

CENTRAL MASSACHUSETTS METROPOLITAN PLANNING ORGANIZATION (CMMPO)

CMMPO Endorsed 2012 Program Year Unified Planning Work Program (UPWP)



**Central Massachusetts Metropolitan
Planning Organization**
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Worcester, MA 01604-4016

Prepared by the transportation staff of the



August 24, 2011

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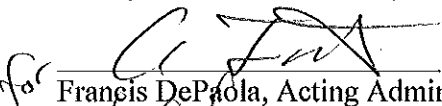
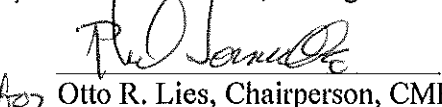
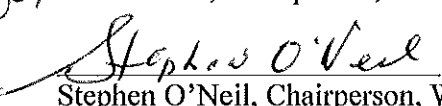
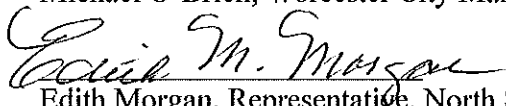
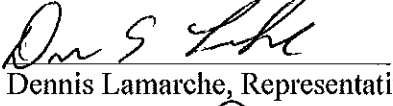

***Central Massachusetts Metropolitan Planning Organization
Endorsement Sheet***

***2012 Program Year
Unified Planning Work Program (UPWP)***

The Central Massachusetts Metropolitan Planning Organization (CMMPO) hereby endorses the 2012 Program Year Unified Planning Work Program (UPWP) document. The UPWP describes all transportation and transportation related air quality planning activities anticipated within the region during the upcoming program year, indicating who will perform the work, the schedule for completing it and the products that will be produced. The 2012 Program Year UPWP document will be endorsed at a meeting of the CMMPO scheduled for August 24, 2011.

**2012 Program Year
Unified Planning Work Program (UPWP)**

Central Massachusetts Metropolitan Planning Organization

<input checked="" type="checkbox"/> I concur <input type="checkbox"/> I do not concur	 Jeffrey B. Mullan, Secretary of Transportation, MassDOT	Date <u>24 Aug 11</u>
<input checked="" type="checkbox"/> I concur <input type="checkbox"/> I do not concur	 for Francis DePaola, Acting Administrator, MassDOT -H'way	Date <u>8-24-11</u>
<input type="checkbox"/> I concur <input type="checkbox"/> I do not concur	 for Otto R. Lies, Chairperson, CMRPC	Date <u>8-24-11</u>
<input checked="" type="checkbox"/> I concur <input type="checkbox"/> I do not concur	 Stephen O'Neil, Chairperson, WRTA	Date <u>8-24-11</u>
<input type="checkbox"/> I concur <input type="checkbox"/> I do not concur	_____ Michael O'Brien, Worcester City Manager	Date _____
<input checked="" type="checkbox"/> I concur <input type="checkbox"/> I do not concur	 Edith Morgan, Representative, North Subregion	Date <u>8-24-11</u>
<input type="checkbox"/> I concur <input type="checkbox"/> I do not concur	_____ Maurice DePalo, Representative, Northeast Subregion	Date _____
<input type="checkbox"/> I concur <input type="checkbox"/> I do not concur	_____ John Hebert, Representative, Southeast Subregion	Date _____
<input checked="" type="checkbox"/> I concur <input type="checkbox"/> I do not concur	 Dennis Lamarche, Representative, Southwest Subregion	Date <u>8-24-11</u>
<input checked="" type="checkbox"/> I concur <input type="checkbox"/> I do not concur	 David Delanski, Representative, West Subregion	Date <u>8/24/11</u>

Central Massachusetts Metropolitan Planning Organization

Listing of CMMPO Members:

1. **David Delanski**, West Subregion Representative
2. **Maurice Depalo**, Northeast Subregion Representative
3. **Francis DePaola**, Acting Administrator, MassDOT-Highway
4. **John Hebert**, Southeast Subregion Representative
5. **Dennis Lemarche**, Southwest Subregion Representative
6. **Otto R. Lies**, CMRPC Chairperson
7. **Edith Morgan**, North Subregion Representative
8. **Jeffrey B. Mullan**, Secretary of Transportation, MassDOT
9. **Michael O'Brien**, Worcester City Manager
10. **Stephen O'Neil**, WRTA Chairperson

Ex-Officio Members:

1. **William Gordon, P.E.**, FTA
2. **Paul F. Maloney, P.E.**, FHWA
3. **Dawn Clark**, MPO Advisory Committee

Listing of MPO Advisory Committee Members and Organizations:

1. **Marie Angelini**, P&W Railroad
2. **Bradford G. Blodget**, Private Citizen
3. **Andrea Briggs**, Massachusetts DEP
4. **Adam Burney**, Town of Auburn
5. **Deborah D. Cary**, Mass. Audubon
6. **Dawn E. Clark**, TPAG member
7. **Laurie Connors**, Town of Millbury
8. **Heather Gould**, City of Worcester
9. **Craig Della Penna**, Northeast Greenway Solutions
10. **David F. Johnson**, Community Center
11. **John Knipe**, Town of Shrewsbury
12. **Claire O'Neill**, Mass. Office of Business Development
13. **Laurie Scarbrough**, MassDOT-H District 2
14. **Wendy Steinhilber**, PTM Brokerage Services Inc.
15. **Ann Sullivan**, MassDOT-H District 3
16. **Karin Valentine Goins**, Private Citizen

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I. Introduction

The 2012 Program Year Unified Planning Work Program (UPWP) for the Central Massachusetts Metropolitan Planning Organization (CMMPO) briefly describes and provides budgetary information for the transportation and transportation related air quality planning activities that are to be conducted in the region during the coming program year. Federal law requires that there be baseline transportation planning activities in all metropolitan areas receiving federal transportation construction funds. Under federal regulations pertaining to the transportation planning process, the UPWP must be prepared and endorsed annually by the Metropolitan Planning Organization (MPO) prior to the start of the planning program period before money may be spent on any transportation planning studies and activities in the region. On behalf of the CMMPO, CMRPC has the responsibility of preparing the UPWP each year under the terms outlined in the Memorandum of Understanding (MOU) dated October 2010 and signed by:

- Central Massachusetts Regional Planning Commission
- Worcester Regional Transit Authority
- MassDOT Secretary
- City of Worcester
- North Subregion representative
- Northeast Subregion representative
- Southeast Subregion representative
- Southwest Subregion representative
- West Subregion representative

Planning Priorities

Transportation planning tasks and activities contained in the 2012 UPWP have in large measure been shaped by the following pieces of federal legislation enacted in the past 20 years. These are the Intermodal Surface Transportation and Efficiency Act (ISTEA) of 1991, the subsequently enacted Transportation Equity Act for the 21st Century (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the Americans with Disabilities Act (ADA) of 1990 and the Clean Air Act Amendments (CAAA) of 1990. These landmark laws set forth numerous transportation planning and project implementation requirements and establish target dates by which the goals and standards defined in these acts should be achieved.

The most far-reaching of these acts in terms of its impact on transportation planning and therefore on this UPWP was ISTEA. This legislation was intended to promote the establishment of an efficient intermodal transportation network in the United States and conformance with the provision of the Clean Air Act Amendments of 1990 and the mobility provisions established under ADA. Among ISTEA's provisions are the strengthening of the role of Metropolitan Planning Organization (MPOs) in the planning

and implementation of transportation projects, clear definitions as to the content of transportation plans and program, and increased local flexibility in selecting transportation projects. Lastly, it is recognized that transportation systems will be called upon to provide an economic lifeline to jobs and financial independence for the nearly two million individuals that were impacted by past welfare reform initiatives.

TEA-21 and SAFETEA-LU continue ISTEA's emphasis on the development of an intermodal transportation system that maximizes the efficient use of existing facilities and requires that all modes of transportation in the region be considered and evaluated under the 3C planning process. This document reflects this mandate in that virtually all modes of transportation services will be evaluated both individually and as a system to see how they might work more efficiently both now and in the future. In addition, SAFETEA-LU emphasizes the safety and security of intermodal facilities and the need for all stakeholders to be involved in planning for transportation facilities and services.

While SAFETEA-LU separated safety & security into two distinct areas of emphasis, it also provided for eight broad areas in total to be considered in both the regional and statewide transportation planning processes. The eight SAFETEA-LU planning factors, supported in many ways in the planned tasks and activities listed in the Program, are:

- (1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- (2) Increase the safety of the transportation system for motorized and non-motorized users;
- (3) Increase the security of the transportation system for motorized and non-motorized users;
- (4) Increase accessibility and mobility of people and freight;
- (5) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- (6) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- (7) Promote efficient system management and operation; and
- (8) Emphasize the preservation of the existing transportation system.

Some of these planning factors essentially have entire tasks devoted to them, while others have their intent woven throughout the fabric of various undertakings. The accomplishment of these planning objectives occur in multiple tasks simultaneously, in several tasks independently, and in general techniques and approaches used in more than one task.

The following provides brief examples of how the MPO addresses the Eight Planning Factors:

- The RTP's regional thrust – dealing effectively with a central city surrounded by many smaller towns – enhances regional economic vitality by giving proper importance to the key central region's concerns while keeping the needs and

- strengths of the ring towns and outer suburbs in view and in perspective. Each of the identified Major Infrastructure projects within financial constraint was carefully chosen due in large part to its significance to economic vitality, as evidenced by their location along the region's primary economic corridor. (1)
- System safety and security are enhanced by the continuing inclusion of separate chapter work in the RTP. Additionally, RR grade crossing lists, mapping of key area crash locations, and similar inventories lend the ability to focus efforts on the proper locations. The inclusion of past safety and security analyses and the identification of needs in the form of additional study (evacuation plan) or projects (HSIP recommendations) are included in the RTP, TIP and UPWP. (2,3)
 - Freight mobility and productivity is enhanced by the RTP's ongoing freight planning detail. This information is used as a resource by many in the region in order to realize the big picture as well as for various carrier and transload location details. Regional freight rail gatherings made possible by UPWP tasks also keep stakeholders regionally informed and provide them opportunities for growth and coordination. (4)
 - The TIP promotes quality of life and clean air by steadfastly allocating monies to worthy CMAQ projects over the years while the UPWP itself promotes consistency with state and local planning efforts with its parallel activities inquiries. The RTP promotes energy conservation and quality of life via its new standalone Environmental chapter, which addresses global warming and climate change as well as livability topics. Additionally, the RTP's comprehensive bike and trail materials assist those interested in maintaining health and quality of life through outdoor travel activities. (5)
 - The MPO-supported Worcester Regional Mobility Study fosters interconnection of the transportation system across areas and modes, for people and freight, by considering all modes and all travelers within the central region. Additionally, the comprehensive public transit materials in the RTP keep attention and focus on modal travel that is available to all people and show how the region is working towards improved connectivity between all modes. Public outreach activities for all documents keep connectivity and intermodality in the forefront of MPO attention and concern, and various tasks in the UPWP ensure a continuation of these planning activities. (6)
 - Congestion Management Process studies described in the RTP promote efficient system management by locating and verifying inefficient/congested locations. The growing part that Intelligent Transportation Systems plays in all MPO documents will also serve as a guide as we plan into the future. In addition, the RTP Implementation task in the UPWP includes the development of a more integrated role in working closely with implementing agencies to plan, implement, monitor and re-plan. (7)
 - The RTP emphasizes preservation by reviewing, evaluating and setting resource employment priorities, allocating the largest share of resources to pavement and other preservation activities. The UPWP also focuses activities on further refining the pavement analysis program in order to optimize the preservation strategy. (8)

In addition to the planning factors, more recent federal and state emphasis areas have been incorporated into this work program. At the federal level, the Sustainable Communities Partnership involves a policy directive to the Department of Transportation, the Environmental Protection Agency, and the Department of Housing and Urban Development to integrate problem solving for housing, land use, and transportation planning by:

- Promoting and implementing policies and programs to address climate change, protect the environment, and advance federal transportation and housing goals
- Recognizing the coordinated action needed to address climate change and solve problems
- Asking MPOs to use the Livability principles to guide vision, planning, and decisions. The Livability Principles are defined as:
 - Provide more transportation choices, including transit and nonmotorized
 - Promote equitable, affordable housing
 - Enhance economic competitiveness
 - Target resources to existing communities, including environmental quality – clean air, energy efficiency, aesthetics, environmental and cultural resources
 - Coordinate and leverage federal policies and investment
 - Value unique characteristics of communities, no matter their size

In addition to federal initiatives, Massachusetts has also promoted livability and climate change in two recent programs. The first is the YouMove Massachusetts program to solicit views from users of the transportation system to be included in the statewide long-range transportation plan. The responses were organized into the following ten themes:

- Improve transportation system reliability
- Focus attention on maintaining transportation system
- Design transportation systems better
- Encourage shared use of infrastructure
- Increase capacity by expanding existing facilities and services
- Create a more user-friendly transportation system
- Broaden the transportation system to serve more people
- Provide adequate transportation funding and collect revenue equitably
- Minimize environmental impact
- Improve access to our transportation system

MassDOT is intending to use these themes as the foundation of a statewide transportation plan currently under development.

Also on the statewide level, the Massachusetts Department of Transportation (MassDOT) has launched the GreenDOT Policy Directive; a comprehensive environmental responsibility and sustainability initiative intended to make MassDOT a national leader in “greening” the state transportation system. MassDOT will promote sustainable

economic development, protect the natural environment, and enhance the quality of life for all of the Commonwealth's residents and visitors through the full range of its activities, from strategic planning to construction and system operations. MassDOT's goal is to use resources in a manner that serves its existing customers while preserving resources for future generations. GreenDOT will be driven by three primary goals: reduce greenhouse gas (GHG) emissions; promote the healthy transportation options of walking, bicycling, and public transit; and support smart growth development. GreenDOT calls for MassDOT to incorporate sustainability into all of its activities, from strategic planning to project design and construction to system operation. The initiative includes greenhouse gas reduction targets mandated under the Global Warming Solutions Act.

In addition, state officials have signed a Healthy Compact with an interagency group of the Massachusetts Department of Transportation (MassDOT), Executive Office of Health and Human Services, and the Office of Energy and Environmental Affairs, as required in recent transportation reform legislation. The purposes of the group are to 1) Address transportation needs, 2) Promote public health, and 3) Promote a clean environment. The group developed the following related goals:

- To promote interagency cooperation
- To increase access to healthy transportation alternatives in order to:
 - Reduce greenhouse gas emissions
 - Increase physical activity
 - Increase service options for persons with disabilities
- Increase bicycle and pedestrian travel
- Support implementation of complete streets
- Develop and use health impact assessments
- Facilitate access to appropriate, cost-effective transportation for individuals with disabilities
- Expand Safe Routes to Schools program

The substance of these federal and state initiatives on promoting livability, addressing climate change, creating healthy environments, and reducing energy demands are incorporated into this planning work program.

As part of the development of the 2011 Regional Transportation Plan (RTP) document, the Central Massachusetts MPO identified the following planning priorities while forging a future transportation-related vision for the region:

- Attain a safer more secure & better-maintained transportation system across all modes and for all populations
- Promote livable communities and improved air quality through context-sensitive design and reduced traffic congestion
- Develop an alternative, creative transportation system that integrates multiple travel modes and includes the use of technology

- Maintain and improve the existing coordinated transportation planning process

The work tasks approved by the CMMPO for inclusion in the 2012 UPWP document attempt to address each of the region's identified planning priorities, in the spirit of SAFETEA-LU and more recent federal and state emphasis areas. The tasks under ***Element 1*** provide for the management of the transportation planning process and the development of the annual work program. Further, the annual TIP effort allows for the compilation of a prioritized listing of improvement projects, programmed for federal-aid funding, which are brought forth through the Management Systems as well as the proactive public outreach process. The TIP development process considers both the maintenance of existing transportation infrastructure as well as a limited number of expansion projects.

The collection & analysis of quality transportation data is integral to the CMMPO's ongoing planning efforts. ***Element 2*** of the UPWP focuses, in part, on obtaining and analyzing traffic count data, conducting travel time surveys, park and ride facility monitoring, vehicle crash research, and the assessment of pavement condition. Although most of these efforts focus on highways acknowledged as "Vital Links" by the CMMPO, study locations identified by the communities are also included. Additionally, this element also supports ongoing work on integrating the various mode data and analysis using the regional transportation network simulation model.

CMMPO approved work tasks under ***Element 3*** include the analysis of integrated Management Systems - congestion, pavement and safety - in order to progress *Corridor Profile* and bottleneck reduction efforts as well as assist in the selection and prioritization of projects. Also drawing on the Management Systems, this UPWP includes Worcester Regional Mobility Study implementation efforts. Further, this element supports continued efforts to introduce ITS technologies to the region as well as expand local awareness of freight issues - both truck and rail - and their respective impacts on highway congestion and efforts to increase Commuter Rail service. Additionally, the completion of the 2011 comprehensive RTP leads to new study opportunities for issues identified during that process. Planning for livability and climate change, including strategies for greenhouse gas reduction, are also included in Element 3.

Transportation system security, including identification of vulnerable transportation infrastructure and evacuation planning, is addressed within the region's work program under ***Element 4***. Tasks under this element also consider the intermodal planning, the transportation needs of the elderly & disabled population, as well as the coordination of public transit with various human service agencies. The element tasks also assists communities with implementation of land use management tools, providing local planners with tools that improve safety, congestion, and the ability to accommodate all modes.

Again, cognizant of federal/state requirements and initiatives, the 2012 UPWP has been crafted with the intent of addressing each of the region's identified planning priorities.

For clarification purposes, the time periods made reference to in this document for the various funding sources are as follows

<u>Funding Source</u>	<u>Anticipated Time Periods for 2012 Program Year</u>
FHWA/MassDOT (PL Funds) FFY '11	October '11 - September '12
FTA Section 5303 – (1/2) FFY '11 & FFY'12	October '11 – September '12
FTA Section 5307 – (¾) FFY '10 & (1/4) FFY'11	October '11 – September '12

**Development of the
Year 2012 Unified Planning Work Program (UPWP)
for the
Central Massachusetts
Metropolitan Planning Organization (CMMPO)**

The UPWP is a project-by-project description of all transportation planning and transportation-related air quality planning activities anticipated within the region during the next one program-year time period. It indicates who will perform the work, allocated funding levels, the schedule for completion and the products that will be produced.

May 18, 2011: Meeting of the CMMPO. Staff reviews need to develop *Draft Year 2012 UPWP* document. Recommended Year 2012 UPWP work tasks, including *Environmental Justice (EJ)*, *climate change*, *“Livability”* and *pavement preservation*, are discussed. Staff provides initial work task summary materials.

May 23, 2011: MassDOT forwards MARPA-derived RPA apportionments to be used in the development of the 2012 UPWP document.

May 25, 2011: Meeting of the CMMPO Advisory Committee. UPWP development process discussed, including the need for various tasks, including *Environmental Justice (EJ)*, *climate change*, *“Livability”* and *pavement preservation*.

June 15, 2011: Meeting of the CMMPO. The MPO reaches general consensus on work tasks necessary for inclusion in the *Draft Year 2012 UPWP* document. Staff indicates compilation of *Draft Year 2012 UPWP* document is underway.

July 13, 2011: Scheduled meeting of the CMMPO. MPO approves release of *Draft Year 2012 UPWP* document for 30-day public review & comment period. Draft document subsequently posted on the CMRPC agency website. Legal advertisement appears in the *Telegram & Gazette*. Conduct region wide mailing to invite interested parties to attend public meeting scheduled for July 20th.

July 20, 2011: Scheduled 2012 UPWP (& 2011-2014 TIP) Public Meeting, CMRPC conference room, Union Station, 5:00 PM

July 27, 2011: Meeting of the CMMPO Advisory Committee. UPWP status updated.

July 28, 2011: Meeting of the Central Massachusetts Transportation Planning Committee. *Draft Year 2012 UPWP* work task summary reviewed; results of July public hearing discussed. Recommendation concerning Commission endorsement sought.

July 2011: WRTA Advisory Board considers *Draft Year 2012 UPWP* work task summary.

August 16, 2011: 30-day public review & comment period on *Draft Year 2012 UPWP* document closed. Endorsement process is now underway.

August 17, 2011: Scheduled meeting of the CMMPO. *Final Year 2012 UPWP* work task summary reviewed; results of July public hearing discussed. MPO moves to endorse *Final Year 2012 UPWP* document.

September 2011: *CMMPO Endorsed Year 2012 UPWP* document finalized and submitted for MassDOT and FHWA & FTA review and approval.

October 1, 2011: Beginning of FFY 2012. *CMMPO Endorsed Year 2012 UPWP* in effect.

FHWA Comment
on the Development of the
2012 UPWP

**FHWA Comments on
Central Massachusetts Draft 2012 UPWP
Dated August 25, 2011**

FHWA Comment: General

- Please include Paul F. Maloney, P.E. and William Gordon, P.E. on the membership list for the MPO, as Ex-Officio members.

CMMPO Response:

- A listing of the CMMPO membership, including Ex-Officio members, will be added/included at the forefront of the CMMPO Endorsed 2012 UPWP.

FHWA Comment: Page 5 – Planning Priorities

- Please refer to the TIP and other planning documents to provide brief examples of how the MPO addresses the Eight Planning Factors.

CMMPO Response:

- Brief examples of how each of the 8 Planning Factors is being actively incorporated in the region's transportation planning and air quality program will be included in the finalized UPWP document. The text addressing this comment is attached.

FHWA Comment: Page 11 – FHWA Guidance

- Much guidance has been shared with FHWA's state and MPO partners in past years, particularly following the passage of SAFETEA-LU, as applicable to the UPWP. There was no new guidance shared during this UPWP update.

CMMPO Response:

- Comment noted. This placeholder page in the UPWP will be used instead to include a copy of the FHWA comment submitted for staff to address in the finalized document.

FHWA Comment: Task 2.7 – Sidewalk Management

- This is a nice effort to undertake and making this effort in concert with the Pavement Management data collection effort is particularly thoughtful. Kudos!

CMMPO Response:

- The comment is noted and appreciated. *(Federal certification procedures for the CMMPO transportation planning program are forthcoming in 2012.)*

FHWA Comment: Task 3.1 – Bottleneck Reduction Program

- The effort FHWA discussed with MassDOT and the MPOs involved low-cost solutions to bottlenecks responsible for congestion. \$100,000 - \$500,000 was a cost range that was outside of the FHWA intent.

CMMPO Response:

- The region's localized bottleneck reduction program has examined, as intended, the top bottleneck locations in the region. An effort was also made to include bottleneck locations in the urban, suburban and rural areas of the planning region. These locations, an urban Interstate interchange, a suburban state highway intersection and a rural downtown with two intersections with state numbered routes were examined. Interstate improvements are typically multi-million dollar efforts and the state highway intersections would also exceed \$1 million. The region's top bottleneck locations would require substantial improvement monies.

In an effort to address this comment within the context of the 2012 UPWP, efforts to inventory suggested improvement options listed in earlier CMP efforts as well as in the series of Corridor Profile documents completed over the last five year period can be undertaken to determine if lower cost solutions to bottleneck locations in the region are in fact available and feasible. In the Central Massachusetts planning region, the costs associated with federal-aid highway improvement projects are seldom less than \$1 million, thus low cost was considered to be one-half to one-tenth of that amount. Projects less than \$100K can be sought, and may be effective at marginal bottleneck locations, perhaps as a means to prevent the spread of recurring congestion.

FHWA Comment: Page 67 – Pavement Management-Project Development (Task 3.4)

- Looking at Procedure #4, is this anticipated to result in an amendment to the 2012-2035 RTP, since a rather bleak set of conditions (50% Very Poor, 49% good) were anticipated to result from the 80% expenditure of Plan 2, endorsed by the MPO?

CMMPO Response:

The following factual information is reflected in the pavement section of the 2012 RTP (Chapter VII):

- The cost to maintain existing conditions (present day) would be approximately \$750 million.
- The total amount of discretionary funding available to the region, as projected by MassDOT is approximately \$663,255,000.
- Of the total amount of discretionary funding available to the region, the minimum targets for the Highway Safety Improvement Program (HSIP) requires 7% (~\$46 million) and the Congestion Mitigation Air Quality (CMAQ) program requires 9% (~\$60 million).
- After meeting the HSIP and CMAQ requirements, 84% of the total amount of discretionary funding available to the region remains. The MPO cooperatively decided to allocate 80% of the remainder, or ~\$530 million, to pavement maintenance.
- MassDOT has yet to determine what amount of future state funding (Non federal aid) would be used for pavement maintenance on state maintained roads.
- The MPO staff did not include any estimate of potential Chapter 90 monies (local aid) that may be used for future year pavement maintenance activities.
- The pavement management software, as a default, assumes that all pavement analysis segments revert to a "very poor" condition in a period of 20 years if no maintenance is performed. *As such, the default values built into the analysis software may not be optimal for the purposes of long range planning efforts.*

Based on the above, as well as this being the MPO's first attempt of conducting such an extensive analysis of the system, this 2012 UPWP work activity will seek to refine this preliminary analysis. Staff envisions the identification of "priority corridors for pavement rehabilitation" that could be considered as future year TIP programming options.

