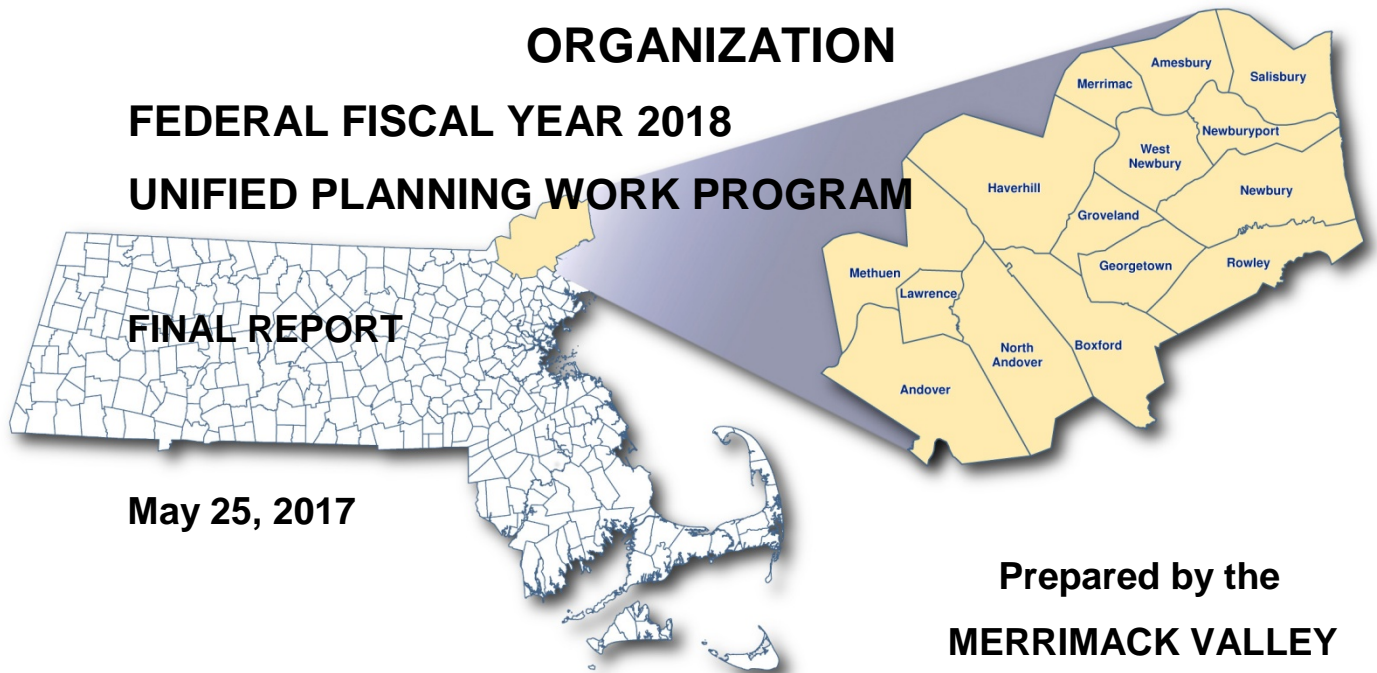


MERRIMACK VALLEY METROPOLITAN PLANNING ORGANIZATION

FEDERAL FISCAL YEAR 2018

UNIFIED PLANNING WORK PROGRAM



FINAL REPORT

May 25, 2017

**Prepared by the
MERRIMACK VALLEY
PLANNING COMMISSION**

This document was prepared by the Merrimack Valley Planning Commission under Contract #95416 with the Massachusetts Department of Transportation (MassDOT) and under Contracts MA-80-010 and MA-80-011 with MassDOT, and with the assistance of the Merrimack Valley Regional Transit Authority (MVRTA), MassDOT, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Its contents do not necessarily reflect the official views or policies of the U.S. DOT.

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Merrimack Valley Metropolitan Planning Organization
c/o Merrimack Valley Planning Commission
160 Main Street
Haverhill, MA 01830-5061
(978) 374-0519, extension 15
AKomornick@mvpc.org

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Massachusetts Commission Against Discrimination (MCAD)
One Ashburton Place, 6th Floor
Boston, MA 02109
(617) 994-6000
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Mon-Khmer, Cambodian

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MVMPO Endorsement Page



MERRIMACK VALLEY METROPOLITAN PLANNING ORGANIZATION ENDORSEMENT

MERRIMACK VALLEY REGION FEDERAL FISCAL YEAR 2018 UNIFIED PLANNING WORK PROGRAM

The undersigned representatives on the Merrimack Valley Metropolitan Planning Organization hereby endorse the Merrimack Valley region's Federal Fiscal Year 2018 Unified Planning Work Program.

Stephanie Pollack
MassDOT Secretary/CEO

Joseph Costanzo
MVRTA Administrator

James Fiorentini
Mayor of Haverhill

Karen Conard
MVPC Executive Director

Thomas Tinlin
MassDOT Highway Division Administrator

Daniel Rivera
Mayor of Lawrence

William Buckley
City of Methuen

Robert Snow
Town of Rowley

Neil Harrington
Town of Salisbury

David Surface
Town of Georgetown

Date: May 24, 2017

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MVMPO Self Certification Compliance Statement



Merrimack Valley Metropolitan Planning Organization Self Certification Compliance Statement

Concurrent with the submittal of the proposed FFY 2018 UPWP to the FHWA and the FTA, the MPO Policy Board shall certify that the metropolitan transportation planning process is being carried out in accordance with all applicable requirements including:

1. 23 U.S.C. 134, 49 U.S.C. 5303, and this subpart;
2. In nonattainment and maintenance areas, sections 174 and 176 (c) and (d) of the Clean Air Act, as amended (42 U.S.C. 7504, 7506 (c) and (d)) and 40 CFR part 93;
3. Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CFR part 21; 49 U.S.C. 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex, or age in employment or business opportunity;
4. Section 1101 (b) of the FAST Act (Pub. L. 114-94) and 49 CFR part 26 regarding the involvement of disadvantaged business enterprises in USDOT funded projects;
5. 23 CFR 230, regarding the implementation of an Equal Employment Opportunity Program on Federal and Federal-aid Highway construction contracts;
6. The provisions of the American with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) and 49 CFR parts 27, 37, and 38;
7. The Older Americans Act, as amended (42 U.S.C. 6101), prohibiting discrimination on the basis of age in programs or activities receiving Federal financial assistance;
8. Section 324 of title 23 U.S.C. regarding the prohibition of discrimination based on gender; and
9. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and 49 CFR part 27 regarding discrimination against individuals with disabilities;
10. Anti-lobbying restrictions found in 49 USC Part 20. No appropriated funds may be expended by a recipient to influence or attempt to influence an officer or employee of any agency, a Member of Congress, in connection with the awarding of any Federal contract.

Signatory Certification:

Stephanie Pollack
Secretary/CEO Mass DOT

Joseph Costanzo
MVRTA Administrator

James Fiorentini
Mayor of Haverhill

Daniel Rivera
Mayor of Lawrence

Thomas Tinlin
MassDOT Highway
Division Administrator

William Buckley
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Karen Conard
MVPC Executive Director

David Surface
Town of Georgetown

Neil Harrington
Town of Salisbury

Robert Snow
Town of Rowley

Date: May 24, 2017

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INTRODUCTION

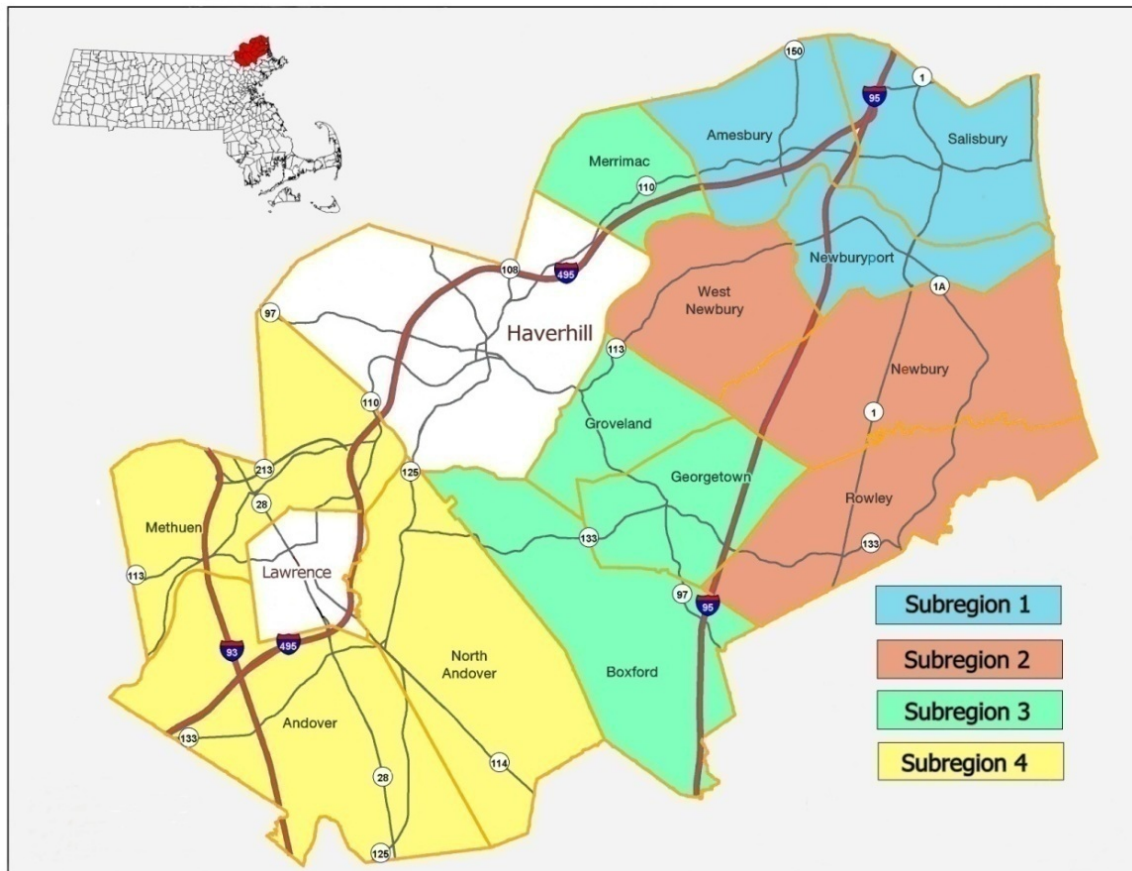
As mandated under the federal “3C” transportation planning process, the Unified Planning Work Program (UPWP), describes the transportation planning activities that are to be carried out by a Metropolitan Planning Organization (MPO) during the federal fiscal year (October 1 – September 30), identifies the planning products that are to be produced, and identifies which agency will be responsible for producing these products.

The UPWP must be prepared and endorsed annually by the Merrimack Valley Metropolitan Planning Organization (MVMPO) 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 Merrimack Valley Planning Commission (MVPC) Transportation Program staff serves as the MVMPO’s staff and is responsible for preparing the UPWP each FFY. The MVMPO staff will undertake most of the activities described in the FFY 2018 UPWP. 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.

Merrimack Valley Metropolitan Planning Organization (MVMPO) Region and Subregions

Figure 1 below is a map showing the boundaries of the MVMPO region, its sub-regions, and 15 member communities:



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.

Created by the Governor of Massachusetts in 1972, the MVMPO covers the same fifteen-community geographic area that defines the MVPC region and the Merrimack Valley Regional Transit Authority (MVRTA) service area.

The current MVMPO membership is as follows:

- MassDOT Secretary
 - MassDOT Highway Division Administrator
 - MVPC Executive Director
 - MVRTA Administrator
 - Mayor of Haverhill
 - Mayor of Lawrence
 - MVMPO Subregion Representatives:
 - Subregion 1 (Amesbury, Newburyport, **Salisbury**)
 - Subregion 2 (Newbury, **Rowley**, West Newbury)
 - Subregion 3 (Boxford, **Georgetown**, Groveland, Merrimac)
 - Subregion 4 (Andover, **Methuen**, North Andover)
- Stephanie Pollack
Thomas Tinlin
Karen Conard
Joseph Costanzo
James Fiorentini
Daniel Rivera
- Neil Harrington**
Robert Snow
David Surface
Bill Buckley

Ex officio, non-voting MVMPO members:

- FHWA Massachusetts Division Administrator
 - FTA Region I Administrator
 - Rockingham Planning Commission MPO (NH)
 - Boston MPO
 - Northern Middlesex MPO
 - Nashua Planning Commission MPO (NH)
- Jeff McEwen
Mary Beth Mello
Phil Wilson
Keith Bergman
Phillipe Thibault
David Hennessey

Organization of FFY 2018 Unified Planning Work Program

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

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

MVMPO Transportation Planning Priorities

The UPWP may be thought of as the document that ensures that 3C planning process in the MVMPO region is implemented in a *cooperative* manner and recognizes the many influences that are at work at various levels in shaping the transportation network. The Continuing, Com-

prehensive and Cooperative ('3C') federal transportation planning process recognizes that a wide array of factors influence the multimodal transportation network and, conversely, many of these factors are influenced by this network. A milestone event in this regard occurred in 1991 with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA), which established 16 specific factors that MPO's were required to consider in developing the plans and programs mandated under the legislation. While the number of these factors has been consolidated to 10 over the past 24 years, the need to be continuing and comprehensive in considering them remains at the foundation of the 3C planning process.

Listed below are the key concepts, analyses, policies, programs and recommendations that influenced the selection of the studies and analyses contained in the MVMPO FFY 2018 UPWP.

Regional Plans and Studies

The following regional transportation studies, plans and areas of focus have played an important role in shaping the development of the FFY 2018 UPWP:

Bicycle and Pedestrian Planning

MVMPO staff, in cooperation with the towns of Boxford, Georgetown, Newbury and Salisbury, continued working with MassDOT to advance Border to Boston Trail project designs. In the Spring of 2017, MassDOT and the above communities came to an agreement by which the final design of the various sections of the Trail was to be funded and administered.

MVMPO staff continued working with local officials in Haverhill, Groveland, and Georgetown to implement recommendations made in the Georgetown Branch Rail Trail Feasibility Study. In 2017 this included:

- Construction of Phase I of the Bradford Rail Trail (BRT), which was completed in the late Spring of 2017;
- The City of Haverhill selecting a designer for Phase II of the BRT and the project being programmed in the MVMPO's FFYs 2018-2022 TIP;
- The Town of Groveland moving forward with the design of the off-road segment of the Groveland Community Trail. Twenty-five (25%) plans were submitted to MassDOT and the project is being programmed in the MVMPO's FFYs 2018-2022 TIP.
- MVPC hosting meetings of and providing technical support to the Georgetown Branch Rail Trail Advisory Committee.

Further west, the City of Lawrence secured the services of a consultant to design the proposed Manchester & Lawrence Rail Trail, a 1.4-mile path that will run from the south bank of the Merrimack River to Manchester Street Park, and then north to link with the Methuen Rail Trail. MVPC completed a feasibility study for this proposed trail in 2014.

Title VI/Environmental Justice Planning

In recent years, the MVMPO has worked in coordination with USDOT and MassDOT to increase its efforts to implement Title VI and EJ planning activities.

Between 2009 and 2015 MVMPO work tasks included revision of the MVMPO Public Participation Plan, Title VI Notification, Complaint Policy and form; integration of updated Census and American Community Survey data, and continued expansion of outreach to constituents in communities. Staff updated contact information, forged stronger working relationships with Community-Based Organizations (CBOs) and distributed information on its work in non-traditional formats (i.e. Facebook, attendance at community events) to engage Title VI and EJ populations.

Under the FFY 2016 UPWP, staff updated the MVMPO's Title VI Program, which included an analysis of the region's protected populations at the Census Block Group level of geography. In addition, MVMPO staff:

- Updated information required by FTA regulations pertaining to compliance with Title VI of the Civil Rights Act of 1964 and Executive Order 12898 regarding Environmental Justice.
- Implemented recommendations and increased solicitation of input from minority, low-income and elder constituents.
- Made presentations on planning issues at neighborhood meetings in areas where low-income and minority populations are present as well as at locations or events involving elders and the disabled.
- Assisted the MVRTA in implementing evaluation measures for its outreach to Limited English Proficiency (LEP) populations as well as research additional recommendations for improving its outreach to these groups.
- Monitored MVMPO transportation funding, project prioritization and investments as to how they benefited and/or burdened protected populations.

MVMPO Regional Transportation Plan

The MVMPO prepared its FFY 2016 RTP under the FFY 2015 UPWP. It is the first MVMPO RTP to address the MAP-21 requirement that performance and outcome-based planning methods must be used to guide the programming of transportation capital investments. It also establishes a series of Goals and Objectives that the Organization should pursue to improve the transportation network. The Goals for the transportation network set forth in the RTP are:

- Maintain the System in a state of good repair;
- Increase Safety for All Modes
- Promote Economic Vitality
- Support Transportation Equity

- Promote Environmental Sustainability

Route 114 Corridor Study

The Route 114 Corridor in Lawrence and northern North Andover is one of the MVMPO region's most congested roadways. Under the FFY 2011 UPWP, staff completed a corridor transportation study that considered existing traffic and safety problems, forecasted future travel demand, and made a series of recommendations to address recurrent congestion problems that have plagued the corridor for many years. The implementation of these recommendations is one of the MVMPO's highest priorities. In recent years, the MVMPO has taken the following actions that have been undertaken in pursuit of improving the Route 114 Corridor:

- In December 2014, MassDOT approved a project that would make improvements to the section of the corridor from Andover Street to the Stop and Shop Driveway in North Andover;
- In 2015 and 2016, MassDOT, working in cooperation with area legislators, North Andover officials and with support from Merrimack College, implemented a project to install both a pedestrian signal on Route 114 between the College and the Royal Crest Apartment Complex and sidewalks along Route 114 and Andover Street.
- In 2017, the MVMPO programmed the use of available Target funding in the FFYs 2020 and 2021 elements of the MVMPO's FFYs 2017-2021 TIP for the construction of the improvements to the section of the corridor from Andover Street to the Stop and Shop Driveway in North Andover. It is anticipated that this project will appear in the FFYs 2021 and 2022 elements of the FFYs 2018-2022 TIP;
- In 2017, MVPC worked with the MVRTA to investigate the feasibility of extending fixed route bus service along Route 114 to better serve the College, nearby medical offices and possibly even to restore service the Liberty Tree Mall area;
- MVPC has met with local officials and trails advocates from the communities of Lawrence and Andover to identify options for improving bicycle and pedestrian travel in the corridor and providing connections to adjacent local and regional trails, and
- MassDOT has developed a project that will resurface Route 114 from Lawrence to the North Andover/Middleton Town Line.

Priority Growth Strategy

In 2009, MVPC staff completed the Merrimack Valley Priority Growth Strategy (PGS), the land use plan for the Merrimack Valley region. This document, prepared with communities' direct participation, was well received by planning professionals and local/state elected officials. The National Association of Development Officials (NADO) recognized the PGS as a "Best Practice" in 2009 and awarded the MVPC an Innovation Award for the PGS in

2011 while FHWA featured the PGS on its *Transportation Planning Capacity Building* website as the latest example of an Innovative Project (FFY 2014).

In 2011, the MVPC staff developed a PGS implementation plan with funding from the Commonwealth's Executive Office of Housing and Economic Development. This plan, entitled the 'Merrimack Valley Regional Strategic Framework Plan', informed an MVPC / EOHEd discussion on how to integrate the Strategic Framework Plan with the Commonwealth's then-new "Planning Ahead for Growth" initiative. MVPC and EOHEd staff worked together to identify which of the 57 regional "Concentrated Development Centers" identified in the PGS had statewide significance and could be designated as "Priority Development Areas. "The same exercise was done for identifying "Priority Preservation Areas".

Under the FFY 2014 UPWP, the MVPC staff completed a PGS update to ensure that the PGS land use, transportation, environment, and other content captured any changes that had occurred over the five years since it released the 2009 PGS. The MVPC adopted its PGS update in January 2015.

The MVMPO staff uses the PGS Update in two key areas; 1) to help define the preferred land use and zoning scenario included in the RTP, and 2) to quantify the economic impact of roadway and trails projects in applying the Transportation Evaluation Criteria.

Congestion Management Process (CMP)

The CMP is a USDOT-mandated planning tool that MPOs with Urbanized Areas of more than 200,000 people must use to:

- Comprehensively examine and monitor congestion on an MPO's transportation network;
- Identify congested areas/components, and
- Recommend actions to resolve specific congestion issues. These recommendations often result in traffic analyses and studies that appear in a region's UPWP.

The MVMPO staff last updated its CMP in FFY2011 to support development of its FFY 2012 RTP. Since then, staff has identified several congested MVMPO region locations and added them to the CMP. Staff has subsequently studied many of these locations in more detail under recent UPWPs. Location examples include the Marston's Corner intersection in Methuen, Route 28 in Methuen between Route 213 and the Massachusetts-New Hampshire boundary, and the intersection of Route 28 (Broadway) and Route 110(Haverhill Street) in Lawrence. Under the FFYs 2016 and 2017 UPWPs, staff collected traffic volume and travel time data on federal aid roadways in the region that it will use to maintain the CMP in FFY 2018.

Safety Monitoring System (SMS)

The MVMPO staff uses the SMS to identify components of the regional transportation network that have safety issues. The SMS uses crash data provided by MassDOT, local police departments, the MVRTA and other sources to identify safety problems for motor vehicles, bicycles and pedestrians, and transit riders in the region. Many of the potential safety problem areas identified through the SMS are studied in more detail through tasks included in the UPWP to determine if a safety problem truly exists and, if so, to identify what steps need to be taken next to address it.

