mobility needs while still meeting the future demands on the paratransit program.

In recent years, MVPC has assisted MVRTA in monitoring its EZTrans and Fixed Bus Route services for ADA compliance

### **Tasks**

- 3.1.1 *Continue to Assist the MVRTA in Complying with ADA Paratransit Requirements:* MVPC will assist the MVRTA in reviewing EZTrans Service for compliance with ADA Paratransit requirements.
- 3.1.2 *Assist the MVRTA in Monitoring Compliance with ADA Fixed Route Bus Requirements:* The MVPC will survey MVRTA lift maintenance and repair procedures, wheelchair securement system maintenance and repair procedures, and other areas to ensure that Authority is meeting the requirements of Subpart G of Part 37 of the ADA regulations.
- 3.1.3 *Elderly Transportation Study/Disable Population Transit Study Implementation and Plan Update:* Continue to assist the MVRTA in implementation of the recommendations contained in the 2009 Elderly Transportation Study and 2008 Disabled Population Transit Study including identification of potential funding sources to implement the recommendations contained in these reports. Initiate planning process to update both plans.
- 3.1.4 *Oversight of Mobility Assistance Van Program:* As part of the Mobility Assistance Grant, MVRTA is required to monitor maintenance of MAP vehicles being used by Councils on Aging. MVPC will assist MVRTA in setting up and implementing this process.

**Products/Schedule**

- Task 3.1.1 - Assist MVRTA in Monitoring ADA Demand Response Requirements – Ongoing
- Task 3.1.2 - Assist the MVRTA in Monitoring ADA Fixed Route Bus Requirements – Ongoing
- Task 3.1.3 - Elderly Transportation Study/Disable Population Transit Study  
Implementation and Plan Update– November 2011 - April 2012
- Task 3.1.4 - Oversight of Mobility Assistance Van Program - Ongoing

<b>Funding for Task 3.1</b>				
<b>Elderly and Disabled/ADA Planning</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			0	\$0
MassDOT			0	\$0
FTA Section 5303			0	\$0
FTA Section 5307			166	\$17,200
MVPC			42	\$4,300
<b>TOTAL</b>			<b>208</b>	<b>\$21,500</b>

## Task 3.2 — Transit Planning

### Description

The MVRTA is the primary provider of public transportation in the Merrimack Valley region. Through private operators such as the Merrimack Valley Area Transportation Co., Inc. (MVATC), the Authority provides a wide array of fixed route bus and demand-response transit services. Each of the planning tasks described below is being undertaken in support of the services being offered through the MVRTA.

### Previous Work

The MVRTA now operates six demand response transit services in the region, these being the Ring and Ride Services in Georgetown, Groveland, Newbury, Salisbury, Boxford and West Newbury as well as demand response service that replaced Route 42 in Methuen, and the former Route 22 in Andover and a section of Route 51 in Newburyport.

The MVRTA operates 18 fixed bus routes, two special employment buses, one seasonal fixed bus route to the Salisbury Beach area as well as on-demand service to the towns of Georgetown, Groveland, Salisbury, Boxford, Newbury, Methuen, Andover and West Newbury. MVRTA also provides special services for disabled clients who cannot use the fixed bus routes and to the elderly.

FY 2011 also saw much progress being made in the planning and implementation of five major transit capital projects that are being managed by the Authority. Construction began on the Haverhill Intermodal Transit Center and on the Amesbury Intermodal Center. Construction was also completed on Phase II of the Lawrence Gateway project with the opening of the 865 space surface parking area in November 2010.

In Haverhill the MVRTA continued work on the potential relocation of the Washington Square Transit Station and will select a site and commence final design in FY 2012. Finally, the MVRTA has also recently completed a site selection study for an Intermodal Parking Facility in the City of Newburyport and the City Council approved the selection of the Titcomb Street site for the facility.

### FFY 2012 Activities

Planning assistance will be provided to the Authority and local officials by the MVPC as follows:

### Tasks

- 3.2.1 *Provide Technical Assistance to the MVRTA and Communities as Required:* In previous years, the MVRTA has asked the MVPC to perform technical analyses on an as-needed basis. This has included such activities as preparing RFPs and evaluating responses, estimating sample size for MVRTA surveys and updating the Authority's fixed route bus maps. Similar transit planning activities will be conducted for the Authority under the FFY 2012 UPWP. MVPC will also provide technical assistance on transit issues to communities.
- 3.2.2 *Assist the MVRTA in Updating the Authority's Strategic Plan:* MVPC will continue to assist the MVRTA in updating its Strategic Plan.
- 3.2.3 *Update Coordinated Public Transit – Human Service Transportation Plan and Implement Grant Process:* Originally completed in 2007, MVPC work with MVRTA to initiate planning process to update this plan. MVPC will continue to implement the grant process for JARC and New Freedom programs.
- 3.2.4 *Implementation and Evaluation of New Service:* MVPC will assist the MVRTA with implementing new bus services as well as evaluating them, including the new Salisbury fixed bus route, River Road and New Hampshire Mall services.
- 3.2.5 *Assess Ring & Ride Service:* MVPC will assist the MVRTA with reaching out to communities that utilize the Ring & Ride on-demand transit service to assess how well the service meets the needs of these communities and suggest changes to the service if necessary.
- 3.2.6 *Assist MVRTA with implementation of new internal review processes:* Assist MVRTA with implementation of a variety of internal review processes that relate to triennial reviews, DBE, evaluation of bus service and evaluation of new farebox system or other.

**Products/Schedule**

- Task 3.2.2 - Strategic Plan Update– October 2011 - February 2012
- Task 3.2.3 - Update Coordinated Public Transit – Human Service Transportation Plan – February- June 2012
- Task 3.2.5 - Assessment of Ring and Ride Service – March - June 2012

<b>Funding for Task 3.2</b>			
<b>Transit Planning</b>			
<u>Source</u>		<u>Person Hours</u>	<u>Amount</u>
FHWA		0	\$0
MassDOT		0	\$0
FTA Section 5303		357	\$33,040
FTA Section 5307		460	\$43,880
MVPC		204	\$19,230
<b>TOTAL</b>		<b>1,021</b>	<b>\$96,150</b>

### **Task 3.3 - Route 1/Merrimack Street Intersection Study in Newburyport**

#### **Description**

This intersection provides the primary access to downtown Newburyport from Salisbury. Located at the southern end of the Gillis (Route 1) Bridge, this unsignalized intersection is in effect two intersections. One contains the Route 1 SB off ramp, the entrance to Winter Street southbound, and Merrimack Street. The second intersection is located on the eastside of Route 1 and consists of the on ramp to Route 1 northbound, the exit from Summer Street northbound, and Merrimack Street. The close proximity of these smaller intersections and the variety of turning movements that take place under the Route 1 overpass have created a confusing situation where drivers often accept shorter gaps to make their desired movements or run the risk of enduring very long delays as they attempt to identify more acceptable gaps in the confusing traffic pattern. This situation is made worse by the limited sight distances and even limited visibility caused by the geometrics of the roadways and by the overpass.

Officials from the City have expressed concern about traffic operations at this location. This study would look into the conditions described above and examine how well this intersection is functioning from both a traffic congestion and a traffic safety perspective.

#### **FFY 2012 Activities**

MVPC transportation staff will work with staff from MassDOT and officials from the City of Newburyport in developing proposed short and long-term improvements to this intersection to correct any safety/capacity deficiencies identified through an operational analysis.

#### **Tasks**

- 3.3.1 *Data Collection:* MVPC staff will collect peak hour turning movement and pedestrian crossing data at the intersection and collect the most recent crash data available from the Newburyport Police Department. It will also review the sight-distances for each intersection approach.
- 3.3.2 *Data Analyses:* MVPC will then complete a Level of Service analysis of the intersection to determine how well it is functioning and to identify any improvements that might be made to improve peak hour Level of Service, and improve sight distance(s), if necessary. Staff will also perform a Traffic Signal Warrant analysis of this location to determine if the installation of traffic signals can be justified.
- 3.3.3 *Calculate Intersection Crash Rate:* MVPC will use the latest three years of available crash data and traffic volume data collected under Task 3.3.1 to determine the Crash Rate for this location.
- 3.3.4 *Conduct RSA at the Intersection:* An RSA of a roadway or intersection with identified safety problems must be completed before the MPO can commit to funding any needed improvements under the Highway Safety Improvement Program. Staff will hold an RSA as part of this analysis and prepare both a draft and final RSA report should the analyses conducted under Task 3.3.3 reveal that the Crash Rate at this location exceeds the MassDOT District 4 average Crash Rate for unsignalized intersections.
- 3.3.5 *Meet Local/State Officials:* MVPC staff will present the findings of its analyses to town officials and MassDOT staff, along with preliminary recommendations for both short and long-term improvements to address the problems identified. After reviewing these options, staff will consider and evaluate any additional improvement alternatives recommended by local officials and MassDOT staff.
- 3.3.6 *Develop Short and Long Term Recommended Improvements:* Based on the findings of the traffic and safety analyses completed for all potential improvements, staff will again meet with town officials and staff from MassDOT to identify final short-term and any long-term improvements to the intersection with recommendations for future potential TIP projects.
- 3.3.7 *Prepare Draft/Final Intersection Study Report:* MVPC staff will prepare draft and final reports that outline the study's findings and recommendations for MPO consideration for inclusion in future TIP documents.