Presently, the CMMPO is not anticipating the need for an amendment to the 2012 RTP. Planned refinements to the region-wide pavement analysis will help determine the future course of this ongoing effort.

FHWA Comment: Page 67 – Pavement Management-Project Development (Task 3.4)

- Also, at the end of Product #2, please add "for consideration of future TIP programming".

CMMPO Response:

- Comment noted. As requested, this phrase will be added to the finalized UPWP text.

FHWA Comment: Page 104 – Task Summary Funding Chart

- This UPWP has been found to meet the FHWA requirement to allocate at least 1/3 of the funds in Task 3.0 toward activities resulting in tangible products.

CMMPO Response:

- The comment is noted; staff has made a concerted effort to meet this requirement. *(Federal certification procedures for the CMMPO transportation planning program are forthcoming in 2012.)*

***II. Central Massachusetts Metropolitan Planning Organization
Unified Planning Work Program***

***Element 1:
Management & Support of the Planning Process
and Certification Activities***

Task Title: Management and Support of the “3C” Process

Reference: #1.1

Description

The Management and Support task includes those activities that are necessary to maintain the federally prescribed 3C transportation planning process in the Central Massachusetts region. Included are the presentation of transportation plans and programs (i.e. RTP, TIP and UPWP); the coordination of transportation planning activities with other local and state agencies; contract administration; support of the Central MA Metropolitan Planning Organization (CMMPO), the CMMPO Advisory Committee, and Technical Task Forces; staff attendance at seminars and workshops; staff participation in statewide technical groups/teams; administering the extensive public outreach process as federally-required (including participation on various committees related to environmental justice and economic development); statewide funding proposal assistance; as well as the provision of technical assistance concerning various transportation topics and issues on a small scale, as-needed basis. These later tasks are shown under management and support since their limited magnitude and unpredictable occurrence make them difficult to list as planning tasks.

Previous Work

- Public Outreach Program update - September '09
- Support of the CMMPO, the CMMPO Advisory Committee, and technical task forces including those established for corridor planning studies, Bike & Ped Task Force and the paratransit TPAG (E&D) Committee. Support includes outreach, development of agenda, meeting minutes, and preparation of presentation materials.
- Participation in statewide technical groups/teams including those established for air quality, safety, ITS, enhancements, ridesharing, statewide studies, and pavement.
- Assistance to local communities regarding the Statewide CMAQ and Enhancement Programs
- Ongoing work with numerous local community groups, including Common Pathways, Mass in Motion, and Environmental Justice populations.
- Assistance to local communities regarding the use of Pictometry International/ Oblique Imagery and software, and continuing assistance as related to the release of data and software. Authorized user forms and the tracking of each municipal installation continue to be coordinated with MassDOT-Highway Division.

- Technical assistance to address community transportation concerns in the region.
- Review of ENF and EIR documents.
- Transportation Articles in Newsletters/News bulletins.
- Conducted CMMPO Subregional representative selections in one subregions in 2010.

Procedures

1. Support CMMPO

Conduct subregional nominations and selection of CMMPO representatives for those whose terms are expiring on September 30, 2011. In addition to new member orientation, staff must also continue to assure the continuous flow of relevant information in an appropriate format on all MPO matters to the members. Staff members will continue to encourage joint activities for the MPO and the MPO Advisory Committee.

2. Support CMMPO Advisory Committees

Provide for and actively encourage public and private participation in the 3C planning process through the CMMPO Advisory Committee (the broad stakeholder Advisory Committee to the CMMPO) and Technical Task Forces.

Decision-making includes a pro-active public involvement process that provides complete information, timely public notice, full public access to key decisions, and supports early and continuing involvement of the public in developing the Unified Planning Work Program, Regional Transportation Plan, Transportation Improvement Program, and Public Participation Plan.

3. Review Existing Public Participation / Environmental Justice Program

The procedures in the POP are utilized in the TIP, UPWP, and RTP development process, and reflect requirements of SAFETEA-LU, including the appropriately required consultations with agencies responsible for land use management, natural resources protection, historic preservation, and environmental justice. The POP is reviewed on a regular basis to ensure that it continues to be effective in obtaining maximum participation by all stakeholders. In the coming year, the POP reviewed against the latest guidance on LEP and Title VI.

4. Review Environmental Justice Outreach

As part of the MPO's public outreach program, assure that continued opportunity is provided for low-income and minority populations in the region to actively

participate in the transportation planning process. The MPO will continue to develop and implement procedures to improve its work processes in ways that will allow access and involvement by people who have limited proficiency in the English language. Staff will continue to participate actively with local groups concerned with environmental justice populations, particularly Common Pathways Transportation Subcommittee and the Food & Active Living Policy Council.

5. *Private Sector Assistance and Complaint Resolution Procedure*

Facilitate ongoing communication with private providers as deemed appropriate. Act to facilitate resolution of private sector complaints regarding the planning process or the provision of transit service. Assist private sector providers in understanding and complying with federal requirements effecting their operations.

6. *Participation in Statewide User Groups and Technical Teams*

Participate in user groups and technical teams that have been established on a statewide basis to deal with the technical issues associated with air quality, pavement management, safety, ITS, enhancements, ridesharing, and GIS. In addition, staff will maintain involvement in two new statewide studies: Regional Transit Authorities & State Transportation Plan.

7. *Pictometry International imagery and software distribution support*

GIS department staff coordinates distribution and documentation of Pictometry International products to Authorized Sub-Divisions via meetings, mailings, phone conversations and the internet. CMRPC maintains a database of users and provides MassDOT-OTP with a monthly report of recent installations. Brief training of the authorized users is provided during the installation process, as well as phone/email support for questions after the installation process is complete.

8. *Community Technical Assistance*

Provide limited technical assistance to member communities on transportation issues (above/beyond technical assistance provided under Task 2.1 - Regional Traffic Counting Program). Technical assistance is limited to 10 hours per community on a fiscal year basis, and scheduled so as not to interfere with the established deadlines for recognized UPWP work activities.

9. *Review Federal and State Transportation Programs*

Review of federal and state transportation programs, guidelines, circulars and manuals, including such documents as the Statewide Transportation Plan and Statewide Pedestrian Plan, as well as proposed rules and guidance on Metropolitan Transportation Planning are performed under this task.

10. Statewide Funding Proposal Assistance

Review statewide guidelines such as for the Transportation Enhancement and Transportation Demand Management (TDM) Programs, CMAQ, STRAP, the distribution of final statewide guidelines to local communities, the solicitation of projects from eligible applicants and support to the CMMPO who is charged with the responsibility to evaluate and rank submitted proposals. Staff will also review the status of previously approved projects including obligation of funds.

11. Prepare and Present the UPWP, TIP and Regional Transportation Plan

CMRPC staff will prepare and present the UPWP, TIP, Regional Transportation Plan, POP, (as well as any amendments to same) and any other required documents to the CMMPO for endorsement or amendment.

12. Distribute Required Documents

CMRPC staff will distribute the UPWP, TIP, Regional Transportation Plan, and POP (as well as any amendments to same) to all state and federal agencies. Staff will also maintain all MPO documentation records and files and, in general, act as the secretariat for the CMMPO. Planning documents will be available online and in electronic format to the extent practical and feasible.

13. Coordination of Transportation Planning Activities

CMRPC staff will coordinate transportation activities with related activities and programs developed by other agencies and authorities in adjacent regions, including the Montachusett Regional Planning Commission, Metropolitan Area Planning Council, the Rhode Island Department of Administration, Northeast Connecticut COG, Pioneer Valley Regional Planning Commission and the Worcester Regional Transit Authority.

14. Preparation of Newsletter Articles

Preparation of articles for inclusion on CMRPC newsletters/news bulletins.

15. Contract Administration

Prepare applications, time sheets, progress reports, billing and perform other contract administration activities necessary to the conduct of the 3C transportation planning process.

Products & Schedule

1. Election of local CMMPO members for '12 Program Year - September '11
2. Meeting Minutes of the CMMPO, CMMPO Advisory Committee and the TPAG paratransit (E&D) Committee - Ongoing
3. Updated Inventory of Private Sector providers and documentation on any Private Sector Complaint Resolution - Ongoing
4. Provide Pictometry products and training to authorized users in the region. Collect user ID information and provide to MassDOT-OTP monthly - Ongoing
5. Limited transportation related assistance for member communities - As requested
6. Newsletters/News bulletins - Periodically throughout the year
7. Progress Reports - Monthly MassDOT/FHWA & Quarterly MassDOT/FTA
8. Participation in statewide Regional Transit Authority and State Transportation Plan – Yearlong
9. Review and refine Public Outreach Plan for compliance with latest guidance on Title VI & Limited English Proficiency.

Task Title Management & Support of "3C" Process Ref. # 1.1

Participants	Funding Program/\$						
			FTA Section 5303		FTA Section 5317		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	180,000	45,000	51,200	12,800	3,500		292,500

Task Title: Unified Planning Work Program

Reference: #1.2

Description

The Unified Planning Work Program, as described in the Introduction of this document, describes all transportation planning activities anticipated to be undertaken within the region in the coming program year.

Previous Work

- Unified Planning Work Program and Associated Amendments from 1973-2011.
- Previous Operation Plans/Prospectus from 1973 through 1984 (latest update)

Procedures

1. *Develop 2013 Unified Planning Work Program:* CMRPC will develop the 2013 UPWP for the region which describes all MassDOT-Highway/FHWA, FTA and WRTA funded transportation planning activities anticipated to be undertaken in the next program year. The document will be made available online.
2. *Amend 2012 UPWP:* Performed as necessary.
3. Annual update of CMMPO transportation publications for UPWP.

Products & Schedule

1. Draft 2013 UPWP budget, April '12
2. Updated Bibliography of Transportation Planning Publications - May '11
3. Final 2013 UPWP - May-June '12.
4. Amendments to 2012 UPWP (As necessary)

Task Title Unified Planning Work Program Ref. # 1.2

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	12,000	3,000	5,200	1,300			21,500

Task Title: Transportation Improvement Program (TIP)

Reference: #1.4

Description

The Transportation Improvement Program (TIP) for a metropolitan area includes highway, bridge, transit, intermodal and discretionary projects that are proposed for funding under both Title 23 and the Federal Transit Act. It excludes certain safety projects, emergency relief projects and planning & research projects.

Presently, under SAFETEA-LU, the document needs to be updated every four (4) years. At a minimum, the TIP must contain a priority list of projects and strategies for the 4-year period and descriptions (type of work, limits, length, etc.) of each project as well as a financial plan demonstrating financial constraint within the *regional funding targets* provided annually by MassDOT. Further, SAFETEA-LU indicates multi-modal “investments in pedestrian walkways and bicycle transportation facilities are to be included in the published annual listing of projects.” More recently, U.S. DOT required all American Recovery and Reinvestment Act (ARRA) transportation-related funding to be reflected as appropriate in the TIP.

The TIP will be prepared in accordance with the region’s CMMPO Endorsed Public Outreach Program (POP) with full consideration of the principles of Environmental Justice. It must also be stated that the TIP’s Air Quality Conformity determination is based on the conformity analysis presented in the CMMPO Endorsed 2007 Regional Transportation Plan (RTP) document. (The 2011 RTP document is now poised to enter the MPO endorsement process.) Under current policy, the RTP is adjusted or amended so as to remain in conformity with the State Implementation Plan (SIP) for air quality. As such, it can be stated that the region’s TIP is derived from a conforming RTP.

Previous Work

- Transportation Improvement Program documents, from the earliest, 1976-1978, to the most recent, 2012-2015, time frames.

Procedures

1. *Amend/Adjust Existing 2012-2015 TIP:* Staff will amend/adjust the CMMPO Endorsed 2012-2015 TIP, as necessary.
 - An *Amendment* is called for when there is a significant change to the TIP. It requires formal action by the CMMPO. Examples of significant changes would include adding or dropping projects, movement of

highway projects from Year 3 (FY '14 and beyond) to Year 1 (FY '12) and other actions deemed to necessitate formal action.

- An *Adjustment* is called for when lesser actions affecting the TIP can be accommodated through an administrative procedure by the CMMPO, as reflected in the Public Outreach Program (POP). An Adjustment to the TIP may include movement of a project from Year 2 (FY '13) to Year 1 (FY '12), movement from one funding category to another and the movement of FTA-09 Year 3 (FY '14) projects to Year 1 (FY '12). *The underlying purpose of this mechanism is to provide a degree of flexibility in changing programmed projects in the CMMPO Endorsed TIP.*
2. *Develop 2013-2016 TIP:* Prior to developing the *Preliminary Draft* 2013-2016 TIP in cooperation with MassDOT, staff will update the list of all highway, transit, and air quality projects that are expected to qualify for federal transportation funds for planning and engineering, construction or purchase during FY 2013-2016. This list, which will only include projects that are consistent with the CMMPO Endorsed 2011 Regional Transportation Plan (RTP), will also include:
- All regionally significant transportation projects or programs that require FHWA or FTA approval that are not using federal transportation funds.
 - For information purposes, all regionally significant projects proposed to be funded with federal funds other than from FHWA and FTA.
 - For information purposes, all regionally significant projects proposed to be funded with non-federal funds.

As part of the TIP development process, staff will fully address the following:

- **Visualization Techniques:** Continue the use of in-house Geographic Information Systems (GIS) capabilities, aerial photography, Pictometry images as well as digital photographs taken in the field to indicate project locations.
- **Environmental Consultation:** Through periodic meetings, engage the environmental community in dialogue regarding key areas of environmental concern associated with both current and proposed TIP projects, along with potential mitigation strategies.

Now part of the ongoing TIP development process, the compilation of “Environmental Profile” maps using data provided by the Massachusetts Department of Conservation & Recreation (DCR), the Massachusetts Department of Environmental Protection (DEP) and the National Heritage & Endangered Species Program (NHESP) will continue. Focusing ½ mile on each side of a roadway corridor, Environmental Profile maps allow

major natural features to be viewed as systems, not simply as features adjacent to the roadway. In this manner, environmental constraints and challenges can be identified early in the project development stage.

- **Environmental Justice:** Continue staff participation in statewide efforts aimed at refining standardized approaches to assessing both the benefits and adverse impacts resulting from TIP projects proposed for implementation in identified “EJ” areas. Assist state efforts as appropriate/necessary to adhere to the requirements of the Title IV program.
- **Highway Safety Improvement Program:** Projects analytically derived through the region’s ongoing “HSIP” activities will be considered for TIP programming by the CMMPO.
- **Congestion Mitigation Air Quality:** Staff will complete required calculations and the compilation of other standard materials necessary to support projects programmed under the “CMAQ” funding category. Attend meetings of the CMAQ Consultation Committee in order to obtain project approval as necessary and to be aware of potential new activities for CMMPO consideration.
- **Green House Gas Reduction:** Staff will complete required calculations and the compilation of other standard materials necessary to measure the Green House Gas (GHG) impact of projects programmed on the TIP. Attend meetings on the topic of GHG Reduction as necessary. Consider regionally customized projects aimed at reducing transportation generated GHG.
- **Intelligent Transportation Systems:** Fully consider the potential for “ITS” applications, both stand alone and project-specific, throughout the development of the TIP project listings for highway and transit. Staff will periodically provide ITS overviews to the CMMPO and the MPO Advisory Committee, as appropriate.
- **Transportation Evaluation Criteria:** Continue to utilize the “TEC” established by MassDOT predecessor agencies in the development of the 2013 to 2016 TIP project listing. Potential regional target-funded projects will be evaluated for each of the TIP’s four years. The results of the evaluation, along with other critical benchmark data concerning project status and readiness as requested by the CMMPO, will be used to assist in the selection of TIP target projects for review and eventual programming. This is a continuing, cooperative process among the MPOs and MassDOT.
- **Public Outreach:** Seek early involvement of local legislators, chief elected officials, stakeholders and other interested parties through the CMMPO’s formal Public Outreach Program (POP) with full consideration of the principles of Environmental Justice. Continue ongoing series of

“TIP Development Meetings”, customized for a given community or group of communities, that provide an overview of TIP project development procedures.

- Continue work with the agency’s MPO partners, particularly MassDOT-Highway Division, to obtain periodic project status updates from communities with TIP projects programmed for regional funding target monies. This will serve to remind the communities of their responsibility to complete necessary designs, obtain right-of-way and complete any identified environmentally related work. *The need to move forward in a timely fashion must be emphasized so that the region does not forfeit any federal-aid transportation funding.*
- **Implementing Agencies:** As deemed necessary, meet with MassDOT-Highway Division staff at the #2 and #3 District Offices as well as MassDOT-Planning staff to develop project information. MARPA holds quarterly meetings specifically for this purpose. Similarly, as necessary, meet with the WRTA administrator and staff concerning future transit-related projects.

As part of the TIP development process, MassDOT-Planning staff will:

- Insure that the CMMPO staff is provided regional federal-aid “funding targets” based on the estimate of funds reasonably anticipated to be available in developing the TIP’s financial plan.
- As determined necessary, CMRPC staff will continue to work with MassDOT-Planning and MARPA to address and resolve TIP-related issues that may arise.

Following a standard format provided by MassDOT, the TIP document is expected to provide the following information for each regional project, included in both a consolidated state and federal listing and a stand-alone federal listing:

- Programmed Federal Fiscal Year
- The official MassDOT Project Review Committee (PRC) ID Number
- Municipality or local agency responsible for carrying out the project
- Project/facility name
- Project description
- Estimated total cost, federal cost and state cost. Project costs will include all contingencies (typically ~20%) as well as account for future inflationary cost adjustments at 4% per year
- Proposed federal funding category (and, if applicable, state category)
- Air Quality significance

- Relevant project comments, i.e. design status, right-of-way status, AASHTO bridge ratings, etc.

The 2013-2016 TIP is also expected to include sections on:

- The TIP development schedule (customized by the CMMPO)
 - Proactive public outreach, including all pertinent community, state, federal and CMMPO correspondence
 - Amendment/Adjustment procedures (as reflected in the CMMPO's established Public Outreach Program)
 - Federal Requirements Section, including:
 - Endorsement sheets
 - FHWA and FTA financial plan, which indicates that the TIP is financially constrained by year and demonstrates that the existing transportation system is being adequately maintained
 - "Regionally Significant" project listing
 - Descriptions of Congressionally-earmarked HPP projects will be included for FHWA reference. Project description language will only include work that is anticipated to be completed with the earmarked funding
 - Statewide Infrastructure and Bridge project listing, including structures listed in the state's Accelerated Bridge Program (ABP)
 - Summary of federal-aid projects obligated in the previous year obtained from MassDOT-Planning
 - Listing of Projects Advertised in the Region, FY '97 - FY '11 to Date
 - Air Quality & Transportation Control Measure (TCM) status
 - Technical Appendices that fully document the TIP's Public Outreach, Environmental Consultation, Environmental Justice, and Transportation Evaluation Criteria (TEC) efforts.
3. *Air Quality Conformity Determination:* As mentioned above, the TIP's Air Quality Conformity determination is based on that presented in the CMMPO Endorsed 2011 Regional Transportation Plan (RTP). Under current policy, the RTP is *Adjusted* or *Amended* to keep it in conformity with the State Implementation Plan (SIP) for Air Quality. Therefore, it can always be stated that the region's TIP has been derived from a conforming RTP.
 4. *Amend/Adjust 2013-2016 TIP:* Staff will amend/adjust the 2013-2016 document as necessary.

Products & Schedule

1. Amendments/Adjustments to 2012-2015 TIP, *as necessary*
2. “TIP Development Meetings”, customized for the region’s member communities, *as requested and/or deemed necessary*
3. Draft 2013-2016 TIP project listings, *June 2011*
4. Final 2013-2016 TIP project listings, *July 2011*. Endorsement of the 2013-2016 TIP document will take place at a meeting of the CMMPO to be held August/September 2012.

Task Title Transportation Improvement Program Ref. # 1.4

Participants	Funding Program/\$					
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307	
	FHWA	State	FTA	Local	FTA	Local
CMRPC	40,000	10,000	11,200	2,800		
						Total
						64,000

Task Title: Title VI-LEP

Reference: #1.5

Description

Title VI of the Civil Rights Act of 1964 states that “no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving federal financial assistance.” To fulfill this basic civil rights mandate, each federal agency which provides financial assistance for any program is authorized and directed by the United States Department of Justice to apply provisions of Title VI to each program by issuing applicable rules, regulations, or requirements for public participation in.

Similarly, Executive Order 13166, issued in 2000, also expanded the impact of the 1964 Civil Rights Act and responded to the concern that persons with limited English proficiency deserve equal participation in the transportation planning process. In accordance with the Executive Order, the U.S. DOT issued *Policy Guidance Concerning Recipient’s Responsibilities to Limited English Proficient (LEP) Persons*, which is modeled after the U.S. Department of Justice’s general LEP policy guidance document. As described in the guidance, DOT recipients are required to take reasonable steps to ensure meaningful access to their programs and activities by LEP persons. The guidance applies to all DOT funding recipients, which include MPOs.

Previous Work

- Public Outreach Program update – September 2009
- Ongoing work with numerous local community groups, including Common Pathways, Mass in Motion, and Environmental Justice populations

Procedures

1. Review Existing Public Participation / Environmental Justice Program

The procedures in the POP are utilized in the TIP, UPWP, and RTP development process, and reflect requirements of SAFETEA-LU, including the appropriately required consultations with agencies responsible for land use management, natural resources protection, historic preservation, and environmental justice. The POP is reviewed on a regular basis to ensure that it continues to be effective in obtaining maximum participation by all stakeholders. In the coming year, the POP will be reviewed against the latest guidance on LEP and Title VI, and updated to reflect best practices.

2. *Review Environmental Justice Outreach*

As part of the MPO's public outreach program, assure that continued opportunity is provided for low-income and minority populations in the region to actively participate in the transportation planning process. The MPO will continue to develop and implement new procedures to improve its work processes in ways that will allow access and involvement by people who have limited proficiency in the English language. Staff will continue to participate actively with local groups concerned with environmental justice populations, particularly Common Pathways Transportation Subcommittee and the Food & Active Living Policy Council. Staff will also try to identify and engage organizations that can assist in engaging the involvement of those with limited English proficiency outside of Worcester.

3. *Staff Training*

Train all staff to be able to both comply with Title VI/LEP, and also to better engage LEP persons during public outreach processes.

4. *Identify and Implement Best Practices for LEP Engagement*

Work with MassDOT and other planning partners to research best practices for identifying and implementing LEP, including translation techniques, interpretation services, and engagement strategies.

Products & Schedule

1. Review and refine Public Outreach Plan for compliance with latest guidance on Title VI & Limited English Proficiency and best practices identified by MassDOT partners – Yearlong
2. Continue ongoing involvement with EJ partners, and cultivate new relationships, particularly outside of Worcester – Yearlong
3. Train staff in Title VI/LEP guidelines and compliance – October 2011
4. Identify and implement best practices in areas of translation techniques, interpretation services, and engagement strategies - Yearlong

Element 2: Data Collection and Analysis Activities

Task Title: Regional Traffic Counting Program

Reference: #2.1

Description

CMRPC began collecting traffic volume information in 1982 and has maintained a comprehensive Traffic Counting Program since 1984. Although daily traffic volume counts are already listed, all counts can be also analyzed for axle classification and vehicle speeds. The count data is used by staff in its ongoing transportation planning program, including the calibration of the regional travel demand forecast model, the Management Systems and Freight Planning. The information is also made available in summary form to MassDOT-Highway Division, local municipalities, consultants and others.

The need for traffic volume information continues to be important under the Clean Air Act Amendments (CAAA) of 1990. The CAAA require that emissions reductions consider the effects of economic and population growth on traffic. This can best be accomplished through the use of future scenario traffic volumes and Vehicle Miles Traveled (VMT), which are generated by the regional traffic simulation model. The collected volume information is used extensively to calibrate the model, which estimates future traffic volumes and patterns that can be anticipated in the region as development continues. The model can also generate roadway *focus segments* to be analyzed through the Congestion Management Process (CMP). These *focus segments* are roads that have a Volume-to-Capacity ratio (V:C) greater than 1.0. The traffic volume data is also considered in the region's LPMS program.

The CMRPC traffic counting program divides the region into three distinct geographic areas: the northern subregion (21 communities), the southern subregion (18 communities) and the city of Worcester. The count program rotates to each of these defined areas every three years. Generally, 5 to 10 counts are conducted in each community, the exception being the city of Worcester, where approximately 150 counts are conducted during its target year. In addition to these geographic areas, each year staff collects count data at approximately 25 defined MassDOT-Highway Division coverage stations throughout the region.

In addition, the communities within the focus subregion for a given year are provided the opportunity to request 3 additional locations for counting during that data collection season. Letters of solicitation are sent out during late winter/early spring. Typically, community requested locations add approximately 40 count locations to the schedule. Traffic count requests by public agencies are typically honored if at all possible. Volume counts will also be conducted on roadways that are part of CMRPC's ongoing CMP effort. *It should be noted that the MassDOT-Highway Division coverage station counts conducted by CMRPC do not, for safety reasons, include counts on state-maintained Interstate highways and ramps.*

As a result of the regular count program, trend data is being established for each of the region's forty communities. An effort is also being made to target potential growth areas in order to track changes in the traffic volumes. On average, approximately 200 counts are conducted per year, including the 25 MassDOT-Highway Division coverage stations and the community requested locations.