Since the preparation of the FFY 2017 UPWP last spring, staff participated in the following Road Safety Audits in the region:

- Dascomb Road at Frontage Road and the I-93 Northbound Ramps in Andover, and
- River Street area between the I-495 Northbound Ramps and the River Street/McDonald's Driveway in Haverhill.

MVRTA Regional Transit Plan

The MVRTA completed its Comprehensive Regional Transit Plan in 2015. This document addresses fixed route bus service by examining route ridership, evaluating individual bus routes, identifying areas for transit service and includes service recommendations for FY 2016, 2017 and 2018. The Plan also identifies areas for additional study.

Since this Regional Transit Plan will be used by the MVRTA to plan for and implement transit services in the future, any transit proposals must be included in this Plan to receive consideration for programming and implementation by the MVRTA and the MVMPO.

The MVRTA has requested MVPC assistance in updating components of the Regional Transit Plan under the FFY 2018 UPWP (see Task 3.2.6).

2014 Coordinated Human Services Transportation - Public Transportation Plan

This Plan is an update not only of the 2007 Coordinated Human Service Public Transportation Plan, but the subsequent Elderly and Disabled Transportation Plans, and the 2013 Transit Mobility Plan that were jointly prepared by the MVMPO staff and the MVRTA.

Like the preceding plans referenced above, it is an action plan for the MVMPO's transit planning and funding activities but *unlike* those previous plans it also considers the collaborative work of the Merrimack Valley Regional Coordinating Council (MVRCC), an entity created through Commonwealth Executive Order 530 to increase coordination among all transit service providers, including the RTAs and human services agencies.

Through the public outreach effort that was followed in developing the 2014 Coordinated Human Services Plan, MVMPO staff identified a wide range of proposed transit services that would address perceived gaps in the region's transit/transportation network. Among

these were recommendations for modifying existing MVRTA bus routes, development of new routes that would serve destinations outside the MVRTA service area, and improving the level of MBTA service in the region.

I-93 Preferential Lane Study – Phase II

As the MVMPO was completing its feasibility study of providing Bus on Shoulder (BoS) transit service in the I-93 Corridor between New Hampshire and Boston, CTPS completed its reversible preferential lane analysis for the I-93 segment between MA-133 in Andover and the Central Artery North Area (CANA) in Boston. A preferential lane would permit higher bus operating speeds and carpools/vanpools and other modes of travel that would not be allowed in the shoulder; however, BoS permitting tasks and construction/operation cost advantages are extremely modest by comparison and have proven their value in transportation benefits in many U.S. applications. The MVMPO staff delivered its Draft BoS Study to MassDOT for inspection in FFY 2015 and expects to continue advocating for I-93 corridor transportation improvements with MassDOT in FFY 2018.

Active Transportation Plan for the Merrimack Valley

The MVMPO adopted this Plan in January 2015 which sets forth the region's Active Transportation Vision:

The Merrimack Valley region will be connected by safe, convenient and appealing Active Transportation corridors that people of diverse ages and abilities will choose to use. The MVPC and its communities will achieve this vision by increasing bicycling and walking mode shares to promote environmental sustainability and healthier lifestyles while reducing automobile dependence and improving air quality. We will connect jobs, housing, civic and recreation activities to strengthen our region's livability and economic vitality.

The document contains specific Goals, Strategies and Performance Measures that are designed to support achieving this Vision. These tools will be used as part of the ongoing process of evaluating the nearly 100 regionally-significant and priority community-level bicycle and pedestrian initiatives that have been proposed for the region, many of which were developed with the intent of closing the gaps in the Active Transportation Network that were identified in the Plan.

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. The MVMPO staff has considered these plans in the development of the MVMPO's FFY2018 UPWP.

Chapter 46 – An Act Relative to Transportation Finance

While the title of this 2013 act shows that it was intended to provide funding for the Commonwealth's transportation network, it also contained numerous provisions related to the management of the state's transportation infrastructure. It contained provisions establishing the development of the Performance and Asset Management Advisory Council, required the preparation of Comprehensive Regional Transit Plans and established the Project Selection Advisory Council (PSAC), which it charged with the responsibility of developing the project selection criteria to be used in the development of the comprehensive state transportation plan (see 'PSAC' on page 17).

WeMoveMassachusetts Planning For Performance

MassDOT introduced several firsts with the passage of *weMoveMassachusetts*. It was the first multimodal transportation plan created by the agency since its restructuring in 2009. It was also the first plan to introduce performance management measures into the capital planning process.

weMove Massachusetts evaluates the long-term performance of the transportation network under two alternative funding scenarios: 1) assuming that **historical** funding levels would be in place and, 2) assuming that the current funding levels authorized under Chapter 46 would be available. These impacts were measured in many areas such as pavement condition, bridge condition, mobility, bicycle transportation and safety.

<http://www.massdot.state.ma.us/wemove/Home.aspx>

"GreenDOT"

Launched by MassDOT in July 2010, the **GreenDOT** initiative is designed to make Massachusetts a progressive state in how its transportation network coexists with the environment and supports sustainable development. Three of its primary goals are to:

- Reduce greenhouse gas (GHG) emissions;
- Promote the healthy transportation options of walking, bicycling, and taking public transit, and
- Support smart growth development.

Through the Global Warming Solutions Act, which was enacted by the Legislature in 2008, Massachusetts has committed to reducing statewide GHG emissions between 10-25% from 1990 levels by 2020 and by at least 80% from 1990 levels by 2050. To help achieve these GHG emissions reductions, MassDOT has committed to tripling the mode shares for walking, bicycling and public transportation throughout the Commonwealth. Transit usage would be increased by offering more hours of service, improving bus route designs/schedules, reducing bus/train headways and upgrading the condition of rolling stock and other equipment. Improving travel accommodations for bicyclists and pedestri-

ans through a "Complete Streets" (see below) approach to improving the state's transportation network will make it easier and safer for persons to bike and/or walk.

To further assist in the effort to reduce the number of Single Occupancy Vehicles in the Commonwealth, MassDOT has developed **MassRides**, a statewide travel options program that is designed to help people make more informed decisions about carpooling, bicycling, walking, public transportation, teleworking, and vanpooling.

In December 2012, MassDOT released its GreenDOT Implementation Plan, which establishes 15 broad sustainability goals to decrease the level of resources needed to sustain the Commonwealth's transportation network. It includes many specific measures for reducing GHG emissions in the state including providing alternative fueling options at highway service areas and installing 30 electric vehicle charging stations along the state highway system as well as at transit parking areas. A logical location for such a station would be the Newburyport Park and Ride Lot, which is located adjacent to I-95 and is the busiest such facility in the Commonwealth.

The **Healthy Transportation Policy Directive**, released by MassDOT in 2013, modified MassDOT's Design Criteria for Projects and Bicycle Accommodation in a few key ways including requiring sidewalks on *both sides* of roadways in urban areas, on *both sides of bridges* and/or on *roadways passing beneath bridges*, and on MassDOT facilities wherever adjacent commercial/pedestrian development density is greater than 5 units/acre.

Complete Streets Funding Program

This program was instituted by MassDOT in February 2016 as part of its effort to further support the creation of highway infrastructure that meets the GreenDOT goal of promoting the healthy transportation options of walking and bicycling. This goal was a primary factor influencing the development of the Department's Healthy Transportation Policy Directive.

The new program provides financial support for communities adopting Complete Streets ordinances or by-laws that meet MassDOT criteria. Funding will be provided to both support the implementation of the Complete Streets ordinance or bylaw and to support the construction of Complete Streets projects. MVPC staff has been working with member communities over the past year to develop Complete Streets ordinances.

Massachusetts Statewide Plans for Freight and Rail

In FFY 2011 MassDOT completed work on the State Freight Plan and the State Rail Plan. As part of these plans, MassDOT's consultant completed a comprehensive analysis of freight flows within Massachusetts and to/from Massachusetts. MassDOT has also reviewed the state of rail, truck, air, and water freight transportation in the Commonwealth and forecasted the amount of freight that will be carried by each mode in the year 2030. MassDOT projects 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.

MassDOT cited some MVMPO region freight rail infrastructure capacity limitations. Some track structures do not support 286,000 pound carloads (which is becoming the industry standard) or the 20'8" clearances required for full-doublestack container capacity. In addition, the poor condition of the MBTA Merrimack River Bridge in Haverhill was another factor limiting the growth of freight rail service in the Commonwealth.

Rail projects recommended in prior MBTA Capital Improvement Programs are now being implemented that would address some of the above limitations, including:

Haverhill Line Double-Tracking Project

This project (in construction) will add a second main line track along the MBTA Haverhill Line for most of the section from Andover Street in Lawrence south to the 'Wildcat Branch' junction in Andover, a distance of 5.5 miles. Once completed in 2016, the additional length of second track will make it easier to schedule MBTA Commuter Rail, AMTRAK Downeaster, and PanAm Railways trains along this heavily used section of line. This additional track also offers the possibility of improving the level of MBTA Commuter Rail Service to the MVMPO region.

Rehabilitation of the MBTA Merrimack River Railroad Bridge

This structure was originally built in 1919 and was in very poor condition. Much of the rail freight from eastern New Hampshire, Maine, and eastern Canada travels across this structure as does the AMTRAK Downeaster, and all MBTA Commuter Rail trains. Due to its poor condition, freight trains currently must travel over the bridge at five miles per hour and only one freight train at a time can pass over the structure. MBTA Commuter Rail and AMTRAK Downeaster trains can only travel over the bridge at 15 mph. Reconstruction of this bridge commenced in 2015 and when complete in 2017, freight trains will be able to travel at 30 mph over the new spans and two freight trains will be able to cross the spans at the same time.

MassDOT is now developing the 2017 Update to the State Rail Plan. It will outline the Commonwealth's policies and planning goals for the state's rail network, describe the existing rail system, identify both anticipated trends and proposed system improvements. The Draft Update should be completed by the end of Calendar 2017.

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 over 200 MassDOT and Massachusetts Department of Conservation and Recreation (DCR) – owned bridges that are classified as Structurally Deficient (SD) or are in jeopardy of soon being classified as such.

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.

Six MVMPO region bridge repair or replacement projects are included in the ABP. These are listed on the following page along with their status:

Status of Accelerated Bridge Program Projects in the MVMPO Region	
Project	Status
Replacement of the I-95 Whittier Bridge over the Merrimack River between Amesbury and Newburyport	Construction
Replacement of the Route 28 Bridge over the MBTA railroad tracks in Andover	Construction
Repair of the Route 28 Bridge over the Merrimack River in Lawrence	Completed
Reconstruction of the Route 125 Connector Bridge over Ferry Road/MBTA Haverhill Line in Haverhill	Completed
Cleaning and painting of the Route 1 (Gillis) Bridge over the Merrimack River between Salisbury and Newburyport	Completed
Rehabilitation of the Rocks Village Bridge over the Merrimack River between Haverhill and West Newbury	Completed

District Local Technical Assistance Program (DLTA)

The Massachusetts Legislature created the DLTA Program to support implementation of Sustainable Development Principles. The Commonwealth’s Executive Office of Administration and Finance has authorized distribution of DLTA funding to the Commonwealth’s regional planning agencies to assist their communities with planning service. DLTA funds can be used for a variety of purposes including developing shared land use objectives, reviewing and modifying existing local zoning and land use controls, and creating municipal partnerships.

MassDOT Capital Investment Program (CIP)

MBTA and each MassDOT agency are required to identify and prioritize the most beneficial investments, those that will most help to meet long-term goals for mobility, sustainability, and broad-based prosperity. These investments are funded through the Capital Investment Program (CIP), which uses state and federal funding to pay for long-term improvements to the transportation system. Each year, MassDOT creates a new CIP that combines its capital planning efforts across its aeronautics, highway, motor vehicles and transit business lines. Accordingly, this CIP is important to the MVMPO’s transportation

network, and like the TIP will cover a rolling five-year period to be revised and adopted by MassDOT on an annual basis.

During FFY 2017, MassDOT and the MPO's in the Commonwealth revised the schedule for preparing regional TIPs to facilitate the development and integration of these documents into the CIP and the STIP. MVMPO staff has already provided preliminary comments to MassDOT on the projects potentially eligible to appear in the FY 2018-2022 CIP.

Project Selection Advisory Council (PSAC)

Created by the Legislature as part of *Chapter 46 – An Act Relative to Transportation Finance* in 2013, the PSAC met throughout 2014 and 2015 to develop recommendations for modifying the Commonwealth's transportation project development, evaluation and selection process. The PSAC issued its Final Report to the Legislature in July 2015, and MassDOT incorporated PSAC recommendations in its evaluation of approximately 6,000 transportation projects/project proposals during FFY 2016. The new evaluation and project selection process is again being employed by MassDOT in the development of its FY 2018-2022 Capital Investment Plan.

Massachusetts Strategic Highway Safety Plan

Created under SAFETEA-LU and continuing in the FAST Act, the Highway Safety Improvement Program (HSIP) is designed "to achieve a significant reduction in traffic fatalities and serious injuries on all public roads." Funds may be used for design and/or construction of projects on any public road or publicly owned bicycle and pedestrian pathway or trail.

A key component of the HSIP is the State Highway Safety Plan (SHSP), which is a "data-driven" document that "provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads". The Massachusetts SHSP was originally 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.

The Massachusetts SHSP was revised in Fall 2013, and federal regulations call for Massachusetts to adopt a new SHSP by Fall 2018.

The MVMPO has programmed the use of HSIP funds in the region for the construction of roadway improvements at the Route 125 (Chickering Road)/Massachusetts Avenue intersection in North Andover, and for the reconstruction of the section of the Route 125 Corridor in Haverhill between Winter Street and Merrimack Street. The MVMPO had previously used HSIP funds to complete the design for both projects.

Federal Transportation Planning Legislation and Initiatives

Fixing America's Surface Transportation Act (FAST)

On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, or "FAST Act", that provides five years of surface transportation funding authorization. The FAST Act is the successor transportation funding authorization legislation to the Moving Ahead for Progress in the 21st Century Act (MAP-21).

The FAST Act largely maintains program structures and funding shares between highways and transit that existed in MAP-21. However, it does include changes such as:

- Streamlining the approval processes for new transportation projects, providing new safety tools, and establishing new programs to advance critical freight projects.
- Establishing a dedicated source of both formula and discretionary grant programs to fund critical transportation projects that would benefit freight movements.
- Reinstating the popular bus discretionary grant program and strengthening the Buy America requirements.
- Includes provisions that strengthen workforce training and improve regional planning.

Additional information on the FAST Act may be found at:

<https://www.transportation.gov/fastact/#sthash.W3ybwwyZ.dpuf>

Livability

The concept of livability in transportation is in fact a recognition that the transportation network plays a major role in affecting the quality of life of residents in the area it serves. As was 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 a 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 2018 to support sustainable development

principles in the Valley and, in doing so, improving the quality of life (see Task 2.9 on page 85).

Planning Factors

FHWA and FTA continue to recognize the importance for each UPWP to address the Planning Factors identified in the statute. The FAST Act added the following two new Planning Factors to the eight that were included in MAP-21:

Improve the Resiliency and Reliability of the Transportation System and Reduce or Mitigate Stormwater Impacts of Surface Transportation

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.

For many years, MVMPO has supported planning activities that respond to these issues (see Tasks 3.7 and 3.8).

The region's Multi-Hazard Mitigation Plan identifies transportation facilities that are at risk from storms, floods, and other events. Staff has also been working with the state and local officials in Salisbury, Newburyport, Newbury and Rowley to prepare community resiliency plans that will include the identification of measures that should be taken to mitigate the impact that sea level rise will have on transportation infrastructure.

MVPC is also working closely with the Merrimack Valley Stormwater Collaborative to address the requirements contained in EPA's new Phase II National Pollutant Discharge Elimination System (NPDES) permit for Massachusetts (see Task 3.7), including those related to transportation infrastructure.

Enhance Travel and Tourism

Task 2.11 – Travel and Tourism Planning was added to the FFY 2017 UPWP as a first step in better integrating travel and tourism into the transportation planning process and this task appears in the FFY 2018 UPWP as well.

Bike and Pedestrian Networks

USDOT recommends that MPOs should work to assess bike and pedestrian networks, identify gaps in multi-modal connectivity, and implement strategies to address those gaps and to improve user safety.

As noted earlier, the MVMPO's Active Transportation Plan performs this function.

Performance Management

MPOs should continue to work with MassDOT, transit agencies, and other partners to incorporate performance measures into their planning processes.

Over the past 12-14 months, USDOT released Final Rules for the seven Performance Management area first identified under MAP-21 and which remain in effect under the FAST Act. All these rules are already or very soon will be in effect. The MVMPO will be making a major effort under the FFY 2018 UPWP to incorporate the new performance metrics into its transportation planning process with much of the above work being carried out under Task 2.10 of this UPWP. However, components of this effort are included under Task 2.2 – Regional Pavement Management and Task 2.4 – Congestion Management Process as well.

Sustainability

Implementing sustainable practices and ensuring a sustainable transportation system is important in planning for future transportation needs. FHWA's INVEST offers one way to assess current practices and projects and identify potential areas to improve sustainability. Conducting a vulnerability assessment along with developing strategies and tools to adapt programs to address climate change impacts and severe weather events can also better prepare communities. MPOs should consider how the results of such assessments can inform transportation planning activities and how adaptation and mitigation strategies can be implemented effectively.

Tasks 3.7 – Stormwater Management Technical Assistance, 3.8 – Climate Change and 4.3 - Regional Transportation Security of this document are designed to assist communities in addressing the impacts that climate change and severe weather events can have on their transportation infrastructure.

Also, MVPC will be using the INVEST software to assess how well it current Regional Transportation Plan is supporting sustainable development in the region (see Task 1.6).

Regional Models of Cooperation

There should be a regional approach to planning by promoting cooperation and coordination across transit agency, MPO, and state boundaries. The MPO might consider working with neighboring MPOs or states to identify corridors that are of significance to both regions and would benefit from a cooperative study. Proactively collaborating with transit agencies that may be based in another region through planning studies and related work may also be something for the MPO to consider in developing UPWP activities. Additionally, MPOs may need to revisit their MOUs to ensure that there are effective processes for cross-jurisdictional communication among State DOTs, MPOs, and providers of public transportation to improve collaboration, policy implementation, technology use, and performance management.

Examples of MVMPO activities in the above areas include:

- Coordinating with the Rockingham Planning Commission on assuring the connectivity of the Border to Boston trail in Salisbury with a section of the East Coast Greenway planned for Seabrook, New Hampshire;
- Working with Northern Middlesex Council of Governments on planning and outreach for the Merrimack River Trail.
- Developing a new MOU for the Boston UZA (see Task 1.1);
- Coordinating MVRTA and Lowell Regional Transit Authority transit services through the Merrimack Valley Regional Coordinating Council (see Task 3.2);
- Developing a new MOU between the MVMPO and MVRTA;
- Having the Rockingham Planning Commission conduct a count of bicyclists and pedestrians on the Newburyport Rail Trail to demonstrate the operation of its new data collection equipment;
- Holding joint meetings of transportation staff from the Boston, Northern Middlesex and Merrimack Valley MPOs (see Task 1.2)

Ladders of Opportunity

MPOs are encouraged to identify specific ways within the UPWP to focus on providing access to essential services. The UPWP may provide an opportunity for developing and implementing analytical methods to identify gaps in the connectivity of the transportation system and developing infrastructure and operational solutions that provide the public, especially the traditionally underserved populations, with adequate access to essential services.

Under the FFY 2016 and FFY 2017 UPWPs, MVPC staff examined the feasibility of the MVRTA expanding transit service along Route 114 in North Andover and Route 133 in Andover to provide better connections for Lawrence residents to employment opportunities and health services that exist along both corridors.

MVPC staff has also been working with the Mount Washington Neighborhood Association in Haverhill and the Methuen Arlington Neighborhood group in Methuen to identify transportation projects and services that can improve residents' access to employment opportunities both inside the Merrimack Valley region and to adjacent areas.

Geographic Distribution of UPWP funded studies and Target TIP Projects

As part of the FHWA/FTA certification reviews, MPOs in TMAs are asked to prepare a chart showing the geographic distribution of PL funded studies by median income and municipality over the latest five-year (or longer) UPWP timeframe. Similarly, the MPO is asked to produce a chart showing the distribution (by municipality) of MPO-funded target projects over a similar timeframe. It is acknowledged that the timeframe is only a snap-

shot in time, however it would be informative to see the distribution of PL & Target funds in the MPO's region.

See table on Page 30.

Other Transportation Planning Studies

In addition to the studies, analyses and legislation described above, the following transportation planning studies have been implemented in the region and surrounding areas by other agencies. These include:

Interstate 495 Corridor Study

Completed in 2008, 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.

While there is insufficient funding available in the MVMPO's FFY 2016 RTP to support the construction of all the above improvements in the MVPC region, it is included as an Illustrative Project. It should be noted that one of the recommendations made in the MassDOT study, the signalization of the I-495 ramps to/from Massachusetts Avenue in North Andover, is included in the financially constrained section of the document.

Newburyport Intermodal Parking Facility

The MVRTA and the City of Newburyport are completing Design Engineering for the construction of a 205-space parking facility near the intersection of Titcomb and Merrimac Streets. This project appeared in the MVRTA's FFY 2017-2021 Capital Improvement Plan as well as MassDOT's Draft 2017-2021 CIP. Design work for the for this facility, should be completed by the end of calendar 2017, with construction beginning in FFY 2018.