**Products/Schedule**

- Task 3.3.1 - Data Collection – April 2012
- Task 3.3.2 - Data Analysis – May – June 2012
- Task 3.3.3 - Draft/Final Intersection RSA Reports –June – July 2012
- Task 3.3.6 - Draft/Final Study Reports – July - August 2012

<b>Funding for Task 3.3</b>			
<b>Route 1/Merrimack Street Intersection Study</b>			
<u>Source</u>		<u>Person Hours</u>	<u>Amount</u>
FHWA		251	\$19,000
MassDOT		63	\$4,750
FTA Section 5303		0	\$0
FTA Section 5307		0	\$0
MVPC		0	\$0
<b>TOTAL</b>		<b>314</b>	<b>\$23,750</b>

## Task 3.4 – Marston Corner Safety Analysis in Methuen

### Description

The Merrimack Valley MPO's 2012 Regional Transportation Plan and the region's Congestion Management Process identify the intersection of Route 113/Howe Street/Jackson Street in Methuen that is north of Route 213 as being congested and the site of over 80 crashes during the period from 2006-2008. PM Peak period traffic on Pleasant Street eastbound often backs up to the Route 213 eastbound off ramp, with much of this delay having been caused by delays to traffic attempting to turn left onto Howe Street northbound.

### Previous Work

The Merrimack Valley Planning Commission completed a traffic study of this intersection in 1996. Staff recommended signal timing changes to reduce the long delays endured by drivers attempting to turn from Pleasant Street to Howe Street during the PM peak travel period.

Subsequent to this analysis staff reviewed the traffic improvement plans for the Loop development project (2006) and for the Osco Pharmacy that is located on Pleasant Street just west of the intersection (1998), both of which included this intersection.

Since that time, additional commercial development has taken place along Pleasant Valley Street through the redevelopment of the Mann's Orchard site. The City of Methuen has also restriped Howe Street to add a northbound lane on the bridge over Route 213. This additional capacity may offer opportunities to adjust the timing and phasing of the existing traffic signals at this location.

### FFY 2012 Activities

#### Tasks

- 3.4.1 *Data Collection:* MVPC staff will collect peak hour turning movement and pedestrian crossing data at the interchange and collect the most recent crash data available from the Methuen Police Department and the State Police. It will also review the sight-distances, and length of acceleration/deceleration lanes at this interchange.
- 3.4.2 *Data Analyses:* MVPC will then complete a Level of Service analysis of the intersection to determine how well it is functioning and to identify any improvements that might be made to improve peak hour Level of Service, improve sight distance (if necessary), and review signal phasing should an analysis of crash data show a particular problem with certain vehicle movements.
- 3.4.3 *Conduct RSA at the Intersection:* An RSA of a roadway or intersection with identified safety problems must be completed before the MPO can commit to funding any needed improvements under the Highway Safety Improvement Program. Staff will hold an RSA as part of this analysis and prepare both a draft and final RSA report.
- 3.4.4 *Meet Local/State Officials:* MVPC staff will present the findings of its analyses to town officials and MassDOT staff, along with preliminary recommendations for both short and long-term improvements to address the problems identified. After reviewing these options, staff will consider and evaluate any additional improvement alternatives recommended by local officials and MassDOT staff.
- 3.4.5 *Develop Short and Long Term Recommended Improvements:* Based on the findings of the traffic and safety analyses completed for all potential improvements, staff will again meet with town officials and staff from MassDOT to identify final short-term and any long-term improvements to the intersection with recommendations for future potential TIP projects.
- 3.4.6 *Prepare Draft/Final Intersection Study Report:* MVPC staff will prepare draft and final reports that outline the study's findings and recommendations for MPO consideration for inclusion in future TIP documents.

**Products/Schedule**

- Task 3.4.1 - Data Collection – April 2012
- Task 3.4.2 - Data Analysis – May 2012
- Task 3.4.3 - Draft/Final Intersection RSA Reports –May - June 2012
- Task 3.4.6 - Draft Study Report –June - July 2012
- Final Study Report – August - September 2012

<b>Funding for Task 3.4</b>			
<b>Marston Coner Intersection Study</b>			
<u>Source</u>		<u>Person Hours</u>	<u>Amount</u>
FHWA		255	\$20,000
MassDOT		64	\$5,000
FTA Section 5303		0	\$0
FTA Section 5307		0	\$0
MVPC		0	\$0
<b>TOTAL</b>		<b>319</b>	<b>\$25,000</b>

### **Task 3.5 – Route 213/Route 28 Interchange Safety Analysis in Methuen**

#### **Description**

MassDOT crash data from 2006-2008 identified 171 crashes as having taken place in and around this interchange—one of the higher figures for any intersection/interchange in the Merrimack Valley. This study is intended to identify the primary factors influencing traffic safety at this location.

#### **Previous Work**

The MVPC has reviewed traffic and safety conditions along the section Route 28 located just north of this interchange. Subsequently, improvements to Route 28 at the new Lowe's Plaza and at the Hampshire Road/Route 28 intersection in Salem, NH have also impacted traffic in this corridor.

#### **FFY 2012 Activities**

MVPC transportation staff will work with staff from MassDOT and officials from the City of Methuen in developing proposed short and long-term improvements to this intersection to correct any safety/capacity deficiencies identified through an operational analysis.

#### **Tasks**

- 3.5.1 *Data Collection:* MVPC staff will collect peak hour turning movement and pedestrian crossing data at the interchange and collect the most recent crash data available from the Methuen Police Department and the State Police. It will also review the sight-distances, and length of acceleration/deceleration lanes at this interchange.
- 3.5.2 *Data Analyses:* MVPC will then complete a Level of Service analysis of the intersection to determine how well it is functioning and to identify any improvements that might be made to improve peak hour Level of Service, improve sight distance (if necessary), and review signal phasing should an analysis of crash data show a particular problem with certain vehicle movements.
- 3.5.3 *Conduct RSA at the Intersection:* An RSA of a roadway or intersection with identified safety problems must be completed before the MPO can commit to funding any needed improvements under the Highway Safety Improvement Program. Staff will hold an RSA as part of this analysis and prepare both a draft and final RSA report.
- 3.5.4 *Meet Local/State Officials:* MVPC staff will present the findings of its analyses to town officials and MassDOT staff, along with preliminary recommendations for both short and long-term improvements to address the problems identified. After reviewing these options, staff will consider and evaluate any additional improvement alternatives recommended by local officials and MassDOT staff.
- 3.5.5 *Develop Short and Long Term Recommended Improvements:* Based on the findings of the traffic and safety analyses completed for all potential improvements, staff will again meet with town officials and staff from MassDOT to identify final short-term and any long-term improvements to the intersection with recommendations for future potential TIP projects.
- 3.5.6 *Prepare Draft/Final Intersection Study Report:* MVPC staff will prepare draft and final reports that outline the study's findings and recommendations for MPO consideration for inclusion in future TIP documents.

**Products/Schedule**

- Task 3.5.1 - Data Collection – October 2011
- Task 3.5.2 - Data Analysis –October - November 2011
- Task 3.5.3 - Draft/Final Intersection RSA Reports – December 2011 - February 2012
- Task 3.5.6 - Draft Study Report – February – March 2012
- Final Study Report – March – April 2012

<b>Funding for Task 3.5</b>				
<b>Route 213/Route 28 Interchange Study</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			239	\$18,000
MassDOT			60	\$4,500
FTA Section 5303			0	\$0
FTA Section 5307			0	\$0
MVPC			0	\$0
<b>TOTAL</b>			<b>299</b>	<b>\$22,500</b>

## **Task 3.6 – Lafayette Square Safety Analysis in Haverhill**

### **Description**

Lafayette Square in Haverhill is the intersection of Route 97 with Hilldale Avenue and Essex Street. Despite recent improvements to the intersection, city officials and local merchants remain concerned over the number of crashes that are taking place in the Square. MassDOT crash data from 2006-2008 revealed that over 80 crashes took place in the Lafayette Square area. This study is intended to identify the location and nature of the crashes that have taken place in and around the Square so that an effective program of improvements can be developed.

### **Previous Work**

MassDOT completed a major reconstruction of this intersection in 2005. MVPC staff subsequently reviewed the traffic impact report for CVS Pharmacy, which was then built in the Square.

### **FFY 2012 Activities**

MVPC transportation staff will work with staff from MassDOT and officials from the City of Haverhill in developing proposed short and long-term improvements to this intersection to correct any safety/capacity deficiencies identified through an operational analysis.

### **Tasks**

- 3.6.1 *Data Collection:* MVPC staff will collect peak hour turning movement and pedestrian crossing data at the intersection and collect the most recent crash data available from the Haverhill Police Department. It will also review the sight-distances for each intersection approach within the Lafayette Square area.
- 3.6.2 *Data Analyses:* MVPC will then complete a Level of Service analysis of the intersections to determine how well they are functioning and to identify any improvements that might be made to improve peak hour Level of Service, improve sight distance (if necessary), and review signal phasing should an analysis of crash data show a particular problem with certain vehicle movements.
- 3.6.3 *Conduct RSA at the Intersection:* An RSA of a roadway or intersection with identified safety problems must be held before the MPO can commit to funding any needed improvements under the Highway Safety Improvement Program. Staff will hold an RSA as part of this analysis and prepare both a draft and final RSA report.
- 3.6.4 *Meet Local/State Officials:* MVPC staff will present the findings of its analyses to Haverhill officials and MassDOT staff, along with preliminary recommendations for both short and long-term improvements to address the problems identified. After reviewing these options, staff will consider and evaluate any additional improvement alternatives recommended by local officials and MassDOT staff.
- 3.6.5 *Develop Short and Long Term Recommended Improvements:* Based on the findings of the traffic and safety analyses completed for all potential improvements, staff will again meet with city officials and staff from MassDOT to identify final short-term and any long-term improvements to the intersection with recommendations for future potential TIP projects.
- 3.6.6 *Prepare Draft/Final Intersection Study Reports:* MVPC staff will prepare draft and final reports that outline the study's findings and recommendations for MPO consideration for inclusion in future TIP documents.