Previous Work

- Pilot CMRPC Traffic Counting Program, 1982-1983
- Traffic Counting Demonstration, 1984
- Comprehensive CMRPC Traffic Counting Program, 1984-Present

Procedures

1. *Maintain Regional Traffic Count Information Center:* Staff will add all 2011 count data to its extensive in-house database.
2. *Conduct the regularly scheduled Traffic Counting Program:* The 2012 program will focus on the City of Worcester. Staff anticipates approximately 175 counts.
3. *Conduct MassDOT-Highway Division Coverage Counts:* Volume data and axle classification data will be collected at MassDOT-Highway Division established locations.
4. *Conduct Axle Classification Surveys:* These surveys are performed near major intermodal freight facilities on National Highway System (NHS) Connectors.
5. *Conduct municipality requested counts:* These counts are most often requested at/near proposed developments or to address citizen concerns.
6. *Maintain link with GIS:* Maintain and update the traffic count database and the traffic flow map each year. Utilize the GIS map to identify gaps and allocate resources to collect traffic count data as needed.
7. *Data Submittal:* Staff will forward recently completed count data to the Traffic Data Collection Unit at MassDOT-Highway Division on a monthly basis as well as send an electronic copy of each count at year's end.

Products & Schedule

1. Annual update to *Daily Traffic Volumes & Peak Period Turning Movement Counts*, December 2011
2. Traffic volume and axle classification counts, April 2012 - November 2012
3. Annual Automatic Traffic Recorder calibration effort, April 2012

Task Title Regional Traffic Counting Program Ref. # 2.1

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	32,800	8,200					41,000

Task Title: Congestion Management Process - Data Collection and Analysis

Reference: #2.2

Description

CMRPC will continue to provide the field technicians and necessary preparatory work needed to collect all data necessary to maintain the region's Congestion Management Process as well as prepare for incorporation of these results into the next Regional Transportation Plan. Although there are no *Corridor Profiles* scheduled for the upcoming year, staff will work with the CMMPO to discuss potential candidates for future years. Travel time and delay studies will be conducted along the CMP roadway focus segments. Peak period Turning Movement Counts (TMCs) and physical inventories will be completed at identified critical intersections. In addition, a utilization survey will be conducted at the MassDOT-Highway Division maintained Park-and-Ride facility on Route 62 at I-495 in the town of Berlin.

Previous Work

CMRPC has previously conducted the following data collection activities as part of the Congestion Management Process (*formerly the Regional Congestion Management System*):

1995-2011

- Travel time and delay studies on roadways identified as having existing congestion or where congestion is projected to occur, roadways that accommodate WRTA fixed-route bus service, roadways studied as part of a *Corridor Profile*, and select monitoring locations (1995-2011)
- Turning Movement Counts (TMCs) and physical intersection inventories at *Corridor Profile* focus intersections as well as CMP identified intersections (1996-2011)
- Field observed signal timing and phasing at *Corridor Profile* focus intersections as well as CMP identified intersections (1999-2011)
- Utilization survey and physical inventory at the MassDOT-Highway Division Park-and-Ride Lot in Berlin (1995, 1996, 1998-2011)

Procedures

Data collection activities for the 2012 program year will include, but are not necessarily limited to, the following:

1. *Travel time and delay studies:* These studies will continue to be conducted on roadway segments identified by the 2010 base-year regional travel-demand-and-forecast model as having existing congestion and along a limited number of segments where congestion is projected to occur. The CMP focus roadway network also includes roadways that accommodate WRTA fixed-route bus service. Travel time and delay studies will be conducted during the 2012 data collection season on major routes in the CMRPC region and the results will be entered into the model to aid in the calibration. As previously suggested by FHWA & FTA, staff will continue to utilize GPS technology in the ongoing CMP data collection effort. It should be noted that the data collection schedule has the flexibility to accommodate additions to the CMP focus network identified through ongoing public outreach activities.
2. *Peak Period TMCs:* TMCs will be completed at critical intersections identified as needing further study along CMP focus segments, at focus intersections identified as part of a *Corridor Profile*, or at isolated locations identified through ongoing public outreach activities. In order to evaluate improvements and monitor growth trends, TMCs will also be conducted at intersections where improvement projects have been recently implemented as well as intersections situated near major intermodal facilities. With the help of GIS and the needs of the travel-demand-and-forecast model, staff will organize a regional schedule for when and where TMCs will be conducted. Multiple counts will be conducted in each of the six subregions. Some new locations will be added to the historic database and select older data (more than five years old) will be updated. In addition, physical intersection inventories will be completed at intersections so capacity analyses can be conducted. Signal timing and phasing data will be observed in the field and copies of the official permits will be obtained from the applicable MassDOT-Highway Division district office.
3. *Parking Utilization Survey:* Established as an annual effort, staff will continue to monitor peak period parking accumulation at the MassDOT-Highway Division maintained Park-and-Ride Lot in Berlin on Route 62 at I-495. The results of the utilization study will be summarized and graphed. Staff continues to investigate the seasonal fluctuation of parking levels at this facility.

Products & Schedule

1. Travel Time and Delay studies for the CMP, April - September, 2012
2. TMCs, physical intersection inventories and observed signal timing and phasing for the CMP, April - September, 2012
3. Parking Utilization Survey at Berlin Park-and-Ride Lot, September, 2012

Task Title Congestion Mgt Process Data Collection & Analysis Ref. # 2.2

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	20,400	5,100					25,500

Title: Transportation Safety Planning Program - Data Collection and Analysis

Reference: #2.3

Description

Both FHWA and MassDOT Planning have identified roadway safety as an issue deserving and needing further study. The anticipated result of this effort is to provide recommended improvements aimed at alleviating recurring vehicle crash incidents for consideration by MassDOT and the region's communities. CMRPC will provide the necessary staff to collect vehicle crash data for all major intersections to support Regional Transportation Planning efforts. CMRPC staff will also collect data on critical intersections throughout the region, both adjacent and isolated, as described in Task 3.3 (Transportation Safety Planning Program).

In cooperation with local police departments, staff will research the necessary data, covering the latest three (3) years for which it is available. In some instances, it may be necessary to contact the Massachusetts State Police for available data on major roadways. In the city of Worcester, staff anticipates working with the Worcester DPW Department of Traffic Engineering as well as the police. It has been staff's experience that the best available data for the subsequent compilation of vehicle crash diagrams, roadway segment crash summaries, as well as accompanying written explanations (*discussed under Task 3.3*) is available through the files maintained by the local police. Staff also anticipates using the forthcoming vehicle crash data available through MassDOT Planning to assist in the identification of study locations.

Newspaper reports are another source of pertinent information regarding vehicle crashes within the region. Articles describing fatal crashes throughout the region are collected to assist in the identification of high crash locations as well as to track the latest trends in crash activity and type.

Previous Work

Working with local police, planners, engineers and DPW superintendents, CMRPC has previously conducted the data collection and analysis activities described above as a key step in the preparation of the several traffic studies prepared throughout the region.

In addition, the previously described vehicle crash research has been conducted at several isolated locations, identified through the Transportation Safety Planning Program and in response to public concerns.

Also, the Transportation Safety Planning Program has included an effort to collect newspaper reports concerning fatal vehicle collisions that occur within the region and one town out. The information included in the reports was translated into an excel worksheet and converted to a GIS data layer in order to map the results on an annual basis.

CMRPC compiled the 2006-2008 high crash location report analyzing the crash data obtained from MassDOT. The HSIP guidelines and criteria provided by MassDOT safety division were followed to develop the high crash location list. The report also includes high crash locations from each of the towns in the region.

In 2010, CMRPC staff collected vehicle crash data from police departments of West Boylston, Northborough and Worcester. Crash analysis was also conducted by CMRPC in the preparation of Roadway Safety Audit projects within these communities.

Procedures

Typically, staff holds a preliminary meeting with the appropriate police department personnel, such as the designated safety officer. Often at this preliminary meeting, the community's planner, engineer or DPW superintendent is in attendance. Arrangements are made for staff to subsequently go to the police station and have access to the vehicle crash files and a place to sit and work. Numerous visits to the particular police station are often needed to collect the last three years of available data for either specific roadway focus segments or critical study intersections. The data collected at the police station is taken back to the CMRPC office for review and the subsequent compilation of vehicle crash diagrams, roadway segment crash summaries as well as accompanying written explanations.

The data collected through this work activity will be used in the preparation of the *Regional Transportation Plan* as well as an annual report documenting the region's *Transportation Safety Planning* efforts. Further, when deemed appropriate, following the implementation of improvement projects, either along the focus segments or at critical intersections, the same data collection activities will be used for monitoring purposes and to assist in determining project effectiveness.

The Transportation Safety Planning Program includes an effort to collect newspaper reports concerning vehicle collisions that occur within the region and one town out. The information included in the reports is translated into an excel worksheet and converted to a GIS data layer in order to map the results on an annual basis.

Products & Schedule

1. Preliminary meeting with local police and planner, engineer or DPW superintendent in order to arrange subsequent visits to the police station to collect necessary data, January – February 2012
2. Conduct vehicle crash research at local police departments. Results will be summarized and presented in a Safety Program Progress report document - February – April 2012
3. Compile vehicle crash diagrams, March – May 2012
4. Prepare map depicting locations and other information of fatal crashes as reported in area newspapers during calendar year 2011, January 2012
5. Update the crash database with 2009 crash data obtained from MassDOT and report crash locations that have significant changes addition or reduction in reported crashes, December 2011

Task Title Transportation Safety Data Collection & Analysis Ref. # 2.3

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	16,000	4,000					20,000

Task Title: Pavement Management - Data Collection and Analysis

Reference: #2.4

Description

Since 2005, CMRPC has staff has collected pavement distress data in the field along the *town-maintained federal-aid eligible* roadway system within the region. In recent years, staff included state-maintained federal-aid eligible roadways and rural, minor collectors to provide a more comprehensive pavement condition picture. Staff collects data on approximately 1,200 miles of road within the Central Massachusetts region. Pavement distress data has generally been collected on these roadways every three years in rotation throughout the entire region. As such, CMRPC plans to continue data collection on this network in FY 2012.

During FY 2012, CMRPC staff will provide pavement distress data along roadway segments included or proposed for inclusion on the CMMPO Endorsed TIP document, in order to provide the data necessary for MassDOT's Transportation Evaluation Criteria process.

Previous Work

1991- 2004

Since 1991, the CMRPC staff has conducted the data collection tasks necessary to obtain pavement distress condition, both type and extent, in the field. In some cases, staff also collected gravel roadway distress data. As reflected in Table 2.4, staff completed the data collection activities necessary for 29 distinct pavement management studies conducted primarily for locally maintained roadway networks. The pavement distress data collected in the field was subsequently used as input to the noted software packages utilized by staff. Distress data was also collected on the federal-aid system roadways within the CMRPC region between 1995 and 1997 and utilized for the development of the *1997 Pavement Condition Report for the Surface Transportation Program (STP) Roadway Network*. This report was later forwarded to MassHighway's Pavement Section for their information and usage.

2005-2008

In 2005, CMRPC began a three-year cycle of collecting pavement distress data along *town-maintained Federal-Aid* eligible roadways within the region. Pavement condition along these roadway segments was evaluated in the towns to the north and west of Worcester. In 2006, the data collection effort was completed for the region in order to provide the data necessary for evaluation of infrastructure needs for the 2007 CMMPO Regional Transportation Plan.

2009

In 2009, CMRPC staff collected pavement data on all the federal-aid eligible road segments for the City of Worcester. These segments will be included in future data collection rotations. Data collection was done around the region to fill gaps from previous data collection years. The addition of this data completed CMRPC's pavement condition inventory for all town-maintained federal-aid eligible roads in the CMRPC planning region.

2010

In 2010, CMRPC began maintaining the pavement condition inventory for town-maintained federal-aid eligible roads in the region. Staff began reanalyzing the data that was collected in 2006 to update the road conditions in the database and ensure the accuracy of data analysis. The collection began in the northeast subregion, and moved in a counter-clockwise direction into adjoining subregions. This process will continue in 2011 and will be completed in 2012. The regional data on town-maintained federal-aid eligible roads will continue on a three-year cycle into the future.

CMRPC received pavement condition data from MassDOT pavement division for all state-maintained federal-aid eligible roads and interstate highways. Because of differing rating systems, staff worked to integrate this data into CMRPC's data by finding a "conversion" between the two pavement condition rating systems. This converted data was included in CMRPC's inventory for analysis.

2011

In 2011, staff continued entering data for the northeast, southeast, and southwest regions collected in 2010. Staff reestablished and began a three-year data collection cycle, beginning in the western subregion and moving counter clockwise. Staff collects data on approximately 1,200 miles of road within the central Massachusetts region. Staff established a more rigid 3-year cycle comprised of 400 miles per year. Staff collected data on federal-aid eligible roads as well as on rural, minor collectors, which provide important connections between the federal-aid eligible road network

Procedures

Pavement Management Data Collection activities will include the following:

1. *Data Preparation:* Staff will complete collection on approximately 400 miles of data miles of road in FY 2012. The Roadway Inventory Files (RIF), developed and maintained by MassDOT-Planning, will be utilized to prepare field data sheets for each roadway segment.
2. *Data Collection:* Using the "windshield survey" data collection technique, staff will record the presence, severity, and extent of pavement distress types as defined within *Cartograph*. Further, if deemed necessary, the following RIF information will be updated for each roadway segment surveyed:

- Length of segment, *field measurement*
- Width of segment, *field measurement*
- Average Daily Traffic (ADT) volume, *utilizing CMRPC's in-house traffic count database*
- Jurisdiction, *community clarification*
- Functional Classification, *utilizing the most recent information provided by MassDOT-Planning*
- Other major changes, *e.g. roadway name and/or surface type*

Products & Schedule

CMRPC will prepare for and conduct pavement distress condition data collection activities under the three-year schedule previously described. Staff anticipates the following products:

1. Listing of roadways where pavement distress data collection will be completed, May-June 2012.
2. Data collected on roads schedule for collection, July – September 2012
3. Pavement distress data for locations where improvements have been included or proposed for inclusion on the CMMPO Endorsed TIP document, in order to provide the data necessary for MassDOT's Transportation Evaluation Criteria process, May – September 2012.

Task Title Pavement Management Data Collection & Analysis Ref. # 2.4

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	19,400	4,850					24,250

Task Title: Regional Transportation Model

Reference: #2.5

Description

The Regional Travel Demand Forecast Model is an important planning tool both for the evaluation of proposed regional transportation improvements and the projection of mobile source air emissions for significant regional projects. The model is the most effective and comprehensive way to project transportation needs within a twenty-year planning horizon as required by Federal regulation.

A regional travel demand forecasting model can estimate the traffic impacts caused by socio-economic (employment, households, and population) changes, identify both existing and projected congested areas, and estimate future Vehicle-Miles Traveled (VMT) on the regional highway system.

CMRPC completed integrating the 2010 census information into the Travel Demand Model and produced model runs for use in the Regional Transportation Plan.

Previous Work

CMRPC has used travel demand forecast models for highway planning purposes since about 1980, and for assessing regional air quality since 1993. CMRPC is continually updating and maintaining its regional model for project-specific work and for back-up calculations of mobile source emissions. During FY'09 and FY'10, the model was used extensively in support of the Worcester Regional Mobility Study and the I-495 ramp study. Due to the refinements made during these past two years, the model is expected to be used even more extensively in the coming year for project-specific forecasting. The development of the model has four phases:

Update Socio-Economic Projections

Federal regulations require that the most current transportation planning assumptions be used in the planning process. Traffic Analysis Zone (TAZ) boundaries were redrawn to reflect the 2010 Census definitions of census block groups, and the area of the model was expanded to include at least one town beyond the perimeter of the CMRPC region in all directions. Current estimates and future projections of population, households and employment have been developed for years 2010, 2020, 2030, and 2035 at the municipal and sub-municipal (TAZ) level based on available data.

Update Highway and Transit Network

The model uses the 2009MassDOT-Highway Division Roadway Inventory File (RIF) representation of the highway system as the basis for its network, with edits to represent the changes expected to occur in future (horizon) years. The network must be checked for continuity and functionality, a time-consuming task, and the centroid connectors for each TAZ must be appropriately located.

The transit network of the model is continuously fine-tuned as various route changes occur. In FY 2012 staff envisions to use the model to analyze various transit and commuter rail scenarios for use in ongoing transportation planning activities.

Calibration

For the model to be useful, it must be “calibrated”, that is, it must be capable of estimating traffic flows on the various highway links that approximate flows observed on the ground. Traffic counts by MassDOT-Highway and the regional planning agencies are used as they become available to provide the necessary “ground truth” to the model. In addition, passenger transit counts are used to calibrate the transit network.

Model Utilization

The model has been used to project future conditions and potential alternatives for the Worcester Regional Mobility Study and the I-495 ramp study. In addition, the model was used in the I-495 Study to help determine the traffic impact of alternative land use scenarios. The calibrated TDF Model has also been used to answer other questions from CMRPC staff, MassDOT-Highway Division, the Worcester Regional Transit Authority (WRTA), contractors on regional projects (I-290/I-495 Interchange Modification Study) and town officials regarding projected traffic volume increases on roadways of interest.

Procedures

The population, household and employment projections for the Regional Travel Demand Forecast (TDF) Model were last completed and approved by the CMMPO as part of the development of the 2011 Regional Transportation Plan. The 2009 MassDOT-Highway Road Inventory Files were incorporated into the updated version of the regional model to serve as the basis for the road network, and require ongoing editing of the line files to verify functionality. The base year for the model is 2010, and horizon (future) years are 2020 and 2035.

Additional capabilities for the TDF Model that are being investigated include:

- Refinement of the transit forecasting capability. The current model is currently being refined from using a very simple mode split model, validated at an aggregate level, to a more complex mode split, refined to the route level ridership. The model can also be refined to more accurately predict time of day transit ridership. The coded route system can also be revised to more accurately show route headway differences by time of day.
- Worcester CBD Walk Network. A walk network is needed to support the transit route system. The current model has a very fundamental walk network and this could be revised to more accurately reflect use of local and minor roads in the CBD. Completion of this walk network will aid significantly the calibration of the individual route boarding.
- Estimation of non-motorized (walk) trips. The current model only estimates drive and transit trips. In the Worcester CBD a substantial portion of the trips are

walk. Consequently, the mode split model can be revised to include a walk only travel mode.

- Recently, MassDOT-Highway Division's road inventory line work was updated and this new line work more accurately represents the collector and local road network. Within the City of Worcester and the first ring of border communities, the linework within the current model is being updated to match the latest road inventory.
- Use the model to support MPO initiatives.
- Develop the capability to test proposed traffic improvements of regional significance listed in the Regional Transportation Plan, listed in EIRs, etc.
- Determine the effect of large-scale development proposals on adjacent street networks (e.g., Chap. 40B housing projects, shopping plazas, & the downtown CitySquare development).
- Develop a Summit utility in the model with the purpose of developing metrics comparing the base transit system to a build transit system.
- Continue to build better coverage area analysis into the model. Continue to look at the route coverage by bus stop or route corridor and develop coverage summaries based on population income range or auto availability; as well as by employment. Use the model to test circumferential transit routes as compared to the existing hub and spoke system.
- Develop better reporting functions in the model such as V/C and transit reports.

Each component of the TDF Model will be reviewed and updated with the latest available information. The rates in the lookup tables will be reviewed and the model will be calibrated as recommended by FHWA. Macros and subroutines will be reviewed to maximize the efficiency of running the new TDF model. The FHWA certification checklist for Travel Forecasting Methods will be reviewed and used as a guide for quality control.

2011

The following tasks were completed in FY 2011:

- Updates to demographics and employment data have been completed during FY2011. The internal zones in the current model use the latest CMRPC land use data. However, since completion of the model, updates to external areas have been completed. This data is continually being updated in the model, particularly for specific large employment changes.
- The model was updated with the latest traffic count data map, travel time and delay maps produced by staff. The counts in the model are being updated on an ongoing basis.

Projects & Schedule

1. Use the model to evaluate I-495 Compact's landuse scenarios, October 2011
2. Use the model to assess various multimodal scenarios for use in transportation planning efforts, ongoing
3. Use the model to evaluate I-495/I-90 and I-495/Rte 9 highway design scenarios, May 2012
4. Develop linkage between the regional model and a micro-simulation model and explore the possibility of using micro-simulation to evaluate congestion bottlenecks on I-290.
5. Evaluate the potential for separately forecasting zero auto household trips, by isolating and distributing them based on transit, walk travel time, & accessibility.
6. Ongoing update of model capabilities
 - Continue to develop and test functionality of new roadway network Continue to calibrate new base year Regional TDF model
 - Update the model's line work, consistent with MassDOT-Highway Division's latest road inventory
 - Improve the model's capability to more accurately reflect transit and walk modes of travel
 - Develop Summit utility
 - Develop project-specific Regional TDF models
 - Update roadway network and TAZ layers when information becomes available

Task Title Regional Transportation Model Ref. # 2.5

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	85,800	21,450	4,000	1,000			112,250

Task Title: Data Integration

Reference: #2.6

Description

The goal of the Data Integration Program is: *to provide timely and comprehensive transportation data in an easily-accessible format to:*

- 1. CMRPC Transportation staff for use in its work program in support of the CMMPO transportation planning process;*
- 2. All CMRPC staff for use in their work activities in support of the agency's member communities; and*
- 3. CMRPC/CMMPO member communities to enhance their local planning efforts.*

This work task uses Geographic Information Systems (GIS) technology to maintain, map, and analyze information from the transportation management systems.

GIS will provide the platform for the spatial organization and analysis of the transportation performance measures determined by the CMMPO Congestion Management, Pavement Management, Transportation Safety Planning, and Traffic Monitoring programs. Access to this information through a geographic interface will be used to support the development of CMMPO TIP project listings and Regional Transportation Plans (RTPs) as well as serve as a resource for other planning activities.

This work task also uses a multimodal approach to map and analyze transit data, bike/ped data, freight information for use in ongoing transportation planning activities and for use in the development and implementation of the Regional Transportation Plan.

Previous Work

Transportation management data systems have been the focus of a number of continuing planning efforts within the CMMPO region. Since the passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the CMRPC staff began to supplement the CMMPO traffic monitoring program with transportation data collected to support a regional Congestion Management System (CMS), Pavement Management System (PMS), and Intermodal Management System (IMS), which later became known as "Freight Planning." Beginning in 2004, vehicle crash information from the developing Transportation Safety Planning Program was added to the expanding set of important regional transportation information.

Beginning in FY 2007, GIS technology began to be utilized to maintain, map, and analyze information from the transportation management systems. Specific products included:

- A database and associated GIS data layer and maps storing intersection locations and types studied as part of the Transportation Safety Planning Program, the calculated vehicle crash rates, and the relationship to regional average crash rates for similar intersections.
- A database and associated GIS data layer and maps storing encountered delay (in car-minutes per hour) at intersections studied as part of the region's Congestion Management Program (CMP) and their relationship to a regional average delay.
- A database and associated GIS data layer and maps storing travel time growth rates as calculated on roadway segments monitored as part of the region's CMP.

2009

CMRPC completed mapping and analyzing crash data (2004-2006) obtained from MassHighway and developed the crash report. WRTA bus-stop and ridership data was mapped and analyzed to help in transit planning activities. Traffic count data has been mapped data as points and segments for use by the planning staff and all communities. Regional pavement condition data has been mapped in a usable format and has been used as part of different studies.

2010

CMRPC completed integrating the traffic count database with the MassDOT Roadway Inventory Files to produce a regional traffic volume map. This map assists in analyzing various datasets such as pavement condition, congestion, crash locations etc. Staff analyzed the various datasets and created maps during the RTP public outreach meetings.

2011

Staff presented the various critical locations analyzed using various management systems data to the CMMPO and the CMMPO Advisory committee to note the gaps in region. Staff documented the data integration maps and analysis in the 2011 Regional Transportation Plan document summarizing the gaps and analysis.

Staff created pilot community profiles for five communities and shared the results with the communities and various stakeholder groups and received several positive comments and inputs to improve the data sets.

Procedures

GIS technology will be utilized to maintain, map, and analyze information from the transportation management systems. The GIS component of this work element includes the following tasks:

1. Convert spreadsheets and workbooks, where management system data is currently stored, into database format compatible with GIS applications
2. Modify databases, as necessary, to provide compatibility with CMRPC GIS Center
3. Develop data dictionaries and metadata records for management systems information
4. Refine and/or develop data collection procedures as appropriate in order to optimize the ability to store the information within GIS applications
5. Develop geographic interfaces for use in displaying and querying the transportation management system database for both internal agency use and region-wide community use.
6. Analyze various data layers to help and support the decision making process for the TIP and the RTP efforts
7. Provide access to the all the transportation planning data available via the internet.