Other Non – Transportation MVPC Planning Studies and Funding Sources

In addition to the transportation studies and analyses undertaken by the Commission on behalf of the MVMPO, as a comprehensive planning agency the MVPC is active in studies, initiatives and analyses that address economic development, land use, open space and environmental matters that often directly impact the region's transportation network.

The Merrimack Valley region is designated an Economic Development District (EDD) by the U.S. Economic Development Administration (EDA) of the Department of Commerce. EDA is the main economic development agency of the federal government and works with EDDs throughout the country to promote regional cooperation and job growth. MVPC is the designated liaison between EDA and the 15-community Merrimack Valley region and manages the Merrimack Valley Comprehensive Economic Development Strategy (CEDS) Program. In addition to producing the regional CEDS document, this program consists of; organizing regional CEDS meetings; public works grant assistance; information support through MVPC's regional demographic data center and economic impact model; and support for regional initiatives such as the Brownfields assessment program and "Means Business" websites. Recent activities in these areas are noted below:

- **Comprehensive Economic Development Strategy:** The 2013 Merrimack Valley Comprehensive Economic Development Strategy (CEDS) was submitted to the U.S. Economic Development Administration (EDA). 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 and generate annual Performance Reports in between. The MVPC region has been designated an Economic Development District by EDA since 1986.

The 2013 CEDS features an updated list of goals, objectives, and a plan of action. The regional five-year vision is highlighted by three Executive Actions for immediate consideration: 1) enhanced regional marketing of economic development resources and opportunities available; 2) increased coordination of local capacity assistance in critical planning issues such as priority development sites, Chapter 40R establishment, streamlined permitting, complete streets, stormwater management, and compact neighborhoods and, 3) identifying critical workforce development needs, programs, and partnerships in the Merrimack Valley.

Implementation of the CEDS began as soon as the five-year strategy was completed in 2013. Updates were completed and submitted to EDA in 2014, 2015, and 2016. These updates are available for viewing on the MVPC website. MVPC will be preparing a comprehensive update to the CEDS in FFY 2018.

- **Enhanced Marketing of the Region Through an Updated and Improved Merrimack Valley Means Business Website:** Working closely with the Merrimack Valley Mayors and Managers Coalition (MVMMC), MVPC has better marketed the region to prospective developers and businesses. MVMB.biz now features an easy to use property search tool (CoStar), and there are over 150 listings of commercial and industrial property for sale and lease. The site also highlights priority development projects and state, local, and regional priority development areas, and provides quick

links to key municipal officials, zoning links, and other important information on doing business.

- In 2016, MVPC also engaged in a new branding and marketing campaign for the region. The old MVMB logo was retired and a new sharper logo and taglines have been developed to better reflect the vibrancy of the region. This involved conducting nearly 30 focus group meetings with the region's stakeholders. The overall goal of the marketing initiative is to attract new economic development by strengthening the regional business support network, enhancing the promotion of development opportunities, and bolstering the collection of timely data.

A Cluster Analysis was completed which identified four industry clusters driving economic growth in the region: Food Manufacturing, Electronics, Life Sciences, and Metal Fabricators. MVPC staff is now working with the local Workforce Investment Board trying to target workforce assistance to businesses in these clusters.

MVPC's Local Capacity Assistance has developed into the "Merrimack Valley Support Team" - a new regional resource entity to assist communities in the Merrimack Valley with their unique economic and community development needs. The support team will provide on-going training to local staff on development matters and will encourage the sharing of resources and bolster communication and cooperation in the region. In 2016 we completed projects in Merrimac, Newburyport, Groveland, Methuen, and Salisbury. Projects range from writing Housing Production Plans to developing a Permit Guide, to developing a water resource management plan and assisting communities adopt "smart growth" 40R districts.

- **Brownfields Assessment:** Unfortunately, a three-year \$400,000 grant application to EPA to extend the Merrimack Valley Brownfields Assessment program to 2018 was not funded. The program, which began in 2003, has completed over 70 site investigations and reports on Brownfields sites throughout the Merrimack Valley. Many of these investigations have resulted in the cleanup and reuse of formerly contaminated properties into affordable housing, educational facilities, community gardens, parks, and rail trails. MVPC will attempt again to secure these important funds for the region.

The Commission received supplemental funding from EPA to recapitalize its Brownfields Cleanup Revolving Loan Fund. This program recently financed cleanup activities in downtown Amesbury and Salisbury and MVPC hopes to continue assisting in the cleanup of sites for adaptive re-use projects in other communities. Some of these funds may be used to assist the Town of Merrimac clean a contaminated site and use it to build affordable housing.

- **Priority Growth Strategy:** MVPC has a strategy that will drive the orderly development of the region for years to come. The Merrimack Valley Priority Growth Strategy, the comprehensive master plan for the region, is the cornerstone of this effort. The

Strategy identifies where the region encourages growth, where the region would like to preserve and protect land from development, and how the transportation network of the region can be upgraded and enhanced to sustain and connect these development patterns. The Strategy was first developed in 2009, and was completely updated in 2015 with new priorities and demographic data. The update also reflected the Commonwealth's "Planning Ahead for Growth" initiative and the identification of Priority Development Areas and Priority Preservation areas across the Merrimack Valley region.

- **MVED Revolving Loan Fund:** In 2016, Merrimack Valley Economic Development (MVED) made an equipment loan in the amount of \$200,000 to Jessica's Brick Oven, Inc., a company that produces artisan breads that are sold to grocery stores, bakery shops, and restaurants. In addition, MVPC submitted to EDA the Merrimack Valley Economic Development Corporation Revolving Loan Fund Five-Year Plan, which details MVED's loan processing guidelines, underwriting standards, accounting principles, monitoring, and other operational and administrative procedures.
- **Other Economic Development Support:** MVPC staff handled numerous demographic data inquiries and requests for regional economic development overviews for businesses, individuals, and community officials. MVPC is the regional repository of demographic data from various federal and state agencies. In 2017, MVPC continued to collect and analyze data releases from the U.S. Census Bureau, including the annual American Community Survey (ACS). In addition, MVPC reviewed industrial revenue bond proposals and MVPC offered support to proposed projects in the region.

Transportation Planning Program Years Covered by This Document

The transportation planning tasks and activities in the FFY 2018 UPWP were developed by the MVPC and MVRTA in cooperation with FHWA, MassDOT, FTA, local officials and the input of MVMPO Stakeholders. These activities will be financed in large part with federal planning funds provided by FHWA and FTA. Funding for the PL Contract #95416 between MassDOT and the MVPC will be wholly provided by the Commonwealth, which will later receive 80% reimbursement from US DOT. This contract began on October 1, 2016 and will end on September 30, 2020.

Transit planning activities will be carried out under the Section 5303 and Section 5307 contracts between MassDOT and the MVPC, and MVRTA and the MVPC, respectively. MVPC will provide the match for the federal transportation funds used to support both contracts. Section 5303 Contract X011 went into effect on April 1, 2017 and will end on March 31, 2018. Contract X012 will begin on April 1, 2018 and continue through March 31, 2019. The transportation planning activities funded through the Section 5307 contract between the MVRTA and the MVPC will be in effect from October 1, 2017 through September 30, 2018.

All planning tasks to be initiated under the FFY 2018 UPWP will be performed by either the MVPC or private consultants through the contracts described above.

Transportation Planning Factors Considered Under the FAST Act

The FAST Act includes 10 planning factors that must be considered in the conduct of the 3C Transportation Planning Process. The table presented below shows which individual transportation planning tasks included in the MVMPO's FFY 2018 UPWP address each of them:

FAST Act Planning Factors in the MVMPO FFY 2018 UPWP		
Planning Factor	UPWP Task(s)	RTP Goals
<i>(1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;</i>	Tasks 1.6, 2.4, 2.5, 2.11 and 3.4	Promote Economic Vitality Transportation Equity
<i>(2) Increase the safety of the transportation system for motorized and nonmotorized users;</i>	Tasks 2.7, 2.8, 2.9, 2.10, 3.3, 3.4, 3.5, 3.6, 3.8 and 4.3	Increase Safety for All Modes Promote Environmental Sustainability
<i>(3) Increase the security of the transportation system for motorized and nonmotorized users;</i>	Tasks 2.7, 2.9, 3.5, 3.6 and 4.3	Promote Environmental Sustainability Promote Economic Vitality Transportation Equity
<i>(4) Increase the accessibility and mobility options available to people and for freight;</i>	Tasks 1.5, 1.6, 2.4, 2.5, 2.9, 2.10, 3.1 and 3.2	Create Multi-Modal System to Support Mode Choice Promote Economic Vitality
<i>(5) Protect and enhance the environment, promote energy conservation, and improve quality of life;</i>	Tasks 1.6, 2.7, 2.9, 2.11, 3.1, 3.2, 3.3, 3.7, 3.8 and 4.3.	State of Good Repair Transportation Equity Promote Environmental Sustainability
<i>(6) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;</i>	Tasks 1.1, 1.2, 2.5, 2.7, 2.10 and 3.2	Create Multi-Modal System to Support Mode Choice Promote Economic Vitality
<i>(7) Promote efficient system management and operation;</i>	Tasks 2.1, 2.2, 2.4, 2.6, 2.10, 3.2, 3.3, 3.4, 3.7 and 4.1	State of Good Repair Promote Economic Vitality
<i>(8) Emphasize the preservation of the existing transportation system;</i>	Tasks 2.2, 2.4, 2.10 and 4.3	State of Good Repair Environmental Sustainability
<i>(9) Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation;</i>	Tasks 3.7, 3.8 and 4.3	State of Good Repair Environmental Sustainability
<i>(10) Travel and tourism.</i>	Tasks 2.7, 2.9, 2.11, and 3.2	Create Multi-Modal System to Support Mode Choice Promote Economic Vitality

Summary of Anticipated MVPC Funding Resources FFY 2018 (July 1, 2017 – June 30, 2018)		
<u>Source - Non-Transportation</u>	<u>Amount</u>	<u>% of Total</u>
Economic Development Administration (EDA)	\$100,000	
CIC Grant - CMMS	20,000	1.0%
EDA Revolving Loan Fund	25,000	1.2%
Eight Towns and the Great Marsh (Environmental Protection Agency/Mass. Coastal Zone Mgt.)	62,750	3.1%
Mass. Department of Housing and Community Development District LTA	106,926	5.3%
Stormwater Coalition	25,000	1.2%
U.S. Fish and Wildlife Service - NAWCA Grant	39,757	2.0%
National Wildlife Federation Sandy Grant	10,000	0.5%
Mayor's Coalition	25,000	1.2%
EPA Brownfields Revolving Loan Fund	350,000	17.3%
Pictometry	73,000	3.6%
Local Technical Assistance	13,657	0.7%
CIC Grant - Regional Housing Production Plan	75,000	3.7%
EOEEA Chemical Safety/Climate Change	8,000	0.4%
Misc. GIS and Local Contracts	60,000	3.0%
TOTAL (Non-Transportation)	\$994,090	49.1%
<u>Source - Transportation</u>		
FHWA/MassDOT-PL	\$775,000	38.3%
FTA/MVRTA (Section 5307)	100,000	4.9%
FTA/MVPC (Section 5303)	134,194	6.6%
Haverhill Safety	20,000	1.0%
TOTAL (Transportation)	\$1,029,194	50.8%
MVPC TOTAL	\$2,023,284	

Source: MVPC's FY 2018 Budget #1: July 1, 2017 – June 30, 2018 (Approved 2/16/17)

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Equity Analysis
MVMPO 2013-2022 TIP Funded Projects
UPWP FFY 2011-2018 Studies

Community	% Funding 2018-2022 TIP	% Funding 2013-2017 TIP	# Regional/ Local/ Subregional UPWP Studies	≤ 80% of Med HH In-come¹	Minority Population ≥ 32%	Federal-Aid Roadway Centerline Miles (2015)	# Crash Clusters²	Total Pop.¹
Amesbury	9%	9%	7			32.98	1	16,907
Andover	0%	8%	8			78.02	5	34,616
Boxford	1%	0%	5			27.43		8,138
Georgetown	2%	3%	5			20.43		8,441
Groveland	4%	4%	4			17.31		6,646
Haverhill	51%	7%	20	Yes	Yes	79.88	13	62,079
Lawrence	3%	11%	20	Yes	Yes	41.54	12	78,804
Merrimac	0%	4%	6			15.95		6,601
Methuen	0%	39%	13	Yes	Yes	58.14	6	48,607
Newbury	4%	3%	7			27.11		6,854
Newburyport	4%	6%	19			23.09		17,766
North Andover	16%	3%	9			41.9	4	29,271
Rowley	0%	0%	4			19.4	1	6,081
Salisbury	7%	0%	5			28.22	1	8,672
West Newbury	0%	3%	9			19.59		4,427
Regionwide			2					
Total			143			530.99	43	343,910

¹ Data from American Community Survey 2011-2015. Information based on Census Tracts.
If one Census Tract in that community matched the criteria, then the community received a 'Yes'.

² MassDOT Crash clusters from 2012-2014 with EDPOs of >50.

Geographic Equity Analysis

The MVMPO examined the geographic and social equity of projects funded through the MVMPO as well as studies undertaken by the MVMPO. Haverhill, Lawrence and Methuen have been identified as Title VI and Environmental Justice (EJ) communities. The Title VI communities have Census Tracts with a higher percentage of minorities than the regional average and the same three communities are EJ communities with census tracts that have median household incomes that are 80% or less than the regional average.

Transportation Improvement Program

The table above shows the percentage of all federal transportation funding in the TIP spent per community. The analysis includes all projects on the MVMPO TIPs rather than just target funding, because while MassDOT is supporting several of our projects with statewide funding, these projects are regional priorities as outlined in our 2016 Regional Transportation Plan.

In the MVMPO's FFY 2018-2022 TIP, 55% of the funding is being programmed in Title VI and EJ communities. In FFY 2013-2017, 58% of the funding was programmed in Title VI and EJ communities. The three Title VI/EJ communities in the region have an estimated total population of 189,490, which is 55.1% of the regional population estimate.

Unified Planning Work Program

A total of 143 transportation studies have been included in the MVMPO's UPWPs between FFY 2011 and 2018. Of those studies, 37% were (or will be in FFY2018) conducted in Title VI/EJ communities.

The analysis also takes into consideration the number of federal aid roadway miles and the number of crash clusters between 2012-2014 with EDPOs of ≥ 50 . Thirty-four (34) percent of the federal aid roadway miles exist in Title VI and EJ communities. 58% of the crash clusters occurred in Title VI and EJ communities. The MVMPO has made it a priority to include studies in the UPWP that examine high crash areas. This is reflected in the UPWP studies to be undertaken in the FFY2018 UPWP, which are all either in or bordering Title VI/EJ communities. Additional studies are undertaken as part of local technical assistance in which our member communities ask for the MVMPO assistance with various transportation issues. This is reflected in the geographic distribution of studies among all MVMPO member communities.

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Merrimack Valley Planning Commission Staff

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

Karen Conard, Executive Director

Mary Kay Beninati, Senior Transportation Planner (100%)

Joseph Cosgrove, Environmental Program Manager (15%)

Jennifer Dunlap, Accountant

Betsy Goodrich, Transportation Planner (100%)

Anthony Komornick, Transportation Program Manager (100%)

Steve Lopez, GIS Specialist (40%)

Nancy Lavallee, Administration

Dan Ovalle, Data Collection Specialist (100%)

Michael Parquette, Comprehensive Planning Manager (10%)

Peter Phippen, Environmental Planner (10%)

Kelsey Quinlan, GIS Specialist (10%)

James Terlizzi, Senior Transportation Planner (100%)

Angela Vincent, Community Development Specialist (15%)

Jerrard Whitten, Environmental Planner/GIS Specialist (40%)

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

Local Technical Assistance Projects

<p>Truck Exclusion Application - Georgetown (2016) Transportation Element of Newbury Master Plan (2017) Boat Launch Concept Plan -West Newbury (2017) Transportation Element of Newbury Master Plan (2017) North Andover Downtown Parking Study (2015) Newburyport Chap.40R Traffic Impacts Analysis (2015) Green St./Merrimack St. Bike & Ped. Assess. (2014) Low St./Bashaw Way Intersection Analysis (2014) Newbury Plum Island Traffic and Parking Study (2013) Haverhill Consentino School Speed Zone Plan (2013) Route 108/Rte 110 Intersection Alignment (FFY 2012) Route 125 Pedestrian Crosswalk Analysis (FFY 2012) Route 113 Traffic Impact Review (FFY 2012) Parker St./Merrimack St. Intersect. Review (FFY 2011) Haverhill Street Light Ident.and Mapping (FFY 2011)</p>	<p>Improving Pedest. Access to Central Plaza (FFY 2010) Broadway/Lake St. Intersection in Haverhill (FFY 2010) Analyze Traffic & Safety Issues in Byfield (FFY 2010) Prepare PNF for Rte.133 Project in Boxford (FFY 2010) Willow Ave. Widening Review in Haverhill (FFY 2009) Saratoga St. One-Way Study in Lawrence (FFY 2009) Guard Rail Feasib. on Pelham St in Methuen (FY 2008) Rt. 125/Cushing Ave. Intersect. Study, Haverhill (2008) Bradstreet Property Trail Mapping, Rowley (2008) Lawrence Five Corner Intersection Analysis (2007) Merrimac Traffic Impact Study Review (2007) Haverhill Lafayette Sq. Traffic Impact Review (2007) West Newbury Four-Way Stop Sign Analysis (2006) Storey Avenue Traffic Impacts, Newburyport (2007) Lawrence Industrial Park Rail Siding (2007-2013)</p>
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Transportation Studies

<p>Route 28/Route 213 Ramps RSA in Methuen (2016) Route 110/Lowell Ave./McDonalds Dr. RSA in Haverhill (2017) Route 28/Route 213 Ramps RSA in Methuen (2016) Route 1 Rotary Health Impact Assess. In Newburyport (2016) Park St./Lawrence St. RSA in Lawrence (2014) Methuen Square Traffic Study (ongoing) Haverhill Railroad Ave./River St./Moulton Way Study (ongoing) Lawrence Project Development (2013) I-495 Ramps/Mass. Ave. Intersect. Study, N. And. (2014) Marston's Corner Intersection Study, Methuen (2013) Haverhill St. Corridor Study, Methuen (2013) M&L Branch Trail Feasibility Study, Lawrence (2012/3) Lafayette Square Safety Study, Haverhill (2012) Rte 113/Rte 95 Interchange RSA, Nbprt. (2012/3) Rte 213/Rte 28 Interchange RSA, Methuen (2012/3) Rte 1/Merrimack St. Intersect. RSA, Newburyport (2012/3) Elm St./Rte 1 Intersection Study, Newbury (2012) Broad St./Rte 495 Interchange Study, Merrimac (2012/3) Route 28 Congestion Analysis, Methuen (2012) Merrimack River Trail Reconnaissance Study (2011) Milk St./Route 113 Intersection Study, Methuen (2011) Georgetown Branch Rail Trail Feasibility Study (2011)</p>	<p>Andover St./Rte. 114 RSA, Lawrence (2011) Water St./Broadway RSA, Lawrence (2011) MVMPO 2012 Regional Transportation Plan (2011) Winter St/White St. Intersect. Study, Haverhill (2010) Georgetown Square Intersection Study (2010) Route 1/Route 133 Intersection Study, Rowley (2010) Merrimac St/Spofford St Study, Newburyport (2010) Rte. 114 Corridor Study, Lawrence/N. Andover (2010) Ames St./Haverhill St. Intersection Study (2009) Main St. Corridor Study, Haverhill (2009) Chickering Rd/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) Rte. 1/March Rd. Intersection Study, Salisbury (2005) Rte. 125/Merrimack Street Intersection Study (2005) Route 93 Corridor Traffic Study (2005) MVMPO 2003 Regional Transportation Plan MVMPO Environmental Justice Study (2003)</p>
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Acronyms Used in FFY 2018 UPWP

ABP:	Accelerated Bridge Program	MEPA:	Massachusetts Environmental Policy Act
ADA:	Americans with Disabilities Act	MOU:	Memorandum of Understanding
BOS:	Bus on Shoulder	MPO:	Metropolitan Planning Organization
CAAA:	Clean Air Act Amendments of 1990	MVMPO:	Merrimack Valley Metropolitan Planning Organization
CEDS:	Comprehensive Economic Development Strategy	MVPC:	Merrimack Valley Planning Commission
CIP:	Capital Investment Plan	MVRTA:	Merrimack Valley Regional Transit Authority
CMP:	Congestion Management Process	MVTC:	Merrimack Valley Transportation Committee
CMAQ:	Congestion Mitigation/Air Quality Program	NHPP:	National Highway Performance Program
CHNA:	Community Health Network Area	NHS:	National Highway System
CTPS:	Central Transportation Planning Staff	NMCOG:	Northern Middlesex Council of Governments
DEP:	Department of Environmental Protection	NTD:	National Transportation Demand
DCR:	Dept. of Conservation and Recreation	PGS:	Priority Growth Strategy
DLTA:	District Local Technical Assistance Program	PGS:	Priority Growth Strategy
E & D:	Elderly and Disabled	PL:	Planning Funds (FHWA)
EDA:	Economic Development Administration	PPP:	Public Participation Plan
EIR:	Environmental Impact Report	PSAC:	Project Selection Advisory Council
EPA:	Environmental Protection Agency	RIF:	Massachusetts Road Inventory File
FAST:	Fixing America's Surface Transportation Act	RPC:	Rockingham Planning Commission
FHWA:	Federal Highway Administration	RTP:	Regional Transportation Plan
FTA:	Federal Transit Administration	SAFETEA-	Safe, Accessible, Flexible, Efficient LU
GIS:	Geographic Information Systems	SPR:	State Planning and Research Program
GHG:	Greenhouse Gas	STIP:	State Transportation Improvement Program
HOV:	High Occupancy Vehicle	STP:	Surface Transportation Program
HPMS:	Highway Performance Monitoring System	TAP:	Transportation Alternatives Program
HSIP:	Highway Safety Improvement Program	TEA-21	Transportation Equity Act for the 21st Century
ISTEA:	Intermodal Surface Transportation and Efficiency Act of 1991	TDM:	Transportation Demand Management
ITS:	Intelligent Transportation Systems	TMA:	Transportation Management Area
LEP:	Limited English Proficiency	TIP:	Transportation Improvement Program
LRTA:	Lowell Regional Transit Authority	UPWP:	Unified Planning Work Program
MAP:	Mobility Assistance Program	3C:	Continuing, Comprehensive, and Cooperative (transportation planning process)
MAP-21:	Moving Ahead for Progress in the 21st Century Act	8T&TGM:	Eight Towns and the Great Marsh
MAPC:	Metropolitan Area Planning Council		
MARPA:	Mass. Assoc. of Regional Planning Agencies		
MassDOT:	Massachusetts Department of Transportation		

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**TASK 1.0 - MANAGEMENT AND SUPPORT OF THE 3CTransportation Planning
Process**

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Task 1.1 - Program Management and Support

Description

Program Management and Support activities include tasks that are necessary to maintain the federally prescribed 3C transportation planning process in the MVMPO 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 MVPC staff participation in ongoing transportation studies & analyses being undertaken in the region or in surrounding MPO regions.