**Products/Schedule**

- Task 3.6.1
  - Task 3.6.2
  - Task 3.6.3
  - Task 3.6.6
- Data Collection – November 2011
  - Data Analysis – December 2011 – January 2012
  - Draft/Final Intersection RSA Reports – February - March 2012
  - Draft Study Report – April - May 2012
  - Final Study Report – May - June 2012

<b>Funding for Task 3.6</b>				
<b>Lafayette Square Study</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			261	\$20,000
MassDOT			65	\$5,000
FTA Section 5303			0	\$0
FTA Section 5307			0	\$0
MVPC			0	\$0
<b>TOTAL</b>			<b>326</b>	<b>\$25,000</b>

## **Task 3.7 – Interstate 95/Storey Avenue Interchange Safety Analysis in Newburyport**

### **Description**

MassDOT crash data from 2006-2008 showed that over 60 crashes occurred in and around this interchange. Staff believes that this figure indicates the crash rate for this location may be high given the traffic volumes on Interstate 95 and Storey Avenue.

### **FFY 2012 Activities**

MVPC transportation staff will work with staff from MassDOT and officials from the City of Newburyport developing proposed short-term improvements to this area to correct any capacity and/or safety deficiencies.

### **Tasks**

- 3.7.1 *Data Collection:* MVPC staff will collect peak hour turning movement and pedestrian crossing data at the intersection and collect the most recent crash data available from the Newburyport Police Department. It will also review the sight-distances for each intersection approach within the interchange.
- 3.7.2 *Data Analyses:* MVPC will then complete a Level of Service analysis of the intersection to determine how well it is functioning and to identify any improvements that might be made to improve peak hour Level of Service, improve sight distance (if necessary), and review signal phasing should an analysis of crash data show a particular problem with certain vehicle movements.
- 3.7.3 *Conduct RSA at the Intersection:* An RSA of a roadway or intersection with identified safety problems must be held before the MPO can commit to funding any needed improvements under the Highway Safety Improvement Program. Staff will hold an RSA as part of this analysis and prepare both a draft and final RSA report should the analyses conducted under Task 3.7.2 reveal that the Crash Rate at this location exceeds the MassDOT District 4 average Crash Rate for signalized intersections.
- 3.7.4 *Meet Local/State Officials:* MVPC staff will present the findings of its analyses to Newburyport officials and MassDOT staff, along with preliminary recommendations for both short and long-term improvements to address the problems identified. After reviewing these options, staff will consider and evaluate any additional improvement alternatives recommended by local officials and MassDOT staff.
- 3.7.5 *Develop Short and Long Term Recommended Improvements:* Based on the findings of the traffic and safety analyses completed for all potential improvements, staff will again meet with town officials and staff from MassDOT to identify final short-term and any long-term improvements to the intersection with recommendations for future potential TIP projects.
- 3.7.6 *Prepare Draft/Final Intersection Study Reports:* MVPC staff will prepare draft and final reports that outline the study's findings and recommendations for MPO consideration for inclusion in future TIP documents.

**Products/Schedule**

- Task 3.7.1 - Data Collection – May 2012
- Task 3.7.2 - Data Analysis – May/June 2012
- Task 3.7.3 - Draft/Final RSA Audit Reports – June - July 2012
- Task 3.7.6 - Draft Study Report – July - August 2012
- Final Study Report – August - September 2012

<b>Funding for Task 3.7</b>				
<b>I-95/Storey Avenue Interchange Study</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			236	\$18,000
MassDOT			59	\$4,500
FTA Section 5303			0	\$0
FTA Section 5307				\$0
MVPC			0	\$0
<b>TOTAL</b>			<b>295</b>	<b>\$22,500</b>

### **Task 3.8 - Interstate 495/Broad Street Interchange Safety Analysis in Merrimac**

#### **Description**

MassDOT crash data from 2006-2008 showed that 55 crashes occurred in and around this interchange. Staff believes that this figure indicates the crash rate for this location may be high given the relatively low traffic volumes on Interstate 495 and Broad Street.

#### **FFY 2012 Activities**

MVPC transportation staff will work with staff from MassDOT and officials from the Town of Merrimac in developing proposed short-term and long-term improvements in this area to correct any capacity and/or safety deficiencies.

#### **Tasks**

- 3.8.1 *Data Collection:* MVPC staff will collect peak hour turning movement and pedestrian crossing data at the intersection and collect the most recent crash data available from the Merrimac Police Department. It will also review the sight-distances for each intersection approach within the interchange.
- 3.8.2 *Data Analyses:* MVPC will then complete a Level of Service analysis of the intersection to determine how well it is functioning and to identify any improvements that might be made to improve peak hour Level of Service, improve sight distance (if necessary), and review signal phasing should an analysis of crash data show a particular problem with certain vehicle movements.
- 3.8.3 *Conduct RSA at the Intersection:* An RSA of a roadway or intersection with identified safety problems must be held before the MPO can commit to funding any needed improvements under the Highway Safety Improvement Program. Staff will hold an RSA as part of this analysis and prepare both a draft and final RSA report should the analyses conducted under Task 3.8.2 reveal that the Crash Rate at this location exceeds the MassDOT District 4 average Crash Rate for signalized intersections.
- 3.8.4 *Meet Local/State Officials:* MVPC staff will present the findings of its analyses to Merrimac officials and MassDOT staff, along with preliminary recommendations for both short and long-term improvements to address the problems identified. After reviewing these options, staff will consider and evaluate any additional improvement alternatives recommended by local officials and MassDOT staff.
- 3.8.5 *Develop Short and Long Term Recommended Improvements:* Based on the findings of the traffic and safety analyses completed for all potential improvements, staff will again meet with town officials and staff from MassDOT to identify final short-term and any long-term improvements to the intersection with recommendations for future potential TIP projects.
- 3.8.6 *Prepare Draft/Final Intersection Study Reports:* MVPC staff will prepare draft and final reports that outline the study's findings and recommendations for MPO consideration for inclusion in future TIP documents.

**Products/Schedule**

- Task 3.8.1 - Data Collection – June 2012
- Task 3.8.2 - Data Analysis – June - July 2012
- Task 3.8.3 - Draft/Final RSA Audit Reports – July - August 2012 (if needed)
- Task 3.8.6 - Draft Study Report – August 2012
- Final Study Report – August - September 2012

<b>Funding for Task 3.8</b>			
<b>I-495/Broad Street Interchange Study</b>			
<u>Source</u>		<u>Person Hours</u>	<u>Amount</u>
FHWA		238	\$16,000
MassDOT		59	\$4,000
FTA Section 5303		0	\$0
MVRTA			\$0
MVPC		0	\$0
<b>TOTAL</b>		<b>297</b>	<b>\$20,000</b>

### **Task 3.9 - Manchester and Lawrence Branch Rail Trail Feasibility/Redevelopment Study in Lawrence:**

#### **Description**

Local officials have expressed interest in both improving the connectivity of neighborhoods in the Broadway corridor and in redeveloping the largely vacant land along the west side of the roadway near the downtown area. MVPC will investigate various options for the redevelopment of this area that also considers the existing and potential transportation uses of the corridor and the needs of the community.

#### **Previous Work**

MVPC has provided technical assistance to communities throughout the region in support of the development and implementation of multiuse trails. These include the Powow Riverwalk in Amesbury, the Haverhill Riverwalk, Newburyport Rail Trail, the Eastern Marsh Trail in Salisbury, and the McLaren Trail in Merrimac. Working in conjunction with communities in the eastern half of the region and officials from MassDOT, MVPC assisted in the development of the Border to Boston Rail Trail Funding Program that will be used to support the completion of 100% design plans for portions of the trail that will be built in Salisbury, Newbury, Georgetown and Boxford.

#### **FFY 2012 Activities**

MVPC transportation staff will work with community planning and DPW officials from the City of to complete a feasibility study for constructing a multiuse trail that would extend from the Methuen city line to Essex Street.

#### **Tasks**

- 3.9.1 *Description of Existing Conditions:* Staff will walk the corridor, review available aerial images and photography and review the physical condition of the existing right of way, and legal status, and identify the location of key infrastructure elements such as bridges, culverts and roadway crossings.
- 3.9.2 *History of the Corridor:* Staff will gather information on the historical use of the corridor for inclusion in the study report.
- 3.9.3 *Identify Environmental Issues:* MVPC will review information on flood plains, endangered species habitat and former land use to identify and potential environmental issues with the project.
- 3.9.4 *Overview of the Proposed Trail Components:* Staff will identify and evaluate the key aspects of the project including possible trail surface types, opportunities for parking, likely users of the facility, activity centers to be served, the estimated costs of right-of-way acquisition/project design/construction as well as project maintenance costs and responsibilities. It will also summarize the anticipated benefits that would accrue to the region through improved travel safety and livability and public health.
- 3.9.5 *Project Implementation Plan:* MVPC staff will work with Lawrence officials to develop a project Implementation Plan that identifies the key elements as well as the roles and responsibilities of the communities, MassDOT and the Commission in implementing the project.
- 3.9.6 *Draft/Final Versions of Feasibility Study Report:* MVPC will prepare draft and final versions of the Feasibility Study report for MPO and community consideration. It is expected that the report will facilitate the further development of the project for possible inclusion in future TIP documents.