Products & Schedule

1. Integrate the turning movement counts, travel time runs and congestion data for analysis of needs in the region, September 2012
2. Create geographic interfaces via the internet for use by the communities, March 2012
3. Integration of available bike/ped data and freight data into the existing data formats for analysis, April 2012
4. Create templates to receive WRTA transit ridership data using the on-board passenger counts and create procedures to map and analyze the data , September 2012
5. Development of Integrated database of the management systems to guide future data collection activities and analysis of data, Ongoing

Task Title: Sidewalk Management - Data Collection and Analysis

Reference: 2.7

Description

During the development of the Bicycle and Pedestrian plan, staff visited the town center of each community in the region and inventoried the sidewalk and bicycle/pedestrian infrastructure of the town centers. Following up on the heels of this effort, staff is planning to collect sidewalk condition data for sidewalks along federal-aid eligible roadway. It is envisioned that data collection efforts will be performed as along-side the pavement data being collected and will be done using a visual inspection.

As a first step, staff would establish the criteria and the data collection worksheet to collect sidewalk condition data. Also, staff hopes to use Cartegraph to input the data and analyze the condition of the sidewalks. The intent of this program is to have a pilot study in at least one of the communities that pavement data is collected. Staff will start the collection of sidewalk condition for all the federal-aid eligible streets (using the 3-year pavement data cycle) starting in FY 2013.

Procedures

This work task will include the following activities:

1. Establish sidewalk condition data criteria used for a visual inspection.
2. Determine a method for rating/determining sidewalk condition using Cartegraph.
3. Perform a pilot study in at least one town included in the pavement data collection program.

Products & Schedule

1. Create sidewalk condition data criteria and data collection worksheet, March 2012
2. Determine a method for rating/determining sidewalk condition using Cartegraph, September 2012
3. Perform a pilot study in at least one town included in the pavement data collection program, September 2012

Task Title Sidewalk Management - Data Collection & Analysis Ref. # 2.7

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	8,800	2,200					11,000

Element 3: Transportation Plan Refinement Activities

Task Title: Corridor Profile & Traffic Bottleneck Reduction Program

Reference: #3.1

Description

Previous FHWA/FTA guidance has indicated the following:

- 1. It is recommended that the MPOs identify the “top three (3) bottleneck areas” in their regions. Based on the identification of these areas,*
- 2. The MPOs should develop tasks to conduct studies to target low-cost counter measures*

Based on the FHWA/FTA directive, a Localized Bottleneck Reduction Program task has been included in the CMMPO Endorsed UPWP document since the 2010 program year. The region’s entire federal-aid highway system, with a particular focus on the “*Vital Links*” established by the CMMPO, was initially screened as part of this effort.

Traffic Bottleneck Definition

According to FHWA guidance, a Traffic Bottleneck is defined as “a localized constriction of traffic flow” or “choke point”. An expanded definition states “a localized section of highway that experiences reduced speeds and inherent delays due to a recurring operational influence or a nonrecurring impacting event”. FHWA further indicates that “*a bottleneck has congestion, but congestion is often more than a bottleneck*”, citing an example of a wide highway with a narrow bridge that restricts traffic flow on a regular basis.

Identification Methods

Building on the planning agency’s extensive knowledge of the region’s federal-aid highway system, this ongoing effort screens all roadway segments and major intersections seeking the “top three” Traffic Bottlenecks yet to be addressed by the established program. The results of the regional travel demand model are directly utilized for this task. The other Management Systems maintained by staff (congestion, pavement, safety and freight planning) along with public transit planning efforts in the region and MassDOT’s Pontis bridge management system, will also be referenced in determining the “root causes” of recurring bottleneck locations.

Previous Work

- Highway Performance Monitoring System (HPMS) 1990-1993
- Congestion Management System (CMS) 1994 to 2006
- Congestion Management Process (CMP) with GIS component 2007 to Present, *Ongoing*
- Freight Planning efforts, 1994 to Present, *Ongoing*
- Regional travel demand model, development & calibration, 1990 to Present, *Ongoing*
- “Corridor Profile” report documents, including Route 9 East, Route 20 West, Route 9 West, Route 12/16/197, and Route 140, *2005 to 2010*
- 2011 Traffic Bottleneck Reduction Program Progress Report, *April 2011*

Procedures

1. *Screening Tools:* The results of the regional travel demand model maintained by staff will continue to be used to screen all roadway segments and major intersections in the region’s federal-aid highway system, with an emphasis on MPO identified “Vital Links”, seeking the “top three” Traffic Bottlenecks yet to be addressed by the program. At this time, results from the newly calibrated 2010 base year runs will be used for this year’s effort. Based on the Volume-to-Capacity (V/C) ratios calculated by the model and other considerations, roadway segments and intersections where generated vehicular traffic volumes far exceed theoretical roadway capacities will be identified.

Further, the results of the other Management Systems, and their GIS components, maintained by the staff including congestion, pavement, safety and freight planning, along with public transit planning efforts in the region and MassDOT’s Pontis system, will be cross referenced in this effort. As indicated by FHWA, there are often other “root causes” that lead to recurring bottleneck conditions at various “choke points” locations. This is considered another component of the region’s ongoing efforts to integrate the Management Systems.

Other recently completed and ongoing work efforts in the region will also be considered in the identification of Traffic Bottleneck locations. As an example, the recently completed Worcester Regional Mobility Study (WRMS) identified 46 intersection locations in the city of Worcester and the surrounding ring towns as candidates for a range of improvements aimed at decreasing delay while also increasing safety.

2. *Field Observations & Analyses:* Work in the field will be necessary in order to verify this year’s “top three” Traffic Bottleneck locations in the region. One evolving method that will be utilized in the field is what staff has named a “Congestion Audit”. Visits to identified locations will be conducted in order to

view congested conditions that are known to be associated with recurring Traffic Bottlenecks.

Continuing previous efforts to identify Traffic Bottlenecks along the region's federal-aid highway network, staff intends to conduct various basic analyses at each identified Traffic Bottleneck location. These would include intersection TMCs during the peak travel periods used to determine LOS, Travel Time & Delay Studies, as well as intersection inventories including field observed signal timing and phasing. Further, digital photographs will be taken in the field and Pictometry images of the identified locations will be selected for visualization purposes. An analyses findings matrix will be produced, summarizing the results of the series of field observations and subsequent analyses.

3. *Improvement Options:* Reviewing the Traffic Bottleneck summary matrix for a given location, suggested improvement options aimed at reducing and eliminating the identified Localized Bottlenecks will be formulated for consideration by the host communities. A range of improvement options will be considered, with the primary intent of identifying workable, low-cost Transportation System Management (TSM) improvements eligible for federal-aid funding. TSM improvements are "low-cost" by nature, ranging from \$100,000 to \$500,000 in cost, and can often be implemented within the existing right-of-way. These potential improvement projects would need to compete with others deemed eligible for programming on the CMMPO's Transportation Improvement Program (TIP) highway-related project listing.

The intent of seeking low-cost solutions is that Localized Bottleneck Reduction Program projects could perhaps use the balance of any available regional federal-aid funding target monies. When the TIP project listing is developed and amended/adjusted, the CMMPO considers a range of factors, such as feasibility, cost and readiness, mindful of FHWA's emphasis on safety and congestion projects. Certainly, in some instances, high cost solutions may be the only viable alternatives to consider, based on screened and field verified bottleneck conditions. The additions of general purpose travel lanes, for example, often require investments in the millions of dollars.

4. *Inventory of Past Corridor Profile-Derived Suggested Improvement Option:* Staff will catalogue past Corridor Profile-derived suggested improvement options and compare them to both existing and potential TIP projects. Also, consideration will be given to the host community receptiveness, participation, and priority. Additionally, staff will suggest groupings and/or series of improvements, such as Transportation Systems Management (TSM) techniques (signals, signs, and markings) as well as higher cost solutions where deemed necessary. Lastly, staff will suggest alternative plans for the implementation of suggested improvements.

Products & Schedule

1. Identify the “top three (3) bottleneck areas” yet to be addressed by the program on the region’s federal-aid highway system using the results of the regional travel demand model and the other Management Systems maintained by staff, MassDOT and others. The “Vital Links” identified by the MPO will be considered in this effort. *Winter 2012*
2. “Congestion Audits”, which include a range of data collection and analyses, will be conducted in the field to verify Traffic Bottleneck locations screened by the travel demand model. *Spring 2012*
3. Develop range of suggested “low-cost” counter measures or improvement options for the consideration of MassDOT and the host communities. Improvements ranging between \$100,000 and \$500,000, often considered Transportation Systems Management (TSM) techniques, will be targeted. Based on the conditions observed in the field, an initial priority may be assigned to the suggested improvement options. Clearly, some bottleneck locations with complex issues may require more costly solutions. As such, a range of potential countermeasures will be listed as part of this effort. *Summer 2012*
4. Corridor Profile inventory of improvements with potential approaches to implementation, Spring 2012
5. 2011 Localized Bottleneck Reduction Program Progress Report, *September 2012*

Task Title Corridor Profile & Traffic Bottleneck Reduction Program Ref. # 3.1

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	30,000	7,500					37,500

Task Title: Congestion Management Process – Project Development

Reference: # 3.2

Description

MassDOT predecessor agencies, the RPAs, the MBTA, other RTAs and the former Caravan for Commuters developed the Massachusetts Congestion Management Process (*formerly the Congestion Management System or CMS*) as a cooperative effort. Although considered a statewide system, CMRPC has been responsible for both developing and operating the region's CMP on behalf of the CMMPO within the flexible framework established during the program's development in the mid-1990s. Participating state agencies have and are expected to continue providing technical support to the RPAs. An operational CMP is required for all metropolitan areas in air quality nonattainment that have been designated as Transportation Management Areas (TMAs), including the CMMPO region.

The CMP within the CMMPO region includes focus segment roadways, critical intersections and Park-and-Ride facilities that were identified utilizing the criteria developed by the early Technical Team. CMRPC staff will continue to refine the established focus segment network through ongoing public participation activities and updates to the regional travel demand model. The CMMPO will also propose and evaluate alternative strategies to meet the needs identified for each congested corridor, intersection or Park-and-Ride facility. These strategies may include Transportation Systems Management (TSM) improvements, capital investments, Transportation Demand Management (TDM) techniques, and the deployment of Intelligent Transportation Systems (ITS) technologies. As the selection of alternative strategies has been a cooperative effort between the state and the RPAs, intraregional solutions to identified deficiencies are also considered appropriate.

The public participation effort associated with the CMP will continue to be conducted. The CMMPO Advisory Committee has and will continue to provide guidance, insuring that the local communities are informed of ongoing CMP activities. Ongoing CMMPO public participation efforts will continue to provide opportunity for review and comment.

Previous Work

Previous work in the region includes the following:

- MassDOT-Highway maintained Park-and-Ride facility in Berlin on Route 62 at I-495 has been monitored as part of the region's ongoing CMS effort (1995-1996, 1998-2011).

- Developed and evaluated strategies (improvement options) for addressing observed and measured congestion (Ongoing).
- Produced annual Progress Reports (Ongoing).
- Pursued the implementation of CMP strategies in cooperation with the MassDOT-Highway Division District #3 office (Ongoing).
- Conducted Level of Service (LOS) analyses at identified critical intersections and improvement options suggested for consideration (1998, 2001-2011).
- Implemented critical intersection monitoring effort in order to measure traffic growth, improve project effectiveness and/or to suggest improvement options. Historic count data comparisons developed for MassDOT-Highway Division and the communities (Ongoing).
- Compiled the Management System materials and various traffic study components summarized in a bound document envisioned to guide future design efforts for Corridor Profiles.
- Refined the focus roadway network utilizing the 2010 base-year regional travel demand model to identify roadway segments where congestion currently exists or is projected to exist by 2030. Congested roadways are defined by the CMMPO as roadways having volume-to-capacity (V/C) ratios greater than 1.0. Both daily and PM peak hour conditions were utilized for this effort.

2011

During the 2011 Program Year, CMRPC compiled the 2010 Congestion Management Process Progress Report.

Procedures

CMRPC's responsibilities for the 2012 program year will include, but are not necessarily limited to, the following:

1. *CMP Analyses:* As necessary, staff will continue to identify, evaluate, and select strategies to alleviate measured congestion. TMC data, physical intersection inventories and signal timing & phasing data (as reflected under Task 2.2) will be utilized to conduct capacity analyses at identified critical intersections. (Data collected at some intersections will be evaluated as part of Task #3.1, which describes the development of a *Bottleneck Reduction Program*). Travel Time and Delay study information will also be analyzed. Based on the results of the analyses, improvement options will be suggested as appropriate to address quantified congestion. This may include signal warrants analyses and, where determined necessary, the compilation of basic conceptual improvement plans. Some of these intersections will be monitored in order to measure traffic growth

and the effectiveness of recent improvement projects. The results of the Berlin Park-and-Ride facility utilization study will also be analyzed and compared to previous studies. All work will be documented and presented in GIS maps and associated databases.

2. Integrate results from the CMP data collection and analysis into the preparation of the 2012 CMP Progress Report.
3. *Public Outreach Program (POP) Activities:* Staff will continue to coordinate ongoing CMP activities with the region's communities through the MPO Advisory Committee.
4. *Inventory Past CMP-Derived Suggested Improvement Options:* Staff will catalogue past CMP-derived suggested improvement options and compare them to both existing and potential TIP projects. Also, consideration will be given to the host community receptiveness, participation, and priority. Additionally, staff will suggest groupings and/or series of improvements, such as Transportation Systems Management (TSM) techniques (signals, signs, and markings) as well as higher cost solutions where deemed necessary. Lastly, staff will suggest alternative plans for the implementation of suggested improvements.

Products & Schedule

1. Data analyses, maps and integration with other management data, Ongoing
2. Integrate CMP data and analysis into the 2012 CMP Progress Report, September 2012
3. POP Activities, Ongoing
4. CMP inventory of improvements with potential approaches to implementation, Spring 2012

Task Title Congestion Management Process Project Development Ref. # 3.2

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	14,000	3,500					17,500

Task Title: Transportation Safety Planning Program – Project Development

Reference: #3.3

Description

Both FHWA and MassDOT have identified highway safety as an issue both deserving and needing further study. The CMMPO Transportation Safety Planning Program was developed to improve the safety of region's infrastructure for use by the traveling public. Ideally, the fully developed program will address multiple modes of travel, develop and monitor improvement strategies, and reduce the number of injuries and fatalities occurring as people and freight move along our region's transportation system.

CMRPC has identified a number of elements that will comprise the Transportation Safety Planning Program. While each of these work efforts will have specific tasks dedicated to implementing solutions, staff recognizes that this is not an autonomous program. The information collected and analyzed as part of the Transportation Safety Planning Program will need to be fully integrated into the CMMPO planning process and disseminated to the traveling public, community officials, and planners, engineers, and policy makers across all levels of government.

The program includes the development of six basic program elements, which are intended to address the region's public roadways, bridges, rail crossings, and sidewalks as well as the manner in which people utilize this infrastructure. Other safety issues associated with the operation of the transportation system, such as highway incident response, evacuation route planning, disaster mitigation, and transportation system security are to be addressed separately by the CMMPO as directed by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The six program elements include:

- 1) Vehicle Crash Analysis & Monitoring
- 2) Coordination with the Congestion Management System
- 3) Transit/Pedestrian Interface Assessment
- 4) Bicycle & Pedestrian Facility Planning
- 5) Collision Prevention
- 6) Public and Community Outreach & Involvement

Previous Work

Staff has prepared intersection vehicle crash diagrams, roadway segment crash summaries, calculated vehicle crash rates and compiled accompanying interpretative text as part of the preparation of several traffic studies conducted throughout the region. In addition, beginning in 2005, the Transportation Safety Planning Program has expanded the investigation into transportation safety as indicated below:

- Survey of Police Departments located within the CMRPC region (2005)
- Coordination with City of Worcester to identify “hot spots” within the city (2005)
- Survey of Emergency Medical Technicians and Fire Departments located within the CMRPC region (2006)
- Crash Research at several isolated locations in response to public concerns (2005-2009).
- Preparation of a map depicting locations and other information of fatal crashes as reported in area newspapers during calendar year 2008 (2009)
- Bus stop data collected in 2007 and 2008 was mapped using GIS software. The database containing WRTA ridership sample data by bus route was also mapped. Using the crash data from MassHighway the bus-stop locations with highest Bike/Ped crash clusters were identified.
- Compiled the 2006-2008 high crash location report analyzing the crash data obtained from MassDOT. The HSIP guidelines and criteria provided by MassDOT safety division were followed to develop the high crash location list. The report also includes high crash locations from each of the towns in the region. (2010)
- Participated in MassDOT Roadway Safety Audit projects for Town of Northborough and City of Worcester. (2010-2011)
- Conducted the data collection and analysis activities as a key step in the preparation of the Roadway Safety Audit on Route 140 within town of West Boylston. (2011)
- Prepared the *Transportation Safety Planning Chapter in Regional Transportation Plan* (2011)
- Vehicle crash data was mapped and analyzed with roadway pavement data and traffic flow data using GIS software to identify critical intersections and roadways segments throughout the region. The result was mapped and presented at CMRPC

Procedures

Staff will work on the following program elements:

1. *Vehicle Crash Analysis & Monitoring Activities:* Utilizing a management system approach, the Vehicle Crash Analysis & Monitoring element will analyze crash data obtained from MassDOT and produce high-crash locations report. This report will provide a detailed list of top crash locations, regional corridors, fatal crash locations and Bike/Ped crash locations in the region. The report will also include in top crash locations in each of the towns in the CMRPC region and other crash corridors in the towns. CMRPC will utilize this report to choose crash locations to perform Roadway Safety Audits (RSA). The RSAs will be performed in locations that have benefit to multiple towns, where the towns will be invited to participate for training purposes.
2. *Coordination with the Congestion Management Process:* Staff will use the High Crash location report in conjunction with congestion locations derived from the travel demand model to alleviate some crashes. Further, where collision research indicates that aggressive driving may be a major contributing factor, additional efforts to mitigate congestion will be considered. For example, a high incidence of rear-end collisions suggest a disproportionate number of drivers “tailgating” or failing to maintain a safe following distance from the vehicle in front of them. Pursuing congestion mitigation measures at such a location could reduce the incidence of vehicle crashes.
3. *Transit/Pedestrian Interface Assessment:* CMRPC continues working with WRTA to analyze ridership data and incorporate it into the management systems database. Further analysis will be done to identify bus stop locations with high levels of Bike/Ped crashes and shared with WRTA and the city of Worcester to implement safety measures.
4. *Pedestrian/Bicyclist Activity Area Identification:* CMRPC continues to analyze pedestrian and bicycle safety as part of the Transportation Safety Planning Program. Efforts for FY 2011 will include researching the Pedestrian/Bicycle safety clusters produced by MassDOT to determine top locations that pose a safety hazard for pedestrians and bicyclists. In future work programs, tasks will include: researching pedestrian and cyclist injuries and fatalities; analyzing connectivity of bicycle and pedestrian facilities; recommending improvements, such as the installation of sidewalks and bicycle facilities; and evaluating the effectiveness of those improvements.

5. *Public & Community Outreach/Involvement:* Public and community involvement will be essential to the success of the Transportation Safety Planning Program. Not only is input from the public important in identifying locations where safety needs to be improved, consensus-building outreach activities will also need to be incorporated into each of the program elements to ensure that the best improvement strategies, tailored to local needs, are developed and implemented. CMRPC continues to communicate the top crash locations with each of the communities and requests comments on the crash locations.
6. *Coordination with Massachusetts Strategic Highway Safety Plan:* Staff intends to continue to participate in the implementation of the statewide Strategic Highway Safety Plan.

Products & Schedule

1. Crash summaries, vehicle crash rates, and improvement options, January - April 2012
2. Identify 3 locations of high crash rates involving vehicles, pedestrians/ bicyclists and transit users using the latest information from MassDOT and WRTA, October -December 2011
3. Conduct three multimodal Roadway Safety Audits (1 auto, 1 bike/pedestrian, and 1 transit) January – September 2012
4. Coordination and participation in the implementation of the Massachusetts Strategic Highway Safety Plan, ongoing
5. Identification of safety-related projects or projects with safety components for the TIP, May 2012

Task Title Transportation Safety Project Development Ref. # 3.3

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	12,000	3,000					15,000

Task Title: Pavement Management - Project Development

Reference: #3.4

Description

The CMMPO pavement management program focuses on the *town-maintained federal-aid eligible* roadways within the region. As discussed under Task #2.4 (Pavement Management - Data Collection), a three-year cycle of data collection has been developed. Analysis of the collected pavement distress data utilizing an appropriate software package typically produces condition ratings, recommended repairs, estimated repair costs, and priority rankings. It is anticipated that the information collected on the town-maintained roadways will also be beneficial to the region's communities as they plan their local improvements and possibly apply for federal-aid funding. In order to provide timely pavement condition information for the development of the Regional Transportation Plan (RTP), data collection is annually resumed on the entire federal-aid system, as well as rural, minor collectors. As data is collected, the regional inventory of pavement condition as well as budgeting scenarios based on the updated distress data will be refined and published as necessary.

In FY 2012, pavement evaluation will also be conducted at locations where improvements have been listed or proposed for inclusion on the CMMPO TIP to provide information for the Transportation Evaluation Criteria process. It is anticipated that some roadway segments may need to be analyzed on an annual basis due to the fluctuation of projects on the CMMPO TIP listing.

Previous Work

1991- 2004

Since 1991, staff has conducted nearly 30 pavement management studies for communities in the region. Most were "Preliminary Local PMS Studies," aimed at establishing an operative PMS while some were "Follow-up Local PMS Studies," conducted with the intent of maintaining an established PMS. In virtually all cases, an iteration of VHB's *Road Manager* software package was utilized.

Staff has also conducted several workshops and informational meetings concerning pavement management for local Highway Superintendents. The meetings were held at the MassHighway District #3 office and attended by State Aid personnel. (1996-1999)

2005-2008

CMRPC produced Annual Reports summarizing the objectives of the Pavement management Program and listing the town-maintained Federal-Aid eligible roadways that were surveyed in those years. The report was distributed to communities where data was collected with the offer to provide copies of the pavement distress data sheets upon

request. As such, the detailed information was forwarded to town officials in Auburn and Paxton.

Staff coordinated a number of meetings of the Pavement Management User's group (PMUG), which is comprised of representatives from many regional planning agencies within the Commonwealth. Topics of discussion have focused on data sharing and software selection. CMRPC staff's research into various software packages available for pavement management was brought to the group for discussion. PMUG has selected *Cartegraph* as the preferred software choice, largely due to its potential ability to integrate the information produced by the various regional and statewide management system programs. During 2006, staff hosted a pavement management workshop for municipal employees and a roadway distress identification manual prepared for distribution at the workshop. During 2007, staff evaluated the town-maintained federal-aid roadways and the evaluation was published as a Technical Memorandum

During the 2008 Program Year, staff inputted all the data from 2005 onwards into the new software program (Cartegraph) and staff calibrated the pavement model to generate future pavement condition predictions and various budget analysis scenarios.

2009

During the 2009 Program Year, CMRPC coordinated efforts with the City of Worcester to obtain pavement condition ratings on the city maintained streets. Staff also contacted MassHighway to obtain pavement condition ratings on the state maintained roadways.

2010

During the 2010 Program Year, CMRPC analyzed regional pavement distress data to determine the cost to maintain the current condition of the town-maintained federal-aid eligible road network, as well as the cost to bring the roads to "excellent" condition. CMRPC worked with MassDOT and other DPW staff to develop current repair strategy costs. Produced a regional pavement condition map that included a regional condition "score," and a percentage breakdown of road miles in each of the five condition categories: excellent, good, fair, poor, and very poor. A similar map was developed for each subregion.

Staff also included pavement condition data for state-maintained federal-aid eligible roadways to create a map of all federal-aid eligible roads in the CMRPC region as well as provide an estimated cost for maintenance and improvements. Pavement data analysis was considered in all transportation research and concept evaluations.

2011

During the 2011 Program Year, CMRPC continued to update regional pavement distress data analysis to determine the cost to maintain the current condition of federal-aid eligible road network. Staff participated in the Pavement Management sub-groups meetings to discuss the methodology for RPAs to analyze pavement condition and produce backlog costs as part of the 2011 RTPs. Staff produced regional analysis for the 2011 RTP including a pavement condition map, regional condition "score," and a

percentage breakdown of road miles in each of the five condition categories: excellent, good, fair, poor, and very poor. Staff also developed research to determine a work backlog for the region's federal-aid eligible roadways for town and state maintained federal-aid eligible roads. Pavement data analysis was considered in all transportation research and concept evaluations.

Procedures

This work task will include the following activities:

1. Update the regional inventory of pavement distress data and budget scenarios utilizing the Cartegraph pavement management software.
2. Analyze collected pavement distress data for the Transportation Evaluation Criteria process.
3. Continue limited technical assistance and support for community pavement management programs, as requested.
4. Use the analysis created for the RTP with a goal of determining an "acceptable" pavement condition for the region as well as a prioritized list of roads for pavement preservation projects.

Products & Schedule

1. Determine an "acceptable" condition for the Federal-Aid eligible roadways in central Massachusetts, September 2012
2. Start create a list of prioritized roads for pavement preservation projects in the region, January 2012
3. Create a Pavement Management Report, May 2012
4. Discussion with MassDOT over the relationship between CMRPC and MassDOT pavement data, ongoing

Task Title Pavement Management Project Development Ref. # 3.4

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	16,000	4,000					20,000

Task Title: Worcester Regional Mobility Study Implementation

Reference: #3.5

Description

The Worcester Regional Mobility Study is a comprehensive study of the multimodal movement of people and goods within Worcester and the surrounding urban area. The study analyzed ways to improve mobility by enhancing the existing infrastructure and planning for new infrastructure. CMRPC served as the Project Manager, overseeing a consultant team funded with Statewide Planning & Research (SPR) funds. The study was concluded in May 2011, and the process of planning for implementation of recommendations is now beginning for short-term and long-term mobility improvements, as well as the development of a process for on-going coordination of operations and management of the intermodal system, including continuous review and implementation of improvement strategies. CMRPC anticipates that the partnerships forged during the course of the two year study (local municipal representatives, state and federal agency representatives, and local groups and individuals representing business, the environment, traditionally underserved populations, freight and rail interests) will be an invaluable resource to forming working groups to lead various implementation efforts.

The majority of work on Task 3.5 will be conducted as part of Task 3.8 Regional Transportation Plan implementation as Task 3.5 phases out with the completion of the FTA FY'12 contract.

Previous Work

- Worcester Regional Mobility Study – March 2011

Procedures

Now that the study is formally completed, CMMPO staff expects to begin to undertake the implementation phase of the project, including:

1. Establish a master action plan for organizing the various short, medium, & long-term implementation efforts into task forces, including a proposed timeline for start-up of each effort
2. Meet with key members of WRMS Technical Task Force to amend and gain acceptance for established process;
3. Form individual task forces, as appropriate to overall action plan, and begin to plan implementation including:
 - Determining solutions to institutional/jurisdictional barriers to implementation;
 - Determining solutions to process barriers to implementation;

- Developing necessary concept scopes for projects that will require design
- Ongoing monitoring of effectiveness of implemented projects and initiatives; and
- Ongoing revision of recommendations based on monitoring results.

Products and Schedule

1. Establish Master Action Plan – September 2011
2. Meet with WRMS Technical Task Force members to amend/gain acceptance for established process – October 2011
3. Begin to form individual implementation task forces or sub-groups, as appropriate – November 2011
4. Work with implementation task forces per schedule set forth in Master Action Plan – Ongoing December 2011 to September 2012

Task Title Worcester Regional Mobility Study (Implementation) Ref. # 3.5

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	12,000	3,000	4,000	1,000			20,000

Task Title: Intelligent Transportation Systems (ITS) Project Development

Reference: #3.6

Description

Federal law requires all intelligent transportation systems (ITS) projects funded through the Highway Trust Fund be compliant with a Regional ITS Architecture. During FY'11, CMRPC continued to coordinate with MassDOT-OTP to update the Central Massachusetts Regional ITS Architecture and effect its implementation, including the development of strategies for the Central Massachusetts MPO to stimulate deployment of "near-term multi-agency initiatives" identified in the previous Regional ITS Architecture, as well as, defining the need to create a Highway Operations Center presence in the region in order to better coordinate the flow of communication regarding active traffic management between the area and the Boston office. During FY'11 as part of the Worcester Regional Mobility Study, the need to develop a better traveler information system was identified for I-290, as part of an overall approach to manage the demand in light of the constraints in expanding capacity. In addition, staff identified the need to work with local stakeholders in the core of the region to identify roadway projects that demonstrate the potential to benefit from ITS, including areas that are congested, have high crash locations, or experience non-routine traffic patterns. Significant to the ITS efforts in Central Massachusetts, staff worked with the WRTA during FY'11 to implement a comprehensive suite of ITS technologies on its fleet. The implementation on fixed route buses is expected to be completed in December 2011, and on the paratransit vehicles in March 2012.

Previous Work

- Staff supported MassDOT-OTP in the development of the Central Massachusetts Regional ITS Architecture in 2005 & 2011, and the education of local and regional agencies.
- CMRPC continues to assist the WRTA in effecting ITS deployment strategies that are consistent with the Regional ITS Architecture.
- CMRPC staff has identified how ITS could benefit regional mobility, particularly in the areas of safety and congestion, and is beginning to work with MassDOT District 3 to plan for a traveler information system for the congested I-290. In addition, CMMPO staff has mapped overlapping areas of

congestion and safety to identify areas that could benefit from ITS roadway techniques.

- Staff worked through the Regional Architecture committee to attempt to gain a presence of the Highway Operations Center in the region. Success has been limited and other approaches are being sought for FY'12.

Procedures

CMRPC will continue to broaden its overall/ongoing transportation ITS planning activities by maintaining an approach that encompasses activities related to both the Regional ITS Architecture and regional highway and transit. CMRPC will support activities related to implementation of “near-term initiatives” identified in the Central Massachusetts ITS Regional Architecture. Because this is seen as a “bare minimum” effort, CMRPC will continue to pursue the implementation of ITS through various other approaches, as outlined below. This effort will include, but not be limited to the following activities:

1. Continue work with the Worcester Regional Transit Authority (WRTA) to encourage coordinated ITS implementation consistent with the transit element of the Regional ITS Architecture, including the ongoing efforts that will greatly expand ITS application for transit efficiency and customer service;
2. Establish an integration format for the extensive new data that will come from the WRTA ITS implementation, in order to effectively relate the data to existing highway, bike and pedestrian data for multi-modal analysis and recommendations.
3. Continue to facilitate contact between key stakeholders in the region, including both highway and transit elements related to transit signal priority, and identify new stakeholders as implementations unfold;
4. Assist MassDOT-OTP, MassDOT Highway Division, and other regional stakeholders in the implementation of “near-term multi-agency initiatives” outlined in the Regional Architecture. MassDOT Highway Operations Center staff will be asked to present to the CMMPO the plan for Central Massachusetts;
5. Assist MassDOT-OTP in coordinating the activities of the newly-established Central Massachusetts ITS Coordinating Committee. Assist regional entities in identifying and implementing a more coordinated approach to ITS, particularly between Boston-oriented state agencies and regional agencies.
6. Ensure short and long range project consistency between the Regional Transportation Plan, the Transportation Improvement Program, and the ITS Regional Architecture;

7. Assist in developing agreements between key stakeholders regarding ITS activities in the Central Mass. Region;
8. Using the Management Processes (see Tasks 3.1-3.4), and in cooperation with MassDOT-Highway Division District 3, continue to identify highway projects that might produce regional benefits from the addition of ITS components;
9. Develop a GIS-based Traffic Signal Inventory for Central Massachusetts, including the identification of ITS attributes to better analyze where gaps exist relative to congestion, safety, and ITS efforts.
10. Develop an ITS Toolkit to assist local ITS implementing agencies in identifying appropriate ITS applications; and
11. Identify ITS-enhanced safety and security initiatives for roadway and transit.

Products & Schedule

1. Assist in preparation of agreements between local ITS stakeholders, consistent with the Central Massachusetts Regional ITS Architecture – As needed
2. Assist appropriate stakeholders to initiate implementation of “near-term multi-agency initiatives” outlined in the Regional ITS Architecture. Request MassDOT Highway Operations Center staff to speak to CMMPO and Regional Coordinating Committee regarding specifics of plans for Central Massachusetts in order to integrate better with regional entity plans – October 2011
3. Monitor TIP projects for consistency with Regional ITS Architecture and encourage development of TIP projects that include ITS features – Ongoing
4. Research best practices of using ITS components in multi-modal projects and develop toolkit for use by CMMPO and regional implementing entities – December 2011
5. Continue to identify highway projects that might benefit from ITS components; continue to pursue traveler information system along I-290 as recommended in the Worcester Regional Mobility Study – Ongoing
6. Assist WRTA in coordinating ITS transit implementation strategy with non-transit regional stakeholders, particularly with regard to new efforts underway. Develop data interface to ensure integration of new data with other existing multi-modal data – March 2011

7. Develop a GIS-based Traffic Signal Inventory for Central Massachusetts, including the identification of ITS attributes and identify gaps relative to congestion, safety, and ITS efforts.
8. Assist MassDOT in coordinating the activities of the newly-established Central Massachusetts ITS Coordinating Committee, including improving coordination between the MassDOT Highway Operations Center and the region – Fall 2011

Task Title Intelligent Transportation Systems Project Development Ref. # 3.6

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	4,800	1,200	6,400	1,600			14,000

Task Title: Freight Planning

Reference: #3.7

Description

The primary mission of *Freight Planning* in the Commonwealth is to improve intermodal transportation system connectivity and performance. Improvements in system performance increase the opportunities to move freight and interregional passengers at less cost and with fewer impediments. These efforts influence the decisions that are made regarding public policies and transportation investments. Freight Planning provides effective inputs to the overall transportation planning process through continued development, evaluation and recommendation of strategies to improve system performance. This is done in the interest of the public at large by balancing intermodal cost and operating efficiencies with the potential impacts of proposed decisions.

Initially developed as an Intermodal Management System (IMS) by MassDOT predecessor agencies and the RPAs, Freight Planning has evolved as both a regional and statewide effort. The major intermodal freight facilities connected to the National Highway System (NHS), emphasized under SAFETEA-LU, are a primary focus of the Freight Planning work task. To a lesser extent, this effort also includes other minor intermodal activities as well as the interregional component of passenger intermodal activity. The three main goals of Freight Planning in the Commonwealth are as follows:

1. Improve the performance of freight and interregional passenger intermodal corridors and terminals.
2. Coordinate and cooperate with affected constituencies, both decision makers and stakeholders, from the public and private sectors.
3. Assist in identifying and considering the economic, social, environmental, energy, safety and external impacts of potential decisions as appropriate.

Carried out by MassDOT and the RPAs, Freight Planning is an ongoing process of system evaluation, supported with data collection activities in the field, which is utilized to provide technical support in the development of the RTP and both the regional and statewide TIP documents. The CMMPO, the MPO Advisory Committee, and the CMRPC will continue to influence the ongoing refinement and operation of this planning effort. MassDOT, the RPAs and other agencies will continue using travel demand modeling, vehicle classification counts and other methods to identify the existing and future needs of the intermodal transportation system as well as to suggest/evaluate potential strategies and projects to meet these identified needs. In most instances, it is recognized that the MassDOT will need to take assume a lead role in the formation of statewide policies and projects.

When the region's intermodal facilities inventory was initially developed within the parameters of the system description framework, available data was utilized where possible; ongoing Freight Planning activities along with the established CMP will continue to share a number of common performance measures. Intermodal freight and passenger data has been available from the RPAs, various state agencies, FHWA's Freight Analysis Framework (FAF) and the recently completed *Massachusetts Freight Plan*. Any new data collection efforts are envisioned to be concise and fairly limited. This may include purchasing available data from vendors or acquiring information through the proactive Public Outreach Program, including the Regional Rail Advisory Group. The deployment of ATRs at key locations along the region's NHS Connector roadways is an example of ongoing monitoring efforts. It is also realized that many freight intermodal requirements can only be met with data provided from the private sector.

In response to identified needs in the intermodal transportation system, Freight Planning participants will continue to recommend statewide, regional and location-specific strategies to improve the NHS Connectors which provide access to major intermodal facilities. These strategies, ranging from operational improvements to major capital investment, will address both existing and projected future year conditions. Potential improvement projects, which may address such issues as roadway condition and capacity, physical restrictions or safety, would need to be programmed in the CMMPO TIP project listing. Further, the Commonwealth now has the ability to engage in Public/Private Partnerships to fund improvements to the freight system.

The CMMPO, following the intent of the Freight Planning provisions of SAFETEA-LU, is required to provide the opportunity for input from the member communities as well as all interested stakeholders. The CMRPC staff has forged relationships with various modal providers in the railroad, trucking and intermodal industries. In light of current economic conditions, it is also increasingly important for the CMMPO, decision makers and stakeholders to understand the issues and needs concerning freight mobility when formulating regional transportation policy.

Previous Work

- 1993 Regional Transportation Plan: Regional trucking activities survey completed in cooperation with the ATA Foundation.
- Identification of NHS Connectors to major intermodal terminals, 1995.
- Participation on the EOTC/MFAC *Identification and Prioritization of Statewide Freight Issues* study, 1997-1998.
- Staff research concerning MBTA Commuter Rail service to Worcester, the call for increased service frequency along the Worcester Line, as well as other passenger rail initiatives in the state and the greater Northeast region.

Compilation of informational guide entitled *Passenger Rail in the Central Massachusetts Region: News, Events & Studies*, 2006-2007.

- Continuing NHS Connector monitoring efforts include the collection of daily traffic volumes and vehicle classification counts, *Ongoing*.
- Since 2008, staff has convened a *Regional Rail Advisory Group* consisting of participants from a wide variety of backgrounds and expertise.
- Several *PowerPoint* presentations compiled and refined by staff have worked to inform and educate decision makers & stakeholders about freight and passenger rail operations, known challenges and identified needs in the greater region.
- Staff hosts outreach meetings for development of Massachusetts Rail and Freight Plan documents, *November 2008, February 2009, September 2009 and April 2010*.
- Staff attendance at pertinent meetings, including the New England Rail Club's annual Railroad Expo, *March 2009 and March 2010*.
- 2010 Freight Planning Progress Report document. In addition to summarizing all freight planning related tasks completed by staff, this document also includes an in-depth review of the region's established NHS Connector roadways as specifically requested by FHWA, *Annual*.
- Staff review of rail freight periodical *Rail Pace* magazine and the *Atlantic Northeast Rails & Ports* e-newsletter. (*The general news media provides little about freight rail other than the reporting of problem incidents, while the coverage of passenger rail service is often biased and uninformed.*) *Ongoing*.
- Compilation and distribution of a variety of data resources concerning freight and passenger rail, intermodal operations, and trucking as well as the need to conserve energy, *Ongoing*.

Procedures

As the CMMPO needs to carry out, as appropriate, the Freight Planning provisions of SAFETEA-LU, this work activity includes:

1. Regional Rail Advisory Group activities

Continue ongoing efforts to convene and strengthen the *Regional Rail Advisory Group* (formerly "Task Force") under the auspices of the CMMPO. Periodic meetings of the group are anticipated over the next program year. It is intended that the Advisory Group serve to assist and inform the CMMPO, as appropriate, in the transportation policy-making process. Considering the region's central location as a distribution center to the entire New England and eastern New York marketplace, it is critical that the CMMPO be kept

aware of existing freight operations and known issues (rail, truck and intermodal) within the region, neighboring MPOs, statewide and the Northeast. In addition, in part due to steadily rising fuel costs and redevelopment opportunities, local demand for expanded commuter and intercity passenger rail remains strong.

As intended by SAFETEA-LU, the *Regional Rail Advisory Group* is expected to advance efforts for the CMMPO to stay informed about the various rail issues impacting the mobility of both freight and passengers. Hosted by staff, ongoing roundtable discussions will continue. *Beyond freight and passenger rail, other topics that require further discussion are area trucking activities, “last mile” distribution and intermodal challenges impacting the region. The greater region’s trucking industry moves by far the largest share of the Commonwealth’s freight. The often unique needs of trucking and associated freight movement need to be identified and fully considered in the planning process and the programming of improvement projects.* The periodic roundtables allow for the CMMPO to obtain improved information concerning existing operations, identified deficiencies and planned improvements - particularly those that have the potential to reap regional and/or statewide benefits. The *Regional Rail Advisory Group* is anticipated to convene perhaps twice annually.

Beyond the CMMPO, the region’s communities need to be made aware of the nature of freight and passenger flows – in a knowledgeable fashion from both the public and private viewpoints – including the impediments that limit their mobility and growth. It is anticipated that local issues could be voiced to the *Regional Rail Advisory Group* for feedback and/or guidance.

Potential topics of discussion include:

- ***Rail Passenger Service:*** Enable the CMMPO to be made aware of the extent of competing MBTA Commuter Rail initiatives, priorities and challenges both in the region and on a statewide basis.
- ***Rail Freight Service & Intermodal:*** Enable the CMMPO to be apprised of rail freight activities and challenges throughout the greater region to aid in formulating transportation policy and the programming of projects.
- ***Trucking Operations:*** Trucking operations are projected to significantly increase on the nation’s - and region’s - highways over the coming decades. The CMMPO needs to be aware of trucking’s critical role in the Commonwealth and the needs of the industry at large. A roundtable discussion will be convened that focuses on area trucking activities. Prior, staff will research potential participants and establish a meaningful agenda to attract interest.

2. Continue ongoing monitoring efforts by conducting traffic volume and vehicle classification counts on the region's established NHS Connectors (*See Regional Traffic Counting Program Task*).
3. Host meetings of significance concerning freight and/or passenger issues, allowing the opportunity for shared consensus and strategy building. Such meetings have successfully demonstrated the importance of gathering interested parties together, providing an opportunity for a more unified perspective on issues impacting the region. (*The CMRPC office is located in Worcester's historic Union Station, an ideal setting for rail-related discussions. In April 2011 the agency hosted the Providence & Worcester Railroad's Annual Shareholder meeting for the second time. The agency will again host the P&W shareholder meeting in 2012.*)
4. Attend meetings of significance in the region and elsewhere, particularly the New England Rail Club's annual Railroad Expo, the Boston MPO's Regional Transportation Advisory Council's (RTAC) Freight Committee, the National Corridors Initiative (NCI) Alpha Committee and the 495 MetroWest Partnership.
5. Review various periodicals, documents and research pertaining to freight and/or passenger issues, including *Rail Pace* magazine and the *Atlantic Northeast Rails & Ports* e-newsletter.
 - **Document Review:** Potential examples include assessing the findings and recommendations of pertinent studies as well as evaluating the secondary impacts (roadway, parking, pedestrian & bicycle issues) associated with the expansion of passenger service or intermodal freight operations. Further, as applicable, work with host communities to ensure that project information is available to interested parties.
 - **Research Review:** This will allow for the CMMPO to be informed on current public policy related to freight mobility on the federal, state and local levels and, additionally, private sector freight initiatives and responses to local and larger market conditions. This work effort would also utilize the agency's GIS capabilities to produce various maps and/or conduct various analyses. Examples include maps of the greater region's rail network, intermodal yards, designated truck routes, weight restricted structures, etc.
6. Address any unanticipated Freight Planning-related requests from MassDOT and/or FHWA.

Products & Schedule

1. Annual *Freight Planning Progress Report* document. Staff's freight planning efforts will be summarized in a report document complete with tables, graphics,

and maps, documenting ongoing efforts over the past year. Particular attention will be given to the activities of the greater region's trucking industry, serving "Main Street, USA", *September, 2012*

2. Conduct traffic volume and vehicle classification counts on the region's NHS Connectors, *Ongoing*
3. Continue efforts to periodically convene and strengthen the established *Regional Rail Advisory Group* under the auspices of the CMMPO. This group will continue to assist and inform the CMMPO, as appropriate, in the transportation policy-making process. It is anticipated that the Advisory Group will convene perhaps twice annually. Anticipated topics of discussion include, but are not limited to:
 - Area trucking activities
 - Rail passenger service
 - Rail freight service & intermodal
 - "Last Mile" distribution

Staff will continue to document the proceedings of the *Regional Rail Advisory Group* in order to provide a record for consideration and reference by the CMMPO. *September 2012.*

4. As previously mentioned, the mission of *Freight Planning* in the Commonwealth is to increase the opportunities to move freight and interregional passengers at reduced cost and with fewer impediments. Based upon input from the *Regional Rail Advisory Group*, staff will continue to stress the critical importance of freight movement through the development, evaluation and recommendation of strategies to address identified issues and challenges, including continued public education and outreach. *Ongoing*
5. Host meetings concerning freight and/or passenger issues for MassDOT and other CMMPO partners as well as private freight transportation providers serving the greater region's railroad and trucking needs, *Ongoing*
6. Attend various Freight Planning meetings in the region and elsewhere, particularly the 495 Metrowest Partnership, *Ongoing*
7. Staff will continue the compilation of GIS produced freight and/or passenger related maps. Both aerial and Pictometry views of the region's major intermodal transloading facilities will be updated as necessary, *Ongoing*.
8. Topic-specific PowerPoint slide presentations, used to both educate and inform decision makers and stakeholders, will continue to be compiled and customized, *Ongoing*.

9. Staff will continue the ongoing review and chronology of rail freight periodical *Rail Pace* magazine and the *Atlantic Northeast Rails & Ports* e-newsletter, *Ongoing*
10. Staff review of various documents and research pertaining to freight and/or passenger issues, *Ongoing*
11. Address any unanticipated Freight Planning-related requests from MassDOT and/or FHWA, *As necessary*

Task Title Freight Planning Ref. # 3.7

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	19,000	4,750					23,750

Task Title: Regional Transportation Plan Implementation Efforts

Reference: #3.8

Description

The CMMPO is expected to endorse the 2011 long-range Regional Transportation Plan (RTP), laying out the projects expected to be implemented over the next 20 years and the emphasis of MPO study and project development over that same time frame. Consistent with FHWA and FTA's emphasis that planning and operations should be closely related processes, the CMMPO staff will continue its practice of involvement in the development of projects and studies that evolve from the RTP. Specific to the 2011 RTP, staff will be engage in activities in FY'12 involving: 1) completion of the multi-modal park and ride study; 2) developing a framework and beginning implementation of the Worcester Regional Mobility Study recommendations; 3) analyzing and prioritizing corridors suggested for signal synchronization; 4) participation in various major studies including those on I495/Rte9/I90, I-495 Compact, statewide Transportation Plan, and statewide Regional Transit Authorities.

Previous Work

1. RTPs dating back to 1993 under ISTEA federal authorization; latest RTP-2007.

Procedures

1. CMMPO staff will work with state and regional stakeholders to facilitate implementation of RTP recommendations, including studies, ITS & demand management initiatives, and projects.
2. Staff will complete the multi-modal Park and Ride Study begun during the Summer of 2010. The Travel Demand Model, congestion data, and transit data will be used to identify potential travel corridors. Analyses will be performed to determine potential park and ride locations. Travel demand management strategies will be evaluated to increase potential use of park and ride locations.
3. The Worcester Regional Mobility Study (WRMS) completed in March 2011 will be moved to the implementation phase following FHWA guidelines for linking planning and operations. An action plan will be expanded upon, and resulting task forces developed to aid in implementation planning. The majority of work identified under Task 3.5 will be done under this task, as the WRMS implementation task is phased out.
4. Corridors throughout the region have been identified for potential signal synchronization as the result of various planning studies performed over the past

several years. These corridors will be evaluated as a group to determine the potential for prioritizing implementation. Various factors will be considered including existing signal technology and potential for improvement in congestion.

5. CMMPO staff will be continuing involvement in various studies being conducted within the region that are not part of the UPWP activities. Three of these studies are being conducted by MassDOT: the I-495/Rte9/I-90 multi-modal design study; the Statewide Transportation Plan, and the Statewide Regional Transit Authority study. In addition, CMMPO staff is participating in the I-495 Compact Study funded by the Department of Housing and Community Development which looks at establishing priority growth and preservation areas and then evaluates the impact on infrastructure needs, including transportation systems.
6. CMMPO staff may become involved in other efforts the impact the Regional Transportation Plan implementation, as appropriate.

Products & Schedule

1. Complete multi-modal Park and Ride Study – December 2011
2. Draft expansion of WRMS Action Plan – September 2011
3. Meet with WRMS Technical Committee to discuss Action Plan & gain concurrence on Action Plan and commitment to implementation of recommendations – October 2011
4. Form WRMS implementation task forces – November 2011 to June 2012
5. Identify and evaluate corridors for potential signal synchronization – June 2012
6. Participate in various state and regional studies – Ongoing throughout year
7. Work with state and regional stakeholders to facilitate implementation of RTP recommendations, including studies, ITS & demand management initiatives, and projects – Ongoing, as appropriate

Task Title Regional Transportation Plan Ref. # 3.8

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	38,800	9,700	25,200	6,300			80,000

Task Title: Livability & Climate Change

Reference: #3.9

Description

Recently, both federal and state agencies have emphasized two important areas, livability and climate change. A full description of these initiatives is contained in the Introduction section. While these are distinct areas of emphasis, they are incorporated into the same task element due to many ways in which they overlap. For instance, while the possible transportation infrastructure impacts resulting from climate change are unique to that topic, many of the possible transportation remedies that reduce emissions which lead to climate change, such as TDM approaches, may also enhance the livability of an area.

The substance of these federal and state initiatives on promoting livability, addressing climate change, creating healthy environments, and reducing energy demands are incorporated into this planning work element.

Previous Work

Climate Change Efforts:

- 2008 Vehicle Idling Education Campaign.
- Mapping of flood prone areas and current analysis of vulnerability of critical transportation infrastructure.
- Ongoing efforts to plan for better traveler information techniques that are responsive to changes in peak period congestion along I-290.
- Partnering with MassRides and the WRTA to coordinate promotion of alternative modes of travel, related to efforts to reach large employers.
- Work with the WRTA, a CMMPO partner, to replace its aging fleet of vehicles with new clean-diesel and hybrid buses, development of a multi-use hub at the Union Station intermodal center, and replacement of an environmentally unsafe maintenance and operations facility. CMRPC assisted in grant writing and is continuing to assist in planning and for these efforts.

Livability Efforts (in addition to above):

- Walkability Assessment of Town Centers for 2010 Bicycle & Pedestrian Plan.

- Assessment & prioritization of bicycle improvement facilities as part of the 2010 Bicycle & Pedestrian Plan.
- Walkable Community Workshops (one coordinated w/Safe Routes to School).
- Targeted Jobs Access Reverse Commute funding to direct transit access between urban core and suburban job opportunities.
- Scenic Byway Corridor Management Plan along Route 122 from Paxton to Petersham.
- Route 146 Futures Plan: Community discussion of access/land use needs.
- Development of Access Management Toolkit to provide community land use planners with tools for managing internal/external intermodal access.
- Work with the WRTA to encourage large employers to promote employee use of transit as a “green” effort and to save money. CMRPC has provided geo-coding of employee addresses and matched them with bus route schedules.
- Broad-based initiative to work with state, local, and regional groups to encourage healthy living, including assessment of healthy transportation policies, walkability assessments, employer transit forums, community planning to improve snow removal on sidewalks, and 2011 Bike Week activities.
- Review of large local/regional development plans for traffic impact and alternative mode accommodations.

Procedures

Building upon prior work efforts noted above, staff will continue to broaden its comprehensive approach to planning for Climate Change and Livability.

1. Complete analysis of vulnerability of critical transportation infrastructure, based on mapping of flood prone and poor drainage areas. Staff will provide recommendations for addressing vulnerable transportation infrastructure and will review TIP projects for potential changes to design. The analysis will also feed into efforts beginning Summer 2011 to plan for evacuations in coordination with the Central Mass. Homeland Security Council.
2. Continue efforts with MassDOT-District 3 staff to investigate traveler information techniques that are responsive to changes in peak period congestion along I-290. Work with MassDOT ITS staff to better coordinate provision of real-time traveler information in the region.

3. Continue efforts with the WRTA to replace the existing bus fleet with fuel-efficient, low emissions vehicles.
4. Continue to work on broad-based community initiatives with the WRTA, Mass In Motion, Common Pathways and other groups to promote availability of alternative modes of travel. Efforts include working with large employers to geo-code employee addresses and match with bus routes (especially the Mass College of Pharmacy & Health Services and St. Vincent's Hospital), working on expanding and connecting sidewalks, community walk/bike days, employer transit forums and sidewalk snow removal.
5. Continue to review land use, transit, and roadway projects to include features that allow better access to alternative modes, including review of all TIP projects and major economic/housing development projects, and working with local officials to consider such features in local roadway projects. Consider TIP Evaluation criteria changes.
6. In conjunction with new CMRPC website expected to be online in Fall 2011, develop web page on new CMRPC website that focuses on strategies for Climate Change and Livability.
7. Continue to work on action plan with Bicycle & Pedestrian Task Force to promote walkability through Walkable Community Workshops. Target communities that showed low Walkability Assessment of Town Centers as part of the 2010 Bicycle & Pedestrian Plan, particularly those with Environmental Justice populations.
8. Continue to work with Bicycle & Pedestrian Task Force on action plan for prioritized bicycle facilities as outlined in the 2010 Bicycle & Pedestrian Plan. Expand trail count program that will begin Summer 2011.
9. Analyze high bike/pedestrian crash locations and develop improvement recommendations.
10. Package and promote access Management Toolkit for managing internal and external intermodal access to local planners, DPWs, and Planning Board members.
11. Monitor Global Warming Solutions Act activities and other federal/state initiatives related to reducing green house gases. Monitor opportunities to integrate transit promotion, travel demand management and congestion reduction into these initiatives.

12. Continue to evolve the Environmental Consultation process to include the development of Environmental Mitigation strategies with appropriate stakeholders.

Products & Schedule

1. Complete analysis of vulnerability of critical transportation infrastructure and feed results in new Evacuation planning efforts with the Homeland Security Council – December 2011
2. Continue efforts to plan for traveler information system that is responsive to changes in peak period congestion along I-290. Request MassDOT ITS staff to meet with regional planners and Regional ITS Coordinating Committee – Ongoing
3. Continue efforts with the WRTA to replace existing fleet with fuel-efficient, low emissions vehicles – Ongoing
4. Continue to work on broad-based community initiatives to promote alternative modes of travel, including working with large employers to match employees with transit routes, working on expanding and connecting sidewalks, community walk/bike days (including Bike Week – May 2012), employer transit forums and snow removal efforts – Additional work ongoing
5. Ongoing review of projects to include features that encourage alternative modes, including review of all TIP projects and major economic/housing development projects, and working with local officials to consider such features in local roadway projects – Ongoing
6. Review TIP Evaluation Criteria to better reflect Livability and Climate Change emphasis – December 2011
7. Develop web page on new CMRPC website that focuses on strategies for Climate Change and Livability – December 2011
8. Target Walkable Community Workshops for communities that showed low Walkability Assessment of Town Centers as part of the 2010 Bicycle & Pedestrian Plan, particularly those with Environmental Justice populations – Spring/Summer 2012
9. Continue to work with Bicycle & Pedestrian Task Force on action plan for prioritized bicycle facilities as outlined in the 2010 Bicycle & Pedestrian Plan. Expand trail count program that will begin Summer 2011 - October 2011 meeting of Task Force; Expanded trail counts Summer 2012

10. Analyze high bike/pedestrian crash locations and develop improvement recommendations – June 2012
11. Package and promote access Management Toolkit for managing internal and external intermodal access to local planners, DPWs, and Planning Board members – March 2012.
12. Continue to evolve the Environmental Consultation process to include the development of Environmental Mitigation strategies with appropriate stakeholders – June 2012

Task Title Livability & Climate Change Ref. # 3.9

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	37,605	9,401	14,000	3,500			64,506

Element 4: Other Technical Activities

Task Title: Transportation Security Planning

Reference: #4.1

Description

Transportation security refers to both personal and homeland security, including attention to the vulnerability to intentional attack and natural disasters, and the associated evacuation procedures. The goal is to increase the security of the transportation system for both motorized and non-motorized users.

Previous Work

- CMRPC serves as the fiduciary agent to the Central Region Homeland Security Advisory Council.
- CMRPC assisted in the development of a Pre-Disaster Mitigation Plan for the CMRPC district with funding provided by the Massachusetts Emergency Management Agency.
- CMRPC assisted the WRTA in the development of a Continuity of Operations Plan (COOP) and periodic updates.
- CMRPC has assisted the CMMPO in prioritizing its role in security planning and has developed an action plan.
- Transportation Vulnerability mapping

Procedures

Staff will continue to implement the security action plan by working with current stakeholders in security planning (i.e. WRTA and the Homeland Security Council) to assess gaps in planning for threats and to determine how they might be filled. CMRPC will begin an Evacuation Planning process (expected to take several years to complete) with the Central Region Homeland Security Advisory Council.

The effort will include, but not be limited to the following activities:

1. Ongoing education of CMRPC staff with the latest information on Security Planning for the transportation system and other training;
2. Assessment of data and data gaps and SWOT analysis of existing conditions to be used for the development of a county-wide evacuation plan, that will ultimately include identification of evacuation scenarios, modeling of evacuation impacts against current conditions, and recommendations for implementation of the plan.

3. Based on above analysis, begin to carry out planning that addresses identified gaps;
4. Assisting the WRTA in the development and ongoing refinement of their Continuity of Operations Planning (COOP) effort.

Products & Schedule

1. Assess key demographics, including daytime and nighttime populations, population densities, special populations, group quarters institutions, and EJ populations – December 2011
2. Identify major employment centers, hospitals, natural features, flood plains, and critical dams – December 2011
3. Assess transport systems, including overall current travel patterns (to assess change needed in specific scenarios), private auto/non-auto, roadway characteristics, congestion (Volume-to-capacity; Intersection Ratings), bridge characteristics, and constraints such as major water bodies (for example, Lake Quinsig presents impediment to E-W travel in area), transit (bus/rail/charter) – February 2012
4. Assess communication systems such as inventory message boards, cameras, and ITS – March 2012
5. Assessment of significance of data for Evacuation Plan: Shelter locations for Capacities & Vulnerabilities and Key travel corridors for Capacities & Vulnerabilities – June 2012

Task Title Transportation Security Planning Ref. # 4.1

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	4,000	1,000	4,000	1,000			10,000

Task Title: Regional Transit & Paratransit Services/Intermodal Planning

Reference: #4.2

Description

In addition to providing technical assistance to the WRTA and its funded services, CMRPC staff also provides technical assistance to non-WRTA communities/service providers within the CMMPO region, as well as providing intermodal planning for an integrated service structure. The purpose is to ensure that the transportation planning process within the entire CMMPO region includes a coordinated approach between modes and between public and private organizations, and between WRTA and non-WRTA, as well as special efforts to plan public mass transportation facilities and services that can be utilized effectively by elders and people with disabilities, with emphasis on coordinating WRTA and non-WRTA services.

Previous Work

- Coordination of and assistance to private non-profit corporations applying under the FTA Section 5310/5316/5317 Program
- Technical assistance to non-WRTA communities and non-WRTA funded transit service providers within the CMMPO region.
- Technical assistance in the effort to coordinate both WRTA and non-WRTA services.
- Development of integrated MBTA/private bus schedules from Worcester to Boston.
- Coordination of private JARC/New Freedom services with the public WRTA services and with each other.
- Assistance with the planning for a WRTA hub facility at the Union Station intermodal facility that will better allow for private bus, commuter rail, and public bus integrated activity.
- Assistance to several communities considering the augmentation of WRTA services with local community-organized shuttles.
- Ongoing participation in a Human Services Coordination training sponsored by United We Ride.
- Participation in Common Pathways and other organizations that work with environmental justice populations in finding and developing transit resources for the

region. Particular attention has been focused on educating employers about transit as a resource for their employees.

Procedures

1. On-going review of services provided by CMMPO region Section 5310/5316/5317 recipients and success of same in meeting stated objectives in grant applications.
2. Continue to provide assistance to Section 5310/5316/5317 applicants in preparing applications and coordinating services.
3. Continue to review/evaluate role of private operators (both for-profit and non-profit) in providing both paratransit and other alternative transportation services, including those for people with disabilities and elders, within the CMMPO region.
4. Assist low income, elders, people with disabilities and agencies that serve these populations in locating and obtaining appropriate transportation services to meet their needs. CMMPO staff coordinates the Elder Transit Agency RoundTable discussions and the TPAG consumer advocacy group.
5. Give reasonable level of technical assistance to non-WRTA funded providers of transportation services. Assist them in identifying ways to improve the operation and management of their services. Many local communities are beginning to consider their needs for local shuttles to provide in-town service and connect with WRTA services. CMMPO staff assists them with demand analysis, resource analysis, and development of service plans. In the coming year, staff expects to begin or continue working with Southbridge, Charlton, Brookfield, Barre, and Rutland.
6. Assist with the coordination of existing and proposed transit and paratransit services for maximum vehicle utilization and operating efficiency.
7. Review coordination and integration opportunities with other area entities for the WRTA ITS implementation currently occurring.
8. Review/evaluate the coordination of 5310 recipients with new JARC/New Freedom service providers, and other services.

Products & Schedule

1. Pre-applications and Final applications for FTA Section 5310 capital grants (Round 34) – Fall '11

2. Attend formal agency and ad hoc committees (including support to TPAG, the Elder Agency Advisory Committee, and the Coordinated Human Services Planning Committee) that seek to coordinate transit and paratransit service for elders, people with disabilities, and other human services organizations – Ongoing
3. Continue to dialogue with private providers, both transit and paratransit, to ensure a coordinated system – Ongoing
4. Develop an intermodal info plan for Union Station, including a wayfinding plan and a set of recommendations for coordinated information on all modes – February '12
5. Give reasonable level of technical assistance to non-WRTA funded providers of transportation services. Assist them in identifying ways to improve the operation and management of their services. In the coming year, staff expects to begin or continue working with Southbridge, Charlton, Brookfield, Barre, and Rutland as they consider local shuttles to provide in-town service and connect with WRTA services – Year Round
6. Active participation in the state study to review RTA operations – Fall/Winter '11
7. Assist communities with incorporation of best practice designs for transit accommodations into urban design/development review procedures – year round
8. Actively participate in MassDOT design planning for regional projects to ensure transit accommodations – year round
9. Identify major considerations to implement limited stop express bus service from Worcester to Providence in the Blackstone Valley – June '12

Task Title Regional Transit & Paratransit Services/Intermodal Planning Ref. # 4.2

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5317		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC	15,200	3,800	14,800	3,700	4,000		23,500

Task Title: Multimodal Corridor Development & Access Management

Reference: #4.4

Description

SAFETEA-LU calls for an increase in planning for accessibility, mobility, safety, and security of people, across modes, for both motorized and non-motorized users. Since FY 2008, staff has assembled access management and land use planning strategies for development of land area with safe and efficient internal and external access for motorists, transit users, bicycle riders, and pedestrians. For both corridors that are undeveloped and for corridors that will likely face increasing development, staff evaluated the ability to safely access the existing or proposed land uses from the roadway and/or from adjacent parcels. In addition, staff evaluated site design standards currently in place and their ability to provide for efficient vehicle, transit, bicycle, and pedestrian movement. This task was developed as a multimodal planning effort. Guidelines and recommended standards were developed to help ensure that communities and other regulating authorities consider both internal and external vehicle, transit, bicycle, and pedestrian access in the planning, design, permitting, and project approval stages.

Since the strategy development is complete and the task will now move into the ongoing implementation phase, this task will be incorporated into 3.9 Livability and Climate Change. The funds remaining in the FTA contract through March 2012 are the only ones still programmed into this 4.4 task.

Previous Work

- Development of Access Management Toolkit to provide community land use planners with tools for managing internal/external intermodal access.

Procedures

1. Package access Management Toolkit for managing internal and external intermodal access for use by local planners, DPWs, and Planning Board members.
2. Develop a web-based tool that will allow communities to find strategies that are right for their particular corridors and communities.
3. Present information at gatherings of local planning boards, such as quarterly CMRPC and Planners Collaborative meetings.

4. Present information at the CMRPC-hosted Planners Forums made up of town planning professionals.
5. Work with individual towns to develop customization of strategies.

Products & Schedule

1. Package access Management Toolkit specific to local community groups – December 2011.
2. Develop a web-based tool that will allow communities to find strategies that are right for their particular corridors and communities – January 2012
3. Present Toolkit to Planning Boards – March 2012
4. Present Toolkit to town Planners – March 2012
5. Work with towns to customize strategies - ongoing

Task Title Multimodal Corridor Development & Access Management Ref. # 4.4

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC			800	200			1,000

Task Title: WRTA Technical Assistance

Reference: #4.6

Description

To assist, support and conduct a range of operational type planning activities and special studies for the Worcester Regional Transit Authority in accordance with various reporting requirements and in conformance with the adopted budget/services to be provided during FY '12 and into FY'13.

Previous Work

- Various Service Feasibility Studies
- Maintenance and Documentation of Operating Characteristics
- Update of ADA Street Listings for the Complementary Paratransit Service Area
- Planning for fixed route and paratransit components of WRTA Service Plans
- Comparative Ridership Analysis, 1975-2010
- ADA Eligibility Documents and updates, 1992-2010
- Federal JARC Grant Proposals, 1999, 2000, 2002, 2005, 2008, 2009
- Title VI Compliance Plan, 2006 and 2009, and related customer surveys
- MAP Applications, yearly
- Geo-coding of UMass Medical School Employees
- National Transit Database, Yearly
- Ongoing Comparison of Ridership vs. Weather

Procedures

1) Federal and State Reporting Requirements

Staff will prepare various Federal Transit Administration reports detailing ridership and operational data as well as ongoing federal/state compliance efforts. These reports are compiled from ongoing data management activities for specific time periods. Staff handles requests from FTA regarding clarification of monthly and yearly data resulting from FTA database cross-queries. The reporting function is tied to the Data Management function described further below. Activities associated with this task include:

- Assistance in the determination of costs and revenues to be allocated on a route and municipality basis for fixed route services provided by the Authority during FY '11.
- Assistance in the preparation and evaluation of the fixed route and paratransit non-financial operating data for Authority FY '11 services as called for by the National Transit Database (NTD) reporting requirements.
- Assistance in the WRTA's budget preparation process by analyzing existing budgets for the WRTA Council on Aging operators.

- Assistance in the preparation of the Appendices to the Contract for Financial Assistance between State and Authority for FY '12.

2) Data Management

Staff will manage ridership and operational data that is used for both federal and state reporting requirements and for service planning analyses. Data must be managed by month, fiscal year, and calendar year. FTA is now also able to cross-query the reported data, and routinely requests follow-up explanation of data. Activities associated with this task include:

- Maintenance of a system of documentation delineating the operating characteristics of the Authority's fixed route system including route mileage, number of daily trips and, if applicable, date of any change to same.
- Assistance in the evaluation and analysis of systematic boarding counts (including those obtained by registering fare boxes) by RTA Transit Services Inc.
- Maintenance/refinement of a system to compile the various operational and financial characteristics of the paratransit operations funded by the Authority, to analyze same and provide quarterly financial composite projections for WRTA Council on Aging operators outside of Worcester.

3) Paratransit System Monitoring/Assistance

Staff will perform contract management for WRTA third party paratransit providers: S.C.M. Elderbus and the nine Councils on Aging contiguous to Worcester. In addition, staff will work extensively with PBSI, particularly to manage compliance with the Americans with Disabilities Act and the monitoring and expansion of the Mobility Management Model. The contract manager function includes extensive hands-on support to S.C.M. Elderbus and the Councils on Aging in the areas of ADA compliance, operational efficiencies, Federal Drug & Alcohol testing compliance, advising on driver issues (including training/retraining needs), organizing driver training sessions, monitoring budget adherence, and determining optimal vehicle needs. Activities associated with this task include:

- Monitoring/evaluation on a continuing basis the success of the previously developed and adopted FY '12 Service Plan for paratransit operations within Worcester. To provide assistance to Worcester transit operators with the day to day operational and policy issues they face. To revise as necessary through the FY '12 period so as to comply with the adopted budget. Also to assist in the development of the paratransit component of the FY '13 Service Plan within Worcester.
- Assistance to the WRTA with the ongoing development and revision of paratransit service policies.
- Assist to the WRTA in maintaining compliance with the fixed route/paratransit requirements of the Americans with Disabilities Act (ADA).

- Facilitation of the WRTA ADA Appeal Process and provision of staff support to the Appeal Panel.
- Staff will continue to plan for, implement, and monitor the Mobility Management model.

4) Project Development/Service Planning

Staff will coordinate project development and major service planning functions for the WRTA. The work normally begins as a specifically defined task, but often results in ongoing oversight, such as occurred with The Local Connection (TLC). Work can include concept development for new service, application for funds (if appropriate), development of detailed scope of service, coordination of implementation, ongoing monitoring of service. Activities associated with this task include:

- Monitoring/evaluation on a continuing basis the success of the previously developed and adopted FY '12 Service Plan for fixed route operations. To revise as necessary throughout the FY '12 period so as to comply with adopted service standards and the adopted budget. Also, to assist in the development of the fixed route component of the FY '13 Service Plan.
- Assistance in the overall review of the fixed route service model with the goal of determining a more sustainable model using new GIS mapped data and development of plans to adjust or revamp the system accordingly.
- Assistance in the ongoing monitoring procedures established for WRTA Title VI, EJ, and Limited English Proficiency (LEP) compliance purposes.
- Assistance (provision of background information review and comment, etc.) in those studies which may be conducted by outside consultants for the WRTA as requested, particularly with ITS implementation.
- Particular assistance will be provided in the coming year with the planned implementation of the Eastern Shuttle Services.

5) Resource Coordination

Staff will assume lead coordinator function for major cross-functional, cross-agency implementations, including major service changes and contingency planning. The coordination function is typically an intensive process of identifying tasks, roles, and responsibilities, and ensuring communication among all affected staff. Typically, weekly or bi-weekly coordination meetings are used to monitor progress, raise concerns that transcend departments, and ensure that all parties are up-to-date with upcoming tasks. Activities under this task will be determined on an as-needed basis. Assistance with potential grant applications typically involves coordination of resources, as does contingency planning.

6) Review of Federal/State/Local Requests/Materials

Staff will assist the WRTA Administrator in responding to unanticipated issues, requests for information, or quick analysis of federal and state movement on regional transit authority subject matters. Such issues are likely to include new federal guidance on Title VI, interim guidance in lieu of new

authorization legislation, MARTA involvement in state contract assistance, state study of RTAs, state COOP planning initiatives, and various other unforeseen topics that require the WRTA Administrator's attention.

- Provision of technical assistance to WRTA providers in maintaining a drug/alcohol-free workplace and a compliant drug/alcohol testing program. Assistance to include identification of regulatory changes and recommendation for implementation strategy of same.
- Provision of other technical assistance to the Authority as the Authority may reasonably request.

Products & Schedule

1. Ongoing assistance with fixed route component planning, including a complete review of the current fixed route service model to determine a more sustainable model – ongoing; Transit Advisory Committee meets bi-weekly
2. FY'12 fixed route operating characteristics documentation- ongoing
3. Fixed route ridership analysis for FY '12, including weekdays (school in and out of session) plus Saturday and Sunday - ongoing
4. FY'11 fixed route cost and revenue allocation - August '11
5. Preparation of fixed route and paratransit FY '11 non-financial data for National Transit Database (NTD) Annual Report - October '11
6. WRTA Title VI Compliance monitoring including analysis of opinion surveys and on-time performance - ongoing
7. Revisions to paratransit component of FY'12 Service Plan for inside and outside of Worcester - as needed.
8. Financial & statistical analysis of WRTA paratransit providers - quarterly
9. Development and revision of paratransit service policies - as needed
10. ADA compliance assistance - as needed
11. ADA Appeal Process assistance - ongoing
12. Technical assistance in maintaining a drug/alcohol-free workplace and compliant drug/alcohol testing program - as needed
13. Budget related financial information on paratransit services, January '12

14. WRTA FY '11 Program of Projects - September '11 (fixed route and paratransit)
15. Appendices to FY '12 State/WRTA Contract - August '11
16. Consultant assistance, particularly related to ITS and service planning - as needed
17. Assistance with development of a sustainable service model using GIS mapped data - ongoing
18. Assistance with developing employer transit plans using GIS mapping resources - ongoing
19. Development of systems framework for analysis of ITS data and related interface with existing MPO data sets.
20. Assistance with ongoing development of plans for Maintenance & Operations and Hub facilities.
21. Other technical assistance, as needed.

Task Title WRTA Technical Assistance Ref. # 4.6

Participants	Funding Program/\$						
	FHWA PL/SPR		FTA Section 5303		FTA Section 5307		Total
	FHWA	State	FTA	Local	FTA	Local	
CMRPC					241,223	60,306	301,529

III. Task Summary by Funding Source

Proposed 2012 Program Year Unified Planning Work Program
III. Task Summary by Funding Source

Task #	Description	FHWA PL/SPR (thru DOT)	State Match	FTA 5303 (through DOT)	CMRPC Match	FTA 5307 (through WRTA)	WRTA Match	FTA 5317 New Freedom	Totals:
<i>Element 1: Management & Support of the Planning Process and Certification Activities</i>									
1.1	Management & Support of "3C" Process	180,000	45,000	51,200	12,800			3,500	292,500
1.2	Unified Planning Work Program	12,000	3,000	5,200	1,300				21,500
1.4	Transportation Improvement Program	40,000	10,000	11,200	2,800				64,000
1.5	Title VI - LEP	6,200	1,550						7,750
Subtotals:		238,200	59,550	67,600	16,900	0	0	3,500	385,750
<i>Element 2: Data Collection and Analysis Activities</i>									
2.1	Regional Traffic Counting	32,800	8,200						41,000
2.2	Congestion Mgt Process Data Collection & Analysis	20,400	5,100						25,500
2.3	Transportation Safety Data Collection & Analysis	16,000	4,000						20,000
2.4	Pavement Management Data Collection & Analysis	19,400	4,850						24,250
2.5	Regional Transportation Model	85,800	21,450	4,000	1,000				112,250
2.6	Data Integration	42,800	10,700	10,739	2,685				66,924
2.7	Sidewalk Management Data Collection & Analysis	8,800	2,200						11,000
Subtotals:		226,000	56,500	14,739	3,685	0	0	0	300,924
<i>Element 3: Transportation Plan Refinement Activities</i>									
3.1	Corridor Profile & Traffic Bottleneck Reduction	30,000	7,500						37,500
3.2	Congestion Mgt Process Project Development	14,000	3,500						17,500
3.3	Transportation Safety Project Development	12,000	3,000						15,000
3.4	Pavement Management Project Development	16,000	4,000						20,000
3.5	Worcester Reg. Mobility Study (Implementation)	12,000	3,000	4,000	1,000				20,000
3.6	Intelligent Transportation Sys. Project Development	4,800	1,200	6,400	1,600				14,000
3.7	Freight Planning	19,000	4,750						23,750
3.8	Regional Transportation Plan	38,800	9,700	25,200	6,300				80,000
3.9	Livability & Climate Change	37,605	9,401	14,000	3,500				64,506
Subtotals:		184,205	46,051	49,600	12,400	0	0	0	292,256
<i>Element 4: Other Technical Activities</i>									
4.1	Transportation Security Planning	4,000	1,000	4,000	1,000			4,000	10,000
4.2	Transit / Intermodal / E&D / Rail	15,200	3,800	14,800	3,700				41,500
4.4	Multimodal Corridor Development & Access Mgmt			800	200	241,223	60,306		1,000
4.6	WRTA Technical Assistance								301,529
Subtotals:		19,200	4,800	19,600	4,900	241,223	60,306	4,000	354,029
Totals:		667,605	166,901	151,539	37,885	241,223	60,306	7,500	1,332,959

*FTA 5303 funds represent the remainder of FFY '11 (for 9/11 - 3/12) and half of FFY '12 funds (for 4/12 - 9/12)

Expenditure Category by Transportation Funding Source

<u>Expenditure Category</u>	<u>Contract / Funding Source</u> ¹				<u>TOTAL</u>
	FHWA MHD PL	FTA CMRPC 5303	FTA WRTA 5307	FTA CMRPC 5317	
Direct Salary	\$372,075	\$88,671	\$142,024	\$3,438	\$606,208
Overhead Costs	412,631	98,253	157,505	3,812	\$672,201
Direct Costs	<u>49,800</u>	<u>2,500</u>	<u>2,000</u>	<u>250</u>	<u>\$54,550</u>
Total	\$834,506	\$189,424	\$301,529	\$7,500	\$1,332,959

① As reflected in '12 UPWP

CMRPC Funding Summary 2012 Program Year

Transportation Funding

Source	Value (\$)	% of Total
FHWA/MHD-PL ^{1 2}	\$834,506	62.6
FTA/WRTA ^{1 3}	\$301,529	22.6
FTA/CMRPC ^{1 4}	\$189,424	14.2
FTA/CMRPC ¹	\$7,500	0.6

Transportation Funding Total:

1,332,959

100.0

Other Funding ⁶

Source	Value (\$)	% of Total
Local Assessments ⁵	124,618	21.3
Homeland Security Fiduciary	90,000	15.4
Homeland Security Planning	50,000	8.5
Local Assessor Mapping	10,200	1.7
Water/Sewer Asset Collection	10,000	1.7
CDBG (Barre)	13,000	2.2
CDBG (FY'09)	25,000	4.3
Housing/Production Plans	20,000	3.4
3-5 Chapter/Contracts	24,000	4.1
Southbridge CDC M&A	15,000	2.6
Open Space & Recreation Plan	6,000	1.0
DLTA	150,000	25.6
Local Pavement Management Projects	25,000	4.3
Interest Income	8,000	1.4
Brownfields	15,000	2.6
<i>Total:</i>	585,818	100.0

Overall Funding

Source	Value (\$)	% of Total
FHWA/MHD-PL ^{1 2}	834,506	43.5
FTA/WRTA ^{2 3}	301,529	15.7
FTA/CMRPC ^{1 4}	189,424	9.9
FTA/CMRPC ¹	\$7,500	0.4
Local Assessments ⁵	124,618	6.5
Homeland Security Fiduciary	90,000	4.7
Homeland Security Planning	50,000	2.6
Local Assessor Mapping	10,200	0.5
Water/Sewer Asset Collection	10,000	0.5
CDBG (Barre)	13,000	0.7
CDBG (FY'09)	25,000	1.3
Housing/Production Plans	20,000	1.0
3-5 Chapter/Contracts	24,000	1.3
Southbridge CDC M&A	15,000	0.8
Open Space & Recreation Plan	6,000	0.3
FY'09 DLTA	150,000	7.8
Local Pavement Management Projects	25,000	1.3
Interest Income	8,000	0.4
Brownfields	15,000	0.8
<i>Total:</i>	1,918,777	100.0

¹ As reflected in '12 UPWP

² Includes 20% local/state match

³ Includes 20% local/WRTA match

⁴ Includes 20% local/CMRPC match

⁵ Does not include 20% CMRPC local match of \$37,885 for FTA grant

⁶ As reflected in FY '12 CMRPC Annual Budget

Allocation of Direct Staff Time^① to UPWP Identified Contracts

<u>Staff Member</u>	<u>Category</u>	<u>% of Time To UPWP Identified Contracts</u>
Blunt	Full Time	100
Rydant	Full Time	100
Mohanakrisnan	Full Time	100
Church	Full Time	100
Moisuk	Part time	80 ¹
Krasnecky	Full Time	100
Mellis	Part time	85
Ding	Full Time	100
Sen	Full Time	100
L'Esperance	Full Time	100
Hanna	Full Time	100
Franz	Full Time	25 ¹
Bromage	Part time	32 ¹
4 Planning Technicians	Part time	82 ¹
Land Use Staff (DiPrete/Kolias/ Settles/Lundergan)	Full Time	10 ¹

¹ Based on one full time equivalent

IV. Other Transportation Planning Studies

In order to assure that duplicative transportation planning efforts are not occurring within the CMRPC region, this section of the UPWP provides summaries of known transportation planning studies being conducted by others. Each of the agencies listed below has been asked to provide summary information concerning their now-underway transportation planning studies. Their responses are provided on the following pages.

- ***Jan Reitsma, Executive Director of the JHCBRVNHCC: Blackstone River Bikeway, other transportation-related planning efforts***
- ***David Mohler, Executive Director, Office of Transportation Planning, attention Josh Lehman: Blackstone River Bikeway and Quinebaug River Rail Trail, attention Callida Cenizal: I-495/Route 9 Study***
- ***District Highway Director (DHD) MassDOT-Highway District #3: I-495/I-290, Route 9/ Burns Bridge, and I-290/Vernon St***
- ***MassDOT Aeronautics Division: Worcester Regional Airport, Southbridge Municipal Airport, Hopedale, Spencer, Tanner-Hiller Airports***
- ***Assistant City Manager, City of Worcester, attention Timothy McGourthy: City Square, Blackstone Canal related activities***
- ***Robert Moylan Jr., Commissioner of Public Works, City of Worcester: Proposed City Common Pavilion, McKeon Road ped-related, Kilby-Gardner-Hammond, Main & Maywood Sts, CBD Streetscape***
- ***David Forsberg, President, Worcester Business Development Corporation (WBDC), attention Julie Holstrom: North Main Street Gateway Improvements, Centech Park expansion***

JHCBRVNHCC

Blackstone River Bikeway



BLACKSTONE RIVER VALLEY

National Heritage Corridor
One Depot Square
Woonsocket, RI 02895

Blackstone - Worcester Visitor Center

Update to Stakeholders July, 2011

April 1, 2011. The full Stakeholders Group met at Union Station and decided we need to focus for the time being on the original visitor center (VC) site at McKeon Road, rather than the downtown area, because (1) the federal funds were appropriated specifically for a VC at that location, and (2) there is risk of the federal funds being lost if they cannot be obligated or used in the near future. We agreed to ask the designers who worked on the previous VC design (before the fire) to make a presentation about design options under current conditions (site conditions, funding, timing, etc.). The Corridor offered to pay for the consultants' work so as to keep the planning process going.

It was confirmed that MassDOT owns the site and will be the lead on site remediation. However, site ownership over the long-term still needs to be discussed and resolved.

Those present agreed with the City that it makes sense to pursue implementation of the Blackstone Gateway Park at the same time as the VC, as it will add value to the site as a destination, its recreational attractions, and its potential to establish a green corridor connecting to MA Audubon's Broad Meadow Brook Sanctuary and green spaces in Quinsigamond. In addition, options were discussed to incorporate the historic, built-in-Worcester, Sherwoods Diner into the site plan and the project contract.

April 20. Public meeting in Quinsigamond Village under the auspices of the Visitor Center Task Force. Consultants made presentations about three scenarios for site development, as well as possibilities for interpretive features, generating a lively discussion. We decided we should try to merge the best elements of the three options into a new conceptual plan that should also incorporate many of the suggestions made by the community and stakeholders.

May 12. Public meeting of the VC Task Force. Consultants presented a new conceptual plan, placing the "activity node" at the center of the site but south of the river, a multi-use "hardscape" in the northern part, and maintaining the large lawn in the southern part, with structures that can be added in phases. The phased approach is meant to allow us to move more quickly and start using the federal funding, while we work out longer term issues relating to level of services and associated operating responsibilities. Those present supported the plan unanimously, appreciating its flexibility and understanding there will be future opportunities for public input into design. There was again agreement that the Blackstone Gateway Park should be pursued at the same time, if at all possible. It was suggested that MADCR should be contacted about possible interest and participation in the project.

The City and MassDOT will contact federal highway officials to get their concurrence that the plan meets the intent and conditions of the original appropriation. Upon resolution and in coordination with MassDOT, the City will work to develop a request for proposals for the design work and secure an architectural/engineering design firm. The process to procure such a firm will take approximately 4 months. It is estimated that the actual design work and development of construction bid documents will take an additional 6-8 months.

July 5. The Sherwoods Diner is transported from Cranston, RI to Sutton, MA, where it will be stored until restoration can begin. Thanks in particular to Bill Wallace for his hard work to get the transport planned and executed, and to Jeannie Hebert for arranging for the new storage space.

July 11. Subgroup Meeting. The subgroup met at Worcester City Hall. The discussion focused on funding and ownership issues. Regarding funding, the City understands that that the Federal Highway Administration (FHWA) has voiced several concerns with the current proposed plan:

1. The need for an operations or business plan. Particularly, FHWA is looking for more specific information about the level of services provided at the site as well as ongoing operations, maintenance, staffing, and sustainable funding. Another subgroup has worked on a business plan, and the City is exploring options, as well. Since funding has been restored in the state budget, there may be an opportunity to obtain state tourism funding for this business plan.
2. Use of the diner as a food service. Recent media stories have suggested the Sherwood Diner would be a food service establishment, which would likely make it ineligible for federal transportation funding. Since the stakeholders group has focused on using the diner as a visitor facility, it will hopefully be relatively easy to eliminate this concern.
3. Incorporation of Blackstone Gateway Park. FHWA contends it might be outside the scope of a "visitor center" as originally envisioned. Although most of us agree that combining the two projects enhances both site elements and would help attract more visitors, providing an even better park experience and boosting both recreation and alternative transportation benefits, this is still a topic of ongoing discussion. Possible participation by MADCR was again mentioned.

The City reiterated it is committed to the concept of a visitor facility at the McKeon Road site, considers this project a priority, and continues to commit its time and resources to it. (See attached handout.) This includes addressing the questions raised by FHWA as quickly as possible. Congressman McGovern's office is taking an active role to facilitate the discussion with FHWA and MassDOT. (Representatives of both Congressman McGovern and Congressman Neal attended the subgroup meeting.)

Office of Transportation Planning

***Blackstone River Bikeway
Quinebaug River Rail Trail
I-495/Route 9 Study***

MASSACHUSETTS BLACKSTONE RIVER BIKEWAY WORCESTER - BLACKSTONE

Project Description: This project involves the construction 28 miles of the Blackstone River Bikeway through the communities of Worcester, Millbury, Sutton, Grafton, Northbridge, Uxbridge, Millville and Blackstone as part of a federally-designated heritage corridor. The completed bikeway will ultimately provide a shared use path connection between the Cities of Worcester, MA, and Providence, RI.

Background: The ROW acquisition associated with the project, as well as anticipated costs for construction, have always been significant challenges to completion of the bikeway. If the project is built through the TIP using Federal funds, the design must meet Federal guidelines. The high cost and significant environmental impacts of the project identified in the draft EIR prompted a reassessment of this approach.

Status: DCR has agreed to accept full project management responsibilities for the Blackstone River Bikeway. DCR will first work toward completing the design, permitting and construction of Segments 1, 2 and a portion of 3 (Blackstone, Millville and Uxbridge). These segments will complete the bikeway between the RI State line and Riverbend Farm in Uxbridge, a DCR-owned property.

Recognizing the right of way and environmental challenges, DCR will use a greenways approach to move toward completion of the remaining portion of the bikeway between Riverbend Farm and the completed Segment 6 in Millbury and Worcester, traversing Uxbridge, Northbridge, Sutton, Grafton and Millbury, and including Segment 5. This means that the bikeway will be built to reflect the various challenges that are present, including use of off-road segments, on-road segments, soft surfaces, and reduced cross-sections.

Segment 7 (PROJIS #454778) will begin at the terminus of Segment 6 at Brosnihan Square and will have dual Worcester termini at City Hall and Union Station. The City of Worcester and the Blackstone Valley Corridor Commission will complete the design, with MassDOT oversight, using a combination of Alternative Transportation in Parks and Public Lands (ATPPL) federal grant funds and HPP earmark funds. The construction estimate is currently \$2.5 million and will be funded through an HPP earmark. That funding appears on the FY 2013 element of the draft FY 2012-15 TIP currently released for public comment. D3 contact is Arthur Frost (508.929.3837)

Cost: The total cost to build the proposed off-road bikeway, conforming to AASHTO and MassDOT guidance, had been estimated at \$70 million, exclusive of ROW costs. It is likely that the cost under the current approach will be significantly less, but those costs have not yet been estimated. There is an additional \$2.8 million allocated for MassDOT's contract for preliminary design and the EIR (with Parsons Engineering). These remaining funds, as well as an additional \$1.2 million, will be transferred to DCR through an inter-agency agreement. This \$4 million will be used to fund design of the bikeway between the RI State line in Blackstone and Riverbend Farm in Uxbridge.

MassDOT has transferred \$34 million in Accelerated Bridge Program (ABP) funds to DCR. DCR proposes to use a portion of these funds that had been identified for pedestrian bridges toward construction of this phase of the Bikeway.

DCR Contact: Dan Driscoll 617.626.1438

BRIEFING MEMORANDUM
BLACKSTONE RIVER CORRIDOR PROJECT

July, 2011

Prepared by Recreation Facilities Planning, Department of Conservation & Recreation

Project Background:

- In 1985, the Blackstone River Valley National Heritage Corridor (known after 1999 as the John H. Chafee Blackstone River Valley National Heritage Corridor) was designated by the United States Congress, following the path of the Blackstone River from Providence to Worcester. This designation set in motion the vision of creating a continuous bike and pedestrian corridor from Worcester, Massachusetts to Providence, Rhode Island.
- The distance of the Heritage Corridor from Worcester to Providence totals 48 miles.
- The Blackstone River Heritage Corridor connects historic and cultural sites, natural resources, recreation facilities, and commercial and residential areas.

Progress Update (Rhode Island):

- In 1997, the Rhode Island Department of Environmental Management and Department of Transportation began work on the first Rhode Island segment of the corridor.
- Rhode Island has made significant progress on their proposed 20 mile section (MA border to Providence). They have completed and opened 10 miles of multi-use recreational path between Valley Falls Heritage Park in Cumberland and River's Edge Park in Woonsocket.
- Additional segments are under design to extend the path further through Woonsocket to the Massachusetts border and south into Central Falls and Pawtucket.

Progress Update (Massachusetts):

- In 1996, a study undertaken by MassDOT (MHD at the time) and the DCR (DEM at the time) produced a plan for seven segments of trail linking Worcester with Blackstone, Massachusetts and the Rhode Island border. Following is an update for each of these 7 segments:
- Segment 1 (Blackstone/Rhode Island Border to Central Street Millville, 3.5 miles):
 - MassDOT transferred, via an ISA, \$850,000 to DCR to design this segment.
 - DCR has awarded the design contract to the consultant team of VHB and FST. Design work began in Fall, 2010.

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston MA 02114-2119
617-626-1250 617-626-1351 Fax
www.mass.gov/dcr

- Segment 1 (continued):
 - MassDOT transferred via an ISA an additional \$4,000,000 to DCR for design of Segments 1 & 2 and construction of Segment 1.
 - Complexity of analysis and design for bridges, and development of multiple bid packages will result in a design fee increase of approximately \$673,500. DCR's ABP funds will cover this design cost increase. Total design fee for Segment 1 will total \$1,523,800.
 - Preliminary cost estimate for construction of all of Segment 1 equals \$15,256,265 (\$13,256,265 for all bridges and viaducts, and \$2,000,000 for the pathway and park amenities). NOTE: With 25% contingency this total cost estimate equals \$19,675,020.
 - DCR has complete ownership of this entire segment, as part of the SNETT corridor, with the exception of 2 locations where the DCR right of way overlaps the Providence and Worcester Railroad right of way. Negotiations have commenced for the rights for this greenway to access the P&W overlap land areas.
 - There will be temporary easements required at 7 locations along the corridor for bridge construction access. There are 2 permanent drainage easements needed.
 - Due to cost and complexity of viaducts, the project scope has been modified with recommendation to cut Canal Street bridge, St. Paul St. bridge, single span viaduct and seven span viaduct. Cost implications follow below.
 - Costs of elements proposed to be removed from Blackstone Segment 1 project: St. Paul bridge = \$448,100; Canal St. bridge = \$1,469,400; single span viaduct = \$1,484,000; seven arch viaduct = \$6,120,000. Total cost estimate for elements being cut from Blackstone Segment 1 = \$9,521,500 (with 25% contingency totals \$11,901,875).
- Total cost estimate for remaining seven bridges that will be done with DCR ABP funding for Blackstone Segment 1 totals approximately \$6,115,140 (with 25% contingency totals \$8,153,520). Adding pathway and park amenity cost of \$2,000,000 (funded from DOT ISA, not ABP) brings the present total cost estimate for constructing reduced section of segment 1 to \$8,115,140 (estimate with 25% contingency totals \$10,153,520).
- Segment 2 Uxbridge – 3 miles: Segment 2 was approaching 75% design, but due to a number of complications MassDOT chose to allow the contract with Cullinan Engineering to expire. Since a portion of Segment 2 from Center Street to Route 146a

- will require local permitting only, and no land acquisitions, DCR recommends including this portion of Segment 2 in the Segment 1 design project. DCR has taken over the completion of design for Segment 2, and estimates the cost to complete the design at \$350,000. This design fee will be covered by recent funds (totaling \$4,000,000) transferred to DCR from DOT as an amendment to the original \$850,000 ISA. Total DCR funds presently available for the project, outside of the DCR ABP, totals \$4,850,000.
- DCR anticipates starting Segment 2 design work in late, 2011.
 - Segments 3, 4 & 5 (Uxbridge to Millbury – 16 miles): This section comprises the most complex 16 miles of the entire project. MassDOT was managing a \$5,200,000 design contract with Parsons Engineering for these segments, but decided to terminate this work in 2009. As the design evolved over the prior two years, it became increasingly clear that implementation of these segments as an off-road bike/pedestrian transportation corridor, built to ASHSTO standards, would be extremely difficult and costly. The cost estimate for just construction was approaching \$60,000,000, not including any right of way work which would be extensive. The projected environmental impacts were also very significant, and mitigation sites and plans were not yet developed.

NOTE: Regarding the future of Segments 4, 5 and the remainder of 3 DCR has recommended the project scope be revised and that this portion of the project move forward at a later date as a “greenway” (not an ASHTO standard multi-use path). A greenway will allow both bicycle and pedestrian use, but we would have much more flexibility in designing a corridor that would be far less costly and have much less impact on the natural environment. We should also consider designing on-road sections when off-road sections don’t make fiscal or environmental sense. This approach has been presented and supported by key state and local elected officials, DOT, and the National Park Service. It is also recommended to evaluate these sections as a Greenway through a feasibility study to review alternative alignments and path cross sections for Segments 3-5.

- Segment 6 (Millbury to Worcester – 3.5 miles): This segment between Rte. 122A and Rte. 290 was constructed as part of the Rte. 146/MA Turnpike Interchange project. It has been open to the public for three years. The DCR is working with MassDOT and DCAM on completing the formal transfer of care and control of this segment to DCR.

- Segment 7 (Rte. 290 to Worcester City Common, via Union Station – 2.5 miles): This segment is under design through DOT. DOT has hired the consultant team of FST and VHB to do this design. DCR will have minimal involvement in this segment. We will provide design input, especially as it relates to connecting with Segment 6.

Acquisition Needs for Segments 1, 2, and Portion of 3:

- Two drainage acquisitions required for Segment 1 (all DCR property - SNETT).
- Two access acquisitions are required from the P&W Railroad for Segment 1
- Segment 2 requires a moderate number of acquisitions (10 takings from 3 owners, 14 permanent easements, and 39 temporary easements). It is very difficult to cost estimate this effort. Some towns have stated that they were confident many would be gifts. A safe assumption is that it could cost as much as \$1,000,000 and as little as \$200,000.
- The portion of Segment 3 is not advanced enough to know exact acquisition needs, but there would be a number of required takings. DCR already owns about half of this proposed section.
- A portion of the \$4,850,000 ISA funds may be used to assist DCR with acquisition work on segments 2 and 3.

Summary: DCR and MassDOT have proactively negotiated a solution to moving the Blackstone River Corridor Project forward in the most efficient manner. We agreed that moving all present focus onto Segments 1, 2 and a portion of 3 made the most sense. As part of the agreement related to ABP funding, DCR and elected officials agreed to earmark \$15,000,000 of DCR's ABP funding toward completing development of the eleven bridges in Segment 1. We have further agreed to utilize \$4,850,000 from two ISA's on design of Segments 1 and 2, and construction of Segment 1.

DCR anticipated product delivery includes:

- Full construction of most of Segment 1, from the depot parking lot to the 146A (eliminates two bridges and 7 arch and single arch viaducts). Projected construction start –spring, 2012.
- Complete 100% design and permitting for Segment 2. Cost = \$350,000. Projected start of design and permitting – fall, 2011.
- Complete design and permitting for section of Segment 3 (122N in Uxbridge to DCR's Riverbend Farm Heritage Park, total length = 3.5 miles). Cost = \$450,000. Projected start of design and permitting – fall, 2011.
- Utilize any remaining funds from \$4,850,000 ISA on acquisition needs in Segments 1, 2 and 3.

- DCR will need additional federal/state or private funding to implement construction of Segment 2 and the section of Segment 3. Preliminary construction cost estimate = \$7,000,000 for Segment 2 and \$4,000,000 for Segment 3. Neither MassDOT nor DCR currently have any funding to support this, so we would seek help from the Congressional delegation.

Permitting Background & Needs:

- An ENF was filed for the Blackstone River Bikeway Project in October of 2005. On 11/14/05 the Secretary of EOEEA issued a Certificate granting a Phase 1 Waiver for Section 2 (Millville and Uxbridge) of the project and a scope for a single EIR for Sections 3, 4 and 5. Given the proposed project changes this was revised, and a new ENF was filed with EOEEA for Segment 1, and a portion of Segment 2 (from Centre Street, Millville to Route 146a in Uxbridge) in April 2011. A Certificate was issued in May 2011.
- In order for the federal environmental review (NEPA) of Sections 1, 2 and 3 to be eliminated, we will have to demonstrate that Sections 1, 2, and 3 are a standalone project. We feel confident that a meeting including DCR, MassDOT and FHWA should be able to achieve this objective.
- Standard permitting will be required for Segment 1, 2 and the proposed section of Segment 3. These segments will require a Variance from the Wetlands Protection Act.
- A Notice of Intent was filed with the Blackstone Conservation Commission in the Spring 2011. An Order of Conditions was issued for the project in May 2011.
- The approved strategy will be to separate permitting for segments 1, 2, and part of 3 from the rest of the project.
- DCR and its consultant team of VHB and FST have held meetings with MEPA, DEP, and the Army Corp of Engineers. We have received our MEPA Certificate for Segment 1, and are waiting on completion of the 401 and 404 permit process.
- Anticipate having all permitting complete in winter, 2012.

QUINEBAUG RAIL-TRAIL SOUTHBRIDGE/ DUDLEY/WEBSTER

Project Background: The Quinebaug Rail Trail (QRT) is a proposed 11-mile rail-trail project in the towns of Dudley, Southbridge and Webster, MA, and in the town of Thompson, CT. The project involves segments of the Providence and Worcester Railroad's former Southbridge Secondary right of way that were purchased by the Commonwealth. The project's primary advocates are Senator Richard T. Moore, and Representative Geraldo Alicea, as well as localities and trail organizations..

Funding: MassDOT provided \$1.3 million in Commonwealth Transportation Bond Bill funds for the purchase of the right of way in Massachusetts. There is an additional \$800,000 federal earmark for this project in SAFETEA-LU. Senator Moore estimated in June 2006 that the project will require approximately \$900,000 for planning and design. The Massachusetts Legislature also included \$200,000 in its 2006 supplemental budget for the start of design and right of way cleanup.

Activities to date: A Rail-Trail Advisory Committee including MassDOT representation was convened in 2004; several meetings and site visits have been held. The Town of Southbridge in 2005 requested a right-of-entry for the Rail-Trail Advisory Committee to conduct a trail walkover and to clear brush/debris from the right-of-way. The Town did not initially secure approval as it was not willing to accept potential liability for any risk incurred by the Committee members while on the property. MassDOT's Rail Unit subsequently executed rights-of-entry with the Town of Southbridge; 1) a 90-day, and 2) a 6-month. The right-of-entry permitted trail advocates to enter the right of way to collect and clear debris; work was conducted in Spring and Summer 2006. Survey work, testing or other activity on the right of way is not permitted at this time.

Connecticut Developments: In early 2006 the Providence and Worcester Railroad offered the Connecticut right of way portion for sale. The Connecticut right of way portion remains under the Surface Transportation Board's jurisdiction pending an outcome on abandonment proceedings. MassDOT is hopeful that this portion will be railbanked so that the trail can be developed as a continuous facility. MassDOT and others have been in communication with the Connecticut Department of Transportation regarding its portion of the proposed trail.

Current Status: The Quinebaug Rail Trail Regional Advisory Committee has had a number of meetings in recent years, some of which MassDOT and CMRPC have attended. The last meeting the Highway Division attended was in 2007. At one point Southbridge was going to be the lead Town to start implementing the decision of the Committee on how to expend the earmarked funds.

The Towns are working in conjunction with MassDOT highway Division 3 and elected officials to advance the removal of rails along the MassDOT-owned ROW. The funding source would be the \$200,000 supplemental budget resources. Several technical and fiscal issues are currently being addressed, namely determining a salvage value for the tracks, the advertising and bid processes, and the geographic limits of track removal. MassDOT's Rail Unit has been engaged in this process.

From: Cenizal, Callida (DOT) [<mailto:callida.cenizal@state.ma.us>]
Sent: Friday, August 05, 2011 9:31 AM
To: MaryEllen Blunt
Cc: Richard Rydant
Subject: Language 495/9 study

Hi Mary Ellen,

I recall you mentioning to me the need for some language in the RTP or UPWP concerning the I-495/Rte. 9 Study. Here is some language below, lifted from the scope of work and from what the Boston MPO has included in their documents:

"The purpose of this project is to conduct a study that will evaluate and address transportation issues concerning the interchange of Interstate 495 and Route 9 in the Towns of Westborough and Southborough and the surrounding region. This study will include the analysis of a number of roadway concepts, including non-interchange scenarios that are similar in scope to the analyses conducted previously for the Route I-495 Corridor Study. A recommended plan of future transportation improvements (short-term and long-term), based on the alternatives analysis, will be the end product of this project.

The limits of this study along Interstate 495 extend from one mile north of Route 9 to one mile south of Interstate 90. On Route 9, the study extends from one mile west of Interstate 495 (including the interchange ramps at Route 9/Computer Drive/Research Drive) to one mile east of Interstate 495. On Interstate 90, the study extends from one mile west of Interstate 495 to one mile east of Interstate 495."

Let me know if you want more information; the Boston MPO went into a lot more detail in their documents.

Thank you,
Calli

~~~~~  
**Callida Cenizal | Office of Transportation Planning**  
**Massachusetts Department of Transportation**  
617.973.8079 - [callida.cenizal@state.ma.us](mailto:callida.cenizal@state.ma.us)

For news and updates, check out our blog at [www.mass.gov/blog/transportation](http://www.mass.gov/blog/transportation), or follow us on Twitter at [www.twitter.com/massdot](http://www.twitter.com/massdot).

***MassDOT-Highway District #3***

***I-495 / I-290 Interchange  
Route 9 / Burns Bridge  
I-290 / Vernon St***

**Municipality** Marlborough/Hudson

**Description** Route I-290/Route I-495 interchange reconstruction

**Status** Pre-25% design stage

**Cost** \$110 million

**Description** This project was the result of an internal corridor planning study that was requested by Marlborough and Hudson to address congestion. The location is regionally significant and exhibits extreme delays and congestion during peak commuter hours and during peak holiday travel seasons. The project would provide more efficient and safer connections for movements at the interchange. The proposed improvements involve significant geometric and structural modifications to the existing interchange and associated ramping system, including realignment of three ramps. Also included is construction of a new or expanded bridge over the Assabet River. This project is in the preliminary design and permitting stage.

MassDOT completed a conceptual design for the project and filed an ENF Form under MEPA. It was determined that an EIR is not required for the project. However, FHWA determined that an Interchange Justification Report (IJR) will be needed. A draft IJR has been prepared. The final IJR will be prepared when the project appears on the Boston MPO's long range financial plan.

**Municipality** Shrewsbury, Worcester

**Description** Route 9 (Belmont Street) over Lake Quinsigamond

**Status** Pre-25% design stage

**Cost** \$145 Million

**Description** This project will require replacement of the Route 9 bridge over Lake Quinsigamond, known as the Kenneth F. Burns Bridge. The project will be advertised as a design-build contract once the environmental permitting is completed and the design is at the 25% stage. Currently, the highway design is at the 25% stage and the bridge is at the pre-25% stage. Environmental permitting is being completed.

**Municipality** Worcester

**Description** I-290/Vernon Street Bridge

**Status** Pre-25% design stage

**Cost** \$1.2 Million

**Description** This project is located on Vernon Street (Route 122) at the interchange to I-290 in the City of Worcester. Work will entail replacing the Vernon Street overpass, replacing existing signals at eastbound ramps and providing new signals at the westbound ramps to I-290 as well as geometric improvements at the ramps. Although the I-290 bridge over Vernon Street (Br #W-44-085) is functionally obsolete, it is not structurally deficient. A larger project to replace the bridge and reconfigure Kelly Square is at an early conceptual stage.



***Massachusetts Aeronautics Commission (MAC)***

***Worcester Regional Airport, Southbridge Municipal Airport,  
Hopedale, Spencer, Tanner-Hiller Airports***

***Response not yet received***

*Assistant City Manager, City of Worcester*

*CitySquare  
Blackstone Canal District (including Visitors Center)*



Michael V. O'Brien  
City Manager

CITY OF WORCESTER

August 10, 2011

Mr. Richard A. Rydant  
Transportation Project Manager  
Central Massachusetts Regional Planning Commission  
2 Washington Square – Union Station  
Worcester, MA 01604

*Re: 2012 UPWP Update – CitySquare and Blackstone Canal District (including Visitor Center)*

Dear Mr. Rydant:

Per your request I provide the following information:

**CitySquare** - CitySquare II Development Co. LLC (CS2) acquired many of the development parcels at CitySquare in Downtown Worcester from Berkeley Investments in June 2010. This multi-million dollar construction project has reached historic milestones this year. Among the most significant was the signing of a 17-year lease agreement by Unum Group for occupancy in a soon-to-be-constructed 200,000 square foot building (known as Building H) on Foster Street and the redevelopment of an adjacent 860-car parking garage. The signing of this lease has triggered the abatement and demolition of the former Worcester Common Fashion Outlets mall to enable construction of Building H, which began in September 2010. The construction of Building H will take approximately 24 months, resulting in up to an \$85 million investment and the creation of more than 300 construction jobs. In addition, Unum Group will invest approximately \$15-25 million into the design and tenant fit-out of its new building, retaining 700 jobs and creating 50 net new jobs. In April 2011, St. Vincent Hospital announced the execution of a purchase and sale agreement with CS2 to build a 40,000 square foot medical office building (Parcel L) to house a new comprehensive cancer center at CitySquare. The new center, which represents a \$21 million capital investment by Saint Vincent Hospital, is expected to open in January 2013.

**Blackstone Canal District** - The \$7.5 million Blackstone Canal District streetscape improvement project involves resurfacing, widened sidewalks with upgraded materials, enhanced signage, plantings and street trees, decorative street lighting and improved pedestrian crossings. The work also includes installation of street furniture - benches, bike racks, waste receptacles and water elements representing the Blackstone Canal. The project boundaries are located between Grafton Street and Green Street from Union Station to Kelley Square and along Harding Street and Millbury Street from Kelley Square to Brosnihan Square. MassDOT is overseeing the construction work, currently underway. The improvements are anticipated for completion by December 2012.



OFFICE OF THE CITY MANAGER, CITY HALL, WORCESTER, MA 01608

TELEPHONE (508) 799-1175 | FAX (508) 799-1208

EMAIL: [citymanager@worcesterma.gov](mailto:citymanager@worcesterma.gov)



**Worcester Blackstone Visitor Center** - As a result of a devastating fire that occurred on March 22, 2010, the City and its fiscal partners (including Federal and State officials, the John H. Chafee Blackstone River Valley National Heritage Corridor, and the Worcester Historical Museum/Central Mass Convention & Visitors Bureau) are exploring alternatives to the original Visitor Center project. The building has been demolished and the site has been re-graded. Project stakeholders have endorsed a new conceptual design for the site and the City is working with Federal and State officials to determine the feasibility and funding eligibility for this new design.

If you have questions, or require additional information regarding these projects, please contact me at (508) 799-1175.

Sincerely,

A handwritten signature in black ink, reading "Timothy J. McGourthy". The signature is written in a cursive style with a large, stylized 'T' and 'M'.

Timothy J. McGourthy  
Chief Development Officer

***Commissioner Of Public Works, City of Worcester***

***Proposed City Common Pavilion  
McKeon Road pedestrian-related improvements  
Kilby-Gardner-Hammond  
Main & Maywood Streets  
Central Business District Streetscape Improvements***

**From:** Borbone, Joseph F. [<mailto:BorboneJ@worcesterma.gov>]  
**Sent:** Tuesday, August 30, 2011 4:03 PM  
**To:** Richard Rydant  
**Subject:** WORCESSTER PROJECTS

**CITY COMMON PAVILION** – The City is completing some projects in and around the Common/City Hall, and are reevaluating the details of the Pavilion project to assure that all of the project compliment each other. It is expected that there will be no design plans until next calendar year.

**McKEON RD. PEDESTRIAN-RELATED IMPROVEMENTS** - The plans are at the 25% design level. The design should progress quickly and the project may be ready to bid next year.

**KILBY/GARDNER/HAMMOND PROJECT** – The plans are at 25% design level and the City is waiting for comments from MassDOT Bridge Division. It is expected that the plans will move forward quickly and that this project can be advertised in 2012

**MAIN & MAYWOOD STREETS PROJECT** – Worcester DPW&P is preparing a Request for Proposals to hire a design team. A consultant will be on-board by the end of the fiscal year.

**CENTRAL BUSINESS DISTRICT STREETScape IMPROVEMENTS** – Worcester is working with the new developers of the old shopping mall site to determine how these funds can be used to build the required roadways and enhance the existing roads and sidewalks.

**Joseph F. Borbone**  
**Director of Engineering**  
Dept. of Public Works & Parks  
20 East Worcester Street  
Worcester MA 01604  
Tel. 508-929-1300 x4150  
Fax. 508-799-1458

***Worcester Business Development Corp***

***North Main St Gateway Improvements  
Centech Park Expansion***



August 19, 2011

Mr. Richard A. Rydant, Transportation Project Manager  
Central Massachusetts Regional Planning Commission  
2 Washington Square – Union Station  
Worcester, MA 01604

Dear Mr. Rydant:

Thank you for contacting the Worcester Business Development Corporation (WBDC) regarding the 2012 Unified Planning Work Program (UPWP). Please find an update on the progress of the North Main Street Gateway Improvements in the City of Worcester, as well as the CenTech Park Expansion in the Town of Shrewsbury.

As you know, the WBDC has been working closely with the Town of Shrewsbury on the development of CenTech Park East, a proposed industrial development located on approximately 85 acres of former Grafton State Hospital property in the Town of Shrewsbury. The CenTech Park East development project has direct access onto CenTech Boulevard, a 1.1 mile connector road which runs between Route 20 and Route 30 in the Town of Grafton. This connector road also provides direct access to the Grafton Massachusetts Bay Transportation Authority (MBTA) Commuter Rail, and the Tufts University, Cummings School of Veterinary Medicine.

In 2008, the WBDC and the Town of Shrewsbury received a \$2 million matching grant from the U.S. Department of Commerce, Economic Development Administration (EDA). In addition to these funds, the Town of Shrewsbury applied for and received a \$1 million Public Works Economic Development (PWED) grant from the Commonwealth of Massachusetts Department of Transportation. These grant funds are currently being used to fund the construction of infrastructure, including a 1,800 linear foot access road, to service the CenTech Park East development.

Construction on the 1,800 linear foot roadway began in March, 2010. In January, 2011, the WBDC sold the CenTech Park East development to CenTech Park, LLC, a private developer. The roadway, and all corresponding utilities, was completed in the June, 2011 and the roadway has been accepted by the town as a public way. The CenTech Park East development will provide pad-ready, build-to-suit opportunities to support approximately 650,000 square feet of building with the potential to create 600 jobs, contributing to the community's overall tax base.

In addition to the CenTech East project, the WBDC has been working on the North Main Street Gateway Improvement Projects. In 1998, Congressman McGovern secured approximately \$2



million for infrastructure upgrades around Grove and Salisbury Street. The funds were intended to upgrade the infrastructure to support the development of Gateway Park, a mixed-use office park focusing in biotechnology and life science research. The project was advertised last August and work is currently underway.

The project includes sidewalk replacement and roadway resurfacing on Grove Street from Salisbury to Faraday Street and Salisbury Street from Lincoln Square to Lancaster Street. A new left turn lane will reduce queuing times of vehicles turning from Grove onto Salisbury Street. All signals within the project area will be interconnected to improve traffic flow and a new signal will be installed at the intersection of Faraday Street and Grove Street. A PWED project completed last year by the City of Worcester extended Faraday to Prescott Street, providing improved access to Gateway Park.

Thank you for considering these important economic development projects for inclusion in the 2012 UPWP. Should you require any additional information, please do not hesitate to contact me.

Sincerely,



Julie A. Holstrom  
Project Manager

## ***V. Listing of Previous Technical Studies by CMRPC***

Route 20E Corridor Study - Phase I, 1989  
Route 20E Corridor Study - Phase II, 1991  
ADA Paratransit Compliance Plan, 1992  
Route 9W Corridor Study, 1992  
Highway Performance Monitoring System Report, 1992  
Blackstone Valley Transportation and Growth Management Plan, 1993  
Regional Transportation Plan, 1993  
WRTA Policy on Prohibited Drug Use and Alcohol Misuse, 1994  
Congestion Management System Progress Report, 1995  
Development Framework: A Guide for Growth and Change in Central Massachusetts

- Environment, Infrastructure, Population, 1995
- Economy, 1996

WRTA ADA Appeal Process/Procedure and Establishment of Appeal Panel, 1995  
Local Pavement Management Pilot Study for the Town of Princeton, 1996  
Regional Traffic Volume Summary, 1996-2002  
Preliminary Local Pavement Management Studies for various communities, 1996-2002  
Annual Updates to ADA Complementary Paratransit Plan, through January of 1997  
Congestion Management System Progress Report, 1997  
User Guide for the WRTA's Worcester Paratransit Services, 1997  
Federal-aid System Pavement Condition Report, 1997  
Regional Transportation Plan, 1997  
ADA Eligibility Documents, 1992-1997  
Paratransit Passenger Satisfaction Survey, 1998, 2000, 2004  
Relocation of the City Hall Bus Stop, 2000  
Regional Transportation Plan, 2000  
Cost Containment Considerations Related to Worcester Elder Medical/ Elder Weekend Paratransit Services, 2000  
Tri-Community Corridor Planning Study (Charlton, Southbridge, Sturbridge), 2000  
Preliminary Evaluation of Alternative Fixed Route Bus Transfer Locations, 2002  
Updated WRTA Policy on Prohibited Drug Use and Alcohol Misuse, 2003  
Regional Transportation Plan, 2003  
Traffic Study, Route 20 Northborough, 2003  
Blackstone Valley Corridor Planning Study, 2003  
Shingled Service Brochure for WRTA Paratransit Service Outside of Worcester, 2004  
WRTA FY '05 Service Contingency Plan, 2004

For older studies, please see earlier UPWP documents.

## ***VI. Listing of Transportation-Related Acronyms***

|         |                                                             |
|---------|-------------------------------------------------------------|
| AASHTO: | American Assoc. of State Highway & Transportation Officials |
| ABP:    | Accelerated Bridge Program                                  |
| ADA:    | Americans with Disabilities Act                             |
| ADT:    | Average Daily Traffic                                       |
| AFC:    | Automated Fare Collection                                   |
| AICP:   | American Institute of Certified Planners                    |
| ANR:    | Approval Not Required                                       |
| APC:    | Automatic Passenger Counter                                 |
| APTA:   | American Public Transit Association                         |
| ARRA:   | American Recovery and Reinvestment Act                      |
| ATJ:    | Access To Jobs                                              |
| ATR:    | Automatic Traffic Recorder                                  |
| BMS:    | Bridge Management System                                    |
| BRT:    | Bus Rapid Transit                                           |
| BVCC:   | Blackstone Valley Chamber of Commerce                       |
| CAAA:   | Clean Air Act Amendments of 1990                            |
| CBD:    | Central Business District                                   |
| CDAG:   | Community Development Action Grant                          |
| CDBG:   | Community Development Block Grant                           |
| CFR:    | Code of Federal Regulations                                 |
| CIP:    | Capital Improvement Program                                 |
| CMAA:   | Central Massachusetts Agency on Aging                       |
| CMAQ:   | Congestion Mitigation and Air Quality                       |
| CMMPO:  | Central Massachusetts Metropolitan Planning Organization    |
| CMP:    | Congestion Management Process                               |
| CMRPC:  | Central Massachusetts Regional Planning Commission          |
| CMRPD:  | Central Massachusetts Regional Planning District            |
| CO:     | Carbon Monoxide                                             |
| COA:    | Council On Aging                                            |
| COFC:   | Container On Flat Car                                       |
| COG:    | Council of Governments                                      |
| CPS:    | Corridor Planning Study                                     |
| CSS:    | Context Sensitive Solutions                                 |
| CTPS:   | Central Transportation Planning Staff                       |
| DCR:    | Department of Conservation and Recreation                   |
| DDS:    | Department of Developmental Services                        |
| DEP:    | Department of Environmental Protection                      |
| DET:    | Department of Education & Training                          |
| DHCD:   | Department of Housing & Community Development               |
| DLTA:   | District Local Technical Assistance                         |
| DMA:    | Division of Medical Assistance                              |
| DOT:    | Department of Transportation                                |
| DPH:    | Department of Public Health                                 |
| DTA:    | Division of Transitional Assistance                         |

|             |                                                                                  |
|-------------|----------------------------------------------------------------------------------|
| EDA:        | Economic Development Administration                                              |
| EIR:        | Environmental Impact Report                                                      |
| EIS:        | Environmental Impact Statement                                                   |
| EJ:         | Environmental Justice                                                            |
| ENF:        | Environmental Notification Form                                                  |
| EOEEA:      | Executive Office of Energy and Environmental Affairs                             |
| EOT:        | Executive Office of Transportation                                               |
| EPA:        | Environmental Protection Agency                                                  |
| EPDO:       | Equivalent Property Damage Only                                                  |
| ESS:        | Elder Shopper Service                                                            |
| FAA:        | Federal Aviation Administration                                                  |
| FHWA:       | Federal Highway Administration                                                   |
| FO:         | Functionally Obsolete                                                            |
| FRA:        | Federal Railroad Administration                                                  |
| FTA:        | Federal Transit Administration                                                   |
| GANS:       | Grant Anticipation NoteS                                                         |
| GIS:        | Geographic Information System                                                    |
| GPS:        | Global Positioning System                                                        |
| HAZMAT:     | Hazardous Material                                                               |
| HCM:        | Highway Capacity Manual                                                          |
| HOV:        | High Occupancy Vehicle                                                           |
| HPMS:       | Highway Performance Monitoring System                                            |
| HPP:        | High Priority Project                                                            |
| HSIP:       | Highway Safety Improvement Program                                               |
| I&M:        | Inspection & Maintenance                                                         |
| IM:         | Interstate Maintenance                                                           |
| ITE:        | Institute of Transportation Engineers                                            |
| ITS:        | Intelligent Transportation Systems                                               |
| ISTEA:      | Intermodal Surface Transportation Efficiency Act of 1991                         |
| JARC:       | Job Access Reverse Commute                                                       |
| JHCBRVNHCC: | John H. Chaffee Blackstone River Valley National Heritage Corridor<br>Commission |
| LOS:        | Level of Service                                                                 |
| LPA:        | Local Planning Assistance                                                        |
| LPMS:       | Local Pavement Management System                                                 |
| MAC:        | Massachusetts Aeronautics Commission                                             |
| MAGLEV:     | Magnetic Levitated                                                               |
| MARPA:      | Massachusetts Association of Regional Planning Agencies                          |
| MARTA:      | Massachusetts Association of Regional Transit Authorities                        |
| MassDOT:    | Massachusetts Department of Transportation                                       |
| MassGIS:    | Massachusetts Geographic Information System                                      |
| MassPort:   | Massachusetts Port Authority                                                     |
| MBTA:       | Massachusetts Bay Transportation Authority                                       |
| MEMA:       | Massachusetts Emergency Management Agency                                        |
| MEPA:       | Massachusetts Environmental Policy Act                                           |
| MHC:        | Massachusetts Historical Commission                                              |

|                  |                                                                     |
|------------------|---------------------------------------------------------------------|
| MHD:             | Massachusetts Highway Department                                    |
| MIS:             | Major Investment Study                                              |
| MISER:           | Massachusetts Institute for Social and Environmental Research       |
| MOU:             | Memorandum of Understanding                                         |
| MPO:             | Metropolitan Planning Organization                                  |
| MTA:             | Massachusetts Turnpike Authority                                    |
| MUTCD:           | Manual on Uniform Traffic Control Devices                           |
| MWRA:            | Massachusetts Water Resources Authority                             |
| NAAQS:           | National Ambient Air Quality Standards                              |
| NEPA:            | National Environmental Policy Act                                   |
| NFA:             | Non Federal-Aid                                                     |
| NHS:             | National Highway System                                             |
| NOx:             | Any of the Oxides of Nitrogen                                       |
| NTD:             | National Transit Database                                           |
| NTS:             | National Transportation System                                      |
| NTSB:            | National Transportation Safety Board                                |
| OCI:             | Overall Condition Index (used with pavement)                        |
| OEDP:            | Overall Economic Development Program                                |
| OTP:             | Office of Transportation Planning                                   |
| O <sub>3</sub> : | Ozone                                                               |
| PCI:             | Pavement Condition Index                                            |
| PL:              | Metropolitan PLanning funds (federal)                               |
| PMS:             | Pavement Management System                                          |
| PMUG:            | Pavement Management User's Group                                    |
| POP:             | Public Outreach Program                                             |
| PPP:             | Public / Private Partnership                                        |
| PRC:             | Project Review Committee                                            |
| PRWORA:          | Personal Responsibility & Work Opportunity Reconciliation Act       |
| PUD:             | Planned Unit Development                                            |
| PWED:            | Public Works/Economic Development                                   |
| RIF:             | Roadway Inventory Files                                             |
| RFP:             | Request For Proposal                                                |
| RFQ:             | Request For Qualifications                                          |
| ROW:             | Right Of Way                                                        |
| RPA:             | Regional Planning Agency                                            |
| RSA:             | Roadway Safety Audit                                                |
| RTA:             | Regional Transit Authority                                          |
| RTP:             | Regional Transportation Plan                                        |
| SAFETEA-LU:      | Safe, Accountable, Flexible and Efficient Transportation Equity Act |
| SAR:             | Strategic Assessment Report                                         |
| SD:              | Structurally Deficient                                              |
| SIP:             | State Implementation Plan (for Air Quality)                         |
| SL:              | SAFETEA-LU, on occasion                                             |
| SMS:             | Safety Management System                                            |
| SOV:             | Single Occupancy Vehicle                                            |
| SPR:             | Statewide Planning & Research                                       |

|         |                                                            |
|---------|------------------------------------------------------------|
| STIP:   | State Transportation Improvement Program                   |
| STP:    | Surface Transportation Program                             |
| STP-W:  | STP subset: Worcester urbanized area                       |
| T21:    | TEA-21, on occasion                                        |
| TAZ:    | Transportation Analysis Zone                               |
| TBD:    | Transportation Benefit District                            |
| TCM:    | Transportation Control Measures                            |
| TDM:    | Travel Demand Management                                   |
| TEA-21: | Transportation Equity Act for the 21st Century             |
| TEC:    | Transportation Evaluation Criteria                         |
| TEU:    | Twenty-foot container Equivalent Unit                      |
| TI:     | Transportation Improvement (in SAFETEA-LU)                 |
| TIF:    | Transportation Information Forum                           |
| TIP:    | Transportation Improvement Program                         |
| TMA:    | Transportation Management Association                      |
| TMC:    | Turning Movement Count                                     |
| TOFC:   | Trailer On Flat Car                                        |
| TRB:    | Transportation Research Board                              |
| TSM:    | Transportation Systems Management                          |
| UPWP:   | Unified Planning Work Program                              |
| VMS:    | Variable Message Sign                                      |
| VMT:    | Vehicle Miles of Travel                                    |
| VOC:    | Volatile Organic Compounds                                 |
| WBDC:   | Worcester Business Development Corporation                 |
| WEOEA:  | Worcester Executive Office of Elder Affairs                |
| WRA:    | Worcester Redevelopment Authority                          |
| WRCC:   | Worcester Regional Chamber of Commerce                     |
| WRTA:   | Worcester Regional Transit Authority                       |
| WTW:    | Welfare To Work                                            |
| 3C:     | Continuing, Comprehensive & Cooperative (planning process) |

**Central Massachusetts Regional Planning Commission**  
**2 Washington Square, 2<sup>nd</sup> Floor**  
**Worcester, MA 01604-4016**  
**Voice: (508) 756-7717**  
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