

# CHAPTER 10

## SAFETY

### A. EXISTING CONDITIONS

MassHighway publishes a summary report which lists the top 1000 crash locations within the state. The most recent data available at the time of publishing was from the 1999-2001 MassHighway Report. The crash locations are ranked based on the number of crashes and weighted by the severity of the crash. Fatalities and crashes involving a personal injury are given more weight than crashes only involving property damage. Each year a number of Pioneer Valley Region locations are identified in the listing. Table 10-1 lists the highest crash locations in the Pioneer Valley compiled from a three-year state inventory of crashes. Due to the age of this data, some of these locations may have realized improvements to safety as a result of transportation improvement projects. Traditionally, rotaries with a history of crash problems such as the Route 5/20 rotary in West Springfield do not appear on the MassHighway list because the crash data is summarized by the individual intersections that comprise the rotaries rather than the rotary itself.

A summary of the total number of crashes reported by each community to the Massachusetts Registry of Motor Vehicles over the last ten years is provided in Table 10-2. This information consists of crashes that either result in a personal injury or fatality, or resulted in greater than \$1000.00 worth of property damage. The City of Springfield experienced the greatest number of crashes over the ten year period, while the City of Holyoke experienced the highest number of crashes per roadway mile.

Information on the location of all at-grade rail crossings in the Pioneer Valley Region is shown on Figure 10-1. There are currently 136 railroad crossings in the Pioneer Valley Region. A total of 95 of these crossings are located on active rail lines however, less than 10 percent of all active rail crossings in the region are controlled by automatic gates to stop vehicle traffic.

### B. INCREASING SAFETY

The vision of the RTP focuses on the attainment of a safe and dependable transportation system. In a first step to achieve this vision and its associated goals, the system's present and future needs have been identified. The second step is to develop appropriate strategies to address these needs while adhering to the policies and objectives of the RTP. The third and final step is to advance planning studies and implement program improvement activities that will enhance the transportation system. This continual process will simultaneously alleviate problems in the regional transportation system and advance the goals of the RTP.

Safety is a principal concern in most transportation plans and designs. Highway Safety focuses on the reduction of crashes and resulting deaths, injuries and property damage occurring on public roads. Passenger vehicle movements, truck conflicts, pedestrian and bicycle travel and bridge conditions are all included as part of Highway Safety.

For the purposes of this plan both the preservation of the existing transportation system and its surrounding environment are considered under the category of Safety. Preservation of the system is critical to prevent continual deterioration which can lead to safety problems. Transportation infrastructure also dictates in large part how land is used and transportation choices made by users dramatically affects the environment. Motor vehicles are a major cause of air quality concerns and paved roads are a major contributor to non point source pollution via storm water run-off.

**Table 10-1 - High Crash Locations in the Pioneer Valley**

Rank	Community	Route 1	Street	Route 2	Intersecting Street	Property			
						Total Crashes	Damage Crashes	Injury Crashes	Fatal Crashes
54	SPRINGFIELD	I-91	INTERSTATE 91	5	SOUTH END BRIDGE	201	127	72	2
93	AGAWAM	5	ROUTE 5	57	AGAWAM ROTARY	145	91	54	0
124	CHICOPEE	I-391	INTERSTATE 391	91	INTERSTATE 91	114	63	51	0
161	SPRINGFIELD	I-291	SPRINGFIELD EXP.	91	INTERSTATE 91	99	53	46	0
167	HADLEY	9	RUSSELL ST		S MAPLE ST	109	67	42	0
239	SPRINGFIELD	20A	PAGE BLVD	I-291	SPRINGFIELD EXP	75	37	38	0
282	WILBRAHAM	20	BOSTON RD		STONY HILL RD	97	69	28	0
307	EAST LONGMEADOW	82	N MAIN ST		HARKNESS AVE	96	70	26	0
345	CHICOPEE	I-291	SPRINGFIELD EXP.	I-90	MASS TURNPIKE	67	38	29	0
358	SPRINGFIELD		LONGHILL ST	I-91	INTERSTATE 91	84	60	24	0
377	CHICOPEE	I-391	INTERSATE 391		CENTER STREET	66	39	27	0
385	HADLEY	9	RUSSELL ST	47	MIDDLE ST	65	38	27	0
406	AGAWAM	147	SPRINGFIELD ST.	75	SUFFIELD ST	88	68	20	0
406	WEST SPRINGFIELD		RIVERDALE ST	I-91	INTERSTATE 91	64	38	26	0
422	AGAWAM	187	N. WESTFIELD ST		SPRINGFIELD ST	72	50	21	1
467	SPRINGFIELD		ARMORY CIRCLE		LIBERTY ST	47	20	27	0
501	WESTFIELD	202	N ELM ST		UNION ST	52	28	24	0
534	HOLYOKE		LOWER WESTFIELD RI	91	INTERSTATE 91	57	36	21	0
561	WESTFIELD	202	N ELM ST		POCHASSIC ST	50	28	22	0
671	SPRINGFIELD	I-91	INTERSTATE 91		MAIN ST	48	29	19	0
718	WESTFIELD	202	PLEASANT ST	202	W SILVER ST	35	14	21	0
767	WESTFIELD		EAST MTN RD	20	SPRINGFIELD RD	39	20	19	0
793	WESTFIELD	20	E MAIN ST	187	LITTLE RIVER RD	37	18	19	0
804	AGAWAM		SILVER ST	75	SUFFIELD ST	48	32	16	0
804	HADLEY		BAY RD	9	RUSSELL ST	44	27	17	0
804	LONGMEADOW		DWIGHT RD		WILLIAMS ST	32	12	20	0
823	LONGMEADOW		CONVERSE ST		DWIGHT RD	35	16	19	0
823	WESTFIELD	20	ELM ST	20	MAIN ST	59	46	13	0
850	SPRINGFIELD		SAINT JAMES AVE	I-291	SPRINGFIELD EXP	37	19	18	0
864	SPRINGFIELD		DWIGHT ST	I-291	SPRINGFIELD EXP	36	18	18	0
906	EAST LONGMEADOW		MAPLE ST	220	SHAKER RD	45	30	15	0
906	LUDLOW	21	CENTER ST		HARDING AVE	41	25	16	0
922	SOUTH HADLEY	202	GRANBY RD	33	LYMAN ST	32	14	18	0
922	WESTFIELD	I-90	FRANKLIN ST		SOUTHAMPTON RD	44	29	15	0
958	CHICOPEE		SHAWINIGAN DRIVE	I-291	SPRINGFIELD EXP	34	17	17	0
983	WESTFIELD		SPRINGFIELD RD		MEADOWS ST	32	15	17	0
983	WESTFIELD	20	BOSTON RD		SUMMER ST	28	10	18	0
983	WESTFIELD	20	BOSTON RD		UNION ST	36	20	16	0
1002	SPRINGFIELD		STATE STREET	I-91	INTERSTATE 91	47	34	13	0

Source: MassHighway

**Table 10-2 – Ten Year Community Crash History**

Town	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total Crashes	Average Crashes/Year	Average Crashes/Roadway Mile
AGAWAM	583	639	662	648	658	722	822	659	759	687	6,839	683.9	4.55
AMHERST	524	658	581	525	513	466	492	159	2,594	132	6,644	664.4	4.90
BELCHERTOWN	132	134	135	110	100	108	111	56	239	256	1,381	138.1	0.89
BLANDFORD	56	55	78	57	84	66	91	80	72	67	706	70.6	0.79
BRIMFIELD	77	80	79	59	68	69	92	60	75	67	726	72.6	0.91
CHESTER	16	23	11	20	23	18	6	25	20	19	181	18.1	0.28
CHESTERFIELD	9	14	10	8	10	11	5	12	5	7	91	9.1	0.16
CHICOPEE	684	742	691	627	666	680	590	300	963	1,626	7,569	756.9	2.91
CUMMINGTON	13	17	14	11	19	16	14	4	14	10	132	13.2	0.21
EAST LONGMEADOW	330	388	308	347	373	419	413	431	529	491	4,029	402.9	4.29
EASTHAMPTON	289	342	305	241	231	241	303	140	121	151	2,364	236.4	2.67
GOSHEN	14	13	12	8	12	9	12	20	15	23	138	13.8	0.31
GRANBY	146	142	155	124	121	155	145	136	157	178	1,459	145.9	2.16
GRANVILLE	18	22	22	16	28	37	18	21	31	16	229	22.9	0.31
HADLEY	346	432	428	430	387	416	427	323	435	381	4,005	400.5	4.81
HAMPDEN	51	63	56	60	42	65	65	61	57	65	585	58.5	1.09
HATFIELD	41	44	46	37	30	54	45	29	50	51	427	42.7	0.72
HOLLAND	13	21	20	9	10	15	13	30	15	12	158	15.8	0.43
HOLYOKE	1,079	1,071	971	932	880	892	692	297	1,832	1,609	10,255	1025.5	5.91
HUNTINGTON	27	51	32	22	29	31	19	26	25	17	279	27.9	0.51
LONGMEADOW	235	332	265	260	291	325	298	223	257	265	2,751	275.1	2.79
LUDLOW	167	172	134	106	103	115	110	63	233	433	1,636	163.6	1.26
MIDDLEFIELD	5	2	2	2	4	8	3	3	6	1	36	3.6	0.09
MONSON	175	189	167	171	158	201	172	134	108	108	1,583	158.3	1.40
MONTGOMERY	9	9	23	21	16	16	11	13	28	21	167	16.7	0.54
NORTHAMPTON	884	855	861	757	777	784	759	793	786	725	7,981	798.1	4.42
PALMER	573	634	515	491	513	540	598	485	477	503	5,329	532.9	4.66
PELHAM	18	31	20	13	13	16	19	12	14	16	172	17.2	0.38
PLAINFIELD	5	9	5	7	4	9	3	2	8	3	55	5.5	0.11
RUSSELL	47	50	46	42	49	51	44	30	58	54	471	47.1	1.30
SOUTH HADLEY	342	386	324	309	348	355	340	289	289	270	3,252	325.2	3.14
SOUTHAMPTON	40	59	45	48	55	31	43	41	49	69	480	48.0	0.65
SOUTHWICK	208	199	227	179	218	212	195	209	226	232	2,105	210.5	2.75
SPRINGFIELD	1,836	2,007	1,954	1,757	1,587	1,578	1,384	713	836	675	14,327	1432.7	2.88
TOLLAND	6	8	7	6	2	9	3	7	6	8	62	6.2	0.15
WALES	23	11	18	9	7	15	8	13	13	10	127	12.7	0.44
WARE	157	146	161	166	179	148	155	117	151	176	1,556	155.6	1.33
WEST SPRINGFIELD	314	362	336	292	285	296	333	239	213	174	2,844	284.4	1.99
WESTFIELD	714	803	833	999	931	959	936	860	906	969	8,910	891.0	3.60
WESTHAMPTON	21	15	18	17	19	13	20	18	20	27	188	18.8	0.39
WILBRAHAM	236	322	281	279	336	384	389	334	313	330	3,204	320.4	2.87
WILLIAMSBURG	39	37	46	45	58	57	44	49	46	34	455	45.5	0.91
WORTHINGTON	11	10	9	7	12	18	18	12	10	12	119	11.9	0.19
<b>TOTAL</b>	<b>10,513</b>	<b>11,599</b>	<b>10,913</b>	<b>10,274</b>	<b>10,249</b>	<b>10,630</b>	<b>10,260</b>	<b>7,528</b>	<b>13,061</b>	<b>10,980</b>	<b>106,007</b>	<b>10600.7</b>	<b>2.45</b>

Source: MassHighway

## 1. Needs

A number of needs in the areas of Safety have been identified for inclusion in the RTP. These needs have been summarized in Table 10-3. Each need has been prioritized as either Immediate, Future or Ongoing. Immediate needs are areas that are a high priority and must be addressed through the implementation of future planning studies and projects. Future needs are considered to be areas of a medium importance that should be address in the development of future projects. Ongoing needs are areas that require routine attention and that are typically already included as part of the regional transportation planning process.