**Products/Schedule**

- Task 3.9.1 - Existing Conditions –November 2011
- Task 3.9.3 - Identify Environmental Issues – November/December 2011
- Task 3.9.4 - Project Overview – December 2011 - January 2012
- Task 3.9.5 - Project Implementation Plan – February – March 2012
- Task 3.9.6 - Draft Study Report – March - April 20112
- Final Study Report –May 2012

<b>Funding for Task 3.9</b>		
<b>M &amp; L Branch Rail Trail Study</b>		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	288	\$18,000
MassDOT	72	\$4,500
CZM/MassBays	0	\$0
FTA Section 5307		\$0
MVPC	0	\$0
<b>TOTAL</b>	<b>360</b>	<b>\$22,500</b>

**Task 3.10 - Elm Street/Route 1 Intersection Study in Newbury**

**Description**

This study was requested by the Town of Newbury to determine whether there is justification of installing traffic signals at this intersection.

**FFY 2012 Activities**

MVPC transportation staff will work with staff from MassDOT and officials from the Town of Newbury developing proposed short-term and long-term improvements to this intersection to correct any capacity and/or safety deficiencies.

**Tasks**

- 3.10.1 *Data Collection:* MVPC staff will collect peak hour turning movement and pedestrian crossing data at the intersection and collect the most recent crash data available from the Newburyport Police Department. It will also review the sight-distances for each intersection approach within the interchange.
- 3.10.2 *Data Analyses:* MVPC will then complete a Level of Service analysis of the intersection to determine how well it is functioning and to identify any improvements that might be made to improve peak hour Level of Service, improve sight distance (if necessary), and review signal phasing should an analysis of crash data show a particular problem with certain vehicle movements.
- 3.10.3 *Conduct RSA at the Intersection:* An RSA of a roadway or intersection with identified safety problems must be held before the MPO can commit to funding any needed improvements under the Highway Safety Improvement Program. Staff will hold an RSA as part of this analysis and prepare both a draft and final RSA report should the analyses conducted under Task 3.7.2 reveal that the Crash Rate at this location exceeds the MassDOT District 4 average Crash Rate for signalized intersections.
- 3.10.4 *Meet Local/State Officials:* MVPC staff will present the findings of its analyses to Newburyport officials and MassDOT staff, along with preliminary recommendations for both short and long-term improvements to address the problems identified. After reviewing these options, staff will consider and evaluate any additional improvement alternatives recommended by local officials and MassDOT staff.
- 3.10.5 *Develop Short and Long Term Recommended Improvements:* Based on the findings of the traffic and safety analyses completed for all potential improvements, staff will again meet with town officials and staff from MassDOT to identify final short-term and any long-term improvements to the intersection with recommendations for future potential TIP projects.
- 3.10.6 *Prepare Draft/Final Intersection Study Reports:* MVPC staff will prepare draft and final reports that outline the study's findings and recommendations for MPO consideration for inclusion in future TIP documents.

**Products/Schedule**

- Task 3.10.1 - Data Collection – October 2011
- Task 3.10.2 - Data Analysis – October - November 2011
- Task 3.10.3 - Draft/Final RSA Audit Reports – November – December 2011
- Task 3.10.6 - Draft Study Report – January – February 2012
- Final Study Report – February - March 2012

Funding for Task 3.10				
Route 1/Elm Street Intersection Study				
Source			Person Hours	Amount
FHWA			177	\$14,000
MassDOT			44	\$3,500
FTA Section 5303				\$0
FTA Section 5307				\$0
MVPC				\$0
<b>TOTAL</b>			<b>221</b>	<b>\$17,500</b>



### **Task 3.11 – Stormwater Management Technical Assistance**

#### **Description**

The Phase II Stormwater Rule published by EPA in December 1999 required operators of municipal separate storm sewer systems (“MS4s”) to develop and implement six *minimum* stormwater management measures:

- 1) public education and outreach;
- 2) public participation and involvement;
- 3) illicit discharge detection and elimination;
- 4) construction site runoff control;
- 5) post-construction runoff control, and
- 6) stormwater pollution prevention/municipal good housekeeping.

Successful implementation of these six measures requires a detailed knowledge of the location, function, and condition of the urbanized areas’ municipal storm drainage infrastructure – storm drains, manholes, catch basins, and outfall pipes – as well as of the receiving waters. Except in the case of more recent subdivisions, such infrastructure information is often incomplete, or is not available in a consistent, retrievable, and user-friendly format.

Developing comprehensive drainage system databases and maps on an individual community basis is an expensive proposition that taxes already strained local DPW and highway department budgets and staff. It also results in map and data products that are not compatible on an intermunicipal, watershed, or Regional Planning District level, as the products will have been developed by different parties using wide-ranging field collection and mapping protocols.

#### **Previous Work**

Under the region’s 2001-2002 UPWP, MVPC completed a pilot project in the Town of Georgetown to demonstrate how a smaller community, assisted by MVPC, could go about developing the type of detailed drainage system database that would be necessary to meet the requirements of Phase II Stormwater Rule. Using its GPS and GIS capabilities, MVPC conducted field reconnaissance with Georgetown DPW personnel to locate and inspect stormwater facilities within the community’s Urbanized Area. From this information, a digital storm drainage system inventory and map were created. Local and regional workshops were then held to illustrate how the mapping project was conducted and to showcase the various products and protocols that grew out of it. This information was updated under the region’s FFY 2007 Unified Planning Work Program to include additional areas in Georgetown that were designated as being within the urbanized area as a result of the 2000 U.S. Census.

More recently, MVPC staff worked with community officials in Boxford, Groveland, Merrimac, Rowley, and West Newbury to inventory and map municipal stormwater facilities, draft stormwater management bylaws, and conduct local and regional workshops on the Federal Phase II regulations and stormwater best management practices, including Low Impact Development (LID) techniques. During FFY 2010-2011, to complement this work, MVPC identified and mapped high priority stormwater runoff problem areas (‘chokepoints’) in Boxford, Georgetown, Groveland, Merrimac, Rowley, Salisbury, and West Newbury. Undersized or damaged culverts and other inadequate drainage facilities in these problem areas either cause or contribute to periodic localized flooding and temporary road closures, as well as chronic soil erosion and receiving water degradation.

The compilation and digital mapping of this information will aid the communities as they begin updating their Phase II Storm Water Management Programs (SWMPs) later this year, when the new EPA Small MS4 (Municipal Separate Storm Sewer Systems) requirements are expected to be finalized and issued. This same information will also be useful when the communities revisit and update the local components (‘annexes’) of the “Merrimack Valley Region Natural Hazards Pre-Disaster Mitigation Plan”, produced by MVPC and approved by FEMA. Identifying and incorporating these site-specific drainage facility needs into the regional mitigation plan will enhance the communities’ chances of receiving state and federal hazard mitigation grant funding to address these infrastructure needs.

Also during FFY2010-2011, MVPC worked in partnership with the *GreenScapes North Shore Coalition* to design and carry out a regional homeowner education program. This evolving multi-media program, consisting of workshops, web postings, and direct mailings, is aimed at reducing stormwater runoff and enhancing water resources protection through individual, parcel-based smart landscaping practices. These practices include, among others, bio-retention areas (e.g., rain gardens and green roofs), permeable pavement, and use of drought-hardy native plant species.

**FFY 2012 Activities**

MVPC will expand its Stormwater Management technical assistance into more communities in the region, and will broaden its range of services to include the enhanced municipal requirements under the forthcoming Massachusetts Phase II Small MS4 General Permit.

**Tasks**

- 3.11.1 *Training Workshops and Development of Stormwater Management Bylaws/Outreach Materials:* Staff will design and conduct local and regional workshops to inform and train municipal personnel (public works and highway departments, conservation commissions, health boards) on the new Phase II Small MS4 General Permit requirements, including stormwater facilities mapping, illicit discharge detection and elimination, stormwater best management practices, and stormwater management program financing options (e.g., stormwater utilities). Staff will draft and customize relevant stormwater management bylaws and associated public outreach materials, which are critical to reducing the volume and pollutant loads of uncontrolled stormwater that enters local drainage systems, waterways, and groundwater.
- 3.11.2 *Stormwater Infrastructure Inventorying and Mapping:* Building on previous infrastructure inventorying and mapping work, MVPC will collect and review drainage plans, maps, and reports and will consult with knowledgeable local DPW and highway department personnel in three towns to further identify and map the locations of existing stormwater facilities, with an emphasis on catch basins and connecting drainage pipes. This information will subsequently be verified in the field by trained MVPC staff using GPS equipment.  
The types, locations (lat./long. coordinates), and dimensions of these facilities will be recorded, as well as their general structural and operating conditions, and any visual evidence of illicit connections or dry weather discharges. The data will be downloaded into MVPC's Arcview GIS to create a combined digital inventory (Microsoft Access spreadsheet) and color-coded GIS map of the stormwater facilities and associated receiving waters. As digital products, the storm drainage system maps will be superimposable on a wide array of other digital map layers (e.g., roads, property parcels, hydrography, land use, wetlands, certified vernal pools, rare & endangered species habitat, etc), thereby enhancing their use in other local planning endeavors and for prioritizing future drainage system maintenance and repairs.
- 3.11.3 *Stormwater Sampling Program Training & Design:* In order to facilitate local compliance with the new Phase II stormwater quality sampling requirements, MVPC staff will conduct training sessions for municipal personnel and assist in the design of sampling programs that are tailored to the needs of individual communities, or, as appropriate, coalitions of communities. Wherever feasible, and to maximize limited local resources (both personnel and financial), MVPC will work with member communities to design and implement Phase II MS4 stormwater sampling programs on a shared, inter-municipal basis. A detailed description of the sampling programs will be incorporated in the communities' updated 5-year Storm Water Management Programs (SWMPs).

**Products/Schedule**

- Task 3.11.1 - Training Workshops & Bylaws/Outreach Materials – October 2011-April 2012
- Task 3.11.2 - Stormwater Infrastructure Inventorying/Mapping – December 2011-June 2012
- Task 3.11.3 - Stormwater Sampling Program Training & Design – January -September 2012

Funding for Task 3.11				
Stormwater Runoff Technical Assistance				
FHWA			220	\$21,192
MassDOT			55	\$5,298
CZM/MassBays			100	\$10,000
<b>TOTAL</b>			<b>375</b>	<b>\$36,490</b>

## Task 3.12- Climate Change

### Description

This task responds to guidance that the MPO has received from the Federal Highway Administration and Federal Transit Administration calling for MPOs to “increase their capacity to address climate change in transportation.” According to the FHWA report, “Integrating Climate Change into the Transportation Planning Process”, there is general scientific consensus that the earth is experiencing a long term warming trend and that human-induced increases in atmospheric greenhouse gases (GHGs), primarily from non-renewable fuel consumption. Global climate change is expected to result in rising sea levels and the increased frequency and severity of damaging weather events, including high-intensity and long-duration storms, coastal storm surges, coastal and inland flooding, and even heat waves, droughts, and wildfire. These climate change impacts pose a potential significant threat to the Merrimack Valley region’s transportation network and services, and thus need to be properly considered and integrated into the region’s future transportation planning and decision-making.

In Massachusetts, the Global Warming Solutions Act (GWSA) was passed in 2008 and is designed to accomplish a range of environmental objectives including the reduction of the state’s greenhouse gas emissions. The Act requires the Commonwealth, on an economy-wide basis, to:

- reduce statewide GHG emissions between 10- 25% from 1990 levels by 2020;
- reduce statewide GHG emissions by at least 80 percent below the 1990 levels by 2050.

The GWSA also requires that the state develop an implementation plan for achieving the required GHG emissions reductions by 2020. This process is now underway. Reports prepared by the consultants working on the Implementation Plan have identified a range of transportation-related policies and measures that can help achieve the required emissions reduction goals. These include the implementation of stricter federal standards for lower GHG emissions from new vehicles, prioritization of transportation projects that preserve the existing transportation system, supporting denser land use development, and promoting the use of alternative forms of transportation (e.g. public transit ridership, bicycling, Teleworking, “trip chaining”, etc.)

### Previous Work

This task will build on the stormwater management work begun by MVPC in previous UPWPs, which identified and mapped selected storm drainage infrastructure ‘choke points’ that cause periodic localized flooding and road closures in seven of the region’s communities (*Boxford, Georgetown, Groveland, Merrimac, Rowley, Salisbury, West Newbury*).

### FFY 2012 Activities

MVPC will cite the latest data and guidance available from state and federal sources in determining how climate change is likely to impact the region, such as a range in the expected rise in sea level, storm surge, etc. This information will then be applied to various GIS databases to determine the likely extent of the impacts resulting from climate change, which is a necessary first step before MVPC can identify the specific transportation facilities and services that will be affected.

MVPC will also identify those measures that can be taken locally and regionally as well as nationally to reduce the release of greenhouse gases.

### Tasks

- 3.12.1 *Describe Climate Change’s Potential Impact on the Valley:* Identify and document how projected climate change impacts could affect the Merrimack Valley region’s transportation network and services.
- 3.12.2 *Map Areas Prone to Impacts from Climate Change:* Using the best technical information available, develop regional and community-specific GIS databases and maps depicting those geographic areas that are projected to be at risk from climate change impacts (especially sea level rise, coastal storm surges, and coastal and inland flooding.)
- 3.12.3 *Identify Impacted Transportation Facilities and Services:* Staff will superimpose the projected climate change impact area boundaries onto existing GIS maps depicting the region’s current (and planned) transportation infrastructure in order to identify specific transportation facilities and services at risk. As part of this, MVPC will identify and map other vulnerable infrastructure in the region that, if damaged, could have

an impact on the transportation system, or that would affect the transportation system as it is used by emergency responders. In addition, staff will work with appropriate local, state, and federal agencies to collect relevant drainage system plans, in order to respond to the federal agencies' guidance that MPOs should review those plans to determine if the drainage is adequate for safeguarding the region's at-risk transportation structures.

The above information will be critically important for the development and implementation of appropriate adaptation strategies to protect the region's transportation network and services from the damaging effects of climate change. The information will be periodically evaluated and updated to incorporate new quantitative data that may emerge from the evolving science of climate change.

- 3.12.4 *Develop Recommendations to Reduce GHGs in the Region:* Staff will evaluate existing transportation projects and services in the region to identify those that will help to reduce the amount of GHG being produced. Staff will also identify potential state or federal initiatives that will reduce GHG emissions.
- 3.12.5 *Host Regional Workshops:* MVPC will design and host a public workshop to inform local officials and partner agencies and organizations on the current status and anticipated impacts of climate change on the Merrimack Valley region, and to present the inventory and map results from Tasks 3.11.2 and 3.11.3 above.

**Products/Schedule**

- Task 3.12.1 - Report on projected climate change impacts on MVPC region – October-November 2011
- Task 3.12.2 - Climate change impact area databases and maps – November 2011-March 2012
- Task 3.12.3 - At-risk transportation infrastructure and services maps – Mar-Jun 2012
- Task 3.12.4 - Develop Recommendations to Reduce GHGs in the Region – April 2012 - July 2012
- Task 3.12.5 - Public workshop & handout maps and materials – July - September 2012

Funding for Task 3.12				
Climate Change				
FHWA			208	\$17,314
MassDOT			52	\$4,328
FTA Section 5307			54	\$4,715
MVPC			14	\$778
<b>TOTAL</b>			<b>328</b>	<b>\$26,507</b>

## Task 3.13 - I-93 High-Occupancy Vehicle / Bus-On-Shoulder Feasibility Study

### Description

The Project will inform the MVMPO and other Project stakeholders of the feasibility and effectiveness of HOV and BOS as robust Transportation Demand Management (TDM) measures in the I-93 corridor. The Project will estimate the I-93 corridor's potential HOV uses and transit ridership, estimate travel mobility improvements, and identify limiting factors that influence how and where these technologies are implemented. The Project will generate capital and maintenance costs for HOV and BOS and a preliminary implementation outline.

The I-93 High-Occupancy Vehicle (HOV) Lane / Bus on Shoulder (BOS) Feasibility Study involves a Project to be implemented in three phases: 1) a 'near-term' phase consisting of: a) implementation of a new I-93 southbound HOV lane from points north on I-93 up to the Massachusetts / New Hampshire boundary to the existing I-93 southbound HOV lane in Medford, MA; 2) implementation of a new I-93 northbound HOV lane from the Boston / Somerville municipal boundary to the Massachusetts / New Hampshire boundary, and 3) implementation of I-93 BOS between Manchester, NH and Greater Boston. The Massachusetts BOS Project component will convert the I-93 northbound and southbound HOV lanes for exclusive use by the BOS service.

The MVPC will manage this Project and assign certain Project activities to the Central Transportation Planning Staff (CTPS) of the Boston Metropolitan Planning Organization. CTPS will conduct analyses of travel demand, levels of service and others as specified in this Scope of Work. The MVRTA is providing 80% of the funding for the completion of this task through FTA Grant MA-90-X610 and the MVPC will be providing the 20% non-Federal match

### Previous Work

During the Democratic National Convention in late July 2004, the (then) Massachusetts Highway Department extended the HOV lane north on I-93 southbound using 'Quick Kurb' technology from its current entrance in Medford to I-95 in Woburn, MA, a distance of approximately six miles. This HOV lane extension was part of the event traffic management plan developed by the federal Division of Homeland Security to close I-93 during the late afternoons and evenings while the Convention was in session. The HOV lane was open to public safety vehicles and buses, to encourage transit use while reducing Boston-bound traffic. The MVRTA's inbound commuter bus travel times were dramatically reduced during the week-long period in which the extended HOV lane was operated. While some of the time savings were attributable to fewer commuters driving to work in Boston during that week, much of the travel time savings were the result of the HOV lane expansion. Consequently, the MVPC and the MVRTA find that the potential benefits of implementing this technology are significant, and are recommending that the MassDOT consider extending the existing I-93 southbound HOV north from its current terminus in Medford as a near-term corridor improvement.

### Tasks

**Note: for each of the activities below, the MVPC and / or the Central Transportation Planning Staff (under separate agreement with the MVPC) will perform all work required for the Massachusetts segment of the Project. It is anticipated that the NHDOT will conduct work in support of this Project for that portion of the Project located within the State of New Hampshire, and will provide such information to the MVPC.**

### NEAR TERM– HOV LANE

- 3.13.1 *Review assumptions/results of previous HOV Lane analyses:* Staff will review the assumptions made in: a) Chapter 4 of the MVMPO I-93 Corridor Traffic Study in Andover and Methuen; b) Chapter 2 of the NHDOT Final Environmental Impact Study (FEIS) for the I-93 Improvements: Salem to Manchester Study, and 3) Chapter 3 of the NHDOT Final Supplemental Environmental Impact Study (FSEIS) for that project.
- 3.13.2 *Identify and Evaluate HOV Lane concepts:* The MVPC will, in consultation with Project stakeholders, analyze corridor HOV Lane concepts in addition to those identified in the I-93 Corridor Study and NHDOT environmental documents. These should include the "Quick Kurb" referred to above or even the simple act of marking of the lane as a "diamond lane." This step will include a review of the HOV Lane construction standards established by MassDOT and FHWA and identification of those concepts that will be acceptable to both agencies.
- 3.13.3 *Establish HOV Lane starting and ending mileposts:* The MVPC will review the I-93 right-of-way documents for the segment between the O'Neill Tunnel in Boston and the interchange with MA Route 213 near the

Massachusetts - New Hampshire boundary to determine the feasibility of implementing the various HOV lane concepts identified in the previous step. For each HOV lane concept, identify those sections of the roadway where implementation would be problematic. This information will be used to establish starting and ending mileposts for the preferred HOV Lane concept.

- 3.13.4 *Estimate the additional roadway capital costs of implementing the Preferred HOV Lane alternative:* The MVPC will develop cost estimates for making improvements to I-93 to facilitate implementation of the preferred HOV Lane alternative(s). HOV capital improvements may include but are not limited to: signage, pavement modifications, catch basin and drain grate resets, markings, barriers, Intelligent Transportation Systems (ITS). The MassDOT and host communities will also need to provide for equipment, MassDOT debris removals, modified snow removal, State Police monitoring, policy and equipment / personnel to remove stopped vehicles, and vehicle turnouts. These HOV Lane estimates will be prepared for a two scenarios: 1) a phased implementation plan (if needed), and 2) for implementing the entire HOV lane concept(s) in one phase. This approach differs from the BOS alternative component of this Project, for which the cost analysis will be developed for implementation of the complete project in a single phase. Operating costs will be calculated in accordance with USDOT standards.
- 3.13.5 *Estimate the additional roadway operating costs of implementing the Preferred HOV Lane alternative:* The MVPC will prepare construction cost estimates for implementing HOV lane options that are acceptable to the FHWA and MassDOT, as well as estimates for additional operating costs that may be forecasted for the selected HOV Lane alternative(s). The MVPC will consult with the FHWA and MassDOT to identify costs and potential issues that are associated with police enforcement activities on the HOV Lane. Operating costs will be calculated in accordance with USDOT standards.
- 3.13.6 *Prepare HOV Lane utilization projections:* The CTPS will use its travel demand / mode choice model(s) to evaluate the effectiveness of the HOV lane options identified in the previous step. This will include projecting ridership for commuter bus (public and private carriers), MBTA bus, Logan Express, and other possible transit services that could use the HOV lane. It is anticipated that an identical group of transit services will be included regardless of whether the HOV lane is implemented in Massachusetts only or is extended to I-293 in New Hampshire. In addition, the CTPS will analyze potential rideshare usage of the HOV facility (by vanpools, carpools, and use by vehicles carrying two or more persons). In all scenarios, the MVPC anticipates that the HOV Lane's effectiveness will be reduced as the length of the HOV lane is reduced. The CTPS analysis will address this dynamic.
- 3.13.7 *Calculate LOS, travel speed and other measures of HOV effectiveness on I-93:* The CTPS and the MVPC will cooperate on this task, which is to be performed by CTPS for trip links between all I-93 interchanges from the Massachusetts – New Hampshire boundary to the O'Neill Tunnel in Boston. It will include the 'no build' (four travel lanes and breakdown lane in each direction) and 'build' (i.e. preferred HOV Lane) scenario for both the existing travel conditions (as defined in the statewide traffic model) as well as forecasts for the years 2017 and 2030. These latter two years were selected as they are 'analysis years' considered in MassDOT's statewide model for air quality conformity purposes. Selection of these two years will also simplify the LOS analyses and comparisons between the various BOS and HOV lane options and implementation schedules that are likely to be developed as part of this study. 2017 should provide a comparison of preferred options at a point in time where both are being implemented while both options should be fully implemented by 2030.

### **Long-Term I-93 TDM Improvement – BOS Implementation**

- 3.13.8 *Research and collect data:* The MVPC will collect design, construction, operation and incident management information for BOS transit services in operation in U.S. and Canada. The MVPC will also collect information from other I-93 projects including, but not limited to:
- NHDOT I-93 Transit Investment Study;
  - MVPC / RPC / SNHPC 2010 TIGER II and 2011 TCSP funding applications;
  - I-93 / I-95 / 128 and Lowell Junction Interchange Projects;
  - I-93 Add-A-Lane Project, and
  - I-93 / MA-110 / MA-113 Rotary Project.

The MVPC will consult with FHWA, FTA, MassDOT, NHDOT and MBTA (and private carriers using corridor) to identify any BOS concerns to address, including but not limited to compatibility with all other active I-93 projects.

- 3.13.9 *Develop operating parameters:* The MVPC will address coordination of the Project with the other I-93 projects referenced in Task #1 above. It will first consult with MassDOT to obtain data for existing I-93 infrastructure, including roadway cross-sections, drainage, utility and structures. The MVPC will use this data to determine what modifications are required for use of the I-93 shoulders by HOVs including over-the-road coaches, buses and authorized vehicles. The MVPC will, in concert with Study stakeholders, determine the best locations for terminating the BOS service in the Boston region using the NHDOT I-93 Corridor Transit Investment Study recommended location as a starting point. The MVPC will determine need for and locations of turnouts between the MA-NH boundary and the City of Boston suitable for the interim and final Project phases. The MVPC will work with Study stakeholders identified above to establish I-93 travel conditions that would trigger bus use of shoulder, e.g. 'free-flow' speed on I-93 must be lower than (TBD, i.e. 35 mph) before buses can use breakdown lane.
- 3.13.10 *Identify potential impacts:* The MVPC will identify any rights-of-way, wetlands, endangered species, historic resources or other issues relevant to implementation of BOS technologies in the Massachusetts segment of the Project corridor, particularly south of the Wilmington "lane drop". This subtask will include an assessment of operational and logistical issues relevant to introducing additional HOVs into the City of Boston during morning and evening peak travel periods. The MVPC will consult with the City of Boston's Transportation Department on its bus management policies and identify location(s) for layover space if required. The MVPC will identify any approvals and / or permits that may be required from agencies of the Commonwealth of Massachusetts and its political subdivisions (i.e. host communities) to operate public transportation on applicable roadways.
- 3.13.11 *Perform an I-93 travel demand analysis:* The MVPC and CTPS will consult and meet with the Boston, Northern Middlesex, Rockingham and Southern NH MPOs, and MassDOT and NHDOT Transit Divisions to define the I-93 Corridor study area and identify potential service operators. The CTPS will also meet with transit operators to develop service parameters that CTPS will utilize in its demand modeling process. The CTPS will calculate projected I-93 travel times, ridership demand, and other relevant factors including parking availability and cost in downtown Boston and at other Corridor locations (including facilities where BOS could operate to/from). As previously noted, it will be assumed that the HOV lane will operate first and that the BOS service will be incrementally implemented as segments of I-93 (particularly in Massachusetts) are upgraded as part of routine maintenance projects.
- 3.13.12 *Calculate projected I-93 levels of service, travel speed and other performance measures:* The CTPS will prepare an analysis of the I-93 corridor including all interchanges from the Massachusetts / New Hampshire boundary to the City of Boston / City of Somerville boundary. CTPS calculations will be prepared according to the following two assumptions: 1) a "no-build" (four travel lanes, one breakdown lane per direction) and a "build" (four general purpose lanes and one BOS Lane per direction) scenario. The CTPS will generate LOS, travel speed and other appropriate measures for three scenarios: 1) existing travel conditions; 2) a Year 2017 forecast, and 3) a Year 2030 forecast. The 2017 scenario will compare preferred options at a point in time when the MVPC anticipates that the first phase will be in operation, and the 2030 scenario evaluates the facility's performance for BOS services. The MVPC will review and assess operational / logistical impacts resulting from I-93 BOS to / from Boston in morning and evening peak traffic periods, respectively. Also, the impact analysis will address potential for trip mode shifts among various modes in the Corridor. Finally, the CTPS and MVPC will coordinate the development of these measures, including a service schedule, with the MassDOT and NHDOT for their respective I-93 Project segments.
- 3.13.15 *Develop capital and operating cost estimates for BOS improvement:* The MVPC will work with transportation providers in the I-93 corridor to develop operating budgets for the transit services to be considered in the demand analysis. BOS capital improvements will likely include some of the improvements required for an HOV service, plus: shoulder reconstruction including modified barriers, drain structures, signage and pavement markings, larger turnouts to accommodate BOS vehicles; upgraded ITS interface with buses for real-time schedule information, incident response, lane obstruction detection, fare media, BOS vehicles, terminals or shared-use accommodations at key locations, provisions for backup buses for emergencies, adequate tow vehicles and towing protocols, and traffic controls. Service accessibility for the disabled must

include provisions for vehicle and station equipment to meet regular service requirements and emergencies. The MVPC will identify and estimate costs associated with potential locations for commuter bus stops / park-and-ride lots along I-93 in Massachusetts and along the eastern section of I-495 in the Northern Middlesex MPO region and the western and central sections of I-495 in the MVMPO region.

The MVPC's estimates will isolate and identify that infrastructure that the Project requires which is to be constructed or furnished as part of other I-93 capital projects. Operating costs will be calculated in accordance with USDOT standards.

- 3.13.16 *Address BOS compatibility with existing transportation services in the I-93 corridor:* Identify labor-covered transportation modes in the same corridor (i.e. MBTA or private carriers) that will be notified as a result of BOS implementation.

**Tasks For Both HOV and BOS Projects**

- 3.13.17 *Conduct a comparative project benefit / cost review.* The MVPC will identify potential Project benefits in the Massachusetts segment of the Project corridor including but not limited to the environment, cost savings to transportation infrastructure and to travelers for certain trip origins / destinations to illustrate the Project's benefits. This review will be conducted in accordance with USDOT recommended standards.
- 3.13.18. *Funding Plan.* The MVPC will investigate funding opportunities to improve I-93 and associated infrastructure supporting both the interim and final Project phases. FTA New Starts, FHWA and other funding sources will be reviewed. The MVPC will organize this information according to sources and uses.
- 3.13.19 *Prepare Draft / Final Project Reports:* The draft and final Project reports will outline the findings of both the HOV and BOS Lane analyses for the I-93 corridor as outlined above. In particular, the Project report should provide enough information on both the HOV and BOS options for MassDOT, NHDOT and the Merrimack Valley and Boston MPOs to satisfactorily determine impacts on travel conditions and mobility in the I-93 Corridor should the HOV and / or preferred BOS Lane concepts be implemented.

**Products/Schedule**

- October 2011: Study commencement.
- October – December 2011: Data collection
- October – December 2011: Travel demand analysis
- November – February 2012: Service levels and performance measures
- January – March 2012: Impact identification
- February – May 2012: Funding Plan
- April – June 2012: Critical Path analysis
- July - August 2012: Draft Study Report
- August – September: Final Study Report

Funding for Task 3.13				
HOV/Bus on Shoulder Study				
FHWA			0	\$0
MassDOT			0	\$0
FTA Section 5303			0	\$0
FTA Section 5307			818	\$80,000
MVPC			205	\$20,000
TOTAL			1,023	\$100,000

## **TASK 4.0 - OTHER TRANSPORTATION STUDIES**



## **Task 4.1 - Intelligent Transportation Systems (ITS)**

### **Description**

Intelligent Transportation System (ITS) technology's purpose is to maximize the efficiency of the existing transportation network. This technology has the potential to play a prominent role in the Merrimack Valley region where the opportunities to expand existing roadway capacity are limited. Examples of ITS technologies include:

- use of scanners at toll booths to reduce delay;
- real-time travel information services for commuters;
- real time scheduling for transit routes;
- in-vehicle computers for navigation;
- incident management programs;
- advanced Traffic Management activities such as coordination of signals, and
- cellular phone navigational services.

### **Previous Work**

Since 2004, the MVRTA has had Vehicle Location/GPS-enabled capabilities for all buses and vans including Interoperability capability on the Authority's communications system.

In 2005, the decision was made to include the Merrimack Valley region under the umbrella of the Boston ITS Architecture. Inclusion of the Merrimack Valley as well as the other MPO regions within the Boston Urban area was made in recognition of the strong transportation connections that these areas have to Boston via automobile and transit.

In FFY 2008, MVPC staff participated in the efforts of the Salem/Windham/Plaistow MPO to establish an ITS Regional Architecture.

In FFY 2010, MVPC staff participated in the stakeholder input meetings that are being held in support of MassDOT's effort to update the Boston Regional ITS Architecture. Staff also reviewed the MBTA's ITS Architecture Report to identify what actions being taken by Authority will have an impact on the services the agency offers either directly to Valley residents (commuter rail) or to residents as they use the other parts of the MBTA system.

Also in FY 2010, the MVRTA initiated a project to update the surveillance equipment on its fixed route and demand response vehicles.

Finally, in FY 2010 NHDOT initiated "Open Road Tolling" at its Hampton Toll Booths. Open Road Tolling lanes can process nearly five times as many vehicles as a conventional cash toll lane and 60 percent more traffic than a dedicated E-Z Pass lane. This was considered significant for the Merrimack Valley region as backups from the Hampton Tolls during the peak summer travel periods have often had spillback effects that impact Routes 95 and 495 in Massachusetts. However, since the completion of the upgrades to the Hampton Toll Booths, officials from Amesbury and Salisbury have suggested that congestion on I-95 southbound has increased and claim that the additional throughput provided by the new tolling technology is the cause of this congestion.

### **FFY 2012 Activities**

MVPC staff will work with MassDOT, the MVRTA and other members of the MPO to define the extent that the evolving ITS programs and projects in and around the region should share information and then develop an ITS MOU that prescribes how this information sharing should occur. Staff will also support MassDOT's efforts to update the Boston Regional ITS Architecture.

### **Tasks**

- 4.1.1 *Continue Gathering Information on Existing ITS Projects in Massachusetts:* A number of MPOs around the state are in line to undertake ITS Strategic Deployment Studies. MVPC staff will continue to solicit project updates from these agencies.
- 4.1.2 *Attend Future ITS Conferences and Workshops:* MVPC staff will attend workshops and seminars on ITS as appropriate.
- 4.1.3 *Attend Meetings of Boston Regional ITS Architecture Committee/ITS Integration Strategy:* MVPC staff will continue to attend meetings of the Boston Regional ITS Architecture Committee and participate in the state's efforts to update the Boston Regional Architecture.

**Products/Schedule**

- Task 4.1.1
- Task 4.1.2
- Task 4.1.3

- Gather Information on ITS Projects – Ongoing
- Attend ITS Conferences and Workshops – Ongoing
- Attend Boston Regional ITS Architecture Meetings - Ongoing

<b>Funding for Task 4.1</b>				
<b>Intelligent Transportation Systems</b>				
<u>Source</u>			<u>Person Hours</u>	<u>Amount</u>
FHWA			47	\$3,000
MassDOT			12	\$750
FTA Section 5303			0	\$0
MVPC			0	\$0
<b>TOTAL</b>			<b>59</b>	<b>\$3,750</b>

**Task 4.2 - Local Technical Assistance**

**Description**

Each year, officials from around the region request MVPC assistance to address traffic issues in their communities. These requests typically are limited in scope and consist of intersection capacity analyses, review of roadway signage, small-scale parking studies, a review of local traffic regulations, or traffic safety issues. Because of their limited scope and often-urgent timeframe, it is usually infeasible to prepare a scope of services to complete these projects.

**Previous Work**

Examples of technical assistance projects undertaken under the FFY 2011 UPWP and in other recent years include:

- Assist City of Haverhill in identifying overhead street lights that could be turned off in order to lower the community's expenditures on electricity (FFY 2011)
- Review traffic and safety issues at the intersection of Parker Street and Merrimack Street in Lawrence (FFY 2011)
- Assist the City of Haverhill in identifying options for improving safety of pedestrian traffic to Central Plaza (FFY 2010)
- Review options for making improvements to the Route 97 (Broadway)/Lake Street intersection in Haverhill (FFY 2010)
- Analyze traffic and safety issues in and around the Byfield Village section of Newbury (FFY 2010)
- Provide assistance to the Town of Boxford in preparing Project Need Form for the reconstruction of Route 133 (FFY 2010)
- Assess need for improvements to Willow Avenue in Haverhill. (FFY 2009 UPWP)
- Review of proposal to make Saratoga Street in Lawrence one-way (FFYs 2008/2009)
- Analyze need for construction of guard rail near house in Methuen (FY 2008)

Where such LTA analyses show that a corridor or intersection will deteriorate to a level that would cause it to be categorized as a "Most Severe", "Severe", or "Problem" congestion location, it would be included in the CMS.

**FFY 2012 Activities**

MVPC staff will continue to provide technical assistance to member communities and local citizens on an as-needed basis.

**Tasks**

4.2.1 *Respond to Community Requests for Transportation Data and Analyses:* MVPC staff will respond to small-scale, limited requests for technical assistance in addressing transportation issues in the Valley.

**Products/Schedule**

Task 4.2.1 - Local Technical Assistance— Ongoing

Funding for Task 4.2				
Local Technical Assistance				
Source			Person Hours	Amount
FHWA			137	\$9,360
MassDOT			34	\$2,340
FTA Section 5303			0	\$0
FTA Section 5307			0	\$0
MVPC			0	\$0
<b>TOTAL</b>			<b>171</b>	<b>\$11,700</b>



## **Task 4.3 - Regional Transportation Security**

### **Description**

The events of September 11, 2001 and the tremendous damage caused by Hurricanes Rita and Katrina dramatically raised awareness regarding the security of the nation's transportation system. These events have also forced officials to consider how the existing transportation system can be integrated into plans designed to ensure the safety of citizens in areas that could be the target of another terrorist event or a natural disaster.

Federal requirements include security as a factor to be considered by MPOs in the transportation planning process. MPOs are directed that their planning process "...should provide for consideration and implementation of projects, strategies, and services that will increase the security of the transportation system for motorized and non-motorized users."

### **Previous Work**

During FFY 2008 and FFY 2009, MVPC staff prepared the regional Multi-Hazard Pre-Disaster Mitigation Plan (for hurricanes, floods, coastal storm surges, wildfire, and other natural disasters), including inventorying and mapping of 12 communities' critical facilities and infrastructure (including transportation), analysis of hazard vulnerabilities, identification of existing protection measures, and development of regional and local mitigation action plans.

The Merrimack Valley Regional Transit Authority is the transit representative to the Northeast Regional Advisory Council (NERAC) that was established under the Executive Office of Public Safety and chairs the NERAC Working Group responsible for preparing the Study.

### **FFY 2012 Activities**

Staff will continue to monitor information from USDOT, NARC, AAMPO and other sources on this subject to determine what basic elements should be addressed by an MPO in evaluating its transportation network. It will review and evaluate the ongoing activities of other RPAs and MPOs around the nation in this matter and assess their potential applicability in the Merrimack Valley region. MVPC staff will then report back to the MPO to discuss what actions should be taken to address this issue either through an amendment to this UPWP or as a task in the FFY 2013 UPWP.

### **Tasks**

- 4.3.1 *Review Developments in Transportation Security Planning:* Staff will continue to monitor materials and policies of transportation security that are issued by the USDOT and state transportation agencies.
- 4.3.2 *Maintain Multi-Hazard Pre-Disaster Mitigation Plan:* This document is designed to assist local emergency response and state safety officials in accessing the risks and likely impacts that would occur to the infrastructure in the Valley, including key transportation infrastructure, should it be subject to natural disaster or other catastrophic event. MVPC will maintain the document by attending meetings of local safety officials and workshops on disaster planning.
- 4.3.3 *Participate on NERAC Working Committee:* At the request of the MVRTA, the Northeast Regional Homeland Security Advisory Council (NERAC) allocated funds to conduct a transportation availability study to identify the transportation assets that are available and can be used for the transportation of people (and pets) to various shelters in the event of a natural or manmade disaster. MVPC staff will participate on the Working Group that will develop a scope of work for this study and then to issue a RFP for a consultant to prepare the report. Potential study topics are (1) an inventory of various transportation assets and the capabilities of each, (2) what agreements need to be in place to formalize the availability of these assets, (3) who coordinates the implementation of these assets, (4) what shelters require transportation and how is this coordinated, (5) perhaps conduct a table top exercise and a full scale drill to test the developed plan and (6) issues related to the transportation of pets. The MVRTA will direct this study for NERAC.

**Products/Schedule**

Task 4.3.1  
Task 4.3.2

- Review Developments in Transportation Security Planning - Ongoing
- Maintain Multi-Hazard Pre-Disaster Mitigation Plan- Ongoing

<b>Funding for Task 4.3</b>			
<b>Regional Transportation Security</b>			
<u>Source</u>		<u>Person Hours</u>	<u>Amount</u>
FHWA		36	\$3,700
MassDOT		9	\$925
FTA Section 5303		0	\$0
FTA Section 5307		0	\$0
MVPC		0	\$0
<b>TOTAL</b>		<b>45</b>	<b>\$4,625</b>

## Task 4.4 – County Road Adjudication

### Description

Chapter 336 of the Acts of 2006 amended several sections of Chapter 82 of Massachusetts General Laws governing the alteration, relocation and discontinuance of public ways. Section 1 of Chapter 82, as amended, states that regional planning agencies have the responsibility to “lay out, alter, relocate and discontinue highways and order specific repairs thereon” in those areas where no county government or council of governments exists. To carry out this mandate, the General Court has defined procedures that must be followed by the regional planning agencies.

### Previous Work

During FFY 2009, staff worked with the Town of Amesbury to initiate a request for the discontinuance of a section of county road layout near the intersection of Routes 150 and 110. MVPC developed the necessary forms and outlined the process that must be followed in processing the town’s discontinuance request. The Merrimack Valley Regional Planning Commission Adjudicatory Board met on June 18, 2009 after a public viewing at the site and took action to approve the discontinuance.

In FFY 2011, MVPC received a request from the Town of Boxford to discontinue a section of county road layout for Towne Road, which is located near the North Andover town line. MVPC is now developing the necessary forms that must be followed in processing the town’s discontinuance request. It is anticipated that the Merrimack Valley Regional Planning Commission Adjudicatory Board will meet in August or early September 2011 to take action on this discontinuance proposal.

### FFY 2012 Activities

MVPC staff will continue to collect information on County Roads in the Valley and will implement and refine the review and approval process for the relocation/discontinuance of these roadways.

### Tasks

- 4.4.1 *Implement/Amend Merrimack Valley Region County Road Adjudication Board and Roadway Review Process:* MVPC will implement and, as needed, amend the process for the review of requests to alter county roadways.

### Products/Schedule

Task 4.4.1

- Implement Adjudication Process – Ongoing

Funding for Task 4.4				
County Roads Adjudication				
Source			Person Hours	Amount
FHWA			255	\$3,120
MassDOT			64	\$780
FTA Section 5303			0	\$0
FTA Section 5307			0	\$0
MVPC			319	\$0
TOTAL			53	\$3,900



# FFY 2012 UNIFIED PLANNING WORK PROGRAM TASK FUNDING SUMMARY

Task	Description	FHWA (PL)	MassDOT	FTA/ MassDOT Sect. 5303	FTA/ MVRTA Sect. 5307	MVPC	MVRTA	CZM/ MassBays	TOTAL
1.1	Mgt. & Spt.	\$62,000	\$15,500	\$8,320	\$3,920	\$3,060			\$92,800
1.2	Public Part.	\$33,840	\$8,460	\$6,640	\$0	\$1,660			\$50,600
1.3	UWP	\$10,760	\$2,690	\$3,520	\$0	\$880			\$17,850
1.4	TIP	\$23,500	\$5,875	\$4,160	\$0	\$1,040			\$34,575
1.5	Update Web Pages	\$5,000	\$1,250	\$3,160	\$0	\$790			\$10,200
1.6	Transportation Plan	\$10,000	\$2,500	\$19,200	\$0	\$4,800			\$36,500
2.1	Traffic Monitoring	\$39,457	\$9,864	\$0	\$0	\$0			\$49,321
2.2	Reg. Pave. Mgt.	\$15,000	\$3,750	\$0	\$0	\$0			\$18,750
2.3	GIS	\$76,400	\$19,100	\$12,000	\$0	\$3,000			\$110,500
2.4	CMS	\$8,000	\$2,000	\$3,160	\$0	\$790			\$13,950
2.5	NHS Connections	\$5,000	\$1,250	\$1,360	\$0	\$340			\$7,950
2.6	Model	\$24,000	\$6,000	\$2,960	\$0	\$740			\$33,700
2.7	Bike/Ped/Water Trails	\$13,340	\$3,335	\$0	\$0	\$0			\$16,675
2.8	Safety Monitoring	\$7,000	\$1,750	\$1,717	\$0	\$429			\$10,896
2.9	Livability	\$10,720	\$2,680	\$3,520	\$0	\$880			\$17,800
3.1	E&D Planning	\$0	\$0	\$0	\$17,200	\$4,300			\$21,500
3.2	Transit Planning	\$0	\$0	\$33,040	\$43,880	\$19,230			\$96,150
3.3	Route 1/Merrimack St. Study	\$19,000	\$4,750	\$0	\$0	\$0			\$23,750
3.4	Marstons Corner Study	\$20,000	\$5,000	\$0	\$0	\$0			\$25,000
3.5	Route 213/Route 28 Interchange	\$18,000	\$4,500	\$0	\$0	\$0			\$22,500
3.6	Lafayette Square Study	\$20,000	\$5,000	\$0	\$0	\$0			\$25,000
3.7	I-95/Storey Avenue Interchange	\$18,000	\$4,500	\$0	\$0	\$0			\$22,500
3.8	I-495/Broad Street Interchange	\$16,000	\$4,000	\$0	\$0	\$0			\$20,000
3.9	M&L Branch Rail Trail Study	\$18,000	\$4,500	\$0	\$0	\$0			\$22,500
3.10	Route 1/Elm St. Intersection Study	\$14,000	\$3,500	\$0	\$0	\$0			\$17,500
3.11	Stormwater Planning	\$21,192	\$5,298	\$0	\$0	\$0		\$10,000	\$36,490
3.12	Climate Change	\$17,314	\$4,328	\$3,892	\$0	\$973			\$26,507
3.13	HOV/BOS Study				\$20,000	\$0	\$80,000		\$100,000
4.1	Intel. Trans. Systems	\$3,000	\$750	\$0	\$0	\$0			\$3,750
4.2	Local Tech. Assist.	\$9,360	\$2,340	\$0	\$0	\$0			\$11,700
4.3	Transportation Security	\$3,700	\$925	\$0	\$0	\$0			\$4,625
4.4	County Roads Adjudication	\$3,120	\$760	\$0	\$0	\$0		\$0	\$3,900
<b>TOTAL</b>		<b>\$544,703</b>	<b>\$136,176</b>	<b>\$106,649</b>	<b>\$65,000</b>	<b>\$62,912</b>	<b>\$80,000</b>	<b>\$10,000</b>	<b>\$1,005,439</b>





Merrimack Valley  
Planning Commission  
*plan \* develop \* promote*

**MERRIMACK VALLEY METROPOLITAN PLANNING  
ORGANIZATION ENDORSEMENT**

**MERRIMACK VALLEY REGION  
FEDERAL FISCAL YEAR 2012  
UNIFIED PLANNING WORK PROGRAM**

The undersigned representatives on the Merrimack Valley Metropolitan Planning Organization hereby endorse the Merrimack Valley region's Federal Fiscal Year 2012 Unified Planning Work Program.

\_\_\_\_\_  
Richard A. Davey  
MassDOT Secretary/CEO

\_\_\_\_\_  
Charles Boddy  
Chair – MVRTA Advisory Board

\_\_\_\_\_  
James Fiorentini  
Mayor of Haverhill

\_\_\_\_\_  
Robert Lavoie  
Chairman - MVPC

\_\_\_\_\_  
Francis DePaola  
MassDOT Highway Division Administrator

\_\_\_\_\_  
William Lantigua  
Mayor of Lawrence

\_\_\_\_\_  
Curt Bellavance  
Town of North Andover

\_\_\_\_\_  
Robert Snow  
Town of Rowley

\_\_\_\_\_  
Thatcher W. Kezer III  
Mayor of Amesbury

\_\_\_\_\_  
Philip Trapani  
Georgetown Selectman

Date: September 13, 2011