Previous Work

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 MVRTA. MVPC also prepared newsletters and annual reports, and provided information to the press. This task also provides resources 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 adjacent regions or supporting groups associated with the implementation of major roadway, bridge or transit projects.

In FFY 2017, FHWA and FTA jointly conducted the Planning Certification Review for the Merrimack Valley MPO. The results, recommendations and findings coming from this review will begin to be addressed under the FFY 2018 and subsequent UPWPs. MVPC also participated in the USDOT Planning Certification Review that for the Northern Middlesex MPO that was held in December 2016.

At the local level, staff is a member of and attends Haverhill Traffic and Safety Committee and Newburyport Traffic and Safety Committee meetings.

FFY 2018 Activities

Each of the activities described below will be performed by the MVPC since this agency is designated as the MVMPO's transportation planning staff. A breakdown of Program 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. This includes such documents as the Federal Transportation Authorization legislation, the Commonwealths' State Rail and Freight plans, weMove Massachusetts, GreenDOT Implementation Plan, Transportation Bond Bills, Beyond Boston Transit Study, and MassDOT's Capital Invest-

ment Plan. Chapter 40 Section 54A reviews of development projects proposed for abandoned rail lines in the region would also be performed under this task as would staff attendance at workshops sponsored by MassDOT or USDOT.

- 1.1.2 *Coordination of Regional Transportation Planning Activities:* The MVMPO 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 and the Merrimack Valley Regional Coordinating Council. Staff will also stay apprised of activities being undertaken by the Merrimack Valley TMA in its efforts to relieve congestion in and around Greater Lawrence and the Lowell Junction area of Andover.
- 1.1.3 *Preparation of Newsletter Articles and 2017 Annual Report Articles:* Transportation staff will prepare articles for inclusion in the MVPC newsletter, which will be published quarterly during the period, and for the MVPC's 2017 Annual Report. This latter document will be prepared in the period from December 2017 through March 2018.
- 1.1.4 *Contract Administration:* Prepare time sheets, monthly and quarterly 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 such as staff meetings.
- 1.1.5 *CMAQ Consultation Committee:* Under this task, MVPC staff will review the project descriptions, Air Quality analyses, and other materials to be considered by the state's CMAQ Consultation Committee and attend/participate in Committee meetings.
- 1.1.6 *Attend Meetings of MVPC and MassDOT District 4 Staff:* MVPC transportation planning staff will prepare for and attend meetings with MassDOT District 4 personnel to discuss the status of MVMPO region roadway and trail projects, project programming issues, and other transportation-related topics.
- 1.1.7 *MVMPO Participation in Other Regional Studies/Analyses:* MVPC staff will also continue to attend meetings of the following groups, if scheduled: Tri-Community Planning Task Force, Tri-Town Project Coordinating and Participating Agency Group, the Whittier Bridge Project Working Group, and the Lawrence Area-Wide Brownfields Planning Grant.
- 1.1.8 *Attend Transportation Program Managers Meetings:* The Transportation Program Managers Group serves as a primary forum for the exchange of information between the Metropolitan Planning Organizations, MassDOT and USDOT. MVPC staff will be represented at meetings of this group, which generally occur monthly.
- 1.1.9 *MVMPO Participation on Community Committees:* MVMPO will participate on local traffic and safety committees, road committees, and other groups that have been created to

address transportation issues in the Valley.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Fed. State Programs												
Regional Coordination												
Newsletters/Ann. Rpt.							•					
Contract Admin.												
CMAQ Consultation												
District 4 Meetings												
Part. Other Studies												
Program Managers												
Local Committees												
• Product/Event												

Funding

Funding for Task 1.1 Program Management and Support		
Source	Person Hours	Amount
FHWA	423	\$53,492
MassDOT	106	\$13,373
FTA Section 5303	207	\$23,656
FTA Section 5307	42	\$4,480
MVPC	62	\$7,034
TOTAL	841	\$102,035

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Task 1.2 - Public Participation Process

Description

An essential component of the federal transportation planning legislation requires that MPOs involve the public in all levels of the transportation planning process. The MVMPO's public participation process is designed to ensure that key public agencies at all levels of government, private and nonprofit organizations, MPO Stakeholders, and interested citizens are both kept apprised of the development of important MPO documents such as the Regional Transportation Plan, the Transportation Improvement Program, and the Unified Planning Work Program and provided with the fullest access to all the transportation planning milestones in the region.

Key participating groups in this process are the MVMPO members, the MVMPO Transportation Committee and its Nondiscrimination Working Group, the MVPC, and the MVRTA Advisory Board. However, MVPC-sponsored meetings of local elected officials, the Merrimack Valley Mayors and Managers Coalition (MVMMC) and its subsidiary DPW Directors Subcommittee, regional planners, and area legislators are also important. Through these and the MVPC website, information concerning the status of transportation planning and construction projects as well as transit services in the region are presented and reviewed.

Previous Work

The MVMPO created and adopted a regional Public Participation Plan in the summer of 2007, which was subsequently updated by the MPO in 2010. Under the FFY 2016 UPWP, staff completed major revisions to the above document. Many of these were made in response to guidance that the MVMPO has received from FHWA and MassDOT and are designed to more actively involve the region's Title VI/Environmental Justice/Limited English Proficiency populations in the transportation planning process.

In 2017, the MVMPO amended its Public Participation Plan to reduce the review and comment period needed to adopt/amend its Regional Transportation Plan, Transportation Improvement Program, and Unified Planning Work Program.

MVPC staff prepared numerous public notices and press releases for local newspapers and boards announcing MVMPO meetings, MVTC meetings, and Public Hearings to receive input on MVMPO documents. The MVMPO continued to expand the MVMPO's Stakeholder list, which forms the foundation of this process, and modified its electronic outreach procedures to provide more information that can be used in both measuring how well this form of communication is performing and to streamline the management of the Stakeholders List.

MVPC staff continued supporting its Mayor's and Managers Coalition as well as meetings of a subcommittee of that group, the DPW Directors. This group has and will continue to play a key role in the Merrimack Valley Stormwater Collaborative, a group formed through funding provided through a Commonwealth Community Innovation Challenge Grant (see Task 3.7). Staff also continued to work with the DPW Directors in implementing a software package that can be used by local DPWs to track progress on work orders.

FFY 2018 Activities

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

Tasks

- 1.2.1 *Continued Analysis of the Implementation of the Public Participation Plan (PPP):* Staff will continue evaluating the effectiveness of specific PPP components; review PPP Best Practices information among MPOs in general and propose/adopt PPP modifications, if required.
- 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.
- 1.2.3 *Implement Public Participation Process:* Staff will prepare public notices, announcements, documents, presentations and educational tools to be circulated at MVMPO, MVTC and other meetings, posted on MVPC website / social media, or distributed by mail, newspapers or other media as outlined in the MVMPO's Public Participation Plan.
- 1.2.4 *Distribute Required Documents:* MVPC staff will distribute TIP, RTP, and UPWP documents as well as any amendments to these documents in a manner consistent with the MVMPO PPP.
- 1.2.5 *Host Meetings of Merrimack Valley Mayors and Managers Coalition and Area Legislators:* MVPC staff will host and/or attend these meetings to discuss important transportation issues. This task will also contain some staff time devoted to supporting the Mayors and Managers Coalition's DPW Directors Subcommittee.
- 1.2.6 *Merrimack Valley Transportation Committee/Nondiscrimination 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 MVTC Nondiscrimination Working Group. This includes scheduling of meetings, preparation of agendas and meeting materials. As the Nondiscrimination Working Group is a subgroup of the MVTC, the MVMPO staff may choose to circulate Working Group materials to Working Group members in advance of an MVTC meeting and propose acting upon Working Group items at MVTC meetings to conserve participants' time and to encourage participation.
- 1.2.7 *Hold MVMPO Meetings:* MVPC staff will provide administrative and technical support to the MVMPO and host meetings of the organization. This task includes scheduling meetings, preparation and distribution of meeting agendas, minutes, and other materials.
- 1.2.8 *Monitor/Participate in MPO and Transportation Committee Meetings for Surrounding MPOs:* Under this task, MVPC staff will attend certain meetings of the Boston, Northern

Middlesex, Rockingham and Nashua MPOs including policy and technical committee meetings. Staff may also attend meetings of other MPOs within the Boston Urbanized Area (UZA), although it is anticipated that this will occur less frequently. Staff will also review the materials prepared by these MPOs to ensure the coordination of all transportation-planning activities. Along with Task 1.2.10 below, this task will address the federal requirement for interregional transportation planning coordination.

1.2.9 *Participate in Northern Boston UZA Meeting:* This group is comprised of transportation staff from the Boston, Northern Middlesex and Merrimack Valley MPOs and meets annually to discuss transportation matters (e.g. projects, data availability, etc.) that cross MPO boundaries.

1.2.10 *Adoption of New MOU's:* MVPC staff will participate in the process of developing and securing MVMPO endorsement of a new Memorandum of Understanding between all MPOs within the Boston Urbanized Area as was redefined based on the results of the 2010 U.S. Census.

1.2.11 *Update Transportation Web Pages of MVPC Website and Facebook Transportation Page:* MVMPO staff will continue to update and maintain the transportation content at www.mvpc.org and the MVPC Facebook Transportation page.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Analyze Process												
Update Outreach List												
Public Part. Process												
Distribute Documents												
Meetings MVPC: Other												
MVTC Meetings		•			•			•			•	
MVMPO Meetings												
Attend Other MPOs												
North Boston UZA												•
Boston UZA MOU												
Trans. Web Pages												

• Product/Event

Funding

Funding for Task 1.2 Public Participation Process		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	393	\$45,680
MassDOT	98	\$11,420
FTA Section 5303	177	\$19,904
FTA Section 5307	0	0
MVPC	44	\$4,976
TOTAL	712	\$81,980

Task 1.3 – Unified Planning Work Program (UPWP)

Description

The Unified Planning Work Program (UPWP) 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 MVPC transportation staff within that agency's role as the transportation staff for the MVMPO. 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 staff produced draft and final versions of previous MVMPO UPWPs.

FFY 2018 Activities

Under this task in the coming program year the MVPC, in accordance with responsibilities defined in the Memorandum of Understanding for the MVMPO, will prepare the FFY 2019 UPWP for the region. The MVPC will also amend the FFY 2018 document as needed to reflect changes that may occur during the program year.

Tasks

- 1.3.1 *Develop FFY 2019 Unified Planning Work Program:* The MVPC will develop the FFY 2019 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 2018 UPWP:* Performed as necessary. Amendments to the UPWP shall adhere to the following procedures:

Formal MPO Endorsement Process: These include the addition of a new task and/or deletion of a previously programmed task.

Administrative Adjustment: Minor revisions such as changes to the existing level of effort of tasks and procedures within the current contract/grant may be made as an administrative adjustment with the mutual consent of MassDOT and FHWA. An administrative adjustment will not require a formal MPO endorsement.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Draft/Final 2018 UPWP							•	•		•		
Amend 2017 UPWP												
• Product/Event												

Funding

Funding for Task 1.3 Unified Planning Work Program		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	89	\$11,040
MassDOT	22	\$2,760
FTA Section 5303	34	\$4,088
FTA Section 5307	0	\$0
MVPC	8	\$1,022
TOTAL	153	\$18,910

Task 1.4 - Transportation Improvement Program (TIP)

Description

The TIP serves as 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 project listing, MPOs must demonstrate in the document that there is sufficient funding available to construct these projects and that the existing transportation infrastructure is being adequately maintained.

Previous Work

MVPC staff worked in cooperation with MassDOT's Highway Division District 4 and its Office of Transportation Planning to produce the FFYs 2017-2021 TIP including the application of the Transportation Evaluation Criteria to projects being considered for inclusion in that document.

MVPC staff also continued to update its database of roadway and transit projects that was used to develop the MVMPO's FFYs 2017-2021. Staff continued to conduct qualitative or quantitative assessments of each TIP project's Greenhouse Gas (GHG) Emissions.

The region's FFYs 2017-2021 TIP was developed using MassDOT's *GrantsPlus* transit project and grant management system, which is also being used in the development of the region's FFYs 2018-2022 TIP. The *GrantsPlus* system relies on the Regional Transit Authorities to provide MassDOT with the capital projects they propose to build over the next five fiscal years using FTA Section 5307 federal funds and state matching funds. MassDOT's Rail and Transit Division then reviews these requests and provides the MPOs with a listing of projects that could be built given available state matching funds.

Under the FFY 2017 UPWP, MVPC transportation staff worked in cooperation with the Metropolitan Area Planning Council to have Merrimack Valley region communities become eligible for the latter's program to purchase bicycle racks/parking structures.

FFY 2018 Activities

MassDOT and the other MVMPO members 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 FFYs 2019-2023TIP.

MVPC will continue to complete GHG emissions evaluations for those roadway and bridge projects that appear in Appendix A and Appendix B of the TIP.

Tasks

- 1.4.1. *Develop Five-year Program of Projects:* In developing the Draft FFYs 2019-2023 TIP, staff will update the list of all transit and highway projects that could possibly receive federal transportation funds for planning, engineering, and 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.

This five-year list of projects shall include the following information:

- a. Project title;
- b. Project description;
- c. Project evaluation score based on the MVMPO staff'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. Identification of the intent to use Advance Construction method of funding, when approved;
- h. Proposed source of funding (federal and non-federal);
- i. Identification of the recipient/subrecipient and state and local agencies responsible for carrying out the project, and
- j. Quantitative or Qualitative evaluation of each roadway and bridge project's GHG emissions.

Project descriptions shall be of sufficient detail to adequately describe the scope of the project and 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 MVMPO.

Also, all project construction cost estimates will be adjusted to reflect their anticipated levels in the fiscal year that they are programmed to be advertised. To accomplish this, baseline construction cost estimates will be increased by 4% per year until the fiscal year they are programmed.

1.4.2. *Preparation of MVMPO Region Draft FFYs 2019-2023 TIP:* The following tasks and procedures will be performed by the MVPC transportation planning staff in developing the Draft FFYs 2019-2023 TIP:

- Insure early involvement of local legislators, chief local officials, MVMPO Stakeholders, 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 District 4 Project Engineer, MVRTA Administrator, MassDOT Rail and Transit Administrator, and the Office of Transportation Planning in developing project information.

The Draft FFYs 2019-2023 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 the FAST Act;
- d. The criteria and process for prioritizing projects;
- e. The Financial Plan that compares revenue needs to revenue sources for highway and transit programs;
- f. Evaluation of how the region is programming transportation funding to maintain the existing transportation network;
- g. Description of the transit funding provisions in The FAST Act, and
- h. The GHG emissions associated with each project appearing in the FFYs 2019-2023 elements of the document

1.4.3. *Endorsement of FFYs 2019-2023 TIP:* After the completion of the required public review and comment as outlined in the region’s Public Participation Plan, the MVMPO will endorse the region’s FFYs 2019-2023TIP in late May or June of 2018.

1.4.4. *Amendments to MVMPO’s FFY 2018-2022 TIP:* The MVMPO will endorse amendments to the region’s FFYs 2018-2022 TIP as needed throughout FFY 2018.

1.4.5. *Review Reports on Advertised Projects:* MassDOT provides quarterly reports to the Massachusetts Association of Regional Planning Agencies (MARPA) concerning the status of planned and advertised road and bridge projects. This information is usually disseminated and discussed at quarterly meetings of MassDOT staff, RPA Directors, and RPA Transportation Program Managers. Attendance of MVPC transportation staff at these meetings and the review of the information presented in these reports will be performed under this task.

1.4.6. *Project Evaluation Criteria:* As part of Chapter 46 of the Acts of 2013, the Legislature created the Project Selection Advisory Council (PSAC) that was charged with the responsibility of developing the uniform project selection criteria to be used in the development of a comprehensive state transportation plan. These new criteria were developed in 2015 and applied to the universe of MassDOT projects/project proposals as part of the preparation of the 2017-2021 and 2018-2022 CIPs. MVPC staff has and will continue working with MVMPO members to determine how and whether the PSAC’s new criteria can be incorporated into its own transportation project evaluation process. Staff will also work with MassDOT to annually update the transportation project evaluation scores for roadway and trail projects in the MVMPO region.

- 1.4.7. *CMAQ Consultation Committee*: Under this task, MVPC staff will prepare CMAQ project descriptions and complete mandated Air Quality impact evaluations needed by the state’s CMAQ Consultation Committee.
- 1.4.8. *Publish List of Projects for Which Federal Transportation Funds Were Obligated in FFY 2017*: By January 1, 2018, the MVMPO will develop and make available to the public a list of the transportation projects that federal funds were obligated to in FFY 2017.
- 1.4.9. *Continue Support Regional Bike Parking and ADA Ramp/Sidewalk Programs*: In many years, substantial amounts of MVMPO target CMAQ and TAP funds are not obligated in the region’s TIP. Given the need to improve bicycle parking facilities in the region and improve sidewalks, it may be possible for the MVMPO, working in cooperation with local officials, to develop programs that could channel these funds to such projects. MVPC staff will continue to work with District 4 staff and the Office of Transportation Planning to identify the type of projects that could be developed to make use of any available CMAQ and/or TAP target funding.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
5- Year Prog. Projects						•						
Draft 2019-2023 TIP							•					
Final 2019-2023 TIP								•				
Amend 2018-2022 TIP												
Advertised Projects												
Evaluation Criteria						•						
CMAQ Analyses												
List of Obligated Projs.			•									
Bike & Ped. Projects												

• Product/Event

Funding

Funding for Task 1.4 Transportation Improvement Program		
Source	Person Hours	Amount
FHWA	265	\$28,352
MassDOT	66	\$7,088
FTA Section 5303	50	\$5,520
FTA Section 5307	0	\$0
MVPC	13	\$1,380
TOTAL	394	\$42,340

Task 1.5 – Title VI/Environmental Justice/Limited English Proficiency Activities

Description

The MVMPO's Nondiscrimination Program activities relate to its status as 1) a direct recipient of USDOT planning funds, and 2) through provision of its technical assistance to the Merrimack Valley Regional Transit Authority or MVRTA (a FTA direct funding recipient). Accordingly, certain tasks contained in each MVMPO UPWP are also part of MVRTA documents prepared and submitted by the MVRTA each federal fiscal year (FFY).

The MVMPO performs this task to raise awareness and integration of Transportation Equity / Environmental Justice (TE/EJ) principles and needs in the MVMPO's transportation planning and programming activities as well as in the MVPC's overall Program work. As in previous years, MVPC Staff will continue outreach efforts to minority, low-income, Limited-English-Proficiency, disabled, and elder populations. It accomplishes much of this work through its staff support to the MVRTA (see UPWP Tasks 3.1 and 3.2). For FFY 2018 and beyond, staff proposes to maintain efforts initiated in prior FFYs to integrate TE/EJ awareness through community outreach, specific analyses and reporting in its 3C process, a trend consistent among Federal, Commonwealth and MPO organizations in general.

Previous Work

In FFY 2015 the MVPC Staff continued implementing Title VI/EJ/LEP monitoring and outreach activity improvements recommended at the MPO's April 2013 Certification Review. It also met with MassDOT's Office of Diversity and Civil Rights in Winter 2015 to review MVMPO progress in achieving MassDOT-recommended FFY 2014 tasks and to receive MassDOT's FFY 2015 Title VI Work Plan.

MVPC Staff submitted an FFY 2015 Title VI Annual Report to MassDOT in July 2015. The MVMPO's 2017 Title VI Report will be submitted to MassDOT in September. Also in FFY 2017, staff incorporated minority population, income and language information from the 2011-2015 American Community Survey.

FFY 2018 Activities

MVPC Staff proposes to implement its FFY 2018 Title VI/Nondiscrimination Work Plan by performing the following tasks:

Tasks

- 1.5.1 *Staff Training and Coordination with MassDOT and USDOT:* MVPC Staff will attend seminars, workshops, and other training sessions such as webinars sponsored by USDOT and/or MassDOT to improve the quality of the MVMPO's own Title VI/EJ/LEP monitoring procedures. MVPC Staff will continue coordinating with other Massachusetts MPOs to share nondiscrimination best practices information, and will arrange for in-house trainings and meetings as requested by MassDOT.

- 1.5.2 *Monitoring Regional Protected Population Facts/Trends/MVMPO Outreach and Inclusion Effectiveness:* The MVMPO identifies low-income populations in its region as those living in households at or below 80% of regional median household income (AMI). MVPC staff reaffirmed its use of this standard in a March 2014 analysis, but a 2017 survey of other Massachusetts MPO's low income population definitions showed that the MVMPO includes people with higher household incomes. The staff will continue to monitor this standard's appropriateness in FFY 2018.
- 1.5.3 *Reviewing TIP Projects/UPWP Studies and Perform 'Benefits and Burdens' Analyses:* MVPC Staff will continue to prepare 'Benefits and Burdens' analyses to determine how individual projects or programs affect the region's minority, low-income, limited English-proficient, and other protected populations.
- 1.5.4 *Data Collection:* MVPC Staff will continue to update its socioeconomic data including data for the region's protected populations and will provide this information in its regular reporting cycles to MassDOT. Staff will also review the new GIS data layers that are expected to be released by MassDOT in FFY 2018.
- 1.5.5 *Translating MVMPO Documents/Materials:* MVPC Staff will continue to translate all or portions of its documents and will continue preparing process or document Fact Sheets in Spanish and in Chinese. It will also continue to post materials in languages other than English on electronic media and hard copies at various locations. It will conduct this task in accordance with the MVMPO Public Participation Plan.
- 1.5.6 *Elevating Accessibility:* MVPC Staff will purchase or secure use of equipment and/or services that maintain and/or enhance MVMPO program accessibility. The Title VI Coordinator will also continue coordinating with the MVPC Office Administrator on MVPC facility, policy, and program accessibility. As requested by MassDOT, the Title VI Coordinator will arrange for in-house accessibility training.
- 1.5.7 *Interacting with MVMPO Region Constituent Groups.* MVPC Staff will continue this work, including preparation and circulation of information as outlined in its Public Participation Plan in all MVMPO communities to increase potential for participation in the MVMPO planning process by protected populations including Title VI and EJ targeted populations as well as the disabled, elders, etc.
- 1.5.8 *Preparing Title VI Annual Report Submission to MassDOT:* MVPC Staff will prepare this report to summarize MVMPO Title VI/Nondiscrimination Program activities in the previous year. The content of the Annual Report will follow MassDOT guidance, expected to be released in spring 2018.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Staff Training								•				
Demographic Trends												
Benefits & Burdens						•						
Data Collection												
Translate Documents						•			•			
In-house Accessibility												
Outreach to Local Grps.												
Title VI Annual Report												•

• Product/Event

Funding

Funding for Task 1.5 Title VI / Environmental Justice / LEP		
Source	Person Hours	Amount
FHWA	95	\$10,040
MassDOT	24	\$2,510
FTA Section 5303	64	\$7,280
FTA Section 5307	0	\$0
MVPC	16	\$1,820
TOTAL	199	\$21,650

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Task 1.6- Regional Transportation Plan

Description

The MVMPO Regional Transportation Plan (RTP) is the most important element in the region's 3C planning process. It comprehensively examines the existing transportation network in the region, identifies those issues and problems that either require or will require improvement, and recommends actions designed to facilitate these improvements. All major forms of transportation in the region are considered and the document 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

The MVMPO prepared its FFY 2016 RTP under the FFY 2015 UPWP. This document is the first MVMPO RTP that incorporates the application of performance and outcome-based techniques and programs in the evaluation and management of the region's transportation capital assets.

In FFY 2017, MVPC revised the process used to collect information on proposed, planned, permitted, and built developments in the region.

FFY 2018 Activities

The Merrimack Valley MPO is obligated to adopt a new Regional Transportation Plan in spring 2019. However, data collection, socioeconomic projections and other analyses must be prepared well in advance of that date if they are to be presented to the public as part of the RTP development and review process.

In FFY 2018, MVPC staff will continue to apply its revised process for collecting information on proposed, planned, permitted, and built developments in the region. It is anticipated that this information will again be incorporated into MAPC's Regional Land Use Model, which includes most of eastern Massachusetts, and will be an important tool in generating the socioeconomic projections that will be used in the RTP.

It is the intent of MassDOT and the MPOs around the state to develop the socioeconomic and land use projections to be used in the upcoming RTP by summer 2018.

Staff will continue to use FHWA's Invest software to evaluate the effectiveness of its existing RTP in promoting sustainable development in the region.

Tasks

- 1.6.1 *Monitor Status of Local Development Projects and Proposals:* Staff will continue to work with community planners, development directors and planning boards to identify readily accessible sources of information that can be monitored to track the progress of developments around the region.

- 1.6.2 *Socioeconomic Projections*: MVPC staff will participate in MassDOT's proposed process for developing socioeconomic projections for the MPOs in the state. MassDOT has formed a Projections Committee to work closely with the MPOs to ensure there is input from all regions to facilitate the creation of a projections methodology and subsequent review guidelines for the draft forecasts. MVPC staff will monitor the progress of this committee and provide data and other inputs as needed.
- 1.6.3 *Invest Software*: Also, MVPC will be using the INVEST software to complete an assessment of how well its current Regional Transportation Plan is supporting sustainable development in the region. This process was begun under Task 2.9 of the MVMPO's FFY 2017 UPWP. The results of this analysis will guide the MPO in developing its FY 2020 RTP.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Monitor Developments								•				
Socioeconomic Proj.												
Invest Software Anal.					•							
	• Product/Event											

Funding

Funding for Task 1.6 Regional Transportation Plan		
Source	Person Hours	Amount
FHWA	162	\$17,632
MassDOT	41	\$4,408
FTA Section 5303	30	\$3,520
FTA Section 5307	0	\$0
MVPC	8	\$880
TOTAL	241	\$26,440

TASK 2.0- DATA COLLECTION AND ANALYSIS ACTIVITIES

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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. Using Automatic Traffic Recorder (ATR) counting equipment, the MVPC has annually gathered traffic volume information on roadways throughout the region since 1983. These counts are taken for several 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.

In addition to the ATR counts described above, MVPC staff manually collects vehicle turning movement counts at intersections/interchanges as well as information on bicycle and pedestrian travel.

Previous Work

Under the FFY 2017 UPWP, MVPC completed approximately 100 traffic counts. Many of these counts were taken at locations needed to better calibrate the regional traffic model. At the same time, MVPC produced Community Traffic Counting reports that were distributed to local officials.

MVPC has 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 the 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.

Since 2013, MassDOT has been contracting with Midwestern Software Solutions (MS2) to manage and administer its traffic data library rather than handling these functions itself. As part of this arrangement MVPC staff has been reporting traffic counting data directly to MS2 rather than to MassDOT.

FFY 2018 Activities

Under this year's UPWP, MVPC again anticipates conducting approximately 100 ATR traffic counts. In addition, MVPC staff is seeking to obtain equipment that will allow it to automatically collect data on bicycle and pedestrian travel volumes to better monitor these two important travel modes.

Tasks

- 2.1.1 *Conduct MVPC Counts:* Conduct counts throughout the region to refine and update the traffic database with emphasis on those locations added through the creation of new links to the traffic model. The MVPC plans to conduct 70 counts for these purposes in FY 2018.
- 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 15 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 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:* All counts taken by the MVPC in FFY 2018 will be uploaded to the Midwestern Software Solutions (<http://www.ms2soft.com/>) website. MassDOT has recently proposed having this data upload process occur in the field rather than from the MVPC Offices.
- 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 *Bicycle and Pedestrian Travel Data:* Staff will collect bicycle and pedestrian counts along key on-road and off-road facilities in the Valley and at locations previously counted as part of MVPC intersection/corridor studies and mine the data contained in such studies prepared by consultants to support the development of a bicycle/pedestrian travel database.

Staff will also obtain a bicycle and/or pedestrian traffic recording device (or devices) and begin to collect volume information at selected monitoring locations in the region such as rail trails, arterial roadways, etc.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Data Collection												
Count Library												
Data Submittal												
Community Reports												
Bike/Ped Counts												
• Product/Event												

Funding

Funding for Task 2.1 Traffic Monitoring Program		
Source	Person Hours	Amount
FHWA	708	\$54,880
MassDOT	177	\$13,720
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	885	\$68,600

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Task 2.2 –Regional Pavement Management Program

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 usually found in the road right of way. These typically include sidewalks, water and sewer lines, streetlights, fire hydrants, storm drains and, in some cases, even electric boxes.

Previous Work

During FFY 2015, MVPC collected information on the condition of pavement on federal aid arterial and collector roadways in the region to identify the level of funding needed to maintain the quality of these facilities over the next 25 years. This analysis, which was included in the MVMPO's FY 2016 RTP, showed that \$195 million in roadway resurfacing/reconstruction projects would be needed over the next 25 years to maintain the non-interstate federal-aid roadways in the Valley at 2015 levels.

Also in FFY 2015, MVPC assisted the City of Haverhill in updating its pavement management program and expanding it to also consider the condition of all sidewalks.

In FFY 2016, MVPC provided the pavement condition information gathered by MVPC staff in 2015 to community DPW Directors to assist them in the maintenance of their locally maintained federal aid roadways.

FFY 2018 Activities

Similar to the approach being taken in Task 1.6, MVPC will collect information on the condition of pavement on federal aid arterial and collector roadways in the region in FFY 2018 for use in the FY 2020 RTP. This data will be used to identify the level of funding needed to maintain the quality of these facilities over the next 20 years.

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 *Review Latest Development in Pavement Data Collection and Analysis:* Many communities in the Commonwealth are beginning to utilize automated means of collecting road

surface condition data rather than using traditional ‘windshield’ surveys. This data collection method, while more costly, can be completed in a fraction of the time that it takes to collect this data by hand. Staff will continue to review available information on these technologies to determine if they have applicability for the region’s Pavement Management Program.

- 2.2.3 *Modify MVPC’s Pavement Management Program:* Under the NHS Pavement and Bridge Conditions Final Rule, FHWA has established Performance Measures that must be used in evaluating pavement on Interstate and Non-Interstate NHS roadways. Staff will incorporate the new measures into its CarteGraph pavement management software before pavement condition data is collected on the region’s non-interstate federal aid roadways.
- 2.2.4 *Data Collection:* Pending the findings of Tasks 2.2.2 and 2.2.3 above, staff will collect pavement condition data on the non-interstate federal aid roadways in the region.
- 2.2.5 *Attend Meetings of the Pavement Management Users Group:* Staff will attend meetings of the Pavement Management Users Group.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Community Assistance												
Review Data Collection												
Modify MVPC Program												
Data Collection												
Users Group Meetings												
●Product/Event												

Funding

Funding for Task 2.2 Pavement Management Studies		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	334	\$29,120
MassDOT	83	\$7,280
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	417	\$36,400

Task 2.3 - Geographic Information Systems

Description

The MVPC 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 several transportation-related issues, which have resulted in the creation of the following:

- *Traffic Viewer* for the MVPC website, which allows the public to access the MVPC's traffic counting and crash databases;
- A process to develop intersection and roadway improvement plans in GIS-compatible formats;
- GIS-based tool to assist staff in assigning locations to MassDOT crash reports
- Mapping tool that allows MVPC Transportation Staff to directly access and modify data contained in the Agency's GIS transportation databases;
- Application that integrates the collection of pavement condition data into both CarteGraph and MVPC's GIS Databases;
- Maps that were used in the development of the MVMPO's FFY 2016 Regional Transportation Plan, its TIPs; and the MVPC's Title VI/Environmental Justice/Limited English Proficiency analyses;
- MVRTA route and system maps and updates;
- Updated digital aerial imagery used in regional transportation studies;
- Methodology to identify location of sidewalks using aerial imagery and MassDOT Road Inventory File data, and
- Mapping location of stormwater outfall pipes along public roadways.

In addition, MVPC worked with 14 member communities and one New Hampshire community to contract with Pictometry for a spring 2017 flyover of the area to acquire new digital aerial imagery.

FFY 2018 Activities

MVPC staff will again be assisting local communities in managing their digital aerial photography databases. This work 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 are working with the product.

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.

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 MassDOT's Office of Transportation Planning, its Highway Division, MVRTA, 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 continue to 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 *Maintain Trails Database:* Under previous UPWPs, MVPC staff developed a series of community off-road trail maps that shows the locations of key trails on publicly accessible land. Working with local trails groups and enthusiasts, MVPC will continue to add new trails to these maps and modify maps of existing trails to reflect changes/improvements that may have been made. Similarly, maps showing the locations of new bike lanes, recently opened bicycle and pedestrian trails will also be prepared.
- 2.3.8 *Maintain/Update Traffic Counting Viewer:* GIS staff will update its new public facing web viewer to facilitate public engagement and outreach in the transportation planning process. RTP and TIP projects along with Census demographic data will be displayed along with other data including traffic count locations and volumes as well as trail routes

(on road and off road). Data in the viewer will be accessible to the public and interactive for mapping and analytical purposes.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Maintain Database												
Road Inventory File												
State GIS User Group												
Pictometry Support												
Pictometry Workshops												
MVRTA Bus Layers												
Trails Database												
Trans. Viewer												
• Product/Event												

Funding

Funding for Task 2.3 Geographic Information Systems		
Source	Person Hours	Amount
FHWA	837	\$79,520
MassDOT	209	\$19,880
FTA Section 5303	143	\$13,280
FTA Section 5307	96	\$7,824
MVPC	60	\$5,276
TOTAL	1,345	\$125,780

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Task 2.4 - Congestion Management Process

Description

The Intermodal Surface Transportation and Efficiency Act of 1991 (ISTEA) created Transportation Management Areas (TMA's) in those urbanized areas with populations over 200,000 persons. Within these areas, MPOs were given the primary responsibility to develop and implement a Congestion Management System (now Congestion Management Process). This requirement was slightly modified in SAFETEA-LU, but its general intent remains the same under the FAST Act. Significantly, MAP-21 did officially set forth the requirement that an MPO's Congestion Management Process include Goals and Objectives that could be tracked through application of performance measures.

Previous Work

For many years, the MVMPO's CMP relied on its regional traffic model and existing traffic and transit usage data to identify congested highway, transit, and park-and-ride facilities in the region.

In FFY 2017, MVPC staff completed the process of identifying congested roadway segments using travel time data made available under FHWA's National Performance Management Research Data Set (NPMRDS) program. This data set contains travel time data gathered from a variety of sources on the nation's NHS roadways. Unlike the regional traffic model, the NPMRDS data set provides an almost around the clock measure of actual travel times and congestion.

FFY 2018 Activities

While the MVMPO moved forward with integrating the NPMRDS travel time data into the region's CMP, it did much of this work before FHWA released its new congestion performance measures. Consequently, many of the analyses that were developed by staff to identify and quantify congestion on the region's NHS roadways will need to be modified/augmented before they can be included in its CMP.

Tasks

- 2.4.1 *Data collection:* MVPC staff will continue to monitor usage at park and ride lots throughout the region, review ridership information on congested transit routes/services, and collect turning movement counts at congested intersections.
- 2.4.2 *Congestion Management Process Report:* Staff will revisit its analyses of NPMRDS travel time data from 2015, collect and analyzed 2016 data, and apply FHWA's Congestion Performance Measures. These new analyses will be incorporated into a new MVMPO CMP Report.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Data Collection												
Update CMP Report							•					
• Product/Event												

Funding

Funding for Task 2.4 Congestion Management Processes		
Source	Person Hours	Amount
FHWA	299	\$29,760
MassDOT	75	\$7,440
FTA Section 5303	22	\$2,560
FTA Section 5307	0	\$0
MVPC	6	\$640
TOTAL	402	\$40,400

Task 2.5 - Intermodal Connections with National Highway System / Freight Planning

Description

With its three interstate highways and other NHS roadways such as Route 213, the Merrimack Valley region offers many existing and potential intermodal connection opportunities. The region is also served by three rail lines, one of which provides freight rail access to local businesses (Lawrence Industrial Park Spur) and one line that carries a substantial amount of interstate freight as well as passenger service (Haverhill Commuter Line). A third line currently supports commuter rail service between Newburyport and North Station. Existing intermodal facilities include park and ride lots for commuter bus, commuter rail, and transit services as well as several trucking terminals.

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

In FFY 2012, MVPC 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. This analysis will be updated in late summer of 2017.

In FFY 2016, MVPC prepared a Regional Park and Ride Lot Study, which reviewed the demand for park and ride lot capacity, facility ownership/operation, parking charges, potential sites for new lots, expansion options for existing facilities, and issues that are affecting demand at the existing facilities.

In FFY 2017 the MVMPO also proposed designation of almost four miles of Critical Rural and Critical Urban Freight Corridors in the region. If approved, these designated roadways would become eligible to receive funding under the FAST Act's National Highway Freight Program (NHFP) and under the "Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies" (FASTLANE) Grants Program (Nationally Significant Freight and Highway Projects Program).

FFY 2018 Activities

For the FFY 2018 UPWP, MVPC will undertake the following task 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.
- 2.5.2 *MassDOT Freight Plan Update:* MassDOT is now in the process of updating its 2010 Freight Plan. MVPC staff will participate in this process by attending Freight Plan Task Force Meetings, Public Meetings and by responding to MassDOT/consultant requests for data, public outreach information, and project/policy suggestions and recommendations.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Develop NHS Projects												
MassDOT Freight Plan												
• Product/Event												

Funding

Funding for Task 2.5 Intermodal Connections with NHS		
Source	Person Hours	Amount
FHWA	62	\$6,240
MassDOT	15	\$1,560
FTA Section 5303	22	\$2,360
FTA Section 5307	0	\$0
MVPC	5	\$590
TOTAL	104	\$10,750

Task 2.6 - Regional Transportation Model

Description

Regional transportation simulation models are the primary tools used to estimate the traffic impacts that will be generated by projected economic and population growth in the region, an important component of the Regional Transportation Plan. In the MVMPO region, the regional traffic model also plays an important role in the screening process to identify congested transportation facilities as part of the Congestion Management Process.

MVPC uses the TransCAD transportation modeling software package, as do most of the MPOs in the Commonwealth. The most recent version of the MVMPO's 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 2017 UPWP, staff continued to refine its 2010 baseline network by incorporating population and employment data. Staff also received updated TransCAD model software from Caliper and began the process of creating a new regional model.

FFY 2018 Activities

Detailed employment data at place of work recently became available for Massachusetts through the US Census Bureau. This new dataset identifies employment levels by employment types at the Census Block level, thereby greatly enhancing the MPO's ability to create smaller Traffic Analysis Zones. The new employment data, which is compiled annually, also offers the MPO the ability to create more model baseline networks than was previously possible.

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 *Statewide Travel Survey:* Staff will continue to modify the base year model using the results of data for the Merrimack Valley region obtained from the 2010-2011 Statewide Travel Survey.
- 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 refinement of the model network as needed, through the creation of additional TAZs. Staff will also collect turning movement counts at selected intersections to assess how well the model is reflecting actual travel patterns and will continue to integrate ATR count data into the model

2.6.3 *Model Coordination:* Planning areas surrounding the MVMPO region 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 *Update Employment Shown in Model:* Should more recent employment data become available in FFY2018, staff will compare the employment levels/locations currently shown in the model with the new data and incorporate them where appropriate.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Calibration/Refinement												
Model Coordination												
Update Employment												
• Product/Event												

Funding

Funding for Task 2.6 Regional Transportation Model		
Source	Person Hours	Amount
FHWA	236	\$22,640
MassDOT	59	\$5,660
FTA Section 5303	22	\$2,280
FTA Section 5307	0	\$0
MVPC	5	\$570
TOTAL	322	\$31,150

Task 2.7 -- Bicycle/Pedestrian/Water Trails Planning

Description

MVMPO communities are increasingly interested in improving opportunities for non-motorized transportation. Regional Transportation Plan objectives include:

1. Implementing and expanding the multi-modal network through
 - a. The development of the Active Transportation Network,
 - b. Assisting communities with implementing Complete Streets policies and practices
2. Increasing bicycle parking
3. Fostering tourism through enhancing visitor experiences and improving mobility.

Previous Work

In FFY 2014, MVPC prepared the Merrimack Valley Active Transportation Plan a document intended to both guide the further development of the bicycle and pedestrian trail network in the Valley and assist communities in improving the condition and safety of their bicycle and pedestrian facilities.

In FFYs 2015 through 2017, MVPC continued to work in cooperation with MassDOT and the Haverhill Police Department to implement an innovative program that tracks the behaviors of motorists, bicyclists and pedestrians. The results from this program and those from elsewhere in the state will be used to develop future outreach programs that are intended to promote bicycle and pedestrian transportation.

Staff also assisted the City of Haverhill in implementing the ADA ramp improvement project that will be built using funding from the Haverhill Bicycle and Pedestrian Program.

FFY 2018 Activities

The largest task to be undertaken in FFY 2018 will be the implementation of the recommendations contained in the Merrimack Valley Active Transportation Plan and continue to develop both on-road and off-road bicycle and pedestrian networks in the MVMPO region. Any project recommendations made under this task will consider the requirements of MassDOT's Healthy Transportation Directive.

MVPC staff will also continue to assist the Border to Boston communities in developing their sections of the Trail.

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.
- 2.7.2 *Provide Support to the Development of the Border to Boston Trail:* MVPC will continue to work with local trails groups and MassDOT in support of the effort to complete 25% and 100% design plans for the remaining portions of the Border to Boston Multiuse Trail.

- 2.7.3 *Technical Assistance to Communities for Trails in Development:* MVPC will provide technical assistance on other off-road trail projects including the Georgetown Branch Trail, extension of the Bradford Rail Trail, Methuen Rail Trail, Merrimack River Trail, Shawsheen River Trail and Manchester & Lawrence Branch project in Lawrence. It will also encourage communities to undertake activities that support the development of projects that appear on the Bay State Greenway.
- 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 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 *Implementation of Recommendations Contained in the MVMPO Active Transportation Plan:* This plan identified a network of regional and local bicycle and pedestrian facilities that will serve the citizens of the region. Staff will provide technical assistance to local officials in developing the trail and pedestrian facilities recommended in the Plan, creating needed connections between existing trails, and correcting those parts of the network that are experiencing safety problems.
- 2.7.6 *Promote Safer Bicycle and Pedestrian Transportation:* MVPC will continue to work with communities to examine bicycle and pedestrian safety concerns and identify possible improvements (see Haverhill Police Department tracking program described above). While infrastructure is being built, it must go hand-in-hand with a safety education program. Staff will assess local bike education programs/marketing efforts and provide recommendations for how communities and the region can improve bicycle safety.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Program Review												
Border to Boston Trail												
Technical Assistance												
Attend Meetings												
Active Trans. Plan												
Bike/Ped Safety												

• Product/Event

Funding

Funding for Task 2.7 Bicycle/Pedestrian/Water Trails Planning		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	222	\$22,280
MassDOT	55	\$5,570
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	277	\$27,850

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Task 2.8 - Safety Monitoring System

Description

The Safety Management System is designed to provide the MVMPO with a comprehensive planning analysis tool that identifies potential 'hot spot' safety problem areas on the transportation network. Federal transportation planning regulations include a requirement that metropolitan transportation plans should maximize the safety and mobility of people and goods. The importance of USDOT's emphasis on safety may be found in the fact that funding for the Highway Safety Improvement Program has grown substantially in recent years. This program provides federal funding for safety-oriented projects that support the goals and objectives of a state's Highway Safety Improvement Program.

Data prepared under this task will also be used by the MVRTA to incorporate into its Bus/Van operator training. This will assist in increasing awareness for dealing with high crash locations.

Previous Work

Under last year's UPWP, MVPC acquired crash data from MassDOT for the year 2014, which was used in reviewing safety conditions at several intersections under study.

MVPC used MassDOT's 'Crash Cluster' data for the years 2012-2014 as part of the process of identifying locations for safety studies to be undertaken in the FFY 2018 UPWP.

Staff also participated in Road Safety Audits that were conducted at the intersection of Dascomb Road with Frontage Road and the I-93 Northbound ramps in Andover and at the River Street area between the I-495 Northbound Ramps and the River Street/McDonald's Driveway in Haverhill.

FFY 2018 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. Finally, staff will continue to develop and refine crash rates for intersections in the Valley where large numbers of crashes have taken place.

Tasks

- 2.8.1 *Obtain Most Recent MassDOT and Selected Local Police Crash Data:* Staff believes that crash data from 2016 will be available late in July 2018 and facilitate creation of a three-year analysis period of 2014-2016.
- 2.8.2 *Edit MassDOT Crash Data:* MassDOT crash data is reviewed and edited by MVPC so that crashes not assigned GPS coordinates, but with sufficient supporting information to identify where the crash took place, can be given coordinates and thereby be effectively added to the crash database.

- 2.8.3 *Update Estimated Intersection Crash Rates:* Staff will refine the ADT volumes for local roadways that intersect the federal aid road system as well the ADTs for roadway segments on the federal aid system.
- 2.8.4 *Review State’s Crash Cluster List:* MassDOT prepares a listing of ‘Crash Cluster’ locations based on the latest three years of crash data. This list considers 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.
- 2.8.5 *Assist in Implementing the Recommendations of 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.
- 2.8.6 *Participation in Road Safety Audits:* Staff will participate in the Road Safety Audits undertaken in the region in FFY 2018.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Obtain Crash Data												
Edit MassDOT Data												
Update Crash Rates												
Monitor Crash Clus-												
Strategic Safety Plan												
Road Safety Audits												

• Product/Event

Funding

Funding for Task 2.8 Safety Monitoring System		
Source	Person Hours	Amount
FHWA	81	\$7,280
MassDOT	20	\$1,820
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	101	\$9,100

Task 2.9 – Transportation and Livability

Description

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 when considering and evaluating capital investments.

Previous Work

In 2009, the MVPC 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 creating:

“...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...”

In FFY 2015, MVPC updated the PGS to reflect changes in land use and other areas addressed in the document that have taken place since 2009. Like the original, it contains numerous recommendations for creating a transportation network that will improve the region's quality of life including improving bicycle and pedestrian transportation to Priority Development Areas, imple-

menting 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.

In FFY 2017, staff continued to be an active participant on the Mayor's Health Task Force in Lawrence, a group that is devoted to promoting healthy living in the City, and continued working with the City of Haverhill in drafting and implementing a Complete Streets ordinance. Staff also began working with the Town of Georgetown in a similar manner.

MVPC also created the Regional Health Directors Group to provide a forum where staff could reach out to local public health officials and inform them of the agency's programs and services, and in turn be made aware of their concerns and initiatives.

FFY 2018 Activities

MVPC staff will continue to focus 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, including the Complete Streets approach to managing transportation infrastructure, 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. These implementation activities will be developed in cooperation with the MVRTA and integrated into the Authority's Five Year Capital and Five Year Bus Improvement Design programs.
- 2.9.2 *Continue to Collect Public Health Data for Use in Health Impact Assessment Analyses:* Staff will collect information on health indicators in the MVMPO region from the Massachusetts Department of Public Health, area hospitals and other parties.

Staff will also identify and evaluate the effectiveness of transportation-related health performance measures such as those identified in the MVMPO's Route 1 Rotary HIA. Available health impact data and health-related transportation performance measures will be considered in the traffic and transit studies conducted by the MVMPO under Task 3.0.
- 2.9.3 *Participate in Meetings of the Mayor's Health Task Force in Lawrence, Community Health Network Area 12 (CHNA), and Other Groups:* The MVPC joined the Lawrence Mayor's Health Task Force and is partnering with this coalition to create policies, systems and environmental changes that impact health and which pertain to transportation. In partnership with the coalition, MVPC is assisting with implementing its Complete Streets policy, conducting its annual Ciclovía (open streets) event, and other transportation-related projects.

- 2.9.4 *Provide Technical Assistance to Communities Seeking to Implement Safe Route to Schools Projects:* Many, though not all MVPC communities have joined the Safe Routes to School program through MassRides. MVPC will work to encourage more schools to join the program and assist communities seeking infrastructure improvements to encourage more children to walk or bicycle to school.
- 2.9.5 *Assist Communities in Development of Complete Streets Ordinances:* Staff will work with communities interested in adopting Complete Streets Ordinances by providing examples of similar ones that have been adopted around the state. In addition, staff will assist communities in gathering the data required by MassDOT for communities to apply for funding under the Complete Streets Funding Program.
- 2.9.6 *Support Regional Health Directors Group:* MVPC will continue to convene meetings of and provide support to the Regional Health Directors.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Technical Assistance												
Collect Health Data												
Attend Meetings									•			
Safe Routes to School												
Complete Sts. Assist.										•		
Reg. Health Directors		•				•			•			

• Product/Event

Funding

Funding for Task 2.9 Transportation and Livability		
Source	Person Hours	Amount
FHWA	123	\$13,536
MassDOT	31	\$3,384
FTA Section 5303	56	\$6,480
FTA Section 5307	0	\$0
MVPC	14	\$1,620
TOTAL	224	\$25,020

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Task 2.10 - Development of MVMPO Transportation Performance Measures and Targets

Description

MAP-21 mandated that USDOT, state Departments of Transportation, and MPOs establish a performance and outcomes-based approach to managing the nation's transportation infrastructure and set out National Performance Goals in the areas of Safety, Infrastructure Conditions, Congestion Reduction, System Reliability, Freight Movement / Economic Vitality, Environmental Sustainability, and Reduced Project Delivery Delays. To accomplish this, USDOT, state DOTs and MPOs were required to adopt performance standards and measures that support key federal transportation priorities and establish performance targets based on these measures.

USDOT began releasing Notices for Proposed Rulemakings (NPRMs) for the above areas during 2014 and 2015. Meanwhile, MAP-21's successor, the FAST Act, was passed and carried forward the performance management federal rulemaking process.

Final Rules for all performance areas have been issued by USDOT and their Effective Dates are shown in the table below:

Performance Category	Final Rule Effective Date	MassDOT Deadline	MVMPO Deadline
Transportation Planning for States and MPOs	6/27/16	5/01/17	11/01/17
HSIP and Safety Performance Management.	4/14/16	4/14/17 (effective 1/18)	10/14/17 (effective 1/18)
Systems Performance/Freight/CMAQ	5/20/17	5/1/18	11/01/18
NHS Pavement and Bridge Conditions	5/20/17	5/1/18	11/01/18
Asset Management	10/2/17	10/1/18	TBD
Transit Asset Management	10/1/16	10/1/17	TBD
Public Transit Agency Safety Plan	TBD	TBD	TBD

Once the Final Rules become effective, state transportation agencies will be expected to implement the federal performance standards and will have one year to establish complimentary (and/or additional) statewide measures and targets. Working in cooperation with USDOT and their state transportation agencies, MPOs will then have an additional 180 days to adopt their own region-specific measures and targets.

Particular to transportation safety, states also have the option to establish any number of urbanized area targets and one non-urbanized area target for any or all of the safety measures. USDOT has recently advised that safety targets will be established annually, beginning in August 2017 (fourth quarter of FFY 2017) for application in calendar year 2018.

Previous Work

In FFY 2015, MVPC staff identified various transportation performance measures that were integrated into the FFY 2016 RTP. These measures were developed in recognition of the fact the measures chosen were likely not the same measures that would be required by FHWA/FTA in the coming months.

Throughout FFY 2016 and into FFY 2017, staff has been monitoring the Federal Register and USDOT communications on Performance Management to stay informed as the process

evolved. In 2017, staff participated in the Transportation Managers Performance Measures Committee, which has been examining implementation of the safety performance measures and participated in USDOT's Safety Target Setting Coordination Training Workshop.

FFY 2018 Activities

The Merrimack Valley MPO must develop and endorse a new Regional Transportation Plan by spring 2019. As shown in the above table, the MPOs will need to have complied with the new Performance Measure rules by that time. However, MPOs will be actively involved in gathering, analyzing and presenting information on their transportation networks in advance of these dates in developing their FFYs 2020 RTPs.

Unlike the situation that existed when preparing the FFY 2016 RTPs, MPOs across the Commonwealth now know which measures and metrics that they ultimately will need to comply with directly or through related measures. MVPC staff's actions in FFY 2018 will be to either to directly gather or to work with MassDOT to acquire and begin to analyze the data required under the new rules.

Tasks

- 2.10.1 *Safety Performance Measures/Targets:* MassDOT has recently provided the MPOs with region-specific data needed to satisfy the Safety Performance Measures requirement. Staff will continue to review this data and work with MassDOT to establish regional safety performance targets.
- 2.10.2 *Collect Data for MVMPO Region Sidewalk Locations and Conditions:* While this measure was used in the FFY 2016 RTP, reliable data on the location and condition of sidewalks is lacking. Under the FFY 2016 UPWP, MVPC GIS staff began to apply a methodology for collecting this information using aerial photographs, MassDOT's Road Inventory File, and other resources. This work continued in FFY 2017 and staff anticipates completing this task in FFY 2018 when the region receives updated Pictometry aerial imagery.
- 2.10.3 *Continue Working with MassDOT and the MVRTA on Transit Performance Measures:* Staff will work with MassDOT to evaluate the effectiveness of certain programs and services such as the Community Transit Grant Program, and with the MVRTA to monitor its ongoing transit performance measures as well as its responsibilities for preparing a Transit Agency Safety Plan (TASP) and Transit Asset Management Plan (TAMP). When needed, staff can assist in identifying potential measures for substitution or addition. Staff will also coordinate activities with the MVRTA to integrate its transit performance measurement activities into the MVMPO's overall planning process as is required under The FAST Act.
- 2.10.4 *National Highway System Pavement Performance Measure:* The NHS Highway System/Bridge Condition rule contains new requirements for how State DOTs and MPOs must collect and analyze pavement condition data on Interstate and Non-Interstate roadways. MVPC expects to apply this methodology to the remaining Non-NHS federal aid

roadways in the region as well. Under this task, staff will identify what the new metrics are in assessing pavement condition information and, under Task 2.2.3, incorporate them into MVPC’s upcoming roadway condition data collection effort.

2.10.5 *NHS Performance Management Rule*: This rule establishes the criteria for monitoring and identifying traffic congestion on the Interstate and Non-Interstate National Highway System. MVPC recently completed analyzing NPRMDS data in evaluating congestion along its NHS roadways as part of its CMP. Staff will revisit the 2015 and 2016 NPMRDS data for the region and apply the new criteria so that the results can be incorporated into that document (see Task 2.4).

2.10.6 *Participate on Program Managers Performance Measures Committee*: Staff will continue to participate on this Committee to both exchange ideas and information on the development of local performance measures and targets and to maintain coordination with MassDOT and USDOT in the development and implementation of statewide performance management measures.

2.10.7 *Continue Development/Refinement/Maintenance of MVMPO-Specific Performance Measures*: The MVMPO’s 2016 RTP identifies 30 Performance Measures within its six Goals. Many of these are fully operational and staff will continue to update them with new information. Others, such as the Number of Miles of Sidewalks in the region (see Task 2.10.2) are being developed and staff will continue to work on these as well.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Safety Measures												
Sidewalk Inventory						•						
Transit Measures												
NHS Pavement Rule												
NHS Congestion												
Performance Committee												
MPO Measures												
	• Product/Event											

Funding

Funding for Task 2.10 Transportation Performance Measures		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	259	\$22,496
MassDOT	65	\$5,624
FTA Section 5303	34	\$3,200
FTA Section 5307	0	\$0
MVPC	8	\$800
TOTAL	366	\$32,120

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Task 2.11–Travel and Tourism Planning

Description

As noted earlier in this document, the recently passed FAST Act included a new Planning Factor to enhance travel and tourism.

Public-sector tourism and travel promotion in the MVPC region is chiefly conducted at a statewide or multi-region level. MVPC is involved in promoting the development of tourism activities and recreation projects as tourism is an important element of the region's comprehensive economic development strategy and has land use implications. The MVMPO plans and programs funding for transportation projects that often serve local tourism and recreation travel needs.

Previous Work

Under the FFY 2017 UPWP, MVPC staff created a database of Regional Tourism Centers and Tourism Organizations in and around the MVMPO region and will perform comprehensive outreach to these stakeholders to get an update on their activities and to solicit information on tourism activities/organizations that we may not be aware of. It will also convene a meeting of staff from State and Regional Tourism Centers/Organizations with the goal of introducing these organizations to the new role that travel and tourism has in the transportation planning process and to begin collecting information on any transportation-related issues that they feel are impacting their organizations/facilities, improvements that they would like to see implemented or studied, and hear about any plans they may have for expanding their facilities.

FFY 2018 Activities:

MVPC staff will continue to reach out to groups such as the Essex National Heritage Area, National Park Service, Massachusetts Office of Travel and Tourism, the North of Boston Visitors and Convention Bureau and other organizations such as its region's Chambers of Commerce, and to local and state officials to update its database of tourism activity centers in the region. MVPC will then convene a meeting of representatives from all identified groups to solicit input on any transportation-related issues that they feel are impacting their organizations/facilities, improvements that they would like to see implemented or studied, and hear about any plans they may have for expanding their facilities.

Tasks

- 2.11.1 *Update MVPC Database of Regional Tourism Centers and Tourism Organizations:* MVPC will continue to maintain its database of such these centers and organizations. Staff will reach out to our partners identified above under '**2018 Activities**' to both get an update on their activities and to solicit information on tourism activities/organizations that we may not be aware of.
- 2.11.2 *Attend Meetings of State and Regional Tourism Centers/Organizations:* Through this process, MVPC transportation staff can ensure there is timely coordination of these organizations' projects and planning initiatives with those of the MVMPO.

2.11.3 *Coordinate with MVRTA*: MVPC Staff will work with the MVRTA to include the location of historic and tourist sites identified under this task on the Authority’s bus route maps and its System Map.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Tourism Database												
Tourism Meetings												
	● Product/Event											

Funding

Funding for Task 2.11 Travel and Tourism Planning		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	62	\$6,520
MassDOT	15	\$1,630
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	77	\$8,150

TASK 3.0 -SHORT AND LONG-RANGETRANSPORTATION PLANNING ACTIVITIES

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Task 3.1 -- Elderly and Disabled/ADA Planning

Description

The MVRTA has long been a leader among the Commonwealth's regional transit authorities in providing reliable, affordable transportation for the elderly and disabled. The MVRTA was the first Regional Transit Authority (RTA) in the Commonwealth to operate a fully accessible fixed route bus fleet.

The MVMPO region's elderly population continues to grow and elevate demand for non-ADA demand-response transportation. Increased regional demand for federally-mandated ADA transportation services also continues. Accordingly, combined ADA- and non-ADA transportation demands continue to impact the MVRTA's annual budget. With federal operating subsidies limited 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.

Proponent	Work Conducted By
• Merrimack Valley Regional Transit Authority	• Merrimack Valley Planning Commission

Previous Work

Under the FFY 2008 UPWP, staff finalized the Coordinated Public Transit-Human Services Transportation Plan for the MVMPO and conducted two rounds of grant applications. In 2013, MVPC prepared the MVRTA's Regional Mobility Plan, which both combined three previous plans (2007 Coordinated Human Service Transportation Plan, 2008 Elderly Transportation Plan, and 2009 Disabled Transportation Plan) into one planning document and updated the analysis of transportation issues facing the region's disabled population. It contained forecasts of the region's disabled population to 2030, transit service demand estimates for persons with disabilities, and recommendations as to the type of transit services that will meet this group's transportation needs. These transit service demand estimates for persons with disabilities were updated by MVPC staff in FFY 2017.

In recent years, staff has assisted MVRTA in monitoring its EZTrans and Fixed Bus Route services for ADA compliance. It also assisted the MVRTA in securing funding for the 'MediVan' program, which provides transportation for disabled persons in the Valley to medical facilities in Peabody and in Boston.

FFY 2018 Activities

The most important activity under this task will be an in-depth update of the analysis of the MVRTA's existing ADA/Non-ADA paratransit services as contained in the Authority's Regional Transit Mobility Plan. In addition, MVPC will continue to assist the MVRTA by reviewing how well it is complying with ADA paratransit and fixed route bus requirements and in monitoring the maintenance of MAP vehicles being used by Councils on Aging.

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 the MVRTA is meeting the requirements of Subpart G of Part 37 of the ADA regulations.
- 3.1.3 *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 staff will assist MVRTA in implementing this process.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
ADA: Demand Resp.			•				•			•		
ADA: Fixed Route				•				•	•		•	
MAP Vehicles												
	• Product/Event											

Funding

Funding for Task 3.1 Elderly and Disabled/ADA Planning		
Source	Person Hours	Amount
FHWA	0	\$0
MassDOT	0	\$0
FTA Section 5303	29	\$3,120
FTA Section 5307	199	\$21,200
MVPC	57	\$6,080
TOTAL	285	\$30,400

Task 3.2 — Transit Planning

Description

The MVRTA is the primary provider of public transportation in the MVMPO region. It provides a wide array of fixed-route bus and demand-response transportation through private operators such as the Merrimack Valley Area Transportation Co., Inc. (MVATC). The MVRTA currently operates six demand-response transit services in the region – its Ring and Ride Services in Boxford, Georgetown, Groveland, Newbury, Salisbury, and West Newbury. It also operates demand-response services as more efficient options to the former Route 42 in Methuen and the former Route 22 in Andover.

The MVMPO performs specific planning tasks every FFY in support of the MVRTA's public transportation services.

Proponent	Work Conducted By
• Merrimack Valley Regional Transit Authority	• Merrimack Valley Planning Commission

Previous Work

The MVRTA made significant progress in recent years in the planning and implementation of major transit capital projects such as the Haverhill Intermodal Transit Center and the Amesbury Costello Transportation Center. In FFY 2015, the MVRTA completed site selection study for an Intermodal Parking Facility in the City of Newburyport, and the Newburyport City Council approved the MVRTA's recommended Titcomb Street facility site. Design work on this project proceeded in FFY 2017 and it is anticipated that the Final Design for the project will be completed by the end of calendar 2017.

In FFY 2015, the MVMPO and the MVRTA produced an updated Coordinated Plan in 2015 as required by the Commonwealth's Merrimack Valley Regional Coordinating Council, with the same goal of unifying planning for the needs of these diverse groups. The Coordinated Plan is particularly important, as MassDOT requires FTA Section 5310 applicants to demonstrate that their proposed transportation projects will address an unmet transportation need in the MVMPO region.

FFY 2018 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:* MVPC staff has performed technical analyses for the MVRTA in previous FFYs at the MVRTA's request. Staff has prepared Requests for Proposals (RFPs) and evaluated RFP responses; estimated sample sizes for MVRTA surveys, and updated the MVRTA's fixed route bus maps. The staff will conduct similar transit planning activities for the MVRTA under the FFY 2017 UPWP.

Staff will also provide technical assistance to communities on transit issues, including the MVRTA’s implementation of its 2015 Regional Transit Plan. As always, the MVMPO staff will consult and coordinate with MVRTA prior to providing transit-related technical assistance to any MVRTA member community.

- 3.2.2 *Support Implementation of Route Marker Signs:* In 2016, MVPC staff prepared a draft plan for the placement of fixed route bus marker signs. The signs are intended to facilitate public use of the Authority’s flag system by increasing MVRTA regional identify and visibility while guiding potential riders to convenient boarding locations. MVMPO staff will make any necessary changes to the plan as requested by the MVRTA.
- 3.2.3 *Support Mobility Working Group:* This group provides the MVRTA with user input on the provision of its transit services. MVPC staff will continue to support this group in FFY 2018.
- 3.2.4 *Assist MVRTA in Monitoring FTA Areas of Compliance:* MVPC Staff will assist the MVRTA in monitoring 17 areas of compliance, including Grant Administration, Procurement, and Civil Rights areas, that are included as part of FTA’s Triennial Review of the Authority. Evaluate Real Time Bus Location System
- 3.2.5 *Evaluate Real Time Bus Location System:* MVPC staff will assist MVRTA in evaluating the MVRTA’s Real Time Bus Location system and calculating its effect on ridership, route productivity, service reliability and customer acceptance.
- 3.2.6 *Assist MVRTA in Updating its Regional Transit Plan:* MVPC will assist MVRTA in determining demand for early evening bus service, and the need for second and third shift transportation service.
- 3.2.7 *Support Regional Coordinating Council (RCC):* The MVMPO will actively participate in the RCC and provide planning assistance to help improve mobility in the region.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Technical Assistance												
Route Markers												
Mobility Working Group												
FTA Areas of Compliance												
Real Time Bus Location										•		
Regional Transit Plan								•				
Coordinating Council												
	• Product/Event											

Funding

Funding for Task 3.2 Transit Planning		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	0	\$0
MassDOT	0	\$0
FTA Section 5303	90	\$9,280
FTA Section 5307	508	\$46,496
MVPC	150	\$13,944
TOTAL	748	\$69,720

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Task 3.3 –Route 125/ Route 125Intersection Study in Haverhill

Description

This is the signalized intersection of two moderate-to-high volume arterial roadways located in the Bradford section of the City of Haverhill. Route 125 is a NHS roadway that carries approximately 20,000 vehicles/day and connects Haverhill with North Andover. The Route 125 Connector has one terminus at this intersection and the other at its interchange with I-495 at the northwestern edge of the Ward Hill Industrial Park.

MassDOT is now in the process of developing a Route 125 resurfacing/reconstruction project that would extend from the Boston Road/Route 125 intersection located just east of the study intersection southwest to the Haverhill/North Andover Town Line. MassDOT District 4 officials have expressed concern over the current geometry of this location as it serves as a barrier to bicycle and pedestrian travel along Route 125 and are interested in identifying an alternative intersection alignment(s) that would better accommodate bicycle and pedestrian travel and perhaps reduce the footprint of the facility.

Proponent	Work Conducted By
<ul style="list-style-type: none">● Merrimack Valley MPO● MassDOT District 4	<ul style="list-style-type: none">● Merrimack Valley Planning Commission

Previous Work

This intersection was modified by MassDOT in the mid-1980s to expand capacity to accommodate the traffic demand generated by the Western Electric (later Lucent Technologies) manufacturing plant located at the Haverhill/North Andover town line. Since that time, the manufacturing site has been redeveloped and now generates much less traffic. Unfortunately, the improvements made in providing this capacity did not include making provisions for bicycle and pedestrian travel.

FFY 2018 Activities

The MVMPO staff will work with MassDOT staff and City of Haverhill officials to conduct a traffic study of this intersection with the intent of developing a concept plan that improves the bicycle and pedestrian facilities in the area and reduces the overall footprint of the intersection while still providing acceptable Levels of Service under current travel conditions and those projected for the forecast year.

Tasks

- 3.3.1 *Collect Data on Health Impact Indicators and Transportation-Related Health Performance Measures:* Staff will assemble available Health Impact Indicators for the community as well as any available performance measures.

- 3.3.2 *Hold Study Kick-Off Meeting:* Staff will host meeting of Haverhill officials, MassDOT staff and area stakeholders to discuss the purpose of the study and to solicit input on possible improvements that could be made in the area.
- 3.3.3 *Data Collection:* MVPC will collect weekday AM, PM peak period Turning Movement counts at the intersection and will also conduct ATR counts on the Route 125 and Route 125 Connector approaches to the intersection.
- Staff will also obtain layout plans for both Route 125 and the Route 125 Connector.
- 3.3.4 *Review Crash Data:* Staff will collect and analyze MassDOT crash data and City of Haverhill incident reports for the intersection for the most recent three-year period available.
- 3.3.5 *Data Analysis:* MVPC staff will first analyze existing Levels of Service (LOS) at the intersection. Based on this analysis, staff will meet with MassDOT District 4 staff to discuss the results of this analysis and to identify possible alternative intersection design configurations.
- Staff will also review the health impacts, wetlands, stormwater and endangered species considerations that might be associated with construction of the alternative alignments being considered.
- 3.3.6 *Meet with Haverhill Community Development Officials:* MVPC staff will meet with Haverhill Community Development officials to gather information on proposed/planned developments in the area and solicit feedback on possible intersection improvement alternatives.
- 3.3.7 *Generate Forecast Year Traffic Volumes:* Based upon the input received from the City, staff will develop forecast year ADT and peak hour traffic volumes for the intersection.
- 3.3.8 *Analyze LOS for Current Year/Forecast Year for Identified Alternatives:* Using the traffic volumes generated in Task 3.3.7, staff will analyze LOS for selected alternatives.
- 3.3.9 *Prepare Draft Study Report:* MVPC staff will prepare a Draft Study Report for the intersection that outlines the findings and recommendations obtained from the previous tasks to date.
- 3.3.10 *Hold Stakeholder Meeting:* MVPC will host a meeting of MassDOT and Haverhill officials and local stakeholders to review the findings and recommendations contained in the Draft Study and solicit feedback.
- 3.3.11 *Prepare Final Study Reports:* Based on the feedback received at Stakeholders meeting, MVPC will prepare any additional analyses needed and include them in a Final Study Report.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Health Impact Data												
Kick Off Meeting		•					•					
Data Collection									•			
Data Analysis												
Haverhill Com. Dev.										•		
Forecast Year Traffic				•								
Analyze Options												
Draft Report					•							
Stakeholder Meeting						•						
Final Report							•					
	• Product/Event											

Funding

Funding for Task 3.3 Rte. 125/ Rte. 125 Connector Study in Haverhill		
Source	Person Hours	Amount
FHWA	270	\$25,840
MassDOT	67	\$6,460
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	337	\$32,300

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Task 3.4 – I-495 / I-93 Interchange Road Safety Audit in Andover

Description

The intersection of these two interstate roadways is located at the western end of the MVMPO region and had the highest EPDO score (334) of any location in the MVMPO region. In addition to the large number of crashes at this location, there were two fatal crashes. ADT volumes on both roadways in this area exceed 100,000 vehicles.

The above traffic volumes certainly contribute to why there are so many crashes at this location and analysis may indeed find that the crash rates along the main travel lanes and at ramp junctions and weave points on both interstates is within acceptable levels. However, the importance of this interchange on regional and interstate traffic flow warrants that the MVMPO study this location to identify what options can be taken to reduce the incidence of crashes even further. Even minor collisions at this location during AM or PM Peak travel periods can cause significant delays not only on one or both interstates but on local roadways as well as drivers seek alternate routes to circumvent congestion.

Proponent	Work Conducted By
●Merrimack Valley MPO (EPDO Score)	●Merrimack Valley Planning Commission

Previous Work

The Merrimack Valley Planning Commission completed a study of the I-93 Corridor in 2006 that included this interchange and identified several interchange reconfigurations. Two years later, MassDOT completed its I-495 Corridor Study, which identified deficiencies with the weave section between on-ramp from I-93 NB and the off ramp from I-495 NB to I-93 SB.

FFY 2018 Activities

The primary intent of this RSA will be to identify any short term, low cost/moderate cost changes that can be made at this interchange to reduce the number of crashes.

Tasks

- 3.4.1 *Data Collection:* MVPC staff will use the MassDOT I-495 Study and MVPC I-93 Study to review Weave, Diverge, Merge Levels of Service that were calculated at both levels of the interchange and to note any deficiencies in geometry that were identified. Staff will also review NPMRDS speed data for this location.
- 3.4.2 *Obtain Most Recent MassDOT and State Police Crash Data:* Crash reports for the most recent three-year period available will be collected and analyzed for inclusion in the Draft Road Safety Audit Report.
- 3.4.3 *Draft Road Safety Audit Report/Road Safety Audit:* Staff will present the findings from Tasks 3.4.1 - 3.4.3 to MassDOT and local officials in a Road Safety Audit. This audit will provide MVPC with information and suggestions that will facilitate the development of a small range of improvement options that could address the observed safety problems at

the intersection. It is anticipated that while there will be a RSA meeting to discuss the issues at the interchange, there will be no field visit.

- 3.4.4 *Develop and Evaluate Alternative Improvement Options:* The information obtained through the Road Safety Audit will be used to develop a small set of improvement options that will then be analyzed in greater detail to determine the impacts they might have in reducing the intersection's crash rate.
- 3.4.5 *Prepare Final Road Safety Audit Report:* MVPC staff will prepare a final version of the Road Safety Audit report that outlines the study's findings and recommendations.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Data Collection												
Draft RSA Report				•								
Hold RSA				•								
Develop Alternatives												
Final RSA Report					•							

• Product/Event

Funding

Funding for Task 3.4 I-93 / I-495 Interchange RSA in Andover		
Source	Person Hours	Amount
FHWA	118	\$11,680
MassDOT	30	\$2,920
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	148	\$14,600

Task 3.5 – Washington Street/River Street/Moulton Street Road Safety Audit in Haverhill
Description

Washington Street and River Street are part of Route 110, a NHS roadway that links Downtown Haverhill to I-495 and further west to the cities of Methuen and Lawrence. The area to be studied is located at the western edge of Haverhill’s downtown and includes the busy restaurant district along Washington Street east of Moulton Street. Other traffic generators in the area include the Haverhill Intermodal Center located at the intersection of Moulton Street and Granite Street, and the Haverhill Commuter Rail Surface Parking Lot, located off Washington Avenue.

This area was identified by MassDOT as being a 2012-2014 ‘Crash Cluster’ for vehicles, with an EPDO Score of 123. MassDOT also identified this area as a 2005-2014 Crash Cluster for bicycles and pedestrians.

Given the level of business activity along Washington Street and the growing population in the downtown area, the City of Haverhill has requested the MVMPO conduct a Road Safety Audit to identify the factors that may be contributing to the crashes and to recommend actions to address them.

Proponent	Work Conducted By
<ul style="list-style-type: none"> ● Merrimack Valley MPO (EPDO Score) ● City of Haverhill 	<ul style="list-style-type: none"> ● Merrimack Valley Planning Commission

Previous Work

MVPC completed an analysis of the River Street/Comeau Bridges/Washington Street signalized intersection in 2013 to determine the status and magnitude of perceived congestion in the area. This analysis showed that this signalized intersection was operating at an acceptable Level of Service during both the AM and PM peak travel periods.

Due to the reconstruction work being performed on the MBTA’s Merrimack River Bridge and the railroad bridge over Washington Street, the safety component of the congestion study was not completed.

FFY 2018 Activities

MVPC will undertake the following tasks in conducting this Road Safety Audit/Traffic Study:

Tasks

- 3.5.1 *Collect Data on Health Impact Indicators and Transportation-Related Health Performance Measures:* Staff will assemble available Health Impact Indicators for the community as well as any available transportation related health performance measures. This information will be presented and discussed as part of the Road Safety Audit for this intersection.

- 3.5.2 *Data Collection:* MVPC staff will perform peak hour vehicle turning movement and pedestrian crossing counts at the signalized intersection of Washington Street/Comeau Bridge/River Street, and at the unsignalized intersections of Washington Street/Washington Avenue, and Washington Street/Moulton Street. Staff will also examine NPMRDS data for Route 110 for its applicability to this analysis.
- 3.5.3 *Data Analysis/Level of Service(LOS) Calculations:* MVPC staff will complete LOS analyses for these three intersections to both measure congestion and develop intersection crash rates, which will be used in the Road Safety Audit for the study area.
- 3.5.4 *Obtain and Analyze Crash Data:* Staff will analyze MassDOT and City of Haverhill Police Department traffic incident reports to identify the outstanding safety issues in the area. This information will be included in the Draft Road Safety Audit Report.
- 3.5.5 *Conduct Study Area Road Safety Audit:* Staff will present the findings from Tasks 3.5.1 - 3.5.4 to state and local officials in a Road Safety Audit. This audit will provide MVPC with information and suggestions that will facilitate the development short and long-term improvement options that could implemented.
- 3.5.6 *Develop Improvement Options:* The information and feedback obtained through the Road Safety Audit will be used to develop a set of short and long-term improvement options that will then be analyzed in greater detail to determine the impacts they might have in reducing the crash rate at this location and improving accommodations for bicycle and pedestrian travel. Staff will consult with the MVRTA as part of this process to solicit input as to how the proposed intersection improvements could impact bus movements through the study area.
- 3.5.7 *Prepare Final Road Safety Audit Report:* MVPC staff will prepare a final version of the Road Safety Audit report that outlines the study's findings and recommendations.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Data Collection												
Draft Data Analysis												
Hold RSA												
Develop Alternatives												
Final RSA Report												
	● Product/Event											

Funding

Funding for Task 3.5 Washington St./River St. RSA in Haverhill		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	206	\$18,880
MassDOT	52	\$4,720
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	258	\$23,600

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Task 3.6 – Broadway/Lowell Street; Broadway/Essex Street Road Safety Audit in Lawrence
Description

The section of Broadway (Route 28) between Water Street and Haverhill Street (Route 110) is one of the most congested sections of roadway in the City of Lawrence. Heavy vehicular and pedestrian traffic in the area, the presence of on-street parking coupled with the limited width of Broadway all contribute to the observed congestion and safety problems.

The Broadway/Essex Street and Broadway/Lowell Street intersections, with EPDO scores of 68 and 65, respectively, have been identified by MassDOT as 2012-2014 ‘Crash Cluster’ locations. In addition, the Broadway Corridor between these two intersections has been identified by MassDOT as a Pedestrian Crash Cluster based on data from 2005-2014.

The Merrimack Valley Regional Transit Authority operates fixed route bus service along this section of Broadway. The recurrent traffic congestion issues and conflicts between buses and pedestrians have been problematic, creating trip delays affecting system on-time performance.

Proponent	Work Conducted By
● MVRTA	● Merrimack Valley Planning Commission

Previous Work

MVPC has completed Road Safety Audits for the Broadway/Haverhill Street and Broadway/Tremont Street intersections (2016), which lie north of the study area, and for the Broadway/Water Street/Canal Street intersection (2011) which is located just south of it.

This section of Broadway was reconstructed as part of Project #603474, which was completed in 2008.

FFY 2018 Activities

MVPC transportation staff will complete the following tasks in developing proposed short and long-term improvements to this intersection to correct the safety/capacity deficiencies that now exist.

Tasks

- 3.6.1 *Collect Data on Health Impact Indicators and Transportation-Related Health Performance Measures:* Staff will assemble available Health Impact Indicators for the community as well as any available transportation related health performance measures. This information will be presented and discussed as part of the Road Safety Audit for this intersection.
- 3.6.2 *Data Collection:* MVPC staff will perform weekday AM, PM and Saturday Midday peak hour vehicle turning movement and pedestrian crossing counts at both signalized intersections. Staff will also examine NPMRDS data for Route 28 for its applicability to this analysis.

- 3.6.3 *Data Analysis/Level of Service Calculations:* MVPC staff will complete LOS analyses for these two intersection to both measure congestion and develop intersection crash rates, which will be used in the Road Safety Audit for the study area.
- 3.6.4 *Obtain and Analyze Crash Data:* Staff will collect and analyze the most recent three years of MassDOT data and City of Lawrence Police Department traffic incident reports to identify the outstanding safety issues in the area. This information will be included in the Draft Road Safety Audit Report.
- 3.6.5 *Conduct Study Area Road Safety Audit:* Staff will present the findings from Tasks 3.6.1 - 3.6.4 to state and local officials in a Road Safety Audit. This audit will provide MVPC with information and suggestions that will facilitate the development short and long-term improvement options that could implemented.
- 3.6.6 *Develop and Evaluate Alternative Improvement Options:* The information and feedback obtained through the Road Safety Audit will be used to develop a set of short and long-term improvement options that will then be analyzed in greater detail to determine the impacts they might have in reducing the crash rate at this location and improving accommodations for bicycle and pedestrian travel. Staff will consult with the MVRTA as part of this process to solicit input as to how the proposed intersection improvements could impact bus movements through the study area.
- 3.6.7 *Draft / Final Report Outlining Study Findings and Recommendations:* Staff will prepare draft and final versions of the Road Safety Audit report outlining the study's findings and recommendations.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Data Collection												
Data Analyses												
RSA Meeting												
Develop Alternatives												
Draft/Final Reports										•		
	• Product/Event											

Funding

Funding for Task 3.6 Broadway RSA at Two Locations in Lawrence		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	332	\$30,080
MassDOT	83	\$7,520
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	415	\$37,600

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Task 3.7 – Stormwater Management Technical Assistance

Description

The U.S. Environmental Protection Agency issued the Final Phase II National Pollutant Discharge Elimination System (NPDES) permit for Massachusetts urbanized communities in 2016 with an effective date of July 1st, 2017. The new permit outlines expanded, more prescriptive requirements for city and town operators of municipal separate storm sewer systems (“MS4s”) in implementing six *minimum* stormwater management control measures toward minimizing pollution to the maximum extent practicable of the Commonwealth’s rivers, streams and water bodies. The minimum control measures, elements of all compliant municipal stormwater management systems, are in areas of:

- 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 the six control measures will require 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. Each community will need to prepare stormwater facilities and infrastructure operating and maintenance plans, implement rigorous monitoring and illicit discharge detection & enforcement programs, and update enhanced database and map inventories of stormwater system features including outfalls, pipes and catch basins.

Developing individual community programs that will comply with anticipated new federal requirements will be an expensive proposition. Local DPW and highway department budgets are limited and as is the staffing to implement these programs. These cost and implementation concerns were the impetus for formation of the Merrimack Valley Stormwater Collaborative, established in 2014 by the 15 MVPC communities to promote regional approaches to stormwater pollution prevention.

Previous Work

Under the region’s FFY 2014 UPWP, MVPC was successful in securing funding under the Commonwealth Innovation Challenge grant-program that:

- Developed a framework for establishing local/regional stormwater utilities as a funding mechanism to support sustainable, EPA-compliant local stormwater management programs (SWMPs);
- Standardized and incorporated existing local stormwater infrastructure information into a comprehensive, web-based GIS database and mapping system;

- Developed the regional Collaborative website as a platform for education/outreach tools as well as resource showcasing standard stormwater codes, policies, and procedures for operating and maintaining municipal stormwater systems;
- Designed and conducted a stormwater training program for local personnel, focusing on pollution prevention and good housekeeping practices for municipal operations and facilities;
- Designed and conducted a multi-faceted stormwater public education program, with targeted messaging for four distinct Merrimack Valley audiences: (1) residents, (2) businesses, institutions, commercial facilities, (3) industrial facilities, (4) real estate developers;
- Prepared a Request for Proposals (RFP) templates for procurement of common stormwater management services, equipment, and supplies (e.g., catch basin inspections, outfall catchment area mapping, illicit discharge detection, dry- and wet-weather sampling, etc.), and
- Prepared a 'Sustainability Plan' to ensure the Merrimack Valley Stormwater Collaborative's viability and effectiveness over the long term.

In FFY 2015, 2016 and 2017, MVPC sponsored Stormwater Collaborative networking meetings, organized joint services procurement and sponsored information sessions on the new MS4 permit requirements.

FFY 2018 Activities

MVPC will continue to provide Stormwater Management technical assistance to communities in the region, and will broaden its range of services to include the enhanced municipal requirements under the Massachusetts Phase II Small MS4 General Permit, focusing on staff training, public participation and providing technical assistance to communities in development of updated, compliant Stormwater Management Programs as required by the MS4 permit.

Tasks

- 3.7.1 *Provide Local Technical Assistance to Communities/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 identified in the final permit including assistance in preparation of stormwater system operating & maintenance plans and Notices of Intent. Staff will also draft and customize relevant stormwater management regulatory updates 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.
- 3.7.2 *Provide Support to the Region's Stormwater Collaborative:* Staff will provide technical support and training assistance to the Merrimack Valley Stormwater Collaborative. The regional coalition, made up of DPW, local conservation/stormwater management officials and regional watershed directors, meets monthly. Activities include equipment

sharing, joint procurement, maintenance of information/programs on the Collaborative's website www.merrimackvalleystormwater.org, and program development in areas of regulatory development and stormwater program administration.

- 3.7.3 *Conduct Training Sessions for Municipal Personnel:* In order to facilitate local compliance with the anticipated 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) to be submitted to EPA and MassDEP.
- 3.7.4 *Participate in MassBays and Regional Watershed Associations Water Quality Planning and Best Management Practices Forums and Workshops:* Staff will assist in organizing and making presentations at sponsored workshops & public information meetings in collaboration with MassBays National Estuary Program, Merrimack River Watershed Council, Ipswich River Watershed Association and other regional partners to be held between Fall 2017 through Summer 2018.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
LTA/Outreach												
Spt. Stormwater Collab.												
Training Sessions												
Part. In Workshops												
● Product/Event												

Funding

Funding for Task 3.7 Stormwater Management Technical Assistance		
Source	Person Hours	Amount
FHWA	195	\$23,680
MassDOT	49	\$5,920
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	244	\$29,600

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Task 3.8 - Climate Change

Description

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 Legislature passed its Global Warming Solutions Act (GWSA) in 2008. Its purpose is 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 Commonwealth's agencies 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

Under the FFY 2016 UPWP, MVPC staff participated in the Community Resiliency Planning Project, specifically through its participation in meetings of *the Community Coastal Resiliency Project Municipal Task Force*. This project is being led by staff from the Northeast Office of the National Wildlife Federation (NWF) and planning staff from the Ipswich River Watershed Association (IRWA). Its goal is to identify and prioritize public assets in the Great Marsh that are at risk from climate change events, including coastal storms, sea level rise, inland flooding, and erosion and to develop community-based adaptation strategies and plans to reduce those risks.

Staff also continued to participate in FHWA's Climate Change Adaptation Peer Exchange and reviewed the Climate Change planning efforts that have been completed or are under way in New England and elsewhere in the nation.

In FFY 2017, MVPC again, in partnership with the Great Marsh Coalition, planned, promoted, and co-sponsored a regional “Sea Level Rise Strategy Symposium” for Merrimack Valley and North Shore municipal officials, non-profit organizations, educational institutions, and the public.

FFY 2018 Activities

MVPC staff will continue to participate in meetings of the Community Coastal Resiliency Project Municipal Task Force as part of the Community Resiliency Planning Project and work with communities to prepare vulnerability assessments and strategic plans based on Community Resilience Building guidance promoted through the Mass. Municipal Vulnerability Preparedness Program of the Executive Office of Energy and Environmental Affairs and Executive Order 569 “Establishing an Integrated Climate Change Strategy for the Commonwealth” issued by Governor Baker in Sept. 2016. Staff will also receive training in climate project data generated by Commonwealth agencies along with detailed climate adaptation mapping and modeling activities currently being prepared by MassDOT, the Woods Hole Institute, NOAA, and other sources.

Depending upon the availability of detailed mapping information and tools to model the impacts of storms at inland locations, MVPC can begin to work with its communities located west of the Great Marsh in identifying flood-prone infrastructure and identify potential impacts to both local and regional transportation facilities.

Tasks

- 3.8.1 *Participation in Community Coastal Resiliency Project Municipal Task Force:* Staff will participate in Task Force meetings and will assist local officials in Salisbury, Newburyport, Newbury and Rowley in preparing their Community Adaptation Plans.
- 3.8.2 *Staff Training:* MVPC staff will receive training in how to access/use climate project data generated by Commonwealth agencies and informed of the detailed climate adaptation mapping and modeling activities currently being prepared by MassDOT, the Woods Hole Institute, NOAA, and other sources.
- 3.8.3 *Assist Communities in Preparing Vulnerability Assessments:* Staff will assist communities seeking to develop and strategic plans under the Mass. Municipal Vulnerability Preparedness Program.
- 3.8.4 *Monitor Progress of Sea Level Rise Mapping/Modeling Tools:* Through its work with the MassBays Program, Hurricane Sandy Grant studies/analyses and MassDOT, staff will assess the availability of the mapping and modeling tools needed to identify the combined impacts of flooding from storms and rising sea levels along inland waterways.
- 3.8.5 *Participate In/Host Regional Workshops:* MVPC will continue to participate and present at public workshops to inform local officials and partner agencies and organizations on the status and anticipated impacts of climate change on the Merrimack Valley/North Shore region. This will include the Sea Level Rise symposium held annually with MassBays partners.

3.8.6 *Consultation and Coordination* will be undertaken by the MPO staff with various statewide and regional organizations, for example, Executive Office of Public Safety and Security (EOPSS), Massachusetts Emergency Management Agency (MEMA), Northeast Homeland Security Advisory Council (NERAC), and regional conservation and watershed agencies.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Resiliency Task Force												
Staff Training												
Vulnerability Asses.												
Mapping / Modeling												
Regional Workshops		•										
Coordination												
	• Product/Event											

Funding

Funding for Task 3.8 Climate Change		
Source	Person Hours	Amount
FHWA	190	\$22,120
MassDOT	48	\$5,530
FTA Section 5303	22	\$2,960
FTA Section 5307	0	\$0
MVPC	6	\$740
TOTAL	266	\$31,350

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TASK 4.0 -OTHER TRANSPORTATION STUDIES

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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 plays a prominent role in the MVMPO region where the opportunities to expand existing roadway capacity are limited. Examples of ITS technologies include:

- Use of "EZ Pass" transponders at toll booths to reduce delay;
- Smart phone apps and in-vehicle devices that can provide navigational and real time travel information;
- Incident management programs on interstates and major arterial roadways, and
- Advanced Traffic Management activities such as coordination of signals.

Previous Work

In FFY 2010 the MVMPO staff participated in the stakeholder input meetings 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 impact any impending MBTA actions could have on services the MBTA provides directly to MVMPO region (commuter rail) or to the other parts of the MBTA system.

Also in FFY 2010 the New Hampshire Department of Transportation (NHDOT) initiated "Open Road Tolling" (ORT) at its Hampton Toll Booths. ORT lanes can process nearly five times as many vehicles as a conventional cash toll lane and 60% more traffic than a dedicated EZ Pass lane. While local officials have suggested that congestion on I-95 southbound has increased since the Hampton toll booths were upgraded, it is likely that this problem will be corrected through the widening of I-95 in Salisbury, which is taking place as part of the Whittier Bridge Replacement project.

In recent years, the MVRTA has introduced new fareboxes on its fixed route buses that recognize cards accepted by the MBTA, has upgraded its Vehicle Location/GPS-enabled capabilities for all its buses and vans, and is replacing/upgrading the parking collection technology at several of the intermodal transportation facilities that it manages.

FFY 2018 Activities

The MVMPO staff will continue to investigate the Boston ITS Architecture data archives to determine whether it can use the Boston ITS architecture's data sources to refine its existing performance measures or develop new ones.

Tasks

- 4.1.1 *Continue Gathering Information on Existing ITS Projects in Massachusetts:* Using the Boston ITS Architecture and those from other regions in the state as well as information contained in the STIP and other sources, MVPC staff will monitor actions being taken by

other MPOs to implement ITS technologies and assess their potential applicability in the MVMPO region.

- 4.1.2 *Attend Future ITS Conferences and Workshops:* MVPC staff will attend ITS workshops and seminars as appropriate.
- 4.1.3 *Attend Meetings of Boston Regional ITS Architecture Committee/IITS Integration Strategy:* MVPC staff will continue to attend meetings of the Boston Regional ITS Architecture Committee and participate in MassDOT’s efforts to update the Boston Regional Architecture. The MVPC will update the MVMPO on Boston ITS Architecture Committee activities that would impact their present and future ITS plans/deployments.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Gather Information												
Conf./Workshops												
Boston Regional ITS												
● Product/Event												

Funding

Funding for Task 4.1 Intelligent Transportation Systems		
Source	Person Hours	Amount
FHWA	56	\$5,160
MassDOT	14	\$1,290
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	70	\$6,450

Task 4.2 - Local Technical Assistance

Description

Each year, officials from around the MVMPO region request MVPC staff 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, analysis of traffic safety issues or even assistance in completing the Project Need and Project Initiation Forms needed to advance project proposals through the MassDOT Project Development Process. 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 2016 and FFY 2017 UPWPs include:

- Evaluation of whether the flashing signal at the Loring Avenue/Salem Street/Shawsheen Street intersection in Lawrence should be reset to multiphase operation;
- Working with the Town of Newbury to define scope of services for a potential parking study in the Byfield Village section of the community;
- Supporting development of Transportation Element of the Town of Newbury's Master Plan;
- Preparation of concept plans and supporting maps for developing rooftop kayak launch facility for the Town of West Newbury;
- Provision of technical assistance to the City of Newburyport in Analyzing Potential Traffic Impacts of Proposed 40R District located in vicinity of MBTA Commuter Rail Station;
- Preparation of Four-Way Stop Sign Warrant analysis for the Town of West Newbury
- Developed Heavy Commercial Vehicle Exclusion application for the Searle Street area for the Town of Georgetown.

FFY 2018 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 MVMPO region.
- 4.2.2 *Support Advancement of Projects Through the MassDOT Project Development Process:* MVPC will also support community efforts to advance projects through the MassDOT Project Development Process. This will largely include providing assistance in the preparation of Project Need and Project Initiation Forms.

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Local Technical Assist.												
	• Product/Event											

Funding

Funding for Task 4.2 Local Technical Assistance		
Source	Person Hours	Amount
FHWA	137	\$13,080
MassDOT	34	\$3,270
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	171	\$16,350

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. In the Merrimack Valley region, winter storms have caused severe damage to beach areas on Plum Island in Newbury and major rain events have often resulted in flooding that closes major arterial roadways such as Route 1 in Salisbury. Further inland, Route 114 near the Lawrence/North Andover line has been closed many times due to flooding of the Shawsheen River.

Federal requirements include security as a factor that MPOs must address in the transportation planning process. MPOs must ensure 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 nonmotorized users."

Previous Work

In February 2008, the Merrimack Valley Planning Commission prepared the **Merrimack Valley Multi-Hazard Pre-Disaster Mitigation Plan** *Action Plan to Reduce or Eliminate the Long-term Loss in Human Life and Property from Natural Hazards*. This plan was developed by MVPC in cooperation with 12 of the region's 15 cities and towns pursuant to the Disaster Mitigation Act of 2000 (DMA 2000), which established a national program for pre-disaster mitigation and streamlined the federal administration of disaster relief. This legislation also requires all communities to have a FEMA-approved "Multiple Hazards Mitigation Plan" to qualify for FEMA funding under the Pre-Disaster Mitigation (PDM), Flood Mitigation Assistance (FMA), and Hazard Mitigation Grant Program (HMGP).

In FFY 2012, with funding assistance from MEMA, MVPC began working collaboratively with 14 of the region's 15 communities to prepare an updated Merrimack Valley Multi-Hazard Mitigation Plan covering the period of 2013-2018. This work was completed at the end of 2014 when the draft of the updated plan was submitted to FEMA for review. In 2015 and 2016, MVPC staff worked with committees to secure local endorsement of the Draft.

MEMA presented the Evacuation (and Shelter) Concept of Operations to local officials and Emergency Management Directors in the summer of 2015 and it was determined that there was a need to better synchronize the agency's efforts in Shelter, Evacuation, and Critical Transportation Need planning. In Fall 2016, MEMA completed the Critical Transportation Need Evacuation Operational Plan and the update for the Cape Cod Traffic Plan. In addition, the agency is continuing work on the Mass Care and Shelter Planning Phase II effort that kicked off in Fall 2016. In FFY 2018, MEPA will take up Evacuation Coordination again, informed by its efforts in the above realms and building off the Concept of Operations presented to NERAC local and state stakeholders in June 2015.

In 2011, NERAC commissioned a study to assess each Massachusetts region's emergency transportation needs and investigate the availability of transportation assets and agreements in NERAC communities, including all those in the Merrimack Valley region. This study resulted in

the development of the following planning tools for communities to use in improving planning for the evacuation of local populations.

NERAC is undertaking the following activities to assist member communities in addressing their local evacuation planning requirements:

- **Transportation Availability Plan Update** will revise the NERAC 2008 Transportation Availability Plan as necessary to coordinate with ongoing MEMA evacuation planning efforts.
- **An EVAC Calculator Tool** would update the tool originally included in the 2008 Plan that assists in the determination of transportation resources for evacuation purposes. That tool was originally developed in Microsoft Access 2007, which is no longer available. A more up-to-date platform will be developed to activate the tool.
- **Development of an Evacuation Exercise Tool Kit** that will assist communities in developing community level exercises, scenarios, evaluation of the exercise and the preparation of after action reports.
- **An MOU Template** will be developed that communities can use to document agreements with public and private entities to share evacuation resources during an emergency.

In FFY 2010, the MVRTA became the first transit provider to convert a public transit bus into an Ambu-Bus for use by first responders as a casualty vehicle. The Ambu-Bus can accommodate 12 stretchers and a small number of walk-on patients for treatment and to transport individuals to hospitals. The Authority made this vehicle available to the organizers of the 2014 Boston Marathon. The Authority has two Evacuation Buses and has two Evacuation Vans available for deployment.

The MVRTA 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 on Evacuation Planning.

In FFY 2017, MVPC staff worked with several our local communities in implementing the projects recommended in the region's Multi-Hazard Mitigation Plan.

FFY 2018 Activities

Staff will continue to work with our communities to implement the recommendations contained in the region's Multi-Hazard Mitigation Plan. 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 MVMPO region.

Tasks

- 4.3.1 *Plan Monitoring and Data Collection:* The Regional Natural Hazard Mitigation Plan Update for the 14 participating communities was accepted by FEMA and MEMA and locally

adopted by member communities in Spring 2016. Staff will monitor plan implementation including website updates, project monitoring, and incident/climate data collection.

- 4.3.2 *Assist Communities in Implementing/Monitoring Multi-Hazard Mitigation Plan Elements:* MVPC staff will continue to assist community officials in implementing the recommendations contained in the document as well with the associated monitoring effort
- 4.3.3 *Review Developments in Transportation Security Planning:* Staff will continue to monitor materials and policies of transportation security issued by, NERAC, USDOT and state transportation agencies.

Products/Schedule

Task(s)	10/17	11/1	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Plan Monitoring &Data												
Assist Communities												
Review Security Planning												
• Product/Event												

Funding

Funding for Task 4.3 Regional Transportation Security		
Source	Person Hours	Amount
FHWA	56	\$7,360
MassDOT	14	\$1,840
FTA Section 5303	22	\$2,968
FTA Section 5307	0	\$0
MVPC	6	\$742
TOTAL	98	\$12,910

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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 county roads. 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. The General Court also mandated that the regional planning agencies in such areas create regional Adjudicatory Boards to take actions on any proposed changes to county roadways in their jurisdiction. With the dissolution of Essex County in 1996, the Merrimack Valley Planning Commission fell under this requirement.

The Merrimack Valley Planning Commission Adjudicatory Board is comprised of five members:

- MVPC Chairman
- MVPC Vice Chairman
- MVPC Secretary
- MVPC Treasurer
- MassDOT District 4 Highway Director (or designee)

Previous Work

The Merrimack Valley Planning Commission Adjudicatory Board (MVPC Adjudicatory Board) has taken the following actions since its creation:

- Approved a request from the Town of Amesbury to discontinue a section of county road layout near the intersection of Routes 150 and 110 (June 2009);
- Approved 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 (September 2011);
- Approved a request from the City of Amesbury to discontinue a sliver of the old County Road layout along Route 110 just east of the intersection where a discontinuance was approved in 2009 (September 2012), and
- Approved a request from the Town of Merrimac to discontinue the section of River Road that lies between Skunk Road and a point just east of its intersection with Middle Road, which had been severely damaged by storms in 2006 and 2010 (October 2013).

FFY 2018 Activities

MVPC staff will continue to implement and refine the review and approval process for the relocation/discontinuance of county roadways and roadway layouts that are located on or adjacent to federal aid-eligible roadways in the region.

Tasks

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

Products/Schedule

Task(s)	10/17	11/17	12/17	1/18	2/18	3/18	4/18	5/18	6/18	7/18	8/18	9/18
Implement Process												
	• Product/Event											

Funding

Funding for Task 4.4 County Roads Adjudication		
Source	Person Hours	Amount
FHWA	17	\$2,212
MassDOT	4	\$553
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	21	\$2,765

DRAFT FFY 2018 UNIFIED PLANNING WORK PROGRAM TASK FUNDING SUMMARY

Task	Description	FHWA/ MassDOT (PL)	FTA/ MassDOT/ MVPC Sect. 5303	FTA/ MVRTA/ MVPC Sect. 5307	FFY 2018 TOTAL
1.1	Program Management & Support.	\$66,865	\$29,570	\$5,600	\$102,035
1.2	Public Participation Process	\$57,100	\$24,880	\$0	\$81,980
1.3	Unified Planning Work Program	\$13,800	\$5,110	\$0	\$18,910
1.4	Transportation Improvement Program	\$35,440	\$6,900	\$0	\$42,340
1.5	Title VI/Environmental Justice/LEP Activities	\$12,550	\$9,100	\$0	\$21,650
1.6	Regional Transportation Plan	\$22,040	\$4,400	\$0	\$26,440
2.1	Traffic Monitoring Program	\$68,600	\$0	\$0	\$68,600
2.2	Regional Pavement Management Program	\$36,400	\$0	\$0	\$36,400
2.3	Geographic Information Systems	\$99,400	\$16,600	\$9,780	\$125,780
2.4	Congestion Management Process	\$37,200	\$3,200	\$0	\$40,400
2.5	Intermodal Connections to NHS System/Freight Planning	\$7,800	\$2,950	\$0	\$10,750
2.6	Regional Transportation Model	\$28,300	\$2,850	\$0	\$31,150
2.7	Bicycle /Pedestrian /Water Trails Planning	\$27,850	\$0	\$0	\$27,850
2.8	Safety Monitoring System	\$9,100	\$0	\$0	\$9,100
2.9	Transportation and Livability	\$16,920	\$8,100	\$0	\$25,020
2.10	Development of Transportation Performance Measures	\$28,120	\$4,000	\$0	\$32,120
2.11	Travel and Tourism Planning	\$8,150	\$0	\$0	\$8,150
3.1	Elderly and Disabled / ADA Planning	\$0	\$3,900	\$26,500	\$30,400
3.2	Transit Planning	\$0	\$11,600	\$58,120	\$69,720
3.3	Route 125 / Route 125 Connector Intersection Study in Haverhill	\$32,300	\$0	\$0	\$32,300
3.4	I-93/I-495 Interchange Road Safety Audit in Andover	\$14,600	\$0	\$0	\$14,600
3.5	Washington St./River St./Moulton St. Road Safety Audit in Haverhill	\$23,600	\$0	\$0	\$23,600
3.6	Parker St./Market St. & Parker St./ Merrimack St. in Lawrence	\$37,600	\$0	\$0	\$37,600
3.7	Stormwater Management Technical Assistance	\$29,600	\$0	\$0	\$29,600
3.8	Climate Change	\$27,650	\$3,700	\$0	\$31,350
4.1	Intelligent Transportation Systems	\$6,450	\$0	\$0	\$6,450
4.2	Local Technical Assistance	\$16,350	\$0	\$0	\$16,350
4.3	Regional Transportation Security	\$9,200	\$3,710	\$0	\$12,910
4.4	County Road Adjudication	\$2,765	\$0	\$0	\$2,765
	TOTAL	\$775,750	\$140,570	\$100,000	\$1,016,320

Percentage of Spending for Task 1 29.87%
 Percentage of Spending for Task 2 40.87%
 Percentage of Spending for Task 3 26.48%
 Percentage of Spending for Task 4 3.79%

Percentage of Spending for Planning Studies 33.16%

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COMMENTS RECEIVED ON MVMPPO'S DRAFT FFY 2018 UPWP AND RESPONSES

MVRTA

1. Page 89: Task 2.10 table with final rules should be clarified as follows:

'Public Transit Agency SGR' should be 'Transit Asset Management'.

Response: Change made.

2. Page 89: In regards to safety, FTA has issued a final rule for the Public Transit Safety Program 8/11/2016 and a guidance document called the National Safety Plan 1/18/2017- the Public Transit Agency Safety Plan, which will be in the form of a rule, has not been issued at this time.

Response: Change made.

3. Page 133: Task 4.3 under Previous Work, the fifth paragraph beginning with 'MEMA has also ...'. The MEMA Evacuation planning description should be changed. Below is an excerpt from a 2/15/2017 email between Joe Costanzo and MEMA staff regarding the present status of Statewide evacuation planning:

After rolling out the Evacuation (and Shelter) Concept of Operations to local officials and EMDs in the summer of 2015 we determined that there was a need to better sync our efforts in Shelter, Evacuation, and CTN planning and update the Cape Cod plan before we moved too far ahead on our Evacuation Plan. This past fall we completed the CTN Evacuation Operational Plan and the update for the Cape Cod Traffic Plan. In addition, the agency is underway with a Mass Care and Shelter Planning Phase II effort that kicked off this past fall. That said, my sense is that in 2018 the agency will take up Evacuation Coordination again, informed by our efforts in the above realms and building off the Concept of Operations presented to our local and state stakeholders in June 2015.

Response: Change made.

4. Page 134: The NERAC planning tasks that are presently underway have been revised as follows:
 1. Transportation Availability Plan Update: The NERAC 2008 Transportation Availability Plan will be updated as necessary to coordinate with ongoing MEMA evacuation planning efforts
 2. EVAC Calculator Tool Update: In the 2008 Plan a tool, which would assist in the determination of transportation resources for evacuation purposes, was originally developed in Microsoft Access 2007 which is no longer available. A more up to date platform will be developed to activate the tool.

3. Develop Evacuation Exercise Toolkit: The toolkit will assist communities in developing community level exercises, scenarios, evaluation of the exercise and the preparation of after action reports

4. MOU Template: A resource MOU will be developed that communities can use to document agreements with public and private entities to share evacuation resources during an emergency.

Response: Change made.

5. Page 134: Paragraph beginning with 'In FFY 2010...', modify the last sentence to read as follows:

The Authority has two Evacuation Buses and two Evacuation Vans available for deployment.

Response: Change made.

MVPC

1. Pages 100 and 103: A review of the financial tables used in preparing the document showed that the number of Section 5307 hours shown in Tasks 3.1 (Elderly and Disabled Planning) and 3.2 (Transit Planning) had been incorrectly calculated.

Response: Funding tables for Tasks 3.1 and 3.2 were modified to show correct number of 'Section 5307' and 'MVPC' hours and the correct amount of funding. The DRAFT FFY 2018 UPWP TASK FUNDING SUMMARY found on Page 139 was also modified.