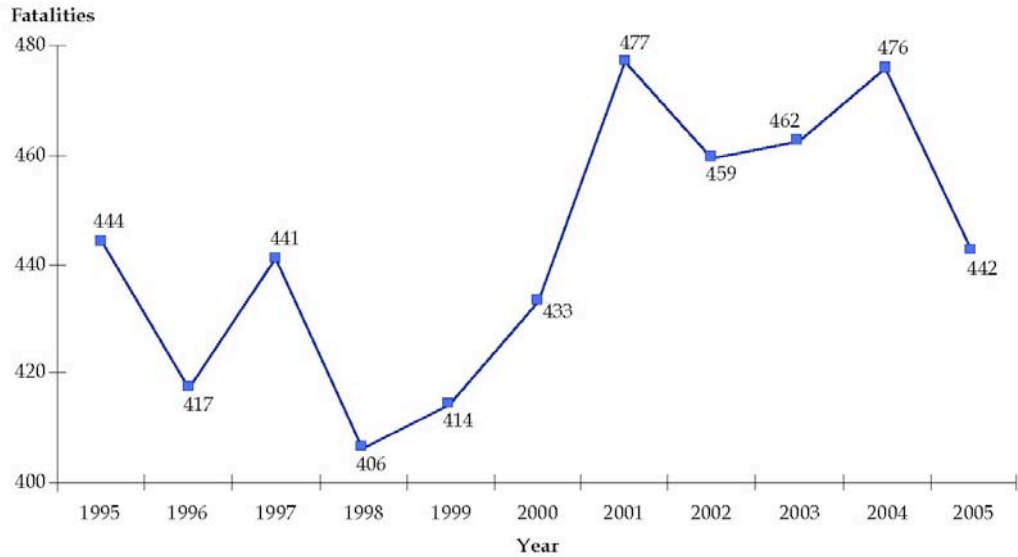
**Table 10-3 – Summary of Safety Needs**

Needs	Priority
Reduce the number of fatal and personal injury crashes for both pedestrians and vehicles in the region.	Immediate
Ensure the safety of mass transit facilities and equipment.	Immediate
Preserve the existing transportation infrastructure without increasing capacity.	Immediate
Provide for the safety of hazardous material transportation in and through the region.	Future
Improve the ability to receive local crash information and access to local crash reports. Improve how crash locations are identified to ensure uniformity.	Future
Identify deficiencies to make major routes more suitable for non-motorized traffic and transit users.	Future
Promote the use of alternative fuels and energy efficient travel modes.	Future
Improve coordination and information exchange between emergency service providers and transportation agencies.	Ongoing
Examine the safety of at-grade railroad crossings.	Ongoing
Improve the safety of existing freight railyards and facilities.	Ongoing
Improve air quality.	Ongoing
Improve water quality.	Ongoing
Protect existing natural, historical, and cultural resources.	Ongoing

- a) Reduce the number of fatal and personal injury crashes for both pedestrians and vehicles in the region.

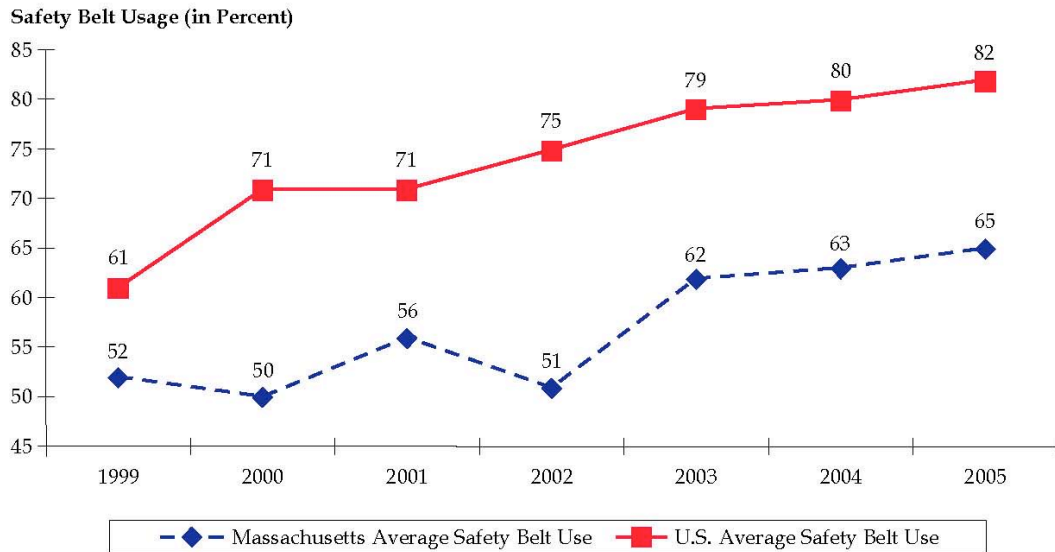
The goal of the Strategic Highway Safety Plan for the Commonwealth of Massachusetts is to reduce the increasing trend of traffic-related fatalities and injuries. Two components of this goal is to achieve a 20% reduction in the 476 lives lost and 5,554 injuries sustained as a result of Massachusetts motor vehicle crashes during the 2004 calendar year by 2010. A summary of fatalities in the state from 1995 to 2005 is presented in Figure 10-1.

**Figure 10-1 - Fatal Crashes in Massachusetts**



Personal injuries and fatalities resulting from motor vehicle crashes can be linked to safety belt usage. Although the use of safety belts in the Commonwealth of Massachusetts has increased over the last three years, it still falls short of the national average. This information is shown on Figure 10-2.

**Figure 10-2 - Safety Belt Use in Massachusetts**



Information from the 2004 Summary of Massachusetts Statewide Seat Belt Use report indicates that Western Massachusetts, defined as Hamden, Hampshire and Franklin Counties, had an observed seat belt use of 69% of all drivers and 67% of all passengers. This is higher than the statewide average of 64% from the same study, but still falls well below the national average.

A summary of the injury status of all participants involved in a motor vehicle crash in the Pioneer Valley region from 2002 to 2005 is shown on Table 10-4. As can be seen the total number of fatalities has remained relatively consistent over the last four years. The increase in injuries from 2002 to 2003 can likely be attributed to the improvements made in the reporting of crash data. The high number of cases where the injury status was listed as “Unknown” or “Not Reported” is also problematic and requires further action to improve the quality of this data.

**Table 10-4 - Participant Injury Status in the PVPC Region**

	2002	2003	2004	2005
Fatal injury	49	56	45	55
Deceased not caused by crash	3	2	3	3
Non-fatal injury - Incapacitating	262	365	416	382
Non-fatal injury - Non-incapacitating	1458	2105	2126	2252
Non-fatal injury - Possible	1252	2240	2330	2280
No injury	10363	15785	16616	17857
Not reported	3210	3887	3341	4720
Unknown	285	498	528	506
<b>Total</b>	<b>18,884</b>	<b>26,941</b>	<b>27,409</b>	<b>30,060</b>

Source: Massachusetts Traffic Records Portal

- b) Ensure the safety and security of mass transit facilities and equipment.

PVTA’s maintenance facility in Springfield is increasingly overextended by the needs to repair both buses and vans. This facility was initially constructed to service streetcars and even with numerous expansions over the years has limited space to service the large number of vehicles that PVTA operates. PVTA is considering developing another location for the van maintenance. This other facility will hopefully address further long running difficulties with parking at the Springfield location. A study completed by the PVPC documented the extent of the parking problem at the PVTA in Springfield. It will be important to ensure the safety and security of all of PVTA’s facilities and equipment in order to maintain a safe and dependable transit system.

- c) Preserve the existing transportation infrastructure without increasing capacity.

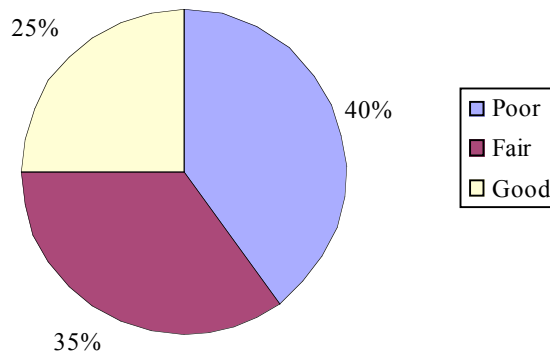
One of the greatest investments made by local communities, states and nations alike, is the transportation system. Each and everyday, highway investments are deteriorating at a rate greater than with which routine maintenance activities can keep pace. The result is an aging, distressed roadway and bridge system. In order to preserve this investment, strategic improvement applications need to be planned and applied in a timely fashion.

Routine maintenance activities have not kept pace with the deterioration of our transportation investments. Public dollars must be directed at the preservation of the existing infrastructure now more than ever. Priority for maintaining the existing system requires a more efficient use of capacity, enhanced safety and travel conditions and efficient use of limited funds.

Figure 10-3 shows the percentage of federal aid roadways in the Pioneer Valley for each condition category for the entire region for roadways inventoried in the 2004 calendar year. Roads in “Poor” condition have a pavement condition index (PCI) of below 65. Roads with a PCI of 65 to 85 and 86 to 100 fall into the “Fair” and “Good” categories respectively. Best management practices suggest that roadways be refurbished before they reach poor condition because it is the most cost effective way to maintain pavement. It requires far more money to stabilize the overall condition of a road network, when even a small portion of the road reaches a condition of major

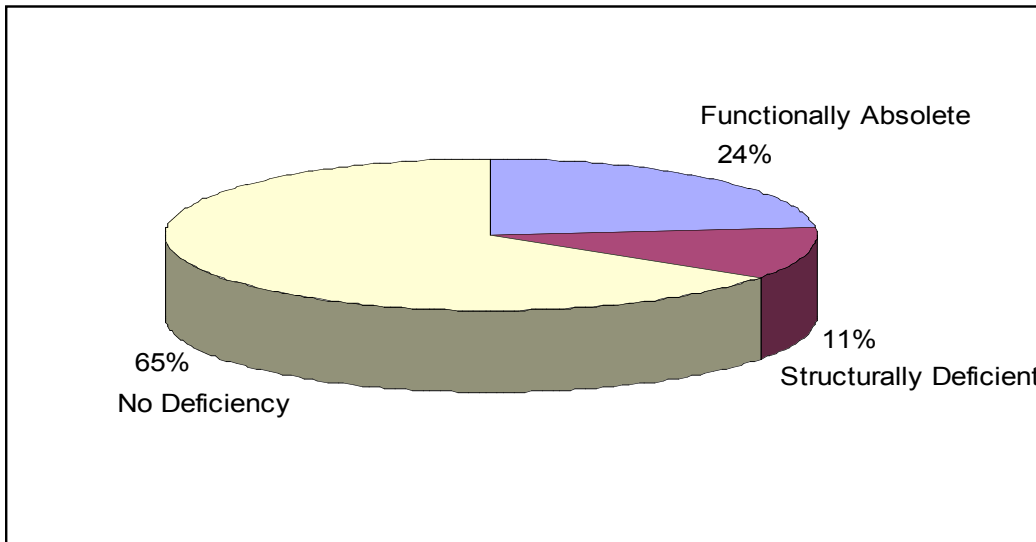
investment (reconstruction or rehabilitation) than to attend to preventive and routine maintenance. Priorities arising out of the pavement management system target roads in poor condition for obvious reasons, but it also recommends significant outlays for roads in the fair category. The usable lifespan of a roadway is maximized if refurbishment occurs at this stage of deterioration.

