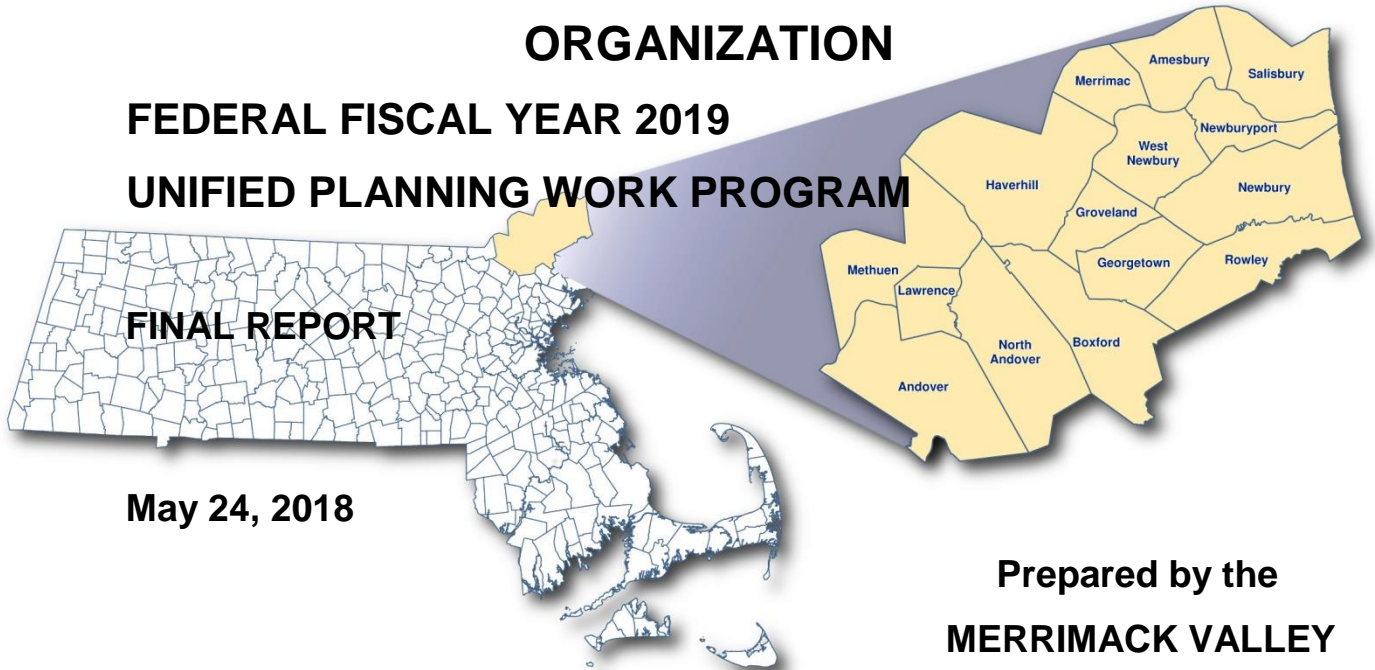


MERRIMACK VALLEY METROPOLITAN PLANNING ORGANIZATION

FEDERAL FISCAL YEAR 2019

UNIFIED PLANNING WORK PROGRAM



FINAL REPORT

May 24, 2018

**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-80-011 and MA-80-012 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.

This page left blank intentionally.

Title VI Notice of Public Protection

The Merrimack Valley Planning Commission (MVPC) operates its programs, services and activities in compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (Title VI), the Civil Rights Restoration Act of 1987, and related statutes and regulations.

Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of race, color or national origin (including limited English proficiency) be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal assistance. Related federal nondiscrimination laws administered by the Federal Highway Administration, the Federal Transit Administration, or both prohibit discrimination on the basis of age, sex and disability. These protected categories are contemplated within MVPC's Title VI Program consistent with federal interpretation and administration. Additionally, MVPC provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with U.S. Department of Transportation policy and guidance on federal Executive Order 13166.

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

Additional Information

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

Title VI Program Coordinator
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

Complaint Filing

To file a complaint alleging a violation of Title VI or related federal nondiscrimination law, contact the Title VI Program Coordinator (above) within one hundred and eighty (180) days of the alleged discriminatory conduct.

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

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

Translation

English

If this information is needed in another language, please contact the MVMPO Title VI/Nondiscrimination Coordinator at 978-374-0519 ext. 15.

Spanish

Si necesita esta información en otro idioma, por favor contacte al coordinador de MVMPO del Título VI/Contra la Discriminación al 978-374-0519 ext. 15.

Portuguese

Caso estas informações sejam necessárias em outro idioma, por favor, contate o Coordenador de Título VI e de Não Discriminação da MVMPO pelo telefone 978-374-0519, Ramal 15.

Chinese Simplified

如果需要使用其它语言了解信息, 请联系Merrimack Valley大都会规划组织 (MVMPO) 《民权法案》第六章协调员, 电话978-374-0519, 转15。

Chinese Traditional

如果需要使用其他語言瞭解資訊, 請聯繫Merrimack Valley大都會規劃組織 (MVMPO) 《民權法案》第六章協調員, 電話978-374-0519, 轉15

Vietnamese

Nếu quý vị cần thông tin này bằng tiếng khác, vui lòng liên hệ Điều phối viên Luật VI/Chống phân biệt đối xử của MVMPO theo số điện thoại 978-374-0519, số máy nhánh 15.

French Creole

Si yon moun vle genyen enfòmasyon sa yo nan yon lòt lang, tanpri kontakte Kowòdinatè kont Diskriminasyon/MVMPO Title VI la nan nimewo 978-374-0519, ekstansyon 15.

Russian

Если Вам необходимо данная информация на любом другом языке, пожалуйста, свяжитесь с Координатором Титула VI/Защита от дискриминации в MVMPO по тел: 978-374-0519, добавочный 15.

French

Si vous avez besoin d'obtenir une copie de la présente dans une autre langue, veuillez contacter le coordinateur du Titre VI/anti-discrimination de MVMPO en composant le 978-374-0519, poste 15.

Italian

Se ha bisogno di ricevere queste informazioni in un'altra lingua si prega di contattare il coordinatore del MVMPO del Titolo VI e dell'ufficio contro la discriminazione al 978-374-0519 interno 15.

Mon-Khmer, Cambodian

ប្រសិនបើលោកអ្នកត្រូវការបកប្រែពីភាសាខ្មែរសម្រាប់ព័ត៌មាននេះសូមទាក់ទងអ្នកសម្របសម្រួលជំពូកទី 6/ គ្នានការដឹកនាំរបស់ MVMPO តាមរយៈលេខទូរស័ព្ទ 978-374-0519 រួចភ្ជាប់ទៅលេខ 15។

Arabic

إذا كنت بحاجة إلى هذه المعلومات بلغة أخرى، يُرجى الاتصال بمنسق الفقرة السادسة لمنع التمييز التابع لمنظمة التخطيط الحضري في ميريماك فالي على الهاتف: 978-374-0519 و ثم اضغط الأرقام 15

This page left blank intentionally.

TABLE OF CONTENTS

MVMPO ENDORSEMENT PAGE	1
MVMPO SELF CERTIFICATION COMPLIANCE STATEMENT.....	3
INTRODUCTION	5
Merrimack Valley Metropolitan Planning Organization (MVMPO) Region and Subregions	5
Organization of FFY 2019 Unified Planning Work Program.....	6
MVMPO Transportation Planning Priorities	6
Regional Plans and Studies	7
State Policies and Plans.....	13
Status of Accelerated Bridge Program Projects in the MVMPO Region.....	18
Federal Transportation Planning Legislation and Initiatives	20
Other Transportation Planning Studies	25
Other Non – Transportation MVPC Planning Studies and Funding Sources.....	26
Transportation Planning Program Years Covered by This Document	29
Transportation Planning Factors Considered Under the FAST Act	29
Summary of Anticipated MVPC Funding Resources	32
Geographic Equity Analysis	35
Merrimack Valley Planning Commission Staff	37
Merrimack Valley Planning Commission Transportation Studies, Analyses and Technical Assistance.....	39
Acronyms Used in FFY 2019 UPWP.....	41
TASK 1.0 - MANAGEMENT AND SUPPORT OF THE 3C TRANSPORTATION PLANNING PROCESS	43
Task 1.1 - Program Management and Support.....	45
Task 1.2 - Public Participation Process.....	49
Task 1.3 – Unified Planning Work Program (UPWP).....	53
Task 1.4 - Transportation Improvement Program (TIP)	55
Task 1.5 – Title VI/Environmental Justice/Limited English Proficiency Activities.....	61
Task 1.6- Regional Transportation Plan.....	65
TASK 2.0- DATA COLLECTION AND ANALYSIS ACTIVITIES	69
Task 2.1 - Traffic Monitoring Program.....	71
Task 2.2 –Regional Pavement Management Program	75
Task 2.3 - Geographic Information Systems.....	79
Task 2.4 - Congestion Management Process	83
Task 2.5 - Intermodal Connections with National Highway System / Freight Planning	85
Task 2.6 - Regional Transportation Model	87
Task 2.7 -- Bicycle/Pedestrian/Water Trails Planning	89
Task 2.8 - Safety Monitoring System	93
Task 2.9 – Transportation and Livability.....	95
Task 2.10 - Development of MVMPO Transportation Performance Measures and Targets	99
Task 2.11–Travel and Tourism Planning	103

TABLE OF CONTENTS (CONT.)

TASK 3.0 -SHORT AND LONG-RANGE TRANSPORTATION PLANNING ACTIVITIES105

- Task 3.1 -- Elderly and Disabled/ADA Planning..... 107
- Task 3.2 -- Transit Planning 111
- Task 3.3 –Route 125 Connector/ Shelley Road Connector RSA in Haverhill..... 113
- Task 3.4 – Identifying Pedestrian Crosswalk Locations on Route 28 in Methuen and North Lawrence 115
- Task 3.5 – Tyler Street/Route 113 Intersection Study in Methuen 117
- Task 3.6 – Route 125/Primrose Street/Marsh Avenue Area Road Safety Audit in Haverhill 119
- Task 3.7 – Route 1A/Route 1/Route 110 Road Safety Audit in Salisbury 123
- Task 3.8 – Stormwater Management Technical Assistance 125
- Task 3.9 - Climate Change..... 129

TASK 4.0 -OTHER TRANSPORTATION STUDIES133

- Task 4.1 - Intelligent Transportation Systems (ITS)..... 135
- Task 4.2 - Local Technical Assistance 137
- Task 4.3 - Regional Transportation Security..... 139
- Task 4.4 – County Road Adjudication 143

FFY 2019 UNIFIED PLANNING WORK PROGRAM TASK FUNDING SUMMARY.....145

COMMENTS RECEIVED ON MVMPO’S DRAFT FFY 2019 UPWP AND RESPONSES147

MVMPO Endorsement Page



MERRIMACK VALLEY METROPOLITAN PLANNING ORGANIZATION ENDORSEMENT

MERRIMACK VALLEY REGION FEDERAL FISCAL YEAR 2019 UNIFIED PLANNING WORK PROGRAM

The undersigned representatives on the Merrimack Valley Metropolitan Planning Organization hereby endorse the Merrimack Valley region's Federal Fiscal Year 2019 Unified Planning Work Program.

Stephanie Pollack
MassDOT Secretary/CEO

Joseph Costanzo
MVRTA Administrator/CEO

James Fiorentini
Mayor of Haverhill

Karen Conard
MVPC Executive Director

Jonathan Gulliver
MassDOT Highway Division Administrator

Daniel Rivera
Mayor of Lawrence

Paul Materazzo
Town of Andover

Robert Snow
Town of Rowley

Neil Harrington
Town of Salisbury

John Cashell
Town of Georgetown

Date: May 23, 2018

This page left blank intentionally.

MVMPO Self Certification Compliance Statement



Merrimack Valley Metropolitan Planning Organization Self Certification Compliance Statement

Concurrent with the submittal of the proposed FFY 2019 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 / CEO

James Fiorentini
Mayor of Haverhill

Daniel Rivera
Mayor of Lawrence

Jonathan Gulliver
MassDOT Highway
Division Administrator

Paul Materazzo
Town of Andover

Karen Conard
MVPC Executive Director

John Cashell
Town of Georgetown

Neil Harrington
Town of Salisbury

Robert Snow
Town of Rowley

Date: May 23, 2018

This page left blank intentionally.

INTRODUCTION

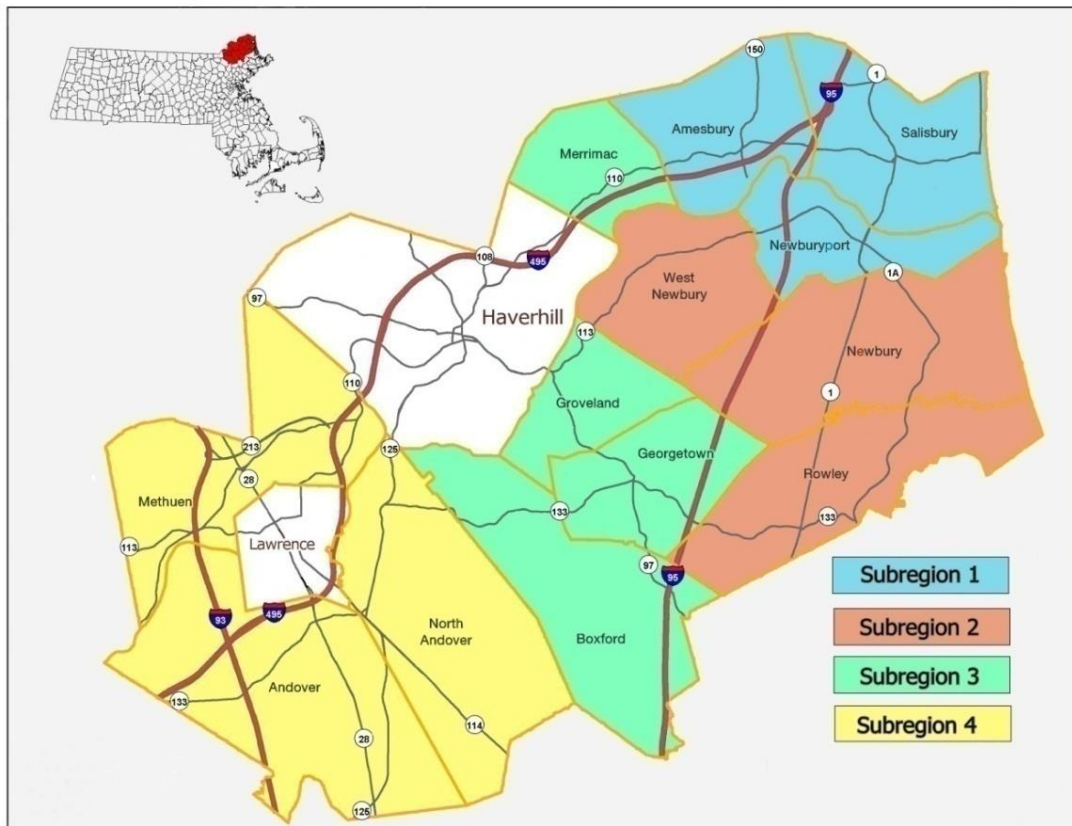
As mandated under the federal “3C” transportation planning process, the Unified Planning Work Program (UPWP), describes the transportation planning activities that are to be carried out by a Metropolitan Planning Organization (MPO) during the federal fiscal year (October 1 – September 30), identifies 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 2019 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 Sub-regions

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

Ex officio, non-voting MVMPO members:

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

Organization of FFY 2019 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 the 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 Continu-

ing, Comprehensive 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 25 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 2019 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 2019 UPWP:

Bicycle and Pedestrian Planning

Border to Boston Rail Trail

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.

In FFY 2018, MassDOT will advertise construction of Phase II of the Salisbury Rail Trail which will extend from Mudnock Road (the northern terminus of Phase I of the Salisbury Rail Trail) north to the New Hampshire State Line.

Georgetown Branch Rail Trails

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 FFY 2018 this included:

- The City of Haverhill moving forward with the design of Phase II of the Bradford Rail Trail and the project being programmed in the MVMPO's FFYs 2019-2023 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 2019-2023 TIP.
- MVPC hosting meetings of and providing technical support to the Georgetown Branch Rail Trail Advisory Committee.

Lawrence Rail Trail

Late in 2017 MassDOT approved a project to construct 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.

Early in 2018, MassDOT suggested that the MVMPO program this project in the FFY 2023 element of its FFYs 2019-2023 TIP using Statewide CMAQ funding.

Other Trail Projects

Design work is continuing on the construction of a bicycle and pedestrian trail that will link the Salisbury Ghost Trail with Elm Street in Amesbury. This project appears in the FFY 2018 element of the MVMPO's FFYs 2018-2022 TIP and should go to construction in 2019. The City of Amesbury is looking to connect the western end of the above trail at Elm Street to the Powwow Riverwalk that runs from the nearby Carriage Town Marketplace to the Lower Millyard area near downtown.

Work is wrapping up on the construction of the new Whittier Bridge that carries I-95 over the Merrimack River between Amesbury and Newburyport. The final component of the project is the construction of a shared use trail that will extend from the Newburyport Park and Ride Lot north over the new structure and terminate near Route 110 in Salisbury.

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.

In 2017, the MVMPO submitted a Title VI update to MassDOT, revised our Title VI analysis of spending, added additional translations of key documents in Chinese and contracted with a translation company for phone translation services.

MVMPO Regional Transportation Plan

Federal Transportation Planning regulations call for Metropolitan Planning Organizations located in ‘Attainment’ or ‘Maintenance’ Air Quality Conformity areas to update their Regional Transportation Plans every four years. With Eastern Massachusetts being classified as an ‘Attainment’ area, the MVMPO is subject to this requirement.

The MVMPO endorsed its FFY 2016 RTP in June 2015. This means that the MVMPO must adopt its FFY 2020 RTP in June 2019 under its FFY 2019 Unified Planning Work Program.

Work on this document is underway as the MVMPO is currently working with MassDOT, the Metropolitan Area Planning Council, UMass’ Donahue Institute and other MPOs in the state to develop the population, household and employment projections that will be used in developing the FFY 2020 RTP. Staff will also begin collecting data on the condition of all non-interstate federal aid roadways in the region, which will be reported in the FFY 2020 document.

The MVMPO’s FFY 2016 RTP addressed the MAP-21 requirement that performance and outcome-based planning methods must be used to guide the programming of transportation capital investments. It established 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 2016 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

As the MVMPO FFY 2016 RTP was being prepared, USDOT released a series of regulations that identified specific performance measures that state DOTs and MPOs must monitor certain performance targets they must meet. These measures are relat-

ed to safety, the reliability of NHS roadways, pavement quality, bridge condition, and asset management. [Task 2.10](#) (see page 97) in this document describes the MVMPO's recent actions in integrating the first of the new performance measures and targets into the region's 3C transportation planning process and identifies the steps that must be taken in FFY 2019 to adopt the others as they are implemented. The MVMPO's FFY 2020 RTP must incorporate all performance measures and targets that are in effect when the document is adopted in Spring 2019.

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. The two projects (one proposed, one approved by MassDOT) that would address safety and congestion issues in this corridor are the two most highly rated projects in the MVMPO region based on their Transportation Evaluation Criteria scores.

The MVMPO has taken the following actions in recent years in pursuit of improving the Route 114 Corridor:

- In December 2014, MassDOT approved a project (#608095) 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 Project #608095. This project appears in the FFYs 2021 and 2022 elements of the FFYs 2018-2022 TIP and it is anticipated that the project will appear in the FFYs 2021, 2022, and 2023 elements of the MVMPO's FFYs 2019-2023 TIP;
- Also in 2017, MassDOT initiated preliminary design work on the above project, with its scope being expanded to extend from the Stop and Shop Driveway to Waverly Road rather than to Andover Street.
- MVPC is working 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 to 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 (#608809) that will resurface Route 114 from Lawrence to the North Andover/Middleton Town Line. This project appears in the FFY 2018 element of the MVMPO's FFYs 2018-2022 TIP.

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).

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 is currently updating its CMP under the FFY 2018 UPWP. The new document will rely heavily upon travel time data that is now available from FHWA for the NHS roadways in the region to identify congested corridor segments and intersections. The new MVMPO CMP will also incorporate the *Travel Time Reliability* Performance Measures mandated by FHWA.

For transit services in the region, the CMP will rely upon ridership data gathered by the MVRTA for its services, and from data gathered by the MBTA for the commuter rail services that it operates in the region.

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.

With MVMPO's adoption of MassDOT's Safety Performance Targets in January 2018, a primary objective of the SMS will be to identify locations on the region's transportation network where crashes involving fatalities and serious injuries take place. MVPC staff will undertake such an analysis under [Task 2.8](#) of this UPWP (see page 91).

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. It 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.

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.

The MVMPO will be updating this document under the FFY 2019 UPWP.

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 Route 133 in Andover and the Central Artery North Area (CANANA) 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, the permitting, construction and operation cost advantages of the BoS are extremely modest by comparison and this concept has proven to be effective in many U.S. applications. The MVMPO hopes that MassDOT will continue to investigate this option.

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. They 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 estab-

lished 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 19).

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 pedestrians 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 pro-

gram 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. By Spring 2018, six communities in the MVMPO region had Complete Streets ordinances/bylaws in place and three others had informed MassDOT of their intent to development them.

Massachusetts Statewide Plans

State Rail Plan

MassDOT recently released its Draft 2018 State Rail Plan, which outlines the Commonwealth's long-term plan for the statewide rail system. The document includes overviews of the following rail system components

- Description of the existing rail system
- The system's overall role in the transportation network

- How the system is financed
- Near term priorities
- A long-term investment strategy

It should be noted that the Draft 2018 State Rail Plan does not include policy decisions regarding specific MBTA Commuter Rail projects. There are several ongoing studies by the MBTA pertaining to the future of Commuter Rail that are currently underway including Focus40, the long-range investment plan for the MBTA and the MBTA Commuter Rail Vision, which will examine different approaches to delivering service including system electrification, among other potential longer-term investments in the MBTA's rail network.

State Freight Plan

MassDOT's Draft 2017 Freight Plan was released in November 2017. It includes a Vision Statement and Guiding Principles for developing "...a multimodal freight system that is safe, secure, resilient, efficient, reliable, and sustainable, and one that catalyzes economic development while supporting the continued competitiveness of the Commonwealth".

It also identifies the following five Performance Goals for the Freight Network:

- The freight system should work for all its customers: shippers, carriers, consumers, workforce, and communities
- The condition of the freight system should be improved to ensure an efficient and reliable supply chain
- Capital budgets should be set in part using freight performance metrics, to ensure that the benefits of projects for freight uses are properly considered in decision-making
- Freight movement should be safe for operators, motorists and passengers, bicyclists, and pedestrians, in urban, suburban, and rural areas
- The freight system should not adversely impact the health and livability of the communities it touches, and it should contribute to the achievement of a 25% statewide reduction in greenhouse gas emissions from utilities, industry, transportation, and other sources by 2020 (Global Warming Solutions Act of 2008).

The Draft Freight Plan also identifies a number of projects that are slated to be built using National Highway Freight Program funds to support projects along the National Highway Freight Network that are intended to improve truck travel time reliability and the condition of core freight assets.

In the Merrimack Valley MPO region, the Draft Plan identifies the I-495 corridor north of I-90 (including the Merrimack Valley region) as the most heavily used truck route in the

state. It also identifies the lack of truck parking facilities in this corridor as an issue that is adversely affecting truck freight movement.

State Bicycle Plan

MassDOT is currently updating the State Bicycle Transportation Plan. The Vision Statement for the document states that Massachusetts:

...will provide a safe, comfortable, and well-connected bicycle network that will increase access for both transportation and recreational purposes. The Bike Plan will advance bicycling statewide for everyday travel—particularly for short trips of three miles or less—to the broadest base of users and free of geographic inequities.

Specific Goals for the Plan include:

- Engaging the public with creative and diverse strategies
- Understanding current and projected trends
- Making the case for bicycling
- Identifying and prioritizing network gaps
- Improving bicycle infrastructure implementation

During FFY 2018 MassDOT reached to the public to promote the new Plan and to present information on new bicycling concepts at Open Streets events including the Downtown Ciclovía in Lawrence that was held on August 20, 2017. These events also provided MassDOT with venues to solicit public input on what steps should be taken to improve bicycle travel in the Commonwealth.

State Pedestrian Plan

MassDOT is also in the process of updating the Massachusetts Pedestrian Transportation Plan in an effort to improve conditions for walking throughout the Commonwealth. The new Plan will recommend policies, programs, and projects for MassDOT to guide decision making and capital investments, as well as develop guidance for municipalities to improve walkability in local communities.

A key piece of the plan is the Municipal Resource Guide, based on stakeholder feedback throughout the planning process.

- Highlighted topics include:
- Why is Walkability Important?
- Elements of Walkable Communities
- ADA Accessibility
- Safety
- Maintenance

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 allowed for the completion of many bridge projects much sooner than would otherwise have been possible and thereby resulted in lower construction costs.

Six MVMPO region bridge repair or replacement projects were included in the ABP. These are listed below 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.

MassDOT has established three capital priority project types in evaluating transportation projects in the Commonwealth:

1 Reliability

Maintain and improve the overall condition and reliability of the transportation system

2 Modernization

Modernize the transportation system to make it safer and more accessible and to accommodate growth

3 Expansion

Expand diverse transportation options for communities throughout the Commonwealth

MassDOT is now in the process of developing its FFY 2019-2023 CIP, which should be adopted in June 2018.

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 2019-2023 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 was revised in Fall 2013.

MassDOT has hosted a series of public planning meetings on the 13 emphasis areas that will be considered in its 2018 SHSP, which must be endorsed by stakeholders this fall. These areas are:

- Bicyclists
- Impaired Driving
- Motorcyclists
- Pedestrians
- Speeding/Aggressive Driving
- Driver Distraction
- Intersection
- Occupant Protection
- Rail Grade Crossings
- Heavy Trucks
- Lane Departure
- Older Drivers
- Young Drivers

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.”

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 2019 to support sustainable development principles in the Valley and, in doing so, improving the quality of life (see [Task 2.9](#) on page 93).

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 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 3.8](#) and [3.9](#)).

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 continues to support 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 3.8), including those related to transportation infrastructure.

As a certified provider of technical assistance under the Executive Office of Energy and Environmental Affairs' Municipal Vulnerability Preparedness (MVP) Program, MVPC staff recently conducted a Vulnerability Assessment Workshop for the City of Lawrence. EOEEA developed the MVP program to provide financial support to cities and towns in the state both for "...planning for resiliency and in implementing key climate change adaptation actions for resiliency."

MVPC Transportation staff has participated in the vulnerability assessment workshops held by the Town of Newbury and the City of Newburyport and it is anticipated that it will continue to participate in these assessments and provide additional assistance to communities under the FFY 2019 UPWP.

Enhance Travel and Tourism

Task 2.11 – Travel and Tourism Planning was first added to the FFY 2017 UPWP to meet this new requirement and appears in this document.

Supporting the above task, in 2017 and 2018 MVPC Economic Development staff examined how the transportation network in the Merrimack Valley region was serving its key tourist and cultural resource attractions as part of its effort to develop the 2018 Merrimack Valley Comprehensive Economic Development Strategy.

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.

From 2015 to 2017, USDOT released Final Rules for the seven Performance Management Areas first identified under MAP-21 and which remain in effect under the FAST Act.

In FFY 2018, the MVMPO adopted MassDOT's Safety Performance Measures and Targets and recognized the Performance Measure and Targets for equipment, rolling

stock and facilities developed by the MVRTA for its upcoming Transit Asset Management Plan.

Under the FFY 2019 UPWP, it will continue to monitor and, where needed, to assist the efforts of MassDOT and the MVRTA in implementing Performance Measures and developing Performance Targets for the remaining Performance Management Areas.

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 3.8 – Stormwater Management Technical Assistance, 3.9 – 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 continue to apply 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 1.2](#));
- Coordinating MVRTA and Lowell Regional Transit Authority transit services through the Merrimack Valley Regional Coordinating Council (see [Task 3.1](#));
- 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.

In June 2017, MVPC staff made a presentation to the Lawrence Industrial Park Committee to get hear from employers in the area as to their transportation needs and concerns. Following up on this effort, MVPC staff worked with the Merrimack Valley Transportation Management Association and the Merrimack Valley Chamber of Commerce to host an Access to Jobs Forum in September 2017 that gathered information from employers and employment agencies on transportation barriers that are preventing workers in the Valley from accessing jobs and to begin identifying potential solutions to these problems.

In 2017, the City of Lawrence expedited the removal of the abandoned railroad bridge as the first step in developing the Lawrence Rail Trail. The MVMPO had conducted a feasibility study for this proposed project for the City under its FFY 2014 UPWP.

Removing the bridge allowed the MVRTA to extend its Route 85 and serve the shopping and employment area that is adjacent to the old structure. The low 10-foot clearance for the old bridge had previously prevented MVRTA buses from serving that location.

This one component of the larger Rail Trail Project will make truck access to the area far more efficient and the revised bus service will provide workers with a far less costly option than relying upon cabs to get to work.

MVPC staff has continued to work 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 snapshot in time, however it would be informative to see the distribution of PL & Target funds in the MPO's region.

See table on [page 33](#).

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

In 2018, the MVRTA and the City of Newburyport began construction of a 205-space parking facility near the intersection of Titcomb and Merrimac Streets.

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, 2016, and 2017. These updates are available for viewing on the MVPC website.

MVPC began preparing for submission of a new five-year CEDS in early 2017 through a number of visioning sessions around four emerging regional issues: Manufacturing, Natural and Cultural Resources, Town Centers, and Transportation. Each of the 2017 CEDS Committee meetings included experts in these areas that

explored ways to address barriers and opportunities ahead. The new CEDS Plan will be submitted to EDA by June 30, 2018 and provides an Economic roadmap to strengthening regional economies.

- **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 2017, MVPC engaged in a new branding and marketing campaign for the region. The old MVMB logo was retired and a new sharper logo and taglines is being 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. MVPC also is preparing to launch a new economic development website by July 1, 2018.

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. We are also working with local Community Colleges and Technical Schools helping to develop the proper training programs needed for local manufacturing companies who are finding it difficult to find skilled workers.

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 2017 MVPC began the development of a first-of-its-kind Regional Housing Plan for the Merrimack Valley. The Regional Plan will be comprised of 15 individual Housing Production Plans for our municipalities as well as regional strategies to create housing of all types in the Merrimack Valley.

- **Brownfields Assessment:** The Merrimack Valley Brownfields Assessment program was funded and expanded in 2017. 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.

- **Brownfields Assessment:** The Merrimack Valley Brownfields Assessment program was funded and expanded in 2017. 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.

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. Through the CEDS committee, MVPC created a PDA Task Force which met several times in 2017 to decide how better to "market" the PDA's in the region. In 2018, we will develop a marketing plan for prioritized sites to help advance the development of these areas.
- **MVED Revolving Loan Fund:** In 2017, Merrimack Valley Economic Development(MVED) made an equipment loan in the amount of \$250,000 to Jessica's Brick Oven, Inc., a company that produces artisan breads that are sold to grocery stores, bakery shops, and restaurants. The funds will be used to grow and expand the business. 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 2018, 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 2019 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 X012 went into effect on April 1, 2018 and will end on March 31, 2019. Contract X013 will begin on April 1, 2019 and continue through March 31, 2020. The transportation planning activities funded through the Section 5307 contract between the MVRTA and the MVPC will be in effect from October 1, 2018 through September 30, 2019.

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 on the following page shows which individual transportation planning tasks included in the MVMPO's FFY 2019 UPWP address each of them:

**FAST Act Planning Factors in the
MVMPO FFY 2019 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, 3.7, 3.9 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, 3.8, 3.9 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, 3.6, 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 3.8, 3.9 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

This page left blank intentionally.

Summary of Anticipated MVPC Funding Resources		
FFY 2019 (July 1, 2018 – June 30, 2019)		
Source - Non Transportation	Amount	% of Total
Economic Development Administration (EDA)	\$100,000	5.0%
CIC Grant - CMMS	20,000	1.0%
EDA Revolving Loan Fund	25,000	1.3%
EDA Lawrence Fabric	2,000	0.1%
EOAF (CCC) E&R Grant Marketing	40,000	2.0%
Eight Towns and the Great Marsh (Environmental Protection Agency/Mass. Coastal Zone Mgt.)	61,750	3.1%
Mass. Department of Housing and Community Development District LTA	106,926	5.4%
Stormwater Coalition	25,000	1.3%
Mayor's Coalition	8,000	0.4%
EPA Brownfields Revolving Loan Fund	312,259	15.6%
EPA Brownfields Assess. Haz & Pet	111,710	5.6%
Pictometry	500	0.0%
Local Technical Assistance	8,958	0.4%
Groveland Open Space Plan	30,000	1.5%
EOEEA Chemical Safety/Climate Change	2,700	0.1%
Misc. GIS and Local Contracts	60,000	3.0%
TOTAL (Non Transportation)	\$914,803	45.8%
Source - Transportation		
FHWA/MassDOT-PL	\$775,000	38.8%
FTA/MVRTA (Section 5307)	100,000	5.0%
FTA/MVPC (Section 5303)	140,000	7.0%
EOEEA Regional Sidewalk Inventory	65,713	3.3%
TOTAL (Transportation)	\$1,080,713	54.2%
MVPC TOTAL	\$1,995,516	

Source: MVPC's FY 2019 Budget #1: July 1, 2018 – June 30, 2019 (Approved 2/15/18)

**Equity Analysis
MVMPO 2014-2023 TIP Funded Projects
UPWP FFY 2011-2019 Studies**

Community	% Funding 2019-2023 TIP	% Funding 2014-2018 TIP	# Regional/ Lo- cal/ Subregional UPWP Studies	≤ 80% of Med HH Income ¹	Minority Popu- lation ≥ 32%	Federal-Aid Roadway Centerline Miles (2015)	# Crash Clusters²	Total Pop.¹
Amesbury	5.8%	11.3%	7			32.98	1	16,907
Andover	0.0%	9.9%	8			78.02	4	34,616
Boxford	0.5%	0.0%	5			27.43		8,138
Georgetown	2.0%	0.0%	5			20.43		8,441
Groveland	1.1%	4.1%	4			17.31		6,646
Haverhill	61%	22.8%	23	Yes	Yes	79.88	18	62,079
Lawrence	8.4%	11.5%	21	Yes	Yes	41.54	13	78,804
Merrimac	0.0%	1.0%	6			15.95		6,601
Methuen	0.0%	30.2%	15	Yes	Yes	58.14	9	48,607
Newbury	2.2%	0.0%	7			27.11		6,854
Newburyport	2.6%	2.6%	19			23.09		17,766
North Andover	10.8%	0.7%	9			41.9	6	29,271
Rowley	0.0%	0.0%	4			19.4	1	6,081
Salisbury	5.2%	5.5%	6			28.22	2	8,672
West Newbury	0.0%	0.0%	9			19.59		4,427
Regionwide	0.3%	0.4%	2					
Total			150			530.99	54	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 2013-2015 with EDPOs of >50.

This page left blank intentionally.

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 2019-2023 TIP, 69.4% of the funding is being programmed in Title VI and EJ communities. In FFY 2014-2018, 64.5% 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 150 transportation studies have been included in the MVMPO's UPWPs between FFY 2011 and 2019. Of those studies, 39% were (or will be in FFY 2019) 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 2013-2015 with EDPOs of ≥ 50 . Thirty-four (34) percent of the federal aid roadway miles exist in Title VI and EJ communities. 74% 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 FFY2019 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.

This page left blank intentionally.

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%)

Angela Cleveland, Community Development Specialist (15%)

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%)

James Terlizzi, Senior Transportation Planner (100%)

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

This page left blank intentionally.

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

Local Technical Assistance Projects

Salem St./Loring St. Intersection Analysis in Lawrence (2018)
 Andover St./Foster St. Intersection Analysis in Lawrence (2018)
 Transportation Element of Newbury Master Plan (2017)
 Boat Launch Concept Plan -West Newbury (2017)
 Truck Exclusion Application - Georgetown (2016)
 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)
 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)

Transportation Studies

Route 125/Route 125 Connector Study in Haverhill (ongoing)
 I-93/I-495 Interchange RSA (ongoing)
 Railroad Ave./Merrimack St./Moulton Way RSA (ongoing)
 Route 28/Lowell St. RSA in Lawrence (ongoing)
 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)
 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)
 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)

This page left blank intentionally.

Acronyms Used in FFY 2019 UPWP

ABP:	Accelerated Bridge Program	MARPA:	Mass. Assoc. of Regional Planning Agencies
ADA:	Americans with Disabilities Act	MassDOT:	Massachusetts Department of Transportation
AV:	Autonomous Vehicle	MEPA:	Massachusetts Environmental Policy Act
BOS:	Bus on Shoulder	MOU:	Memorandum of Understanding
CAAA:	Clean Air Act Amendments of 1990	MPO:	Metropolitan Planning Organization
CEDS:	Comprehensive Economic Development Strategy	MVMPO:	Merrimack Valley Metropolitan Planning Org.
CIP:	Capital Investment Plan	MVPC:	Merrimack Valley Planning Commission
CMP:	Congestion Management Process	MVRTA:	Merrimack Valley Regional Transit Authority
CMAQ:	Congestion Mitigation/Air Quality Program	MVTC:	Merrimack Valley Transportation Committee
CHNA:	Community Health Network Area	NHPP:	National Highway Performance Program
CTPS:	Central Transportation Planning Staff	NHS:	National Highway System
DEP:	Department of Environmental Protection	NMCOG:	Northern Middlesex Council of Governments
DCR:	Dept. of Conservation and Recreation	NTD:	National Transportation Demand
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
GIS:	Geographic Information Systems	LU	Transportation Act: A Legacy for Users
GHG:	Greenhouse Gas	SPR:	State Planning and Research Program
HOV:	High Occupancy Vehicle	STIP:	State Transportation Improvement Program
HPMS:	Highway Performance Monitoring System	STP:	Surface Transportation Program
HSIP:	Highway Safety Improvement Program	TAP:	Transportation Alternatives Program
ISTEA:	Intermodal Surface Transportation and Efficiency Act of 1991	TEA-21	Transportation Equity Act for the 21st Century
ITS:	Intelligent Transportation Systems	TDM:	Transportation Demand Management
LEP:	Limited English Proficiency	TMA:	Transportation Management Area
LRTA:	Lowell Regional Transit Authority	TIP:	Transportation Improvement Program
MAP:	Mobility Assistance Program	UPWP:	Unified Planning Work Program
MAP-21:	Moving Ahead for Progress in the 21st Century Act	3C:	Continuing, Comprehensive, and Cooperative (transportation planning process)
MAPC:	Metropolitan Area Planning Council	8T&TGM:	Eight Towns and the Great Marsh

This page left blank intentionally.

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

This page left blank intentionally.

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.

MVPC also uses 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. Under the FFY 2018 UPWP, MVPC staff began to address the recommendations and findings coming from that review and work will continue on this effort under the FFY 2019 and subsequent UPWPs. This work will take place not only under Task 1.1 but in other tasks included in this document.

Also in FFY 2018, MVPC participated in the USDOT Planning Certification Review for the Rockingham Planning Commission MPO.

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

FFY 2019 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 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 Investment Plan. In addition, Chapter 40 Section 54A reviews of development projects proposed for abandoned rail lines in the region would 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, to the extent feasible, 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, 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 2018 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 2018 Annual Report. This latter document will be prepared in the period from December 2018 through March 2019.
- 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 *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.
- 1.1.6 *MVMPO Participation in Other Regional Studies/Analyses:* MVMPO staff will also support the planning activities needed for regional studies and analyses that can have an impact on transportation in the MVMPO region. These include MVPC's own efforts in Economic Development (including the development of the Comprehensive Economic Development Strategy), Housing and Environmental Planning.

Staff will continue to attend meetings of working groups, task forces and committees that are involved in the development of transportation projects in the region and the completion of planning studies. Recent examples of such groups include the Tri-Community Planning Task Force, Tri-Town Project Coordinating and Participating Agency Group, and the Whittier Bridge Project Working Group.

- 1.1.7 *Attend Transportation Program Managers Meetings:* The Transportation Program Managers Group serves as a primary forum for the exchange of information between the Met-

ropolitan Planning Organizations, MassDOT and USDOT. MVPC staff will be represented at meetings of this group, which generally occur monthly.

- 1.1.8 *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.
- 1.1.9 *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.
- 1.1.10 *Adoption of New MOU's/Planning Agreements:* MVPC staff will continue to participate in the process of developing and securing MVMPO endorsement of a new MOU between all MPOs within the Boston Urbanized Area as was redefined based on the results of the 2010 U.S. Census. Staff will also work with MassDOT and surrounding MPOs to either revise the existing MVMPO MOU or develop and secure MVMPO participation in a new Planning Agreement that outlines the roles and responsibilities required in implementing the Performance Based Planning and Programming procedures established by the final rule on metropolitan and statewide planning that was published in the Federal Register on May 27, 2016.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/18	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Fed. State Programs												
Regional Coordination												
Newsletters/Ann. Rpt.							•					
Contract Admin.												
District 4 Meetings												
Part. Other Studies												
Program Managers												
Local Committees												
North Boston UZA												
Boston UZA MOU			•									
• Product/Event												

Funding

Funding for Task 1.1 Program Management and Support		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	435	\$59,440
MassDOT	109	\$14,860
FTA Section 5303	205	\$24,480
FTA Section 5307	50	\$5,440
MVPC	64	\$7,480
TOTAL	862	\$111,700

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 3.8). Staff also continued to work with the DPW Directors in developing apps that can be used by local DPWs for collecting data and providing direct access to asset databases from locations in the field.

FFY 2019 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 and the Final Rule on Statewide and Metropolitan Planning that apply to this task.

Tasks

- 1.2.1 *Continued Analysis of the Implementation of the Public Participation Plan (PPP):* Staff will continue to apply its revised methodology for evaluating the effectiveness of specific PPP components and will continue to review PPP Best Practices from other MPOs in the country.
- 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.
- 1.2.6 *Host Meetings of DPW Directors Subcommittee and Merrimack Valley Planning and Community Development Directors:* These groups are comprised of stakeholders that play prominent roles in maintaining the transportation infrastructure and in the development of transportation projects in the region. Bringing these groups together allows MVMPO staff to present information on the region's transportation network and transportation planning process and garner meaningful comments and insights. The DPW Directors Subcommittee meets the first Wednesday of every month, while the Planning and Community Development Directors meet on a quarterly basis.
- 1.2.7 *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.
- 1.2.8 *Hold MVMPO Meetings:* MVPC staff will provide administrative and technical support to the MVMPO and host meetings of the organization. This task includes scheduling meet-

ings, preparation and distribution of meeting agendas, notices, minutes, and other materials. The MVMPO usually meets on the fourth Wednesday of each month at the MVPC Offices in Haverhill.

1.2.9 *Monitor/Participate in MPO and Committee Meetings for Surrounding MPOs:* Under this task, MVPC staff will attend policy committee, technical committee, and meetings of the Boston, Northern Middlesex, Rockingham and Nashua MPOs as needed. 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 inter-regional transportation planning coordination.

1.2.10 *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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Analyze Process												
Update Outreach List												
Public Part. Process												
Distribute Documents												
Mayors/Legislators		•						•				
DPW Dir./Planners												
MVTC Meetings		•			•			•			•	
MVMPO Meetings	•	•	•	•	•	•	•	•			•	•
Attend Other MPOs												
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	327	\$38,320
MassDOT	82	\$9,580
FTA Section 5303	156	\$18,568
FTA Section 5307	0	\$0
MVPC	39	\$4,642
TOTAL	604	\$71,110

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 2019 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 2020 UPWP for the region. The MVPC will also amend the FFY 2019 document as needed to reflect changes that may occur during the program year.

Tasks

- 1.3.1 *Develop FFY 2020 Unified Planning Work Program:* The MVPC will develop the FFY 2020 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 2019 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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Draft/Final 2020 UPWP							•	•		•		
Amend 2019 UPWP												
• Product/Event												

Funding

Funding for Task 1.3 Unified Planning Work Program		
Source	Person Hours	Amount
FHWA	85	\$10,720
MassDOT	21	\$2,680
FTA Section 5303	33	\$4,088
FTA Section 5307	0	\$0
MVPC	8	\$1,022
TOTAL	147	\$18,510

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. Federal planning regulations require that any project 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 2018-2022 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 2018-2022 TIP. Staff also continued to conduct qualitative or quantitative assessments of each TIP project's Greenhouse Gas (GHG) Emissions.

The region's FFYs 2018-2022 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 2019-2023 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 2019 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 2020-2024 TIP.

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 2020-2024 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 2020-2024 TIP:* The following tasks and procedures will be performed by the MVPC transportation planning staff in developing the Draft FFYs 2020-2024 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 2020-2024 TIP will also include sections on:

- a. The relationship of the TIP to the RTP;
- b. 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 also 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;
- h. The GHG emissions associated with each project appearing in the FFYs 2020-2024 elements of the document, and
- i. Description of how Performance Measures are included in the FFYs 2020-2024 TIP.

1.4.3. *Endorsement of FFYs 2020-2024 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 2020-2024TIP in late May or June of 2019.

1.4.4. *Amendments to MVMPO’s FFY 2019-2023 TIP:* The MVMPO will endorse amendments to the region’s FFYs 2019-2023 TIP as needed throughout FFY 2019.

1.4.5. *Review Reports on 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 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:* Staff will continue to work with MassDOT to annually update the transportation project evaluation scores for roadway and trail projects in the MVMPO region.

As part of Chapter 46 of the Acts of 2013, the Legislature created the Project Selection Advisory Council (PSAC) which developed uniform project selection criteria that are to be used in the development of the comprehensive state transportation plan. These new criteria have been applied by MassDOT to the universe of projects/project proposals as part of the preparation of the 2017-2021, 2018-2022, and 2019-2023 CIPs. MVPC staff has and will continue to work with MVMPO members to determine how and whether

MassDOT’s new evaluation criteria can be incorporated into its own transportation project evaluation process.

- 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. MVPC staff will also 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.
- 1.4.8. *Publish List of Projects for Which Federal Transportation Funds Were Obligated in FFY 2018:* By January 1, 2019, the MVMPO will develop and make available to the public a list of the transportation projects that federal funds were obligated to in FFY 2018.
- 1.4.9. *Continue to Support Regional Bike Parking and ADA Ramp/Sidewalk Programs:* In some years, substantial amounts of MVMPO Target 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 MPO Target funding.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
5- Year Prog. Projects						•						
Draft 2020-2024 TIP							•					
Final 2020-2024 TIP								•				
Amend 2019-2023 TIP												
Reports on Projects												
Evaluation Criteria						•						
CMAQ Anal./ Committee												
List of Obligated Projs.			•									
Bike & Ped. Projects												
	• Product/Event											

Funding

Funding for Task 1.4 Transportation Improvement Program		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	317	\$34,192
MassDOT	79	\$8,548
FTA Section 5303	58	\$6,880
FTA Section 5307	0	\$0
MVPC	15	\$1,720
TOTAL	469	\$51,340

This page left blank intentionally.

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 Title VI/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 was submitted to MassDOT in September 2017. Also in FFY 2017, staff incorporated minority population, income and language information from the 2011-2015 American Community Survey.

FFY 2019 Activities

MVPC Staff proposes to implement its FFY 2019 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:* 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 2019.
- 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 will be released by MassDOT in FFY 2019.
- 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. The MVPC's Title VI Coordinator will arrange for in-house accessibility training, as needed.
- 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 2019.
- 1.5.9 *Implement Recommendations Provided Through the 2017 Planning Certification Review:* The MVMPO will review and update the LEP/LAP and Title VI program as needed according to the recommendations provided through the Certification Review process.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Staff Training								•				
Demographic Trends												
Benefits & Burdens						•						
Data Collection												
Translate Documents						•			•			
In-house Accessibility												
Outreach to Local Grps.												
Title VI Annual Report												•
Implement Cert. Review												

• Product/Event

Funding

Funding for Task 1.5 Title VI / Environmental Justice / LEP		
Source	Person Hours	Amount
FHWA	138	\$14,600
MassDOT	34	\$3,650
FTA Section 5303	60	\$7,240
FTA Section 5307	0	\$0
MVPC	15	\$1,810
TOTAL	247	\$27,300

This page left blank intentionally.

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's FFY 2016 RTP was the first to incorporate the application of performance and outcome-based techniques and programs in the evaluation and management of the region's transportation capital assets.

In FFY 2018, collected information on proposed, planned, permitted, and built developments in the region which MassDOT, MAPC and the UMass Donahue Institute is using to develop the socioeconomic projections that will be the foundation of the FFY 2020 document. Staff also participated in MassDOT's Socioeconomic Projections Committee, which has been meeting monthly since Autumn 2017, to review socioeconomic data and provide input into the process being employed by MassDOT in developing these projections.

Staff also began to apply FHWA's Invest software to the MPO's FY 2016 RTP to assess its effectiveness in promoting sustainable development in the region.

FFY 2019 Activities

The Merrimack Valley MPO must adopt its FFY 2020 Regional Transportation Plan in Spring 2019. The following tasks will be completed by MVPC in preparing this document:

Tasks

- 1.6.1 *Review of Significant Regional Studies:* Staff will incorporate into the RTP data and other information from the MVPC's Regional Housing Production Plan, CEDS, Multi-Hazard Mitigation Plan, the Active Transportation Plan and the Coordinated Public Transit - Human Services Transportation Plan.
- 1.6.2 *Outreach to Communities to Develop Preferred Land Use/Zoning Scenario:* Staff will contact local planners and community development officials to solicit input on their long-term zoning and land use objectives and likely reflect recommendations contained in existing Community Master Plans and strategies being followed to support the development of Priority Development Areas and Priority Protection Areas as identified in the Merrimack Valley Planning Commission's Priority Growth Strategy.

1.6.3 *Modification of Existing Goals and Objectives to Reflect New Performance Measures and Targets:* The MVMPO will review and, if needed, modify the goals and objectives contained in the FFY 2016 RTP so that they support performance measures and targets that the Organization will have adopted by the end of FFY 2018.

1.6.4 *Collection of Data Showing the Condition and Utilization of the Regional Transportation Network:* Staff will develop or obtain data relating to the regional transportation network including, but not limited to:

From MassDOT

- Latest 3-year Crash Cluster data/locations;
- Condition Data for 242 Bridges;
- Condition of Park and Ride Lots;
- Road Surface Conditions for Limited Access roadways
- Traffic Volumes on Limited Access Roadways

From MBTA

- From *State of Good Repair Report*, information on the condition of commuter rail stations, tracks, signals;
- Load factors on commuter rail trains;
- Boardings at commuter rail stations

From MVRTA

- Condition of Rolling Stock, Maintenance Facilities and Equipment, and bus terminals;
- Ridership on commuter bus, fixed route bus and demand response services;
- Number of crashes/accidents on commuter bus, fixed route bus and demand response services

From MVPC

- Road Surface Conditions for Non-Limited Access federal aid roadways in the Valley;
- Utilization of park and ride lots;
- Traffic Volumes
- Travel Speeds on NHS Roadways;
- Roadway and Transit facilities/services identified in CMP
- Sidewalk inventory data.

1.6.5 *Development of Financial Constraint Information Used in the Document:* It is anticipated that MassDOT, working in cooperation with FTA and FHWA, will prepare estimates of the amount and type of state and federal transportation funding that will be available to all the MPOs in the state over the time period covered in the RTP. In addition, MVPC will develop an estimate of the amount of Chapter 90 funding that can reasonably be expected for use in maintaining federal aid roadways in the region.

1.6.6 *Hold Public Outreach Sessions:* Three public outreach sessions will be held to introduce the Regional Transportation Plan, describe the Merrimack Valley transportation network, present information generated through Tasks 1.6.4 and 1.6.5 above, and discuss important findings and recommendations. Additional presentations will be made to other groups throughout the region including those serving underserved protected populations.

1.6.7 *Develop Recommendations for Programs and Projects:* Staff will work with MPO members and stakeholders to develop a list of recommended projects programs for inclusion in the RTP based on four inputs:

- Comments received through the public outreach sessions;
- Recommendations for projects and services contained in existing state and regional plans and capital programs;
- Projects suggested through the evaluation of the data on the existing condition of the transportation network, and
- Constraints in available funding.

1.6.8 *Preparation of Draft / Final Versions of MVMPO FFY 2020 RTP:* Staff will prepare a draft MVMPO FFY 2020 RTP that contains the recommended projects and programs developed in Task 1.6.7 along with important information that describes the existing condition of the region's transportation network, identifies the amount of funding that will be available to implement the RTPs recommendations.

Once the MVMPO Draft FFY 2020 RTP has been approved for release to the public by the MPO, the document will be made available for public review and comment as outlined in the MPO's Public Participation Plan. Comments received during the public review and comment period will be brought to the attention of the MVMPO for consideration and appropriate action. Once approved by the MPO, a final version of the RTP will be completed and submitted to MassDOT, FTA and FHWA.

1.6.9 *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.

1.6.10 *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. The results of this analysis will guide the MPO in developing its FFY 2020 RTP.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Public Outreach												
Modify Plan Goals.												
Data Collection												
Financial Constraint												
Hearings			•	•								
Identify Projects												
Draft/Final RTPs						•	•	•				
Monitor Developments												
Invest Software												

• Product/Event

Funding

Funding for Task 1.6 Regional Transportation Plan		
Source	Person Hours	Amount
FHWA	518	\$56,912
MassDOT	129	\$14,228
FTA Section 5303	92	\$10,960
FTA Section 5307	0	\$0
MVPC	23	\$2,740
TOTAL	762	\$84,840

TASK 2.0- DATA COLLECTION AND ANALYSIS ACTIVITIES

This page left blank intentionally.

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 2018 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 2019 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 2019.
- 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 2019 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.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
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	716	\$57,440
MassDOT	179	\$14,360
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	895	\$71,800

This page left blank intentionally.

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.

Under the FFY 2018 UPWP, MVPC collected information on the condition of pavement on federal aid arterial and collector roadways in the region for use in the FFY 2020 RTP. This data will be used to identify the level of funding needed to attain and maintain the Pavement Condition goals identified in the FFY 2020 RTP over the next 20 years.

FFY 2019 Activities

MVPC will focus on managing and analyzing data it will have collected on the condition of pavement on federal aid arterial and collector roadways in the region for use in the FFY 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.

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

Tasks

- 2.2.1 Update Regional Pavement Management Program: This task will involve reviewing and where necessary, modifying the assumptions contained in the pavement management software to reflect local preferences in selecting appropriate roadway improvement

treatments. It can also include modifying the model’s degradation curves, and construction cost estimates.

- 2.2.2 *Analysis of Pavement Condition Data:* Once Task 2.2.1 has been completed, staff will use the Regional Pavement Management Program to assess the network pavement’s current condition and forecast what the condition of the network would be if the existing level of roadwork spending were to continue over the time period covered in the RTP.
- 2.2.3 *Identification of Pavement Maintenance Needs:* From Task 2.2.2, staff will identify the estimated cost of maintaining the region’s roadway network in its current condition through the year 2040, and how much funding would be needed for the system to attain the MVMPO’s pavement condition target. These amounts would be compared to estimates of the funding expected to be available to the MVMPO for the maintenance of these roadways over the years covered in the FFY 2020 RTP.
- 2.2.4 *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.
- 2.2.5 *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 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.
- 2.2.6 *Attend Meetings of the Pavement Management Users Group:* Staff will attend meetings of the Pavement Management Users Group.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Update MVPC Program												
Data Analysis												
Identify Pave. Needs												
Community Assistance												
Data Collection Review												
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	192	\$19,360
MassDOT	48	\$4,840
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	240	\$24,200

This page left blank intentionally.

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.

In FFY 2018, MVPC GIS and Transportation staff met with a MassDOT GIS Analyst to discuss how MVPC could assist communities in updating the information shown in the MassDOT Road Inventory File

Another significant achievement under the FFY 2018 UPWP was the development of a Regional Trail Story Map, an online application that combines interactive web maps, text, high resolution

photos, and videos to tell the story of the rapidly growing trail network in the Merrimack Valley region.

FFY 2019 Activities

A priority area under this task will be to support the development of the MVMPO's FFY 2020 RTP. This work will include the preparation of maps and other materials that will be used to present information at public outreach meetings, on the MVPC website, and for inclusion in the Draft and Final versions of the document.

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. It will also continue to work with MassDOT and member communities to facilitate the process of updating the information in the RIF.

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.

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.

It is anticipated that more work will be performed on this task in FFY 2019 as staff incorporates many new datasets (e.g. new Transportation Performance Measures) that will be considered in the FFY 2020 RTP.

2.3.2 *Preparation of Maps and Other Information Needed for FFY 2020 RTP:* This will include providing updated information in the form of tables, charts, and maps for topics to be included in the RTP including, but not limited to, pavement condition, bridge condition, high crash locations, transportation networks/facilities, Census/ACS data, travel time/reliability, and environmental constraints.

2.3.3 *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 and the Assessors Maps that MVPC prepares for most of its member communities.

Staff will also continue to work with MassDOT to develop and implement a process by which MVPC can assist communities in submitting the data needed to update their RIF information.

- 2.3.4 *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.
- 2.3.5 *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.
- 2.3.6 *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.
- 2.3.7 *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.
- 2.3.8 *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, staff will update the information shown in its Regional Trails Storymap.

- 2.3.9 *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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Maintain Database												
Maps/Data for RTP												
Road Inventory File												
State GIS User Group												
Pictometry Support												
Pictometry Workshops												
MVRTA Bus Layers												
Trails Database												
Transportation Viewer												
● Product/Event												

Funding

Funding for Task 2.3 Geographic Information Systems		
Source	Person Hours	Amount
FHWA	832	\$86,080
MassDOT	208	\$21,520
FTA Section 5303	133	\$13,280
FTA Section 5307	96	\$8,240
MVPC	57	\$5,380
TOTAL	1,326	\$134,500

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, which has now become the Congestion Management Process (CMP). 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.

Staff will be completing the MVMPO's 2018 CMP under its FFY 2018 UPWP. The new document will use the NPMRDS to identify congested NHS roadway locations in the Valley. Previous MVMPO Congestion Management reports found that virtually all the congested locations in the region (exclusive of seasonal travel) occurred on NHS roadways. Data from the MVRTA and MassDOT will be used to identify congested transit facilities/services.

FFY 2019 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 *NPMRDS Data:* Staff will work with MassDOT and FHWA to acquire and monitor new NPMRDS travel time information as it becomes available.

- 2.4.2 *Other Travel Time Data:* Staff will inquire as to the availability of INRIX or other travel time datasets for the Non-NHS federal aid roadways in the region for inclusion in a future MVMPO CMP report.
- 2.4.3 *Other 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.
- 2.4.4 *Incorporate NHS Reliability Performance Targets:* The MVMPO will soon be establishing performance targets for the reliability of travel on the Interstate and Non-Interstate National Highway System (including Freight) in the region. Staff will incorporate the travel time reliability targets (including freight) selected by MPO into the CMP report.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Travel Time Data Col.												
Other Travel Time Data												
Other Data Collection												
Add NHS Reliability												
	• Product/Event											

Funding

Funding for Task 2.4 Congestion Management Processes		
Source	Person Hours	Amount
FHWA	59	\$5,920
MassDOT	15	\$1,480
FTA Section 5303	24	\$2,560
FTA Section 5307	0	\$0
MVPC	6	\$640
TOTAL	104	\$10,600

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 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, MVPC completed an update to its 2012 analysis of the condition and usage of the intermodal facilities in the region. This analysis focuses on the park and ride facilities and transit stations located on or near NHS roadways and also assesses the adequacy of the connections to NHS roadways from truck freight terminals in the region. It considers such factors as the physical condition of the facilities and whether there is peak period congestion on the roadways that connect them to the NHS system. The study also makes recommendations for addressing any of the deficiencies identified.

Also in FFY 2017, the MVMPO designated almost four miles of Critical Urban Freight Corridor in the region. With this designation, 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 2019 Activities

For the FFY 2019 UPWP, MVPC will undertake the following task in support of improving intermodal connections and the movement of freight in the Valley:

Tasks

2.5.1 *Development of NHS and Freight Projects:* Based on the recommendations contained in the MVPC's NHS Facilities Inventory and the State Freight Plan, 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 and/or improve the movement of freight both within and through the Merrimack Valley region.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Develop NHS Projects												
<ul style="list-style-type: none"> Product/Event 												

Funding

Funding for Task 2.5 Intermodal Connections with NHS		
Source	Person Hours	Amount
FHWA	22	\$2,640
MassDOT	6	\$660
FTA Section 5303	21	\$2,360
FTA Section 5307	0	\$0
MVPC	5	\$590
TOTAL	54	\$6,250

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 and is a required component of the Regional Transportation Plan. These models also often play an important role in identifying and evaluating congested transportation facilities as part of an MPO's Congestion Management Process.

In FFY 2019, the MVMPO will employ MassDOT's Statewide Travel Demand Model to provide it with the travel demand forecasts that will be used in developing the FFY 2020 RTP.

Previous Work

In FFY 2018, MVPC staff worked with MassDOT, MAPC, the Donahue Institute at UMass and MPOs from around the Commonwealth to develop the socioeconomic projections that will be included in the MVMPO's FFY 2020 RTP. As part of this effort, MVPC staff provided MAPC with information on the size and location of recently completed, approved, and planned developments in the Valley, provided input to MassDOT on its preliminary community-level population projections for the region. It also will complete the process of allocating forecasted growth in the region to the Traffic Analysis Zones (TAZs) contained in the Massachusetts Statewide Travel Demand model.

FFY 2019 Activities

MVPC staff will work with MassDOT and CTPS to review the parameters and capabilities of the Statewide Travel Demand Model. It will also review the travel demand forecasts for the region generated by the model and other materials/data that then can be incorporated in the FFY 2020 RTP.

Tasks

- 2.6.1 *Model Coordination:* Staff will review the Statewide Travel Demand model network for the region and may suggest possible modifications. It will also review the latest forecasts for the region that have been generated. MVPC will also work with CTPS to identify locations where staff can collect ATR and/or turning movement data in support of further refinement/calibration efforts.
- 2.6.2 *Review Travel Demand Forecasts:* MVPC will work with CTPS to identify the model networks/scenarios that the MVMPO wants analyzed as part of the FFY 2020 RTP. Once these forecasts have been completed, staff will review the model outputs and synthesize them for incorporation into the RTP.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Model Coordination												
Review Forecasts			•									
• Product/Event												

Funding

Funding for Task 2.6 Regional Transportation Model		
Source	Person Hours	Amount
FHWA	145	\$14,480
MassDOT	36	\$3,620
FTA Section 5303	21	\$2,280
FTA Section 5307	0	\$0
MVPC	5	\$570
TOTAL	207	\$20,950

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.

FFY 2019 Activities

The overarching focus for this task in FFY 2019 will be supporting the implementation of the recommendations contained in the Merrimack Valley Active Transportation Plan and continuing 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 communities in developing multi-use trails.

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. 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.
- 2.7.7 *Development of Regional Bikeability Index:* Staff will work with MassDOT and area cyclists to identify and then evaluate existing methods of measuring bikeability such as Bicycle Level of Service, Bicycle Suitability Score, among others. These will then be evaluated in terms of their potential applicability to the region's Active Transportation Network. Based on this evaluation and feedback from stakeholders, staff anticipates that it will either select one of these recognized measures or develop one of its own.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Program Review												
Border to Boston Trail												
Technical Assistance												
Attend Meetings												
Active Trans. Plan												
Bike/Ped Safety												
Bikeability Index												
	● Product/Event											

Funding

Funding for Task 2.7 Bicycle/Pedestrian/Water Trails Planning		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	251	\$24,840
MassDOT	63	\$6,210
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	314	\$31,050

This page left blank intentionally.

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 is also used by the MVRTA as part of its Bus/Van operator training to increase awareness for dealing with high crash locations.

Previous Work

MVPC again used MassDOT's 'Crash Cluster' data as the primary means of identifying locations for safety studies to be undertaken in the FFY 2019 UPWP.

However, with the adoption of the new Safety Performance Measures and Targets by the MVMPO, staff also completed a preliminary assessment of how well the Crash Cluster measure employed by MassDOT identified locations where there were fatalities and serious injuries. This analysis showed that only a very small percentage of the crashes at the 2013-2015 Crash Cluster locations in the region involved serious injuries or fatalities.

FFY 2019 Activities

MVPC will expand upon the preliminary analysis described above and conduct a more extensive review of available data to identify where fatal crashes and those involving serious injuries have occurred in the region.

Tasks

- 2.8.1 *Obtain Most Recent MassDOT and Selected Local Police Crash Data:* Staff believes that crash data from 2017 will be available late in July 2019 and facilitate creation of a three-year analysis period of 2015-2017.
- 2.8.2 *Identify Locations of Crashes Involving Fatalities and Serious Injuries:* Staff will work with MassDOT to access the crash data for the Merrimack Valley MPO that it uses for its Safety Performance Measures. Each crash involving a fatality and/or serious injury will be identified. Staff will also identify the number of fatalities and serious injuries that occurred in each such crash. This information will be categorized by roadway functional classification and community, and high crash locations will be identified.
- 2.8.3 *Review State's Crash Cluster List:* Staff will review MassDOT's latest list of 'Crash Cluster' locations based on the latest three years of crash data and compare it to data contained in previous lists.

- 2.8.4 *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 new Massachusetts Strategic Highway Safety Plan.
- 2.8.5 *Participation in Road Safety Audits:* Staff will participate in the Road Safety Audits undertaken in the region in FFY 2019.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Obtain Crash Data												
Fatal/Serious Crashes												
Update Crash Clusters												
Strat. Highway Safety												
Road Safety Audits												
● Product/Event												

Funding

Funding for Task 2.8 Safety Monitoring System		
Source	Person Hours	Amount
FHWA	114	\$10,320
MassDOT	29	\$2,580
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	143	\$12,900

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 2018, 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 assisted the Town of Georgetown in developing its Complete Streets policy, which it adopted in August 2018.

FFY 2019 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:* The MVMPO will do this through collecting health data and participating in Health Impact Analyses. Staff will collaborate with health-related working groups, committees and organizations to improve transportation access for communities.

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. Staff also participate in Haverhill's Mount Washington Alliance partnership.

- 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 convene meetings of and provide support to the Regional Health Directors, as needed.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Technical Assistance												
Collect Health Data												
CHNNA, Health 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	100	\$10,176
MassDOT	25	\$2,544
FTA Section 5303	51	\$5,624
FTA Section 5307	0	\$0
MVPC	13	\$1,406
TOTAL	189	\$19,750

This page left blank intentionally.

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 as well as State DOT and MPO Implementation 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	8/31/17	2/27/18
Systems Performance/Freight/CMAQ	5/20/17	5/20/18	11/16/18
NHS Pavement and Bridge Conditions	5/20/17	5/20/18	11/16/18
NHS Asset Management	10/2/17	4/30/18	TBD
Transit Asset Management	10/1/16	10/1/17	9/30/2018
Public Transit Agency Safety Plan	TBD	TBD	TBD

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 monitored the Federal Register and USDOT communications on Performance Management to stay informed as the process evolved. In 2017, staff began to participate in the Transportation Managers Performance Measures Committee, which advised MassDOT on the development of its Safety Performance Targets (established in August 2017), and is now focusing on the development of the Department's NHS Roadway Travel Time Reliability (including Freight), Percent of Non-Single Occupant Vehicle Travel, Pavement and Bridge Condition Targets.

In FFY 2018, the MVMPO adopted MassDOT's Safety Performance Measures and Targets, and recognized the MVRTA's Asset Targets for its Equipment, Rolling Stock and Facilities.

FFY 2019 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 established performance targets for many of the performance categories shown on the previous page. MVMPO staff will focus its efforts on working with MassDOT to review the data for the performance measures and statewide targets that the MPO will need to adopt by September 30, 2019, which are identified below.

Tasks

- 2.10.1 *Safety Performance Measures/Targets:* Staff will review new MassDOT data on the number and rate of fatalities and serious injuries in the region.
- 2.10.2 *Collect Data for MVMPO Region Sidewalk Locations and Conditions:* This measure was used in the FFY 2016 RTP but reliable data on the location and condition of sidewalks was lacking. Since that time, MVPC GIS staff has been applying a methodology for collecting information on sidewalk location using aerial photographs, MassDOT's Road Inventory File, and other resources. In addition, MVPC has received a state planning grant to fund collection of sidewalk location and condition data in seven communities. This work should be completed in Fall 2018.
- 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 (TAM Plan). 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 *NHS Pavement Performance Measure:* The NHS Highway System/Bridge Condition rule requires that MassDOT develop performance targets for the mandated performance measures in May 2018. MVPC staff will review the data now being analyzed by MassDOT in developing these targets to determine whether, as was the case for the Safety Performance Measures, the MVMPO should adopt the statewide targets for pavement condition and to evaluate whether these targets have applicability for non-NHS federal aid roadways in the region. This task would also support the MVMPO's development of its own targets, if determined to be necessary.
- 2.10.5 *NHS Reliability, Freight and Emissions Rule:* This rule establishes the criteria for monitoring and identifying the reliability of travel on the Interstate and Non-Interstate National Highway System (including Freight). MVPC is currently analyzing NPMRDS data in evaluating travel times and congestion along its NHS roadways as part of its CMP. Similar to Task 2.10.4, staff will review the data now being analyzed by MassDOT in develop-

ing its travel time reliability (including Freight), Percent Non-Single Occupancy Vehicle travel targets to determine their applicability to the MVMPO. This task would also support the MVMPO’s development of its own targets, if determined to be necessary.

Also under this rule, by March 27, 2019 the MVMPO will be required to establish a four-year target for GHG emissions, which will be 180 days after MassDOT establishes its target. Staff will review the GHG data that will be analyzed by MassDOT in developing its target to determine its applicability for the region.

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 the remaining 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, which will be included in the MVMPO’s FFY 2020 RTP. 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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
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	186	\$21,296
MassDOT	47	\$5,324
FTA Section 5303	28	\$3,200
FTA Section 5307	0	\$0
MVPC	7	\$800
TOTAL	268	\$30,620

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.

In FFY 2018, transportation staff participated in the creation of the Merrimack Valley Region's Comprehensive Economic Development Strategy. As part of the outreach and involvement process used to guide the development of this Strategy, stakeholders examined how effective the region's transportation network was in supporting access to the key tourist locations in the Valley. From this, ideas for improving access to these areas such as providing new transit services, installing signage, and even improving the navigability of the Merrimack River were offered for consideration.

FFY 2019 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 these centers and organizations. Staff will reach out to our travel and tourism partners 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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Tourism Database												
Tourism Meetings												
MVRTA Coordination												
	• Product/Event											

Funding

Funding for Task 2.11 Travel and Tourism Planning		
Source	Person Hours	Amount
FHWA	31	\$3,720
MassDOT	8	\$930
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	39	\$4,650

TASK 3.0 -SHORT AND LONG-RANGE TRANSPORTATION PLANNING ACTIVITIES

This page left blank intentionally.

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 2019 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.

More communities are considering 'healthy aging' and the transportation needs of an aging population. MVMPO staff will work with our communities and the MVRTA to identify the service gaps, needs and possible solutions.

The MVMPO will continue to collaborate with NMCOG staff to host the Regional Coordinating Council, which focuses on senior and disabled transportation.

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.
- 3.1.4 *Coordinate and Support the Merrimack Valley Regional Coordinating Council.* The MVMPO will actively participate in the Regional Coordinating Council and provide planning assistance to help improve mobility in the region.
- 3.1.5 *Coordinated Public Transit Human Services Plan:* MVMPO will work with the MVRTA and RCC to update the MVMPO's 2014 Coordinated Public Transit Human Services Plan.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
ADA: Demand Resp.										•		
ADA: Fixed Route											•	
MAP Vehicles												
Support RCC		•						•				
Coordinated Plan				•								
	• Product/Event											

Funding

Funding for Task 3.1 Elderly and Disabled/ADA Planning		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	0	\$0
MassDOT	0	\$0
FTA Section 5303	30	\$3,280
FTA Section 5307	255	\$26,000
MVPC	71	\$7,320
TOTAL	357	\$36,600

This page left blank intentionally.

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. Design work on this project was completed in 2017 and construction will proceed in 2018.

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 2019 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 2019 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 *Haverhill Transit Access*: The MVRTA is working with a coalition of non-profit organizations in Haverhill to identify how they can cooperate to provide additional transit services in Haverhill. MVMPO staff will assist in this process.

3.2.3 *Assist MVRTA in Monitoring FTA Areas of Compliance*: MVPC Staff will assist the MVRTA in monitoring 17 areas of compliance, including Grant Administration, Maintenance reviews, EEO policy implementation, Procurement, and Civil Rights areas, that are included as part of FTA's Triennial Review of the Authority.

3.2.4 *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.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Technical Assistance												
Haverhill Transit Access												
FTA Areas of Compliance												
Real Time Bus Location										•		
• Product/Event												

Funding

Funding for Task 3.2 Transit Planning		
Source	Person Hours	Amount
FHWA	0	\$0
MassDOT	0	\$0
FTA Section 5303	58	\$6,400
FTA Section 5307	399	\$40,320
MVPC	114	\$11,680
TOTAL	572	\$58,400

Task 3.3 –Route 125 Connector/ Shelley Road Connector RSA in Haverhill

Description

This signalized intersection is located approximately ½ mile south of the Route 125 Connector’s intersection with I-495 at Exit 48 in Haverhill. The Connector is a NHS roadway with its other terminus located at Route 125 in Haverhill, just over one mile to the southeast.

This signalized intersection is the major point of access into the Ward Hill Industrial Park, which is located just north of the Connector via Ward Hill Avenue. Shelley Road provides access to many commercial and industrial areas (including a BJ’s Wholesale Club) located south of the Connector.

MassDOT identified this intersection as a 2013-2015 Crash Cluster location, with an EPDO Score of 72.

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

FFY 2019 Activities

The MVMPO staff will complete a Road Safety Audit for this location.

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 *Data Collection:* MVPC will collect weekday AM, PM peak period Turning Movement counts at the intersection and will request that MassDOT conduct ATR counts on the Route 125 Connector approaches.
- 3.3.3 *Data Analysis/Level of Service Calculations:* MVPC staff will complete LOS analyses for this intersection to both measure congestion and develop an intersection crash rate, which will be used in the Road Safety Audit for the study area.
- 3.3.4 *Obtain and Analyze Crash Data:* Staff will collect and analyze the most recent three years of MassDOT data 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.
- 3.3.5 *Conduct Study Area Road Safety Audit:* Staff will present the findings from Tasks 3.3.1 - 3.3.4 to state and local officials in a Road Safety Audit. This audit will provide MVPC with information and suggestions that will facilitate the development of short and long-term improvement options that could be implemented.
- 3.3.6 *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.

3.3.7 *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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Data Collection												
Traffic Data Analysis												
Crash Data Analysis												
Conduct RSA									•			
Analyze Options												
Final RSA Report.											•	

• Product/Event

Funding

Funding for Task 3.3 Rte. 125 Connector / Shelley Rd. RSA in Haverhill		
Source	Person Hours	Amount
FHWA	225	\$21,680
MassDOT	56	\$5,420
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	281	\$27,100

Task 3.4 – Identifying Pedestrian Crosswalk Locations on Route 28 in Methuen and North Lawrence

Description

Route 28 is the primary connector between the downtown areas of the cities of Lawrence and Methuen. The corridor is densely developed, especially near the Methuen/Lawrence City Line. Commercial uses predominate along the roadway but densely settled residential areas are located very close to the roadway.

Through its work with the City of Methuen and with the Methuen Arlington Neighborhood association (MAN Inc.) staff has been made aware of officials' and residents' concerns about the safety of pedestrians that must cross this roadway. These concerns were validated in 2017, when a pedestrian was killed while crossing Route 28 in this area.

Proponent	Work Conducted By
• Local Officials; Area Residents	• Merrimack Valley Planning Commission

Previous Work

MVPC completed the Methuen Walkability Assessment for the City of Methuen in 2016 in support of its effort to create a 40R District in and around Methuen Square. This assistance included an analysis of pedestrian transportation facilities in the downtown area including Route 28. In developing the scope for the Walkability Assessment, City officials had asked MVPC to look into how pedestrians were crossing this roadway and what could be done to make these movements safer.

FFY 2019 Activities

MVPC will analyze pedestrian movements in the corridor to identify where new crosswalks should be installed, which dangerous crosswalks should be removed, and to recommend other actions to improve the quality and safety of pedestrian travel in the area.

Tasks

- 3.4.1 *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.
- 3.4.2 *Meet with Lawrence and Methuen Officials:* MVPC will meet with planners and safety officers from both communities to identify the nature of pedestrian movements in the corridor as well as problem crossing locations. This information will be used to further refine the limits of the study area.
- 3.4.3 *Data Collection:* MVPC staff will collect data on the location and number of pedestrian crossings of Route 28 in the study area.

- 3.4.4 *Data Analysis:* The most frequently used crossing locations will be assessed by staff for their visibility, presence of lighting, proximity to intersecting roadways, proximity to trip generators and other factors. Existing crosswalks in the study area will also be evaluated.
- 3.4.5 *Recommended Improvements:* Based on the information gathered in Tasks 3.4.3 and 3.4.4, staff will identify locations where crosswalks should be installed, where they should be removed and measures that community officials should consider taking (e.g. installation of street lights, removal of parking spaces, etc.) to improve pedestrian safety.
- 3.4.6 *Study Report:* MVPC staff will prepare a report that outlines the study’s findings and recommendations.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Data Collection												
Meet Local Officials				•			•					
Data Analysis				•								
Develop Improvements												
Study Report					•							
	• Product/Event											

Funding

Funding for Task 3.4 Rte. 28 Crosswalk Assessment		
Source	Person Hours	Amount
FHWA	153	\$14,320
MassDOT	38	\$3,580
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	191	\$17,900

Task 3.5 – Tyler Street/Route 113 Intersection Study in Methuen

Description

Tyler Street is a local roadway that intersects Route 113 (North Lowell Street) about ½ mile west of the I-93/Route 110/Route 113 interchange in Methuen. Tyler Street primarily serves residential development in this section of the City.

Tyler Street intersects Route 113 from the northwest at an oblique angle and at a curve on the latter roadway. Vehicles attempting to make a left turn from Route 113 eastbound onto Tyler Street may not be visible to westbound traffic on Route 113 as it approaches the intersection. Traffic conditions at this intersection are also impacted by the nearby Hill Street/Route 113 intersection located 175 feet to the west.

Over the years, area residents had expressed their concern to City officials about the safety of this intersection and MassDOT had at one time approved a project to signalize this location.

With the growth in traffic on Route 113 and the reconfiguration of the interchange of the roadway with I-93 has come a renewed call for looking at traffic and safety conditions at this location.

Proponent	Work Conducted By
• Local Legislator / Public Input	• Merrimack Valley Planning Commission

FFY 2019 Activities

MVPC will undertake the following tasks in conducting a Traffic Study at this location:

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.
- 3.5.2 *Data Collection:* MVPC staff will perform peak hour vehicle turning movement and pedestrian crossing counts at the intersection of Tyler Street and Route 113 and at the intersection of Hill Street and Route 113. ATR counts will be taken on Tyler Street, Hill Street and Route 113 to determine if either intersection meets Traffic Signal Warrants. Staff will also measure and review Sight Distances at key points around both intersections.
- 3.5.3 *Data Analysis/Level of Service (LOS) Calculations:* MVPC staff will complete LOS analyses for these two intersections both to measure congestion and develop intersection crash rates.
- 3.5.4 *Obtain and Analyze Crash Data:* Staff will analyze MassDOT crash data to identify the nature of the recent crash history at these locations.
- 3.5.5 *Meet with Local Officials:* MVPC staff will meet with Methuen Community Development and DPW staff to both assess the potential for continued development along Tyler

Street, Hill Street and Route 113 and hear of any specific concerns there may be about the existing design and function of both intersections.

3.5.6 *Develop Improvement Options:* Using the information obtained in Tasks 3.5.2 – 3.5.5 above, staff will develop a set of short and long-term improvement options that will be presented to City officials.

3.5.7 *Prepare Final Study Report:* MVPC staff will prepare a report that outlines the study’s findings and recommendations.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Data Collection												
Draft Data Analysis								•		•		
Meet with Officials	•								•		•	
Develop Alternatives												
Final Report						•			•			•
	• Product/Event											

Funding

Funding for Task 3.5 Tyler St./Route 1113 Intersection Study		
Source	Person Hours	Amount
FHWA	130	\$12,240
MassDOT	33	\$3,060
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	163	\$15,300

Task 3.6 – Route 125/Primrose Street/Marsh Avenue Area Road Safety Audit in Haverhill

Description

This section of Route 125 in Haverhill is located less than 600 feet south of the busy Route 125/I-495 interchange. It serves as a major connector to the City’s densely settled residential area located just north of the downtown as well as to much of the eastern downtown area itself.

Primrose Street intersects with Route 125 at a signalized intersection at the northwestern end of the study area. At the southeastern edge of this corridor segment, Marsh Avenue serves as a heavily traveled route for southern New Hampshire commuters accessing I-495 via North Avenue, which it intersects with approximately ¼ miles to the northeast.

These two larger intersections are approximately 450 feet apart. In between them there are a number of commercial driveways that carry enough traffic to often impact traffic flow.

MassDOT identified this roadway segment as a 2013-2015 Crash Cluster location, with an EPDO Score of 74.

The MVRTA operates its Route 13 through this section of the corridor.

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

FFY 2019 Activities

MVPC transportation staff will complete the following tasks in developing proposed short and long-term improvements to this intersection to address 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 segment of the Route 125 corridor.
- 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 the Route 125/Primrose Street, Route 125/Marsh Avenue and the Baltimore Street/Route 125 intersections. Turning movement counts will also be taken at the commercial driveways in the study area.
- 3.6.3 *Data Analysis/Level of Service 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.

- 3.6.4 *Obtain and Analyze Crash Data:* Staff will collect and analyze the most recent three years of MassDOT data 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.
- 3.6.5 *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 of short and long-term improvement options that could be 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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Data Collection												
Data Analyses												
RSA Meeting									•			
Develop Alternatives												
Draft/Final Reports										•	•	
	• Product/Event											

Funding

Funding for Task 3.6		
Rte. 125 / Primrose St./ Marsh Ave. RSA		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	251	\$23,920
MassDOT	63	\$5,980
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	314	\$29,900

This page left blank intentionally.

Task 3.7 – Route 1A/Route 1/Route 110 Road Safety Audit in Salisbury

Description

This intersection is in effect two intersections located at the northern end of Salisbury Square. Route 1A, which enters the intersection pair from the south, then heads east and is the primary means of access to Salisbury Beach located approximately two miles away. Route 110 Westbound begins at the southern intersection and is one-way as it passes through the western edge of Salisbury Square where it joins Route 110 Eastbound. Route 110 connects the Square and Salisbury Beach to I-95 at the Salisbury/Amesbury line approximately 2½ miles to the west.

During the summer months and especially on summer weekends, heavy traffic heading to and from Salisbury Beach create long queues of traffic on the Route 1A approaches to this location.

MassDOT identified this intersection as a 2013-2015 Crash Cluster location, with an EPDO Score of 74.

In addition, the Merrimack Valley Regional Transit Authority operates fixed route bus service (Route 54; Route 83) through this intersection.

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

FFY 2019 Activities

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

Tasks

- 3.7.1 *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.
- 3.7.2 *Data Collection:* MVPC staff will perform weekday AM, PM and Saturday Midday peak hour vehicle turning movement and bicycle/pedestrian counts at the Route 1/Route 1A and Route 1A/Route 110 intersections. Turning movement counts will also be taken at each of the commercial driveways located on the approaches to these intersections.
- 3.7.3 *Data Analysis/Level of Service Calculations:* MVPC staff will complete LOS analyses for these two intersections to both measure congestion and develop intersection crash rates, which will be used in the Road Safety Audit for the study area.
- 3.7.4 *Obtain and Analyze Crash Data:* Staff will collect and analyze the most recent three years of MassDOT data and Town of Salisbury 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.

- 3.7.5 *Conduct Study Area Road Safety Audit:* Staff will present the findings from Tasks 3.7.1 - 3.7.4 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 be implemented.
- 3.7.6 *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 number of crashes at this location. Staff will consult with the MVRTA as part of this process to solicit input as to how any of the proposed intersection improvements could impact bus movements through the study area.
- 3.7.7 *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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Data Collection												
Data Analyses												
RSA Meeting												
Develop Alternatives												
Draft/Final Reports										•		
• Product/Event												

Funding

Funding for Task 3.7 Rte. 1 / Rte 1A Intersection RSA in Salisbury		
Source	Person Hours	Amount
FHWA	157	\$14,640
MassDOT	39	\$3,660
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	196	\$18,300

Task 3.8 – 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 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 2019 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

- 3.8.1 *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.
- 3.8.2 *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.

- 3.8.3 *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.
- 3.8.4 *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, Greenscapes North Coalition and other regional partners to be held between Fall 2018 through Summer 2019.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
LTA/Outreach												
Spt. Stormwater Collab.												•
Training Sessions												
Part. In Workshops												
• Product/Event												

Funding

Funding for Task 3.8 Stormwater Management Technical Assistance		
Source	Person Hours	Amount
FHWA	167	\$20,960
MassDOT	42	\$5,240
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	209	\$26,200

This page left blank intentionally

Task 3.9 - 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 2018, 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 2019 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

- 3.9.1 *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.
- 3.9.2 *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.
- 3.9.3 *Assist Communities in Preparing Vulnerability Assessments:* Staff will assist communities seeking to develop and strategic plans under the Mass. Municipal Vulnerability Preparedness Program.
- 3.9.4 *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.
- 3.9.5 *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.

3.9.6 *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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Resiliency Task Force												
Staff Training												
Vulnerability Asses.												
Mapping / Modeling												
Regional Workshops		•										
Coordination												
	• Product/Event											

Funding

Funding for Task 3.9 Climate Change		
Source	Person Hours	Amount
FHWA	241	\$28,600
MassDOT	60	\$7,150
FTA Section 5303	20	\$2,860
FTA Section 5307	0	\$0
MVPC	5	\$715
TOTAL	326	\$39,325

This page left blank intentionally.

TASK 4.0 -OTHER TRANSPORTATION STUDIES

This page left blank intentionally.

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 and to facilitate the installation of High Occupancy Toll (HOT) lanes on limited access roadways;
- Smart phone apps and in-vehicle devices that provide navigational assistance and real-time travel information;
- Incident management programs on interstates and major arterial roadways,
- Advanced Traffic Management activities such as coordination of signals, and
- Creation of High Occupancy Toll (HOT) Lanes on limited access roadways.

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.

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 replaced the parking collection technology at several of the intermodal transportation facilities that it manages.

Early in 2018, the Authority introduced its *Transit App*, which allows users to track the precise location of any bus on the MVRTA fixed route system. The information that the new app provides has been shown to boost ridership where implemented elsewhere across the nation. The upgraded Vehicle Location/GPS-enabled technology has also allowed the MVRTA to more effectively monitor the on-time performance of its buses and to then adjust its fixed route schedules.

FFY 2019 Activities

The MVMPO staff will continue to monitor ITS strategies and technologies in Massachusetts and around the country and assess both their effectiveness and potential applicability in the MVMPO region.

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.
- 4.1.4 *Autonomous Vehicle (AV) Technology:* In recent years there has been extensive work in developing and testing Autonomous Vehicles and it is anticipated that there will be widespread use of such vehicles in the United States within the next 20 years. AVs are being tested for transporting people (cars and buses) and moving freight. Full implementation of this technology may require substantial modifications to the nation's transportation infrastructure. Under this task, staff will monitor the current trends in AV technology and identify how they are likely to impact the transportation network.

Products/Schedule

Task(s)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Gather Information												
Conf./Workshops												
Boston Regional ITS												
AV Technology												
	● Product/Event											

Funding

Funding for Task 4.1 Intelligent Transportation Systems		
Source	Person Hours	Amount
FHWA	78	\$7,720
MassDOT	20	\$1,930
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	98	\$9,650

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 2017 and FFY 2018 UPWPs include:

- Assessed whether four-way Stop sign control should be implemented at Foster Street/Andover Street intersection in Lawrence;
- 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;

FFY 2019 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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Local Technical Assist.												

• Product/Event

Funding

Funding for Task 4.2 Local Technical Assistance		
Source	Person Hours	Amount
FHWA	86	\$8,000
MassDOT	21	\$2,000
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	107	\$10,000

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, MEMA 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 plan 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 several recommendations to assist communities 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 2011 Transportation Availability Plan as necessary to coordinate with ongoing MEMA evacuation planning efforts.
- **The EVAC Calculator Tool**, originally included in the 2011 Plan that assists in the determination of transportation resources for evacuation purposes has been updated and is available on the NERAC website.
- **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 2018, MVPC staff worked with several our local communities in implementing the projects recommended in the region's Multi-Hazard Mitigation Plan.

FFY 2019 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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
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	\$7,720
MassDOT	14	\$1,930
FTA Section 5303	7	\$1,056
FTA Section 5307	0	\$0
MVPC	2	\$264
TOTAL	79	\$10,970

This page left blank intentionally.

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 2019 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)	10/18	11/18	12/18	1/19	2/19	3/19	4/19	5/19	6/19	7/19	8/19	9/19
Implement Process												
	<ul style="list-style-type: none"> • Product/Event 											

Funding

Funding for Task 4.4 County Roads Adjudication		
<u>Source</u>	<u>Person Hours</u>	<u>Amount</u>
FHWA	17	\$2,280
MassDOT	4	\$570
FTA Section 5303	0	\$0
FTA Section 5307	0	\$0
MVPC	0	\$0
TOTAL	21	\$2,850

FFY 2019 UNIFIED PLANNING WORK PROGRAM TASK FUNDING SUMMARY

Task	Description	FHWA/ MassDOT (PL)	FTA/ MassDOT/ MVPC Sect. 5303	FTA/ MVRTA/ MVPC Sect. 5307	FFY 2019 TOTAL
1.1	Program Management & Support.	\$74,300	\$30,600	\$6,800	\$111,700
1.2	Public Participation Process	\$47,900	\$23,210	\$0	\$71,110
1.3	Unified Planning Work Program	\$13,400	\$5,110	\$0	\$18,510
1.4	Transportation Improvement Program	\$42,740	\$8,600	\$0	\$51,340
1.5	Title VI/Environmental Justice/LEP Activities	\$18,250	\$9,050	\$0	\$27,300
1.6	Regional Transportation Plan	\$71,140	\$13,700	\$0	\$84,840
2.1	Traffic Monitoring Program	\$71,800	\$0	\$0	\$71,800
2.2	Regional Pavement Management Program	\$24,200	\$0	\$0	\$24,200
2.3	Geographic Information Systems	\$107,600	\$16,600	\$10,300	\$134,500
2.4	Congestion Management Process	\$7,400	\$3,200	\$0	\$10,600
2.5	Intermodal Connections to NHS System/Freight Planning	\$3,300	\$2,950	\$0	\$6,250
2.6	Regional Transportation Model	\$18,100	\$2,850	\$0	\$20,950
2.7	Bicycle /Pedestrian /Water Trails Planning	\$31,050	\$0	\$0	\$31,050
2.8	Safety Monitoring System	\$12,900	\$0	\$0	\$12,900
2.9	Transportation and Livability	\$12,720	\$7,030	\$0	\$19,750
2.10	Development of Transportation Performance Measures	\$26,620	\$4,000	\$0	\$30,620
2.11	Travel and Tourism Planning	\$4,650	\$0	\$0	\$4,650
3.1	Elderly and Disabled / ADA Planning	\$0	\$4,100	\$32,500	\$36,600
3.2	Transit Planning	\$0	\$8,000	\$50,400	\$58,400
3.3	Route 125 Connector / Shelley Road RSA in Haverhill	\$27,100	\$0	\$0	\$27,100
3.4	Route 28 Crosswalk Evaluation	\$17,900	\$0	\$0	\$17,900
3.5	Tyler Street / Route 113 Intersection Study in Methuen	\$15,300	\$0	\$0	\$15,300
3.6	Route 125/Primrose St./Marsh Ave. RSA in Haverhill	\$29,900	\$0	\$0	\$29,900
3.7	Route 1 / Route 1A Intersection RSA in Salisbury	\$18,300	\$0	\$0	\$18,300
3.8	Stormwater Management Technical Assistance	\$26,200	\$0	\$0	\$26,200
3.9	Climate Change	\$35,750	\$3,575	\$0	\$39,325
4.1	Intelligent Transportation Systems	\$9,650	\$0	\$0	\$9,650
4.2	Local Technical Assistance	\$10,000	\$0	\$0	\$10,000
4.3	Regional Transportation Security	\$9,650	\$1,320	\$0	\$10,970
4.4	County Road Adjudication	\$2,850	\$0	\$0	\$2,850
	TOTAL	\$790,670	\$143,895	\$100,000	\$1,034,565
	AMOUNT AVAILABLE	\$792,413	\$144,313	\$100,000	\$1,036,726

Percentage of Spending for Task 1	35.3%
Percentage of Spending for Task 2	35.5%
Percentage of Spending for Task 3	26.0%
Percentage of Spending for Task 4	3.2%

Percentage of Spending for Studies and Products	33.4%
--	--------------

This page left blank intentionally.

COMMENTS RECEIVED ON MVMPO'S DRAFT FFY 2019 UPWP AND RESPONSES

MassDOT

1. Please include only one sub-task for the CMAQ Consultation Committee. It is currently in the document as two sub-tasks (1.1.5 and 1.4.7)

Response: Sub-task 1.1.5 has been removed and staff participation on the CMAQ Consultation Committee has been added to Sub-task 1.4.7.

2. Page 50 - Task 1.2: Please move the sub-tasks on participation in the Boston UZA meeting and the adoption of new MOUs and planning agreements to be under Task 1.1.

Response: Sub-tasks 1.2.10 and 1.2.11 have been changed to Sub-tasks 1.1.9 and 1.1.10, respectively.

3. Page 54 – Task 1.3: Please define the event/product due in July 2019.

Response: This event has been removed.

4. Page 57 – Task 1.4: Please list performance measures as a section that will be included in the 2020-2024 TIP.

Performance Measures have been added as Item “i” in Task 1.4.2

5. Page 81 – Task 2.4: Please more thoroughly define the deliverables and outcomes of the congestion management process.

Response: Sub-task 2.4.4 has been added to this task describing how MVPC staff will incorporate the travel time reliability targets (including freight) that will be selected by the MPO this fall into the CMP report.

6. Page 83 – Task 2.5: Please describe how this task will tie into or reference the MassDOT Freight Plan.

Response: Sub-task 2.5.1 has been modified to also recognize the State Freight Plan in developing projects that will improve access between key transportation facilities and the region's NHS roadway network and/or improve the movement of freight both within and through the Merrimack Valley region.

7. Page 98 – Task 2.10: Please revise the acronym used for Transit Asset Management Plan to read, “TAM Plan”. The TAMP acronym refers to the FHWA Transportation Asset Management Plan.

Response: This change has been made.

8. Page 105 – Task 3.1: Please clarify the deliverable due in November 2018 for Task 3.1.4 (supporting the Merrimack Valley Regional Coordinating Council).

Response: It is anticipated that there will be meetings of the Merrimack Valley Regional Coordinating Council in November 2018 and in May 2019.

9. Page 113 – Task 3.4: Please address the highlighted year in the second paragraph before finalizing the document.

Response: The highlighting of the year 2017 has been removed.

10. Tasks should be updated to include any relevant follow up actions from the federal recertification findings.

Response: Sub-tasks 1.1.10, 1.2.1, 1.4.8, 2.6.1, 2.6.2 address the finding and recommendations made in USDOT's 2017 Merrimack Valley MPO Planning Certification Review.

11. Please ensure the appendix is updated to include a list of acronyms and a list of completed studies.

Response: The List of Acronyms appears on Page 41 and a List of Transportation Studies, Analyses and Technical Assistance appears on Page 39 of the Final FFY 2019 UPWP.

12. Please check the document for consistency in punctuation, capitalization, grammar and typos (e.g. page 63, page 81, page 115).

Response: Typos on page 63 and page 81 have been removed.

13. Please ensure that all relevant tasks are performed with input from MassDOT District 4.

Response: MassDOT District 4 will be involved providing input in the completion of the traffic studies/Road Safety Audits identified in Tasks 3.3 through 3.7.