**Figure 10-3 - Pavement Condition of Federal-Aid Roadways in the Region**



All of the bridges throughout the state undergo routine structural inspection. Using a generally accepted rating system developed by the American Association of State Highway and Transportation Officials (AASHTO), MassHighway surveyed and rated the state bridges. This process identified bridges that are structurally sufficient, functionally obsolete and structurally deficient. Figure 10-4 summarizes the status of bridge conditions within the Pioneer Valley Region.

**Figure 10-4 - Bridge Conditions Categories for the Pioneer Valley**



A bridge is classified functionally obsolete when deck geometry, local capacity, clearance or alignment of the approach roadway no longer meets the usual criteria for the highway it serves. A bridge is

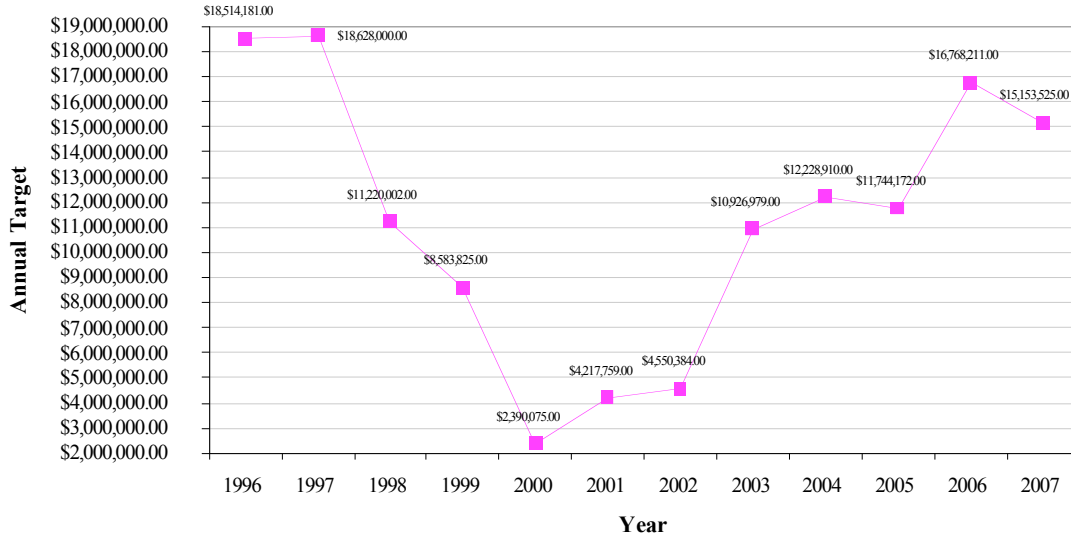
classified structurally deficient when the structural scores are below the acceptable sufficiency rating. Sufficiency rating is a function of the structural adequacy and safety, functional obsolescence and serviceability of a bridge. Eleven percent of the region's bridges were rated structurally deficient. This is a one percent decrease from 2003 when twelve percent of the region's bridges were rated structurally deficient. A summary of deficient bridges by community is presented in Table 10-5.

**Table 10-5 - Deficient Bridges in the PVPC Region**

Community	Functionally Obsolete	Structurally Deficient	Total Deficient Bridges	Total Bridges	% Deficient	% Functionally Obsolete	% Structurally Deficient
Agawam	2	2	4	18	22.2%	11.1%	11.1%
Amherst	2	3	5	15	33.3%	13.3%	20.0%
Belchertown	4	4	8	12	66.7%	33.3%	33.3%
Blandford	1	0	1	11	9.1%	9.1%	0.0%
Brimfield	5	2	7	26	26.9%	19.2%	7.7%
Chester	5	7	12	23	52.2%	21.7%	30.4%
Chesterfield	2	2	4	9	44.4%	22.2%	22.2%
Chicopee	7	4	11	50	22.0%	14.0%	8.0%
Cummington	1	0	1	13	7.7%	7.7%	0.0%
Easthampton	4	5	9	19	47.4%	21.1%	26.3%
Goshen	0	0	0	4	0.0%	0.0%	0.0%
Granby	2	0	2	8	25.0%	25.0%	0.0%
Granville	2	0	2	8	25.0%	25.0%	0.0%
Hadley	2	1	3	10	30.0%	20.0%	10.0%
Hampden	2	0	2	8	25.0%	25.0%	0.0%
Hatfield	7	0	7	15	46.7%	46.7%	0.0%
Holland	0	0	0	1	0.0%	0.0%	0.0%
Holyoke	6	6	12	49	24.5%	12.2%	12.2%
Huntington	5	0	5	8	62.5%	62.5%	0.0%
Longmeadow	0	0	0	4	0.0%	0.0%	0.0%
Ludlow	4	3	7	22	31.8%	18.2%	13.6%
Middlefield	3	0	3	9	33.3%	33.3%	0.0%
Monson	6	4	10	23	43.5%	26.1%	17.4%
Montgomery	2	0	2	5	40.0%	40.0%	0.0%
Northampton	9	9	18	44	40.9%	20.5%	20.5%
Palmer	9	3	12	31	38.7%	29.0%	9.7%
Pelham	1	2	3	3	100.0%	33.3%	66.7%
Plainfield	2	0	2	2	100.0%	100.0%	0.0%
Russell	2	1	3	15	20.0%	13.3%	6.7%
South Hadley	1	1	2	11	18.2%	9.1%	9.1%
Southampton	3	0	3	10	30.0%	30.0%	0.0%
Southwick	1	0	1	3	33.3%	33.3%	0.0%
Springfield	26	5	31	59	52.5%	44.1%	8.5%
Wales	0	0	0	1	0.0%	0.0%	0.0%
Ware	3	3	6	16	37.5%	18.8%	18.8%
West Springfield	8	2	10	26	38.5%	30.8%	7.7%
Westfield	9	3	12	35	34.3%	25.7%	8.6%
Westhampton	3	2	5	14	35.7%	21.4%	14.3%
Wilbraham	2	0	2	4	50.0%	50.0%	0.0%
Williamsburg	6	1	7	16	43.8%	37.5%	6.3%
Worthington	1	1	2	14	14.3%	7.1%	7.1%
Grand Total	160	76	236	674	35.0%	23.7%	11.3%

The preservation of the existing transportation system is tied directly to the funds available for transportation improvements. Figure 10-5 shows the amount of the federal aid target for the Pioneer Valley from 1996 – 2007. This money is used for federal aid roadway and bridge improvement projects. Most bridge improvements in the Pioneer Valley region are funded independently by the state and do not count against the region’s target. In addition, projects that received federal or state earmarks also do not count against the regional target.

**Figure 10-5 - Federal Aid Targets for the Transportation Improvement Program**



- d) Provide for the safety of hazardous material transportation in and through the region.

The Hazardous Materials Transportation Act of 1975 (HMTA), as amended, regulates and enforces the authority of the Secretary of Transportation to protect the Nation against risks associated with the transportation of hazardous materials. In 1990 Congress enacted the Hazardous Materials Transportation Uniform Safety Act (HMTUSA) to clarify conflicting state, local, and federal regulations on the transport of hazardous materials. While it is clear that the transportation of hazardous materials is strictly regulated, it is also important to ensure that the roadways designated for the transportation of hazardous materials are appropriate designed and maintained to facilitate the vehicles used for transport.

- e) Improve the ability to receive local crash information and access to local crash reports. Improve how crash locations are identified to ensure uniformity.

Data compiled by local police departments is an important component in the tabulation of existing safety problems. Specifically, intersection crash data is a valuable tool to analyze historic trends and identify potential safety problems. This information can be difficult to obtain as it is often treated as classified information due to the sensitive nature of some of the information included in the crash reports. In addition, each community can have a different procedure on how crash data is summarized in their computer database. This results in discrepancies in format when performing planning studies to involve multiple communities and in some instances the inability to summarize crash data at the intersection level.

Additional problems are also created by the lack of a non-standardized process for identifying the location of the crash. A crash that occurs at the intersection of Main Street with Oak Street and

River Street could be assigned to the intersection of Main Street with Oak Street, Main Street with River Street, or River Street with Oak Street. In addition, many crashes that could be attributed to an intersection are assigned to the closest street number, utility pole number or mile marker. Finally, crashes that occur at rotaries are not assigned to the entire rotary, but to the specific leg of the rotary on which the crash occurred. This often results in the under-reporting of the total number of intersection crashes throughout the region.

- f) Identify deficiencies to make major routes more suitable for non-motorized traffic and transit users.

The lack of connectivity of sidewalks and suitable shoulders for bicycle use reduce the safety of non-motorized traffic. Similarly, lack of bus shelters and adequate lighting can increase the perception that our transit system is unsafe. In order to improve these areas, a systematic inventory of the existing deficiencies is required. The PVPC routinely performs sidewalk inventories and bicycle Level of Service analyses that can help to identify these areas. A comprehensive inventory of all bus stops in the region was also completed by the PVPC. This information must be updated on a regular basis in order to have the most accurate information available for use in the development of future transportation improvement projects.

- g) Promote the use of alternative fuels and energy efficient travel modes.

The City of Springfield is a member of the Massachusetts Clean Cities Coalition. The Clean Cities Program supports public and private partnerships that deploy alternative fuel vehicles and build supporting infrastructure. As alternative fuel technology continues to gain in popularity and become more affordable, demand for these vehicles is likely to increase in the region. A feasibility study should be conducted for the region to the benefits of providing alternative fueling stations in the Pioneer Valley. This study would identify the most appropriate type of fueling station (i.e.: electric, compressed natural gas, etc.) and most efficient location of proposed stations. Alternative fuel stations should then be constructed in the region based on the recommendations of the feasibility study. The study should also explore the current technology types for alternative fuel vehicles and document the pros and cons of the various options (i.e. hybrid vs. fuel cell).

- h) Improve coordination and information exchange between emergency service providers and transportation agencies.

Emergency service providers rely on a safe and efficient transportation system in order to minimize their response time. It is important that advance notice be given to these agencies on ongoing construction projects and major incidents that could have negative impacts on their ability to serve the public. Similarly, it is also important to keep the emergency service providers closely involved in the transportation planning process to ensure that future transportation improvement projects can meet their needs.

- i) Examine the safety of at-grade railroad crossings.

Many of the at-grade railroad crossings in the PVPC region do not have safety gates to separate motor vehicle traffic from railroad traffic. In addition, supplemental warning devices such as flashing lights, warning signs and pavement markings require routine maintenance in order to provide maximum effectiveness. It is important to maintain an inventory of these at-grade crossings in order to determine when increases in traffic and surrounding developments require the installation of safety gates and other appropriate devices.

j) Improve air quality.

The quality of air we breathe is directly affected by individuals' personal transportation choices and by the kind of transportation infrastructure we plan, design and build. Cars—especially SUVs pollute a lot more than do bicycles, buses, or people on foot. Ozone and carbon monoxide (CO) are harmful byproducts of automobile and other motorized transportation options. The pollutants, Volatile Organic Compounds (VOC), Nitrogen Oxides (NOX), and Carbon Monoxide (CO), react together in conjunction with warm temperatures, humidity, wind speed and sunlight to produce ozone (O<sub>3</sub>). Ozone is bad for the environment. The Commonwealth of Massachusetts is classified as a serious non-attainment area for ozone. The City of Springfield is a CO non-attainment area. These non-attainment classifications require Massachusetts to conduct transportation planning activities that consider air quality pollution levels and target the reduction of vehicle emissions throughout the state.

VOC emissions originate from various sources such as fuel combustion processes, on and off-road mobile sources, biogenic sources and various solvent processes. CO and nitrogen dioxide (NO<sub>2</sub>) emissions, key components of NOx, originate from fuel combustion by on and off-road mobile sources as well as stationary sources. Emissions such as VOC are transferable depending on weather conditions and geography of the land. In Western Massachusetts, emissions generated in areas to the south, such as New York City and New Jersey, are transmitted via prevailing winds. This type of emissions displacement can intensify adverse conditions within a region of relatively low emission levels. Similarly, areas to the north of Massachusetts experience the displacement of emissions generated in the Commonwealth.

k) Improve water quality.

Human activities related to the development and use of land can pollute water supplies through the intentional or accidental release or discharge of potential pollutants. Pollutants can run off the surface of the land and enter surface water supplies, lakes, streams, ponds, and rivers. Pollutants can also leach into the ground and contaminate ground water supplies. Transportation related land uses such as airports, highways, rail yards, and truck terminals take up a large portion of the region and have a significant impact on water quality.

(i) Non-Point Source Pollution

Motor vehicles are the most widespread and difficult to manage non-point sources of pollution. The emissions from the internal combustion engine, at first absorbed into the atmosphere, are released through atmospheric deposition onto land and water surfaces. Fluids, used to lubricate and cool moving parts, leak out during the lifetime of a vehicle and are deposited on land surfaces. Other vehicle components such as brakes and tires wear away through friction, scattering hydrocarbon and metal elements across our region's highways and parking lots. The parking lot, road and highway infrastructure required for automobiles increases the amount of impervious surface in a watershed, and contributes to increased storm water run-off. All of these vehicle related pollutants deposited on impervious surfaces may be deposited into the region's streams, lakes and rivers during storm events.

(ii) Major Roads Cross Water Supply Recharge Areas

Major roads and highways cross much of the Pioneer Valley's public water supply areas, placing these resources at risk of contamination from the salts, petroleum hydrocarbons, asbestos, solids and metals contained in highway storm water run-off. Of the region's 298 public water supply wells, 144 have a highway or interstate passing within their interim wellhead protection areas. Where recreation facilities such as campgrounds, parklands, motels and restaurants are grouped,

clusters of public wells appear directly along the highway. Sections of special note include Route 20 in Monson and Brimfield, Route 19 in Brimfield and Wales, and Route 202 in South Hadley and Granby. Several miles of major roadways pass through DEP Approved Zone II areas, including Route 10 in Southampton and Westfield, Route 202 in Westfield, I-91 in Hatfield, Route 9 in Amherst and Belchertown and Route 57 in Southwick.

(iii) Transportation Support Facilities Can be a Major Source of Pollutants

Transportation facilities, including bus terminals, and government and private fleet service areas, are a potential contributor of non-point source pollution since they are similar to general service gas stations or vehicle repair service shops. Routine engine and body maintenance activities produce solid and liquid wastes, which are carried off of the paved surfaces by storm water run-off. Leaking underground storage tanks can also cause groundwater contamination and create a safety hazard. Storm water can be contaminated by any of these wastes that are not stored properly.

(iv) Urban Run-off and Combined Sewer Overflows

Combined sewer overflows (essentially storm water discharges to bodies of water containing raw sewage from sanitary sewer lines) are a serious problem in the lower Pioneer Valley, preventing the stretch of the Connecticut River south of the Holyoke Dam from reaching fishable/swimable standards. Storm water run-off from roads, parking lots, and buildings is greater than the capacity of the combined sanitary and storm water sewer lines. Rather than have the waste water treatment plant overwhelmed and create flooding in basements and streets, combined systems have been designed to discharge this additional volume to the river.

Reductions to CSO outflow points are achieved primarily by separating tributary sewer lines. Combined sewer and storm systems run beneath local streets and under sections of several state highways, including I-90.

(v) Road Salt and Sanding Practice

Highway maintenance requires numerous operations that can impact water quality. These include salting and sanding roads, inspecting and maintaining stormwater facilities, and other “housekeeping” practices. Proper maintenance of public and private stormwater facilities (catch basins, detention basins, swales, culverts, outfalls, etc.) is necessary to insure they serve their intended function. Without adequate maintenance, sediment and other debris can quickly clog these stormwater management structures, making them essentially useless. Rehabilitation of such facilities is expensive, and in the case of infiltration systems may be impossible. Polluted water and sediments removed during the cleaning operation must be properly disposed. Non-structural management options that can significantly improve water quality are street sweeping and routine maintenance and cleaning of stormwater catch basins.

(vi) Gravel Roads Require Proper Design, Maintenance and Repair to Prevent Erosion and Sedimentation

Heavy storms produce rapid water velocities which increase the potential for soil erosion especially on and around gravel roads. Pollutants such as oil and grease can also be washed from gravel roads along with exposed soil, and fine sands and silts. These roads, by nature of their topography and design, can, if not properly managed, contribute heavily to this significant water pollution problem. These sediments and pollutants are then carried away into nearby streams and ponds. Sediment loading is a major cause of water quality problems in both lakes and streams.

l) Protect existing natural, historical, and cultural resources.

Sustainable development can be defined as the maintenance of development at a rate to meet existing needs while protecting the natural resources required for future generations to meet their development needs. It is important to incorporate the principles of sustainable development in

regional planning to ensure that a wide range of improvement alternatives are considered prior to the construction of new roadways or the expansion of existing facilities.

The PVPC incorporates the tenets of sustainable development as part of its transportation planning process. Recent examples of our efforts in this area include the Northampton Transportation Plan which developed a municipal transportation planning process for the community. The Indian Orchard Master Plan: 20<sup>th</sup> Century Mill Town Plan which developed a toolbox for sustainable development to revitalize the Indian Orchard section of the City of Springfield as well as redevelop the “Crane/Chapman Valve” Brownfield site within the context of the community’s vision. The Merrick-Memorial Redevelopment Plan that focused on improving the efficiency of the transportation system in and around the neighborhood while reducing the environmental impacts of road and rail transportation and investments that support these goals.

Other ongoing efforts in the area of Sustainable Development include the Village at Hospital Hill project which consists of the redevelopment of the former Northampton State Hospital property off of Route 66 in Northampton. The goal of this project is to provide employment and residential opportunities that complement the needs of the surrounding community, protecting the quality and accessibility of open space and the adjacent Mill River riparian zone, and retaining the historic character of the Northampton area. The Town of Belchertown is also focused on the redevelopment of the Belchertown State School. This 272 acre property off of Route 202 is proposed to be redeveloped as a mixed use facility with potential ties to a proposed new courthouse and transit center.

## 2. Strategies

Several different strategies have been developed to address the regional needs identified in the areas of Safety. These strategies have been summarized in Table 10-6. Again, each strategy has been prioritized as either Immediate, Future or Ongoing. Immediate strategies are considered a high priority and must be advanced in the short term. Future strategies are considered to be areas of a medium importance that should be considered during the development of future projects. Ongoing strategies are typically already included as part of the regional transportation planning process.

**Table 10-6 - Summary of Safety Strategies**

Strategies	Priority
Develop a regional list of high crash locations.	Immediate
Work with the State and local communities to standardize the way they archive their crash records.	Immediate
Invest in the repair and maintenance of existing transportation infrastructure.	Immediate
Improve geometrics and upgrade traffic signal control equipment to improve safety.	Immediate
Provide accommodations for pedestrians, transit users and bicyclists in roadway and bridge design and the maintenance of existing facilities.	Future
Implement new communications and ITS technologies to improve public transit safety.	Future
Work with appropriate agencies to improve the transmittal of bike and pedestrian crashes to local police departments.	Ongoing
Employ best management practices to prevent and reduce urban run-off from highways and streets.	Ongoing
Develop a safe routes to school program	Ongoing
Develop a local bike/ped spot improvement program	Ongoing

- a) Develop a regional list of high crash locations.

Similar to the Top 1000 Crash Location list developed by the Massachusetts Highway Department, the Pioneer Valley MPO should develop a listing of the Top 100 Crash Locations in the region. This data should be based on the latest three years of information available from the MassHighway. The pending status of proposed transportation improvement projects should be identified for each location on the list and transportation safety studies developed for locations with no pending improvements.

- b) Work with the State and local communities to standardize the way they archive their crash records.

The new crash report forms implemented prior to 2003 greatly improved the amount of crash data included as part of the statewide database. In the Pioneer Valley region, however, additional efforts are necessary to increase the number and accuracy of the crash data submitted to the State by select communities. The Pioneer Valley MPO should work in consultation with the Massachusetts Highway Department, Governor's Highway Safety Bureau and other appropriate agencies to sponsor regional workshops on the proper procedures for completing crash report forms and distributing information to the state. These workshops should also focus on the existing procedures in which crash data is entered into local police department software to maximize the efficiency of this data for use in ongoing transportation planning activities. The development of a close relationship between the state, regional and local entities will greatly assist in the ability to obtain local crash data for planning purposes.

- c) Invest in the repair and maintenance of existing transportation infrastructure.

Preservation of the existing transportation infrastructure is a critical component to promoting safety in the region. As roads and bridges continue to deteriorate, it becomes less safe for vehicles to travel on them at posted speed limits. The investment of transportation improvement funds in preventive maintenance projects rather than complete rehabilitation projects is an effective and efficient use of limited funds. The Pioneer Valley MPO should continue to utilize the regional project evaluation criteria to identify candidate preventive maintenance projects to be included as part of the TIP.

- d) Improve geometrics and upgrade traffic signal control equipment to improve safety.

Traffic signals require routine maintenance in order to operate at maximum efficiency. Inefficient signal timing plans can lead to driver frustration which often contributes to aggressive driving, road rage and the running of red lights. The Pioneer Valley MPO should consider developing a regional program to invest in the physical upgrade of key intersections throughout the region. Under this program, traffic signal improvements would be restricted to the installation of new equipment such as overhead mast arms and traffic signal heads to bring the intersection in compliance with the Manual on Uniform Traffic Control Devices (MUTCD) and the development of new signal timing and phasing plans. Restricting the improvements to just equipment upgrades would allow more efficient use of funds. In addition, these improvements would be eligible to be funded as part of the Congestion Mitigation and Air Quality (CMAQ) program.

- e) Provide accommodations for pedestrians, transit users and bicyclists in roadway and bridge design and the maintenance of existing facilities.

The Pioneer Valley RTP promotes a balanced transportation system. In order to achieve this system it will be important to invest in increasing the safety of bicyclists, pedestrians and transit users. The Pioneer Valley MPO should continue to utilize the Project Evaluation Criteria to

identify and prioritize transportation improvement projects that promote the safety of bicyclists, pedestrians and transit riders.

- f) Implement new communications and ITS technologies to improve public transit safety.

PVTA has an ongoing ITS program developed through its ITS Architecture, Implementation and Deployment Plan. One component of this plan will allow for vehicle monitoring and improved communications for both drivers and passengers. The Pioneer Valley MPO should invest in the advancement of ITS equipment for the PVTA to improve operational efficiency, give passengers real time information about schedules, provide critical emergency information to first responders, and interface the transit ITS components with the other ITS infrastructure in the region.

- g) Work with appropriate agencies to improve the transmittal of bicycle and pedestrian crashes to local police departments.

The Pioneer Valley MPO in consultation with the Massachusetts Highway Department, Governor's Highway Safety Bureau, local police departments and other interested agencies should develop a public awareness campaign to require bicyclist and pedestrians that are involved in crashes to fill out a crash report form. Currently, bicyclist and pedestrians that may be involved in a minor crash that did not involve an injury may not report the incident. In addition, crashes involving bicyclist and pedestrians along off-road facilities such as the Norwottuck Rail Trail are not reported. More outreach is required to emphasize the importance of this information in bicycle and pedestrian safety planning efforts.

- h) Employ best management practices to prevent and reduce urban run-off from highways and streets.

The Pioneer Valley region should employ "Best Management Practices" (BMPs) to prevent and reduce urban run-off from highways and streets and mitigate its impacts to surface and groundwater drinking water supplies, rivers, lakes and streams. BMPs should be incorporated into the design and construction of all transportation projects, including redevelopment projects, to mitigate impacts to water resources. A comprehensive inventory of needed urban run-off control projects should be undertaken in order to prioritize projects for future funding.

Combined sewer overflows adversely affect water quality in the Connecticut River and is a primary concern to the region. Combined sewer systems need to be replaced with separate sewer systems. Sewer separation is an expensive and time consuming process, because it usually requires excavating and repaving streets. Road and street repair and reconstruction projects provide valuable opportunities to reduce the costs associated with sewer separation projects.

Reduced road salting programs have been successfully implemented on state highways in several regional communities to mitigate salt contamination of sensitive water supplies. Under reduced road salt programs, winter highway salt application rates are decreased by as much as two-thirds, and alternative maintenance practices, such as salt substitutes, pavement additives, increased sanding and plowing, and public education are employed. There are many other public and private water supply areas which are crossed by state highways or other major roads, and could benefit from reduced road salting policies. A comprehensive program should be undertaken to study the region's water resources (reservoirs, aquifer recharge areas and public and private wells), the watersheds, and transportation infrastructure (highways and roads). Sensitive areas should be identified; and reduced road sand and salt programs and additional mitigation measures should be initiated and implemented in these areas.

i) Develop a Safe Routes to School program.

The Massachusetts Safe Routes to Schools Program is developed through MassRides. The Pioneer Valley MPO should work in cooperation with MassRides to promote the Safe Routes to Schools Program and assist in identifying potential candidate communities and school districts for inclusion in the program.

j) Develop a local bicycle and pedestrian spot improvement program.

The Bicycle and Pedestrian Spot Improvement Program makes low cost improvements to enhance safety and convenience by allowing use of the existing street and sidewalk system more comfortably. Projects include; surface improvements - pothole patching, drain grate replacement; signing and striping - motor vehicle warning signs at trail crossings, bicycle lane striping and stenciling; access improvements including the adjusting of electronic detection for bicyclists at traffic signals and traffic island modification; sidewalk bike rack installation.

Complaints or concerns are referred to the MassHighway District Bicycle liaison or to the local department of public works depending on the roadway's jurisdiction. Some projects may be incorporated into larger scale projects proposed on the Transportation Improvement Program.

### 3. Proposed Safety Studies

Information from the most recent version of the Top 1000 High Crash Locations in the PVPC Region was used to identify potential locations for future safety studies for inclusion in the UPWP. The PVPC will consult with local official to determine if there is interest to conduct a detailed safety study for the following intersections.

- (i) Interstate 91 Exit 2 at Longhill Street – Springfield
- (ii) Interstate 391 at Center Street – Chicopee
- (iii) Route 20 at East Mountain Road – Westfield
- (iv) Converse Street at Dwight Road – Longmeadow
- (v) Route 202 at Route 33 – South Hadley

A crash history will be established for the most recent 3 year period through local police department or MassHighway records. Collision Diagrams will be developed when possible to determine existing crash patterns and the predominant collision type. Data on the existing traffic signals at each intersection will be collected and analyzed to determine potential improvements to the traffic signal timing and phasing plan. Finally, a series of recommendations will be developed to improve safety at each intersection.

## C. STRATEGIC HIGHWAY SAFETY PLAN

The Strategic Highway Safety Plan (SHSP) is a statewide-coordinated safety plan that provides a comprehensive framework, and specific goals and objectives, for reducing highway fatalities and serious injuries on all public roads. This statewide document, developed by the State DOT in a cooperative process, includes input from public and private safety stakeholders. The SHSP is a data-driven, four to five year comprehensive plan that integrates the four E's - engineering, education, enforcement and emergency medical services (EMS). The SHSP establishes statewide goals, objectives, and key emphasis areas developed in consultation with Federal, State, local, and private sector safety stakeholders.

The **MISSION** of the SHSP is to:

- Develop, promote, implement, and evaluate data-driven, multi-disciplinary strategies to maximize safety for users of the roadway system.

The **VISION** of the SHSP is to:

- Provide the safest roadway system in the country and promote its safe use.

The SHSP also has the following three **GOALS**:

- Reverse the increasing trend of traffic-related fatalities and injuries upon implementation of the MA SHSP (towards zero fatalities and injuries).
- Achieve a 20% reduction from 476 (2004) lives lost in traffic related fatal crashes by 2010.
- Achieve a 20% reduction from 5,554 (2004) in non-fatal traffic related injuries requiring hospitalizations by 2010.

### 1. Emphasis Area Goals and Performance Measures

A number of goals were established for each of the “Emphasis Areas” of the SHSP. A number of performance measures were also established for each goal. This information is summarized in Table 10-7. Table 10-8 summarizes the Emphasis Area Goals and Performance Measures for higher risk users of the transportation system such as pedestrians, bicyclists, motorcyclists, and younger drivers.

**Table 10-7 – Emphasis Area Goals and Performance Measures**

<b>Emphasis Area</b>	<b>Goal</b>	<b>Annual Performance Measure(s)</b>
Data Systems	Provide accessible, accurate, complete, consistent, integrated, and timely traffic records data to aid decision-makers working to reduce transportation-related fatalities, injuries, and economic loss in Massachusetts.	<ul style="list-style-type: none"> <li>• Average timeframe from crash date to crash report submittal to the Registry of Motor Vehicles (RMV), by community and by police type</li> <li>• Number of police departments contacted regarding underreporting</li> <li>• Number of accurately linked data sets that can provide effective safety data to decision-makers on the causes of motor vehicle crashes</li> <li>• Number of trauma registry centers included in the statewide trauma registry</li> <li>• Number of crash reports electronically submitted to the RMV</li> <li>• Number of interagency data sharing agreements/arrangements pertaining to transportation-related injuries</li> </ul>
Infrastructure	Reduce the number of fatalities and incapacitating injuries resulting from intersection and lane departure crashes and expedite safety-related infrastructure projects.	<ul style="list-style-type: none"> <li>• Number of intersection crashes               <ul style="list-style-type: none"> <li>– Number of fatalities resulting from intersection crashes</li> <li>– Number of incapacitating injuries resulting from intersection crashes'</li> </ul> </li> <li>• Number of lane departure crashes               <ul style="list-style-type: none"> <li>– Number of fatalities resulting from lane departure crashes</li> <li>– Number of incapacitating injuries resulting from lane departure crashes</li> </ul> </li> <li>• Number of Project Need Forms submitted with completed safety data information provided</li> </ul>
At-Risk Driver Behavior	Reduce the number of fatalities and incapacitating injuries involving unbelted drivers and passengers, speeding, and impaired driving.	<ul style="list-style-type: none"> <li>• Number of fatalities involving unbelted (or unhelmeted) drivers by vehicle type (passenger car, truck, or motorcycle)</li> <li>• Number of fatalities involving unbelted (or unhelmeted) occupants by vehicle type (passenger car, truck, or motorcycle)</li> <li>• Statewide safety belt use rate</li> <li>• Number of fatalities involving speed</li> <li>• Number of fatalities involving alcohol</li> </ul>

Source: Massachusetts Strategic Highway Safety Plan

**Table 10-8 – Emphasis Area Goals for Higher-Risk Transportation System Users**

<b>Emphasis Area</b>	<b>Goal</b>	<b>Annual Performance Measure(s)</b>
Young Drivers	Reduce the number of fatalities and incapacitating injuries involving young drivers and encourage greater compliance with the Massachusetts Junior Operator Law.	<ul style="list-style-type: none"> <li>• Number of fatalities involving drivers age 16-24</li> <li>• Number of incapacitating injuries involving drivers age 16-24</li> <li>• Number of nonfatal motor vehicle-traffic injury hospital stays (inpatient and observation) involving drivers 16-24 years (using Mass. DPH data)</li> <li>• Number of citations issued to drivers in violation of JOL requirements</li> </ul>
Older Drivers	Reduce the number of fatalities and incapacitating injuries involving older drivers and encourage statewide implementation of infrastructure and system improvements that better accommodate their needs.	<ul style="list-style-type: none"> <li>• Number of fatalities involving drivers age 65+</li> <li>• Number of incapacitating injuries involving drivers age 65+</li> <li>• Number of nonfatal motor vehicle-traffic injury hospital stays (inpatient and observation) involving drivers 65 years and older (using Mass. DPH data)</li> </ul>
Pedestrians	Design and manage the roadway system to reduce the risk to pedestrians and reduce pedestrian fatalities and injuries requiring hospitalizations.	<ul style="list-style-type: none"> <li>• Number of fatalities involving pedestrians</li> <li>• Number of nonfatal motor vehicle-traffic injury hospital stays (inpatient and observation) involving pedestrians (using Mass. DPH data)</li> </ul>
Bicyclists	Design and manage the roadway system to reduce the risk to bicyclists and reduce bicyclist fatalities and injuries requiring hospitalizations	<ul style="list-style-type: none"> <li>• Number of fatalities involving bicyclists</li> <li>• Number of nonfatal motor vehicle- traffic injury hospital stays (inpatient and observation) involving bicyclists (using Mass. DPH data)</li> </ul>
Motorcyclists	Raise the public awareness of motorcycle safety, educate riders and officials of the special vulnerabilities of motorcycle operation, and ultimately decrease the number of crashes involving motorcyclists.	<ul style="list-style-type: none"> <li>• Number of fatalities involving motorcyclists</li> <li>• Number of incapacitating injuries requiring involving motorcyclists</li> <li>• Number of nonfatal motor vehicle-traffic injury hospital stays (inpatient and observation) involving motorcycle drivers (using Mass. DPH data)</li> <li>• Number of citations issued to motorcyclists in violation of the Massachusetts helmet law</li> </ul>
Public Education and Media	Broaden awareness of safety issues through dissemination of messages to the public and elected officials; assist other Emphasis Area Teams with implementation of their education- or media-related strategies; and assist the Executive Leadership Committee with roll-out of the SHSP	<ul style="list-style-type: none"> <li>• Development and distribution of public information and education campaign regarding safe protocol for obtaining roadside assistance</li> <li>• Number of traffic safety mailings distributed annually (coordinate with RMV)</li> <li>• Number of public service announcements aired related to traffic safety</li> </ul>

Source: Massachusetts Strategic Highway Safety Plan

**Table 10-8 – Emphasis Area Goals for Higher-Risk Transportation System Users  
(cont.)**

Safety Program Management	Work with the Executive Leadership Committee to institutionalize the SHSP through a Memorandum of Understanding (MOU) among agencies that includes a commitment to meet regularly to address safety issues raised by the Steering/Advisory Committee and to communicate how safety is being addressed within each individual agency.	<ul style="list-style-type: none"> <li>• Signed Memorandum of Understanding Regarding the Massachusetts SHSP</li> <li>• Number of agencies reporting progress of individual agency safety initiatives at quarterly meetings</li> </ul>
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Source: Massachusetts Strategic Highway Safety Plan

## 2. Emphasis Area Strategies

Each of the Emphasis Area teams developed a series of strategies to support the Strategic Highway Safety Plan. In July 2006, the Executive Leadership Committee reviewed all final strategies and identified those that could be implemented within the first two years of the SHSP. These were defined as the Tier I Strategies of the SHSP. Tier I Strategies are typically low-cost strategies or strategies that have been previously identified as part of other ongoing planning efforts. A summary of all Tier I Strategies as well as the responsible and lead agencies for implementation is included in Table 10-9.

The remaining strategies, or Tier II Strategies, are summarized in Table 10-10. These strategies will be revisited on a regular basis as new data is analyzed and the SHSP is updated to determine their relevance safety issues. These strategies may be modified based on new data trends and/or changes in priorities.

Similar to the Emphasis Areas defined for the RTP, the Strategies included as part of the SHSP are intended to be cross-cutting and address multiple safety disciplines. Several strategies address the four Es (Engineering, Enforcement, Education, Emergency Response) as well as operations and management disciplines to improve safety in the Commonwealth of Massachusetts.

**Table 10-9 - Massachusetts SHSP Tier I Strategies**

Strategy Description	Supporting Agency	Lead Agency
<b>Cross-Cutting Safety Strategies</b>		
Increase high-visibility enforcement of alcohol impaired driving, speeding, and occupant protection of all motorists, including drivers of passenger vehicles, commercial vehicles, and motorcycles.	Massachusetts State Police (MSP) Massachusetts Chiefs of Police Association (MCOPA)	Governor's Highway Safety Bureau (GHSB)
Provide data, analysis, and research to the legislature and other elected officials as they consider traffic safety legislation and issues.	All agencies as needed and appropriate	GHSB
Expand availability and distribution of safety-related educational materials for all transportation system users with emphasis on personal responsibility and prevention.	All agencies as called upon.	MassHighway and RMV
Incorporate education on the safety needs of higher risk transportation system users in statewide law enforcement training programs, including the needs of young drivers, older drivers, pedestrians, bicyclists, and motorcyclists	MSP (Municipal Police Institute (MPI), Municipal Police Training Committee (MPTC))	GHSB
Include pedestrian, bicyclist, motorcyclist safety information in comprehensive practitioner and driver education		RMV
Improve infrastructure security	All agencies as called upon.	MassHighway
<b>Data Systems Emphasis Area Strategies</b>		
Outreach to Local and State Police (regarding completeness of crash report form)	GHSB	RMV
Police training on Crash and Citation Reporting	GHSB	UMass SAFE
Massachusetts Ambulance Trip Record Information System (MATRIS) and Statewide Trauma Registry	GHSB	Mass. DPH
Increase electronic submission to the Crash Data System	GHSB	RMV
Commonwealth-wide process for sharing data	GHSB	RMV
Standard Massachusetts Highway Safety Data Reports	GHSB	UMass SAFE
<b>Infrastructure Emphasis Area Strategies</b>		
Incorporate stronger safety criteria into project selection	MPOs	MassHighway
Identify top lane departure and intersection crash locations and work at the local and regional levels to develop and implement location-specific strategies to mitigate the safety deficiencies.	Federal Highway Administration (FHWA), Regional Planning Agencies (RPA), GHSB	MassHighway
Incorporate safety elements in routine maintenance projects		MassHighway
Work zone safety for workers and drivers		MassHighway

Source: Massachusetts Strategic Highway Safety Plan

**Table 10-9 - Massachusetts SHSP Tier I Strategies (cont.)**

<b>At-Risk Driver Behavior Emphasis Area Strategies</b>		
Increase seat belt use in Massachusetts	FHWA, NHTSA, and others as needed	GHSB
Increase the number and enhance current programs to educate parents on the proper use of child restraints and all adult passengers; and support child restraint loan programs in targeted areas	Mass. DPH, MCOPA	GHSB
Increase the awareness of the dangers of speeding and conduct Speed Management Workshops for facilitators	GHSB, MassHighway, MCOPA	NHTSA, FHWA, Federal Motor Carrier Safety Administration (FMCSA)
Support Drug Recognition Expert (DRE) training programs to assist in identifying driver drug use and providing expert testimony in court	MSP	GHSB
<b>Higher Risk Transportation System Users Emphasis Area Strategies</b>		
Evaluate before and after Junior Operator Law (JOL) data for crashes involving teen drivers	Mass. DPH	RMV
Educate parents on JOL responsibilities	Mass. DPH	RMV
Support and participate in the healthy Aging Coalition and contribute to the development of their Strategic Plan for Healthy Aging	Mass. DPH	RMV
Identify top pedestrian and bicycle crash locations and work at the local and regional levels to develop and implement location specific strategies to mitigate the safety deficiencies	RPAs and MPOs, Mass. DPH	MassHighway
Expand the Safe Routes to School Program	MassRides, Mass. DPH	EOT
Develop and execute a campaign regarding driving safely around motorcycles and encourage participation in motorcycle education programs		RMV

Source: Massachusetts Strategic Highway Safety Plan

**Table 10-10 - Massachusetts SHSP Tier II Strategies**

<b>STRATEGY DESCRIPTION</b>
<b>Cross-Cutting Safety Strategies</b>
Develop a Safety Toolbox to provide technical assistance to local communities
Tailor messages regarding speed, alcohol-impaired driving, and occupant protection to specific audiences particularly in high-risk locations or communities
Conduct an evaluation of traffic violations, convictions, penalties, dismissals, pleas bargains in Massachusetts courts for offenses related to speeding, failure to wear seat belts, and alcohol impairment
At the state and local levels, encourage greater knowledge and use of Massachusetts and national design guidelines
<b>Data Systems Emphasis Area Strategies</b>
Support activities to improve data collection procedures and data quality, including the use of electronic license swiping equipment for police officers
<b>Infrastructure Emphasis Area Strategies</b>
Develop a safety problem assessment checklist
Evaluate the benefits of a statewide access management policy
<b>At Risk Driver Behavior Emphasis Area Strategies</b>
Explore the possibility of deploying and maintaining a web-based statewide safety calendar
Support the statewide deployment of the State Courts Against Road Rage Program
Coordinate clearinghouses of safety materials (GHSB and Mass. DPH)
<b>Higher Risk Transportation System Users Strategies</b>
Conduct literature/program review to identify existing sources of information regarding best practices in prevention and driver behavior modification methods
Develop statewide guidance on infrastructure improvements that accommodate older driver needs
Conduct an assessment of the mobility needs of older persons in Massachusetts
Develop and disseminate an awareness campaign to encourage planning for future mobility needs
Publicize pedestrian and bicyclist safety resources
Provide input to the safety chapter of the updated Massachusetts Pedestrian Transportation Plan
Consider providing reasonable bicycle and pedestrian accommodations' in new roadway and bridge projects
Publicize motorcycle safety resources
Conduct detailed analysis of motorcycle crash problems in Massachusetts
<b>Public Education and Media Strategies</b>
Use information on best practices from states and locals to enhance media campaign materials

Source: Massachusetts Strategic Highway Safety Plan

# CHAPTER 11

## SECURITY

The security of the regional transportation system is an ever increasing priority. It is critical to ensure that the highest levels of security are provided for the users of our regional transportation system and that appropriate measures are taken to restrict access to our critical transportation infrastructure.

### A. EXISTING CONDITIONS

Over the past few years, the region has concentrated on improving the security of the transportation system. This includes participation with the Massachusetts Executive Office of Public Safety (EOPS) and the Massachusetts Emergency Management Agency (MEMA). In cooperation with both agencies a number of changes have been made to increase both existing security measures and public awareness of potential threats to security. The following sections provide additional information on the topic of security for the Pioneer Valley Metropolitan Planning Organization.

#### 1. Homeland Security

The Pioneer Valley Metropolitan Planning organization is part of the Western Massachusetts Homeland Security Region. The Western Region Homeland Security Advisory Council provides planning, financial and technical resources to all 101 communities within Hampden, Hampshire, Franklin and Berkshire counties of Massachusetts.

The focus of this organization is to support the following activities:

- Identification of Threats and Vulnerabilities within the Region
- Plan Regionally to Protect Critical Infrastructure and Key Assets
- Training First Responders and Local Officials
- Improve Interoperability
- Multi-jurisdiction Exercises
- Intelligence Gathering & Information Sharing

One of the products of the Western Region Homeland Security Advisory Council was the development of a website to increase public awareness and provide the general public with information on the role of the council. This website is located at [www.westernmassprepares.org](http://www.westernmassprepares.org). The Pioneer Valley MPO has also assisted in improving Homeland Security by providing planning assistance in the following areas:

- Assisting in the development of Mutual Aid Agreements between the state and local communities.
- Updating maps for critical infrastructure such as bridges and Tier II Haz-Mat locations.
- Providing technical assistance as needed for use in local and regional evacuation planning efforts.

##### a) Western Region Homeland Security Plan

This plan seeks to enhance the region's capabilities to support homeland security-related public safety efforts, and is guided by the principles established by the Commonwealth in the

Massachusetts State Homeland Security Strategy. The Plan identifies and prioritizes key vulnerabilities that exist in the region, and develops steps to mitigate these potential threats.

Regional solutions were developed in order to strengthen core functions, and provide all public safety agencies the tools required to effectively prevent, provided early response, and recover from terrorist events or other high profile events that threaten security. The Plan also defines funding levels to address the identified priorities and improve interoperable communications and overall emergency preparedness through focused training exercises and upgraded equipment.

## **2. Transit Security**

The Pioneer Valley Transit Authority (PVTA) has undertaken extensive efforts in order to increase the security of the regional transit system. This includes the development of an emergency operations plan for the agency and the installation of security cameras on their entire fleet of buses as well as at all transit facilities. The PVTA has participated in ongoing regional emergency drills and has also provided extensive emergency training for their staff. Most importantly, the PVTA has committed transit vehicles for use in situations that may require the evacuation of residents.

## **3. Rail Security**

Similar to rail service itself, rail security is usually defined by both passenger and freight rail services. Separated into two parts: passenger rail and freight rail. Unlike air travel, neither passenger or freight rail transportation services lend themselves to the increased security measures utilized at airports. While each type of rail service has its own security concerns, they must not be separated because they often share the same track. Passenger rail stations are often located in densely populated areas and freight rail transports nearly half of the nation's hazardous waste materials. As a result, the Pioneer Valley Metropolitan Planning Organization has started to integrate both passenger and freight rail security concerns into its regional planning efforts. Representatives from the region's rail providers are invited to participate in monthly Joint Transportation Committee meetings. In addition, all planning studies approved by the MPO include a rail component when appropriate.

### **a) Merrick-Memorial Neighborhood Redevelopment Plan**

The Pioneer Valley Planning Commission in cooperation with the Town of West Springfield and a private consultant developed a redevelopment plan for the Merrick and Memorial sections of West Springfield. The West Springfield CSX Rail Yard has long dominated the physical landscape and functioned as the economic engine for the Merrick and Memorial neighborhoods. One component of this plan included an analysis of existing safety and security procedures at the CSX Rail Yard. This was prepared by Hatch Mott MacDonald, Inc., who conducted on-site day and nighttime inspections of the yard on August 18, 2004.

The West Springfield Rail Yard (QB-100) comprises a system of tracks primarily for the purposes of making up trains and storing rail cars. The northern portion of the yard contains transportation facilities that support CSXI and other industrial uses. Because of the commodities they transport, intermodal train cars have a potential risk of being targeted for theft and vandalism.

CSXT maintains working partnerships with the fire, police and emergency response personnel in the community, providing them with the Community Awareness Emergency Planning Guide to explain the steps required to handle railroad-based emergencies, should they occur. Approximately, 10 to 20 placarded Hazmat cars are routinely transported through the yard per day. They normally are turned around within 24-hours but do not sit in the rail yard for longer than 48 hours. Chemicals such as chlorine, styrene, propane, and liquefied petroleum gas are some of the types of chemicals that CSXT transports.

Trespassing by local residents within the rail yard and adjacent Connecticut River Bridge is frequently a security problem that involves theft and vandalism. Because of the hazardous materials, dangerous equipment and unsafe settings found within the rail yard, this unhindered trespass is significant and needs to be addressed.

A series of safety and security improvements are recommended that address hazardous materials procedures, existing vulnerabilities, and overall security at the CSX Rail Yard so that security planning may be implemented in advance of an incident, rather than in response to an incident as mitigation. It is expected that these improvements will be implemented by CSX. These improvements include:

- Installing physical barriers;
- Installing and securing access gates at portals;
- Installing a closed circuit television system;
- Posting conspicuously located signage;
- Establishing surveillance patrols utilizing two-way radio communications building in sensors; and
- Implementing local sensors, alarms and detectors using localized audible / visual alerts / deterrents.

## **B. IMPROVING REGIONAL SECURITY**

Although the region has made great strides in identifying and addressing potential threats to transportation security, additional deficiencies remain that must be addressed. The following sections summarize the regional needs and strategies that should be considered by the Pioneer Valley MPO to increase transportation security in the region.

### **1. Needs**

A number of needs in the area of Security have been identified for inclusion in the RTP. These needs have been summarized in Table 11-1. Each need has been prioritized as either Immediate, Future or Ongoing. Immediate needs are areas that are a high priority and must be addressed through the implementation of future planning studies and projects. Future needs are considered to be areas of a medium importance that should be address in the development of future projects. Ongoing needs are areas that require routine attention and that are typically already included as part of the regional transportation planning process.

**Table 11-1 – Summary of Security Needs**

<b>Needs</b>	<b>Priority</b>
Protect regional transportation choke points such as bridges, airports, railyards, bus terminals, etc.	Immediate
Ensure the security of mass transit facilities and equipment.	Immediate
Provide for the security of hazardous material transportation in and through the region.	Future
Improve coordination and information exchange between emergency service providers and transportation agencies.	Ongoing
Improve the security of existing freight railyards and facilities.	Ongoing

- a) Protect regional transportation choke points such as bridges, airports, railyards, bus terminals, etc.

A key component of homeland security is the ability to work with federal, regional, local and private partners to identify the critical infrastructure that is at the greatest risk and taking the necessary steps to mitigate these risks. This begins through the identification of our critical links in the transportation infrastructure and the agencies responsible for the maintenance and security of these areas. This is an ongoing process that is defined in the State Homeland Security Strategy (SHSS) for the Commonwealth of Massachusetts. The following needs have been identified as part of the SHSS.

- Continue to establish a prioritized list of potential targets and potential methodologies of attack.
- Share target lists with key officials.
- Identify conditions that may facilitate the ability of a terrorist to carry out an attack.
- Disseminate important information to key entities and support the development and implementation of risk mitigation efforts.
- Develop and track defined performance metrics that will allow for performance based management of risk mitigation efforts.

- b) Ensure the security of mass transit facilities and equipment.

PVTA's maintenance facility in Springfield is increasingly overextended by the needs to repair both buses and vans. This facility was initially constructed to service streetcars and even with numerous expansions over the years has limited space to service the large number of vehicles that PVTA operates. PVTA is considering developing another location for the van maintenance. This other facility will hopefully address further long running difficulties with parking at the Springfield location. A study completed by the PVPC documented the extent of the parking problem at the PVTA in Springfield. It will be important to ensure the safety and security of all of PVTA's facilities and equipment in order to maintain a safe and dependable transit system.

- c) Provide for the security of hazardous material transportation in and through the region.

The Hazardous Materials Transportation Act of 1975 (HMTA), as amended, regulates and enforces the authority of the Secretary of Transportation to protect the Nation against risks associated with the transportation of hazardous materials. In 1990 Congress enacted the Hazardous Materials Transportation Uniform Safety Act (HMTUSA) to clarify conflicting state, local, and federal regulations on the transport of hazardous materials. While it is clear that the transportation of hazardous materials is strictly regulated, it is also important to ensure that the roadways designated for the transportation of hazardous materials are appropriate designed and maintained to facilitate the vehicles used for transport.

- d) Improve coordination and information exchange between emergency service providers and transportation agencies.

Emergency service providers rely on a safe and efficient transportation system in order to minimize their response time. It is important that advance notice be given to these agencies on ongoing construction projects and major incidents that could have negative impacts on their ability to serve the public. Similarly, it is also important to keep the emergency service providers closely

involved in the transportation planning process to ensure that future transportation improvement projects can meet their needs.

- e) Improve the security of existing freight railyards and facilities.

Similar to air and bus transportation, rail transportation has several unique features that leave it vulnerable to attack. Passenger and freight rail serve dense urban areas with multiple points for access. Both also serve vast rural areas that can be difficult to secure. Additional security measures are required that do not result in increases to service time but improve the safety and security of both rail passengers and cargo in the region.

## 2. Strategies

Several different strategies have been developed to address the regional needs identified in the area of Security. These strategies have been summarized in Table 11-2. Again, each strategy has been prioritized as either Immediate, Future or Ongoing. Immediate strategies are considered a high priority and must be advanced in the short term. Future strategies are considered to be areas of a medium importance that should be considered during the development of future projects. Ongoing strategies are typically already included as part of the regional transportation planning process.

**Table 11-2 - Summary of Safety and Security Strategies**

Strategies	Priority
Increase the deployment of cameras and other security devices and measures.	Immediate
Implement new communications and ITS technologies to improve public transit security.	Future
Limit opportunities to access rail facilities and infrastructure.	Future
Develop an inventory of critical transportation choke points, haz-mat routes and users.	Future

- a) Increase the deployment of cameras and other security devices and measures.

The security of the critical elements of our regional transportation infrastructure is a daunting task. Monitoring of key locations such as bridges, transit centers and rail and freight yards can often be supplemented by the installation of video cameras and other ITS devices. It will be important to continue to identify sensitive areas in the region and develop appropriate plans to increase security.

- b) Implement new communications and ITS technologies to improve public transit security.

PVTA has an ongoing ITS program developed through its ITS Architecture, Implementation and Deployment Plan. One component of this plan will allow for vehicle monitoring and improved communications for both drivers and passengers. The Pioneer Valley MPO should invest in the advancement of ITS equipment for the PVTA to improve operational efficiency, give passengers real time information about schedules, provide critical emergency information to first responders, and interface the transit ITS components with the other ITS infrastructure in the region.

- c) Limit opportunities to access rail facilities and infrastructure.

As stated previously, the security of the regional rail facilities and infrastructure is an important security need for the region. It will be critical to maintain a close relationship with the existing

owners of active rail lines to identify their needs and assist in the development and implementation of security planning activities. Railroads already have existing relationships with local officials with regards to hazardous materials response. These relationships are the logical starting point of discussing homeland security concerns with the regions rail carriers. Locations should also be identified for the installation of security fencing to both promote security and increase safety by restricting areas in which pedestrians can access active rail lines.

- d) Develop an inventory of critical transportation choke points, hazardous material transportation routes and users.

While it is clear that the transportation of hazardous materials is strictly regulated, it is also important to ensure that the roadways designated for the transportation of hazardous materials are inventoried on a regular basis to identify potential problems areas. This information can be collected as part of ongoing pavement management, bridge management and congestion management programs conducted by the state and the region. It will also be important to share this information with transportation providers.

# CHAPTER 12

## ENVIRONMENTAL CONSULTATION AND MITIGATION

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) included a number of new provisions that relate to environmental planning. Regional Transportation Plans must provide information on the efforts to consult with state and local agencies responsible for environmental, land use, and preservation in the development of the RTP. In addition, the RTP must include a discussion of the types of potential environmental mitigation activities and potential areas to carry out these activities. The following sections demonstrate how the new SAFETEA-LU requirements have been integrated into the RTP for the Pioneer Valley Metropolitan Planning Organization.

### A. ENVIRONMENTAL CONSULTATION

The Pioneer Valley Metropolitan Planning Organization must consult “as appropriate” with state and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation to develop the long range transportation plan. To comply with this requirement of SAFETEA-LU, draft copies of the RTP were sent to a variety of state and local agencies. A complete list of these agencies is shown in Table 12-1.

**Table 12-1 - Environmental Consultation on the Draft RTP**

Massachusetts Historical Commission	Massachusetts Department of Public Health
Massachusetts Division of Fisheries and Wildlife	Connecticut River Watershed Council
Route 9 Transportation Management Association	Department of Conservation and Recreation
Massachusetts Audubon Society	Rails-to-Trails Conservancy
The Kestrel Trust	American Heart/Stroke Association
United States Fish & Wildlife Department	Massachusetts Public Health Association
Parks for People New England - Trust for Public Land	International Council for Local Environmental Initiatives (ICLEI)
MassBike Pioneer Valley	Army Corp of Engineers
Norwottuck Rail Trail Advisory Committee	Barnes Aquifer Protection Advisory Committee
Westfield River Wild and Scenic Committee	Appalachian Mountain Club
Local Planning Departments	Local Departments of Public Works

Each of the above agencies were sent one copy of the Draft RTP. An offer was also extended to meet with each agency to discuss the Draft RTP in greater detail. Existing relationships with many of the above agencies were in the development of the regional transportation needs and strategies included in Chapter 5 of this document. Other ongoing initiatives such as the results of a project for the I-91 corridor with local communities and ICLEI were included in the RTP as appropriate.

## **B. MASSACHUSETTS ENVIRONMENTAL MITIGATION**

Throughout the region, the Pioneer Valley Planning Commission is leading a wide array of policies, programs and actions geared towards preserving this region's high quality of life, a large portion of which is attributable to the health of the local environment. In addition to state and federal protections given to the natural community, PVPC is working through several programs in the Commonwealth to preserve the region's environmental quality.

### **1. Regulatory Protection for Habitat and Wildlife in Massachusetts**

Massachusetts has a long track record of passing progressive, forward thinking environmental policies. The protections given to Massachusetts' endangered species, wetlands and rivers are among some of the nation's most effective rules and regulations. All construction and transportation projects that take place within PVPC's jurisdiction will comply with the regulations listed below. This will result in mitigation measures that are built into the project from the earliest phase.

#### **a) National Heritage Endangered Species Program**

The National Heritage Endangered Species Program protects crucial habitat for terrestrial and aquatic plants, vertebrates and invertebrates. In Massachusetts, the Massachusetts Endangered Species Act (MESA; M.G.L. c 131A) serves as the regulatory framework for promoting the conservation of rare species habitat. On July 1, 2006, delineated boundaries of rare and endangered species habitat were redrawn to incorporate current scientific data about the extent, occurrence and range of habitat.

Massachusetts National Heritage Endangered Species Program staff evaluate projects when they fall within an area that has been identified as priority habitat for a rare animal or plant species. This process is initiated when a proponent files documentation with NHESP detailing work proposed within a NHESP habitat area. Within 30 days, staff from NHESP respond, indicating whether or not the submission is complete; 60 days after that, NHESP determines whether or not a project, as proposed, will result in the "take" of a rare species. Should that be the case, NHESP might require a redesign of the project to avoid a "take". If a project cannot be amended to avoid a "take", the proponent can only be issued a Conservation and Management Permit. To qualify for a Conservation and Management Permit, a proponent must submit alternative assessments of temporary and permanent impacts to species, demonstrate that a proposed project will impact only an insignificant portion of the local population of a state-listed species and design and implement a conservation management plan that provides for the long-term net benefit of the affected state-listed species. This net-benefit mitigates adverse impacts on species through on or off-site permanent habitat protection, management or restoration of state-listed species habitat or conservation research designed to benefit the species affected by a given project.

For issues relating to transportation projects, there are some key exemptions granted: utility repairs within 10 feet of existing paved roads; maintenance, repair or replacement (but not widening of) existing paved roads; shoulder repair up to four feet; paved parking areas, excluding actions that would change stormwater drainage.

### **2. Wetlands Protection Act**

If it is alleged that a project is located within a wetland, a proponent must go before the appropriate local Conservation Commission to request a wetlands delineation. If a project occurs within the mandatory 100' protective buffer established through the WPA, a proponent must file a Notice of Intent (NOI) detailing the proposed alterations to the site. Thirty days after this letter is received NHESP will respond to the NOI. If the project is determined to have an impact on a wetland(s), the NHESP requires conditions for approval. The Order of Conditions, as these conditions are formally

known, outline necessary steps for preserving any affected wetlands. These terms are enforced by the local conservation commission and *must* be complied with during and after the construction process. The Massachusetts WPA has been nationally acknowledged as one of the nation's most effective regulatory approaches to wetlands conservation.

Exemptions listed above for the NHESP also apply to the Wetlands Protection Act (M.G.L. c. 131, s.40 and 310 CMR 10.00). In addition to regulating wetlands, the WPA also regulates intermittent streams.

### **3. The River Protection Act**

Chapter 258 of the Acts of 1996 restricts development within 200 feet of the annual mean high water mark for Massachusetts' 9,600 miles of rivers. In some urban areas, including Springfield, this buffer is reduced to 25 feet. This act accomplishes the goal of:

...the protection of public and private water supply, protection of groundwater supply, protection of land containing shellfish, protection of wildlife habitat, flood control, storm damage prevention, prevention of pollution, and protection of fisheries.... [and to] protect the natural integrity of rivers and to encourage and establish open space along rivers.

Transportation infrastructure that was in existence, or in the process of being permitted, at the time of the passage of the Rivers Act are exempt, but new construction is not. For this reason, project proponents operating within PVPC's member communities must work with DEP to ensure that no encroachment on the 200 foot or 25 foot buffer occurs.

In addition to protecting this resource area, the Commonwealth has also issued Stormwater Management standards and guidelines to complement the Wetlands Protection Act and the Rivers Act. Project proponents must work with the local Conservation Commission and the Department of Environmental Protection to ensure that there is no net change in stormwater discharge between pre-development and post-development runoff conditions and to minimize pollutant loading in the affected waterbodies. This process commences with the filing of a Notice of Intent; mitigating measures are issued as part of the Order of Conditions that a project proponent must comply with throughout and after the development process.

### **4. Massachusetts Environmental Policy Act (MEPA)**

The Massachusetts Environmental Policy Act (MEPA) requires that state agencies study the environmental consequences of their actions and take all feasible measures to avoid, minimize, and mitigate damage to the environment. MEPA applies to projects that trigger predefined thresholds and that involve some state agency action. This includes projects that are proposed by a state, municipal, or nonprofit agency, or are proposed by a private party and require a permit, financial assistance, or land transfer from a state agency.

The MEPA process requires public study, disclosure, and development of feasible mitigation for proposed projects. It does not make decisions on the environmental benefits of projects, or determine if a project can or should receive a particular permit. Those decisions are left to the respective permitting agencies. MEPA review occurs before permitting agencies act, to ensure that they know the environmental consequences of their actions. The following information on the Great River Bridge Project in Westfield is included as an example of the analysis conducted and mitigation developed as part of the MEPA process.

#### a) Great River Bridge MEPA Review

The Great River Bridge has been thoroughly evaluated through the Massachusetts Environmental Protection Act Review process, and mitigation measures have been proposed. In 1997, a MEPA filing for the proposed Great River Bridge improvement project over the Westfield River was submitted to the Executive Office of Environmental Affairs in compliance with the Massachusetts Environmental Policy Act (301 CMR 11.00). In this report (dated September, 1997), the impacts of the Great River Bridge project on land use, traffic and safety, relocation of commercial properties, air quality, noise, water quality, surficial geology and soils, wildlife, wetlands, floodplains, historic resources, archaeological resources, oil and hazardous materials were evaluated. In this report, the following findings were presented for the following environmental impacts:

- Land Use—preservation of free flowing condition of the river and no flooding impacts on the river
- Air Quality—will be improved from an 18.4 percent decrease in the emissions of volatile organic compounds. Emissions of nitrogen oxides will increase by 7.9 percent, attributable to increased vehicle speeds. Net decrease in emissions of ozone precursors and will result in an improvement in regional air quality.
- Noise—no change or slight, imperceptible decreases
- Water Quality—negligible impact on the water quality of the Westfield River. The increase in roadway surface will be 39,040 square feet, and a storm drainage system with catch basins with sediment sumps will be constructed and connected to the city's existing drainage system. Minor increases in pollutant loadings will result, leading to mean copper concentrations during a 3-year storm event that are only 1/19 of the chronic water quality criterion; lead and zinc are well below this threshold. A construction period erosion and sedimentation control plan will be prepared in accordance with the standards and protocols established by NRCS, such measures will include clearly delineating work site boundaries and installing erosion control barriers; steep slopes stabilization and wetland buffering will prevent sedimentation of the river. Stabilized rock entrances for construction sites, signed and identified refueling sites will be constructed and water quality will be monitored in the project area.
- Surficial Geology and Soils—negligible impact
- Wildlife—minor impacts due to location of habitat areas, which are on the lower banks of the river. Plantings of food species and continuous wildlife travel corridors will enhance habitat.
- Wetlands—impacts are unavoidable due to location of this project; approvals will be sought from the U. S. Army Corps of Engineers under the Federal Clean Water Act, as well as the Westfield Conservation Commission under the Massachusetts Wetland Protection Act. Mitigation will be provided in the form of compensatory wetlands.
- Floodplains—a hydraulic study conducted for the project concluded that there are no negative impacts to the floodplain resulting from the construction of this project. Total permanent impacts to the 100-year floodplain are 974 cubic meters (1,300 cubic yards). Additional temporary construction period impacts total 1,376 cubic meters.
- Historic Resources—This project will have direct impacts on two bridges which have been found to be eligible for National Register Listing: the Great River Bridge will be sensitively rehabilitated for continued use, and the superstructure of the Pioneer Valley Railroad Bridge over the Westfield River will be raised to accommodate the change in grade proposed for the set of train tracks. Project impacts on both bridges will be reviewed by the Massachusetts Highway Department and the Massachusetts Historical Commission under section 106 in order to avoid/minimize/mitigate any adverse effects to either structure.
- Archaeological Resources—a reconnaissance survey identified a number of archaeologically sensitive areas adjacent to the Westfield River. An intensive survey will be conducted to locate traces of potentially significant prehistoric and historic period sites.

- Oil and Hazardous Materials—An initial site assessment identified an area of polycyclic aromatic hydrocarbon (PAH) and total petroleum hydrocarbon (TPH) soil and groundwater contamination in excess of the Upper Concentration Limits of the Massachusetts Contingency Plan. These compounds were detected at a depth of 6 meters (20 feet) in the northwest corner of Wojtkiewicz Park on the south bank of the river, adjacent to the existing Great River Bridge. The contamination is at a depth that will not result in direct exposure to the general public, as construction activities will not directly impact the area of contamination.

## C. REGIONAL ENVIRONMENTAL MITIGATION EFFORTS

Regional planning agencies have no regulatory authority or other implementation powers in Massachusetts. Consequently, the Pioneer Valley Planning Commission has relied upon its connections with the region’s municipalities, non-profit sector, academic institutions, businesses and informed citizenry to incorporate environmental quality enhancements across a wide range of planning topic areas. This section details the ways in which PVPC has taken a leadership role in mitigating the environmental problems and challenges the region is facing.

### 1. Land Use Planning on the Regional Scale

The Pioneer Valley Planning Commission is a leader in promoting land use policies—in the form of zoning bylaws, general bylaws, amendments to subdivision regulations and regional planning—that encourage development practices that are *both* environmentally sustainable and sensitive to the needs of the local business community. This has resulted in a series of programs and policies that seek to address environmental issues on a regional scale. The mitigation measures PVPC has successfully developed and implemented are listed below.

### 2. Valley Vision 2

Valley Vision 2 is the regional land use plan for the Pioneer Valley. It is a Smart Growth plan in that it is designed to promote compact, mixed use growth in and around existing urban and town centers, while promoting protection of open space and natural resources outside developed centers.

Valley Vision 2 consists of seven parts:

- The Plan – describes the costs of sprawl in the Pioneer Valley, 16 smart growth strategies, and smart growth success stories from around the region.
- The Toolbox – available in compact disc format, the Toolbox describes smart growth strategies in more depth and includes model bylaws/ordinances, design examples and photo-simulations of smart growth principles. The Toolbox includes several actions designed to benefit local environmental conditions, such as: developing incentives for cluster development, redeveloping Brownfields, preserving farmlands and supporting farm businesses, establishing greenbelts and blue ways for open space protection, building an inter-modal pedestrian bicycle and transit network, protecting environmental quality.
- The Map – illustrates locations recommended for more compact growth, lands for environmental protection and open space greenbelts, Brownfields redevelopment sites and Chapter 40R smart growth districts.
- The Compact – an intergovernmental compact for adoption of Valley Vision 2 by communities to promote mutual consistency of local and regional plans and zoning.
- Pilot Projects – PVPC encourages public-private partnerships to develop real construction projects bringing smart growth concepts to life in the Pioneer Valley.

- The Website – increased general public involvement and education on smart growth is promoted through a uniquely interactive website, providing access to the plan and smart growth tools in digital format.
- Public Outreach and Local Technical Assistance – PVPC will offer ongoing support and local technical assistance to community officials interested in implementing smart growth strategies or securing EOEA Smart Growth grants.

To date, 36 of PVPC’s member communities have endorsed Valley Vision 2 and PVPC fully intends to work with these communities in a collaborative manner to implement smart growth within the region.

### **3. Westfield River Wild and Scenic River and Advisory Committee**

In 1993, the Westfield River, located in the western Hampshire and Hamden Counties, received Federal Wild and Scenic River Designation for its remarkable and unique geological features, fish populations, scenic vistas and cultural resources. When a project either receives federal funding or requires a permit from a federal agency *and* is located within a quarter mile of the mean high water mark of sections of the Wild and Scenic Sections of the Westfield River, the proponent must obtain comments from the National Park Service (NPS). The NPS is one of several federal and state agencies that sign off during the review process of a proposed project’s plans. This process is designed to ensure that the river’s remarkable wild and scenic qualities are considered during the planning stages of a project. The NPS is the designated federal administering agency for the Westfield River.

In addition to the federal protections granted to the Westfield River, a regional committee has been formed to promote policies that preserve the Westfield River. This committee is known as the Westfield River Wild and Scenic Advisory Committee, and it is composed of appointed representatives from Huntington, Cummington, Chester, Chesterfield, Middlefield, Worthington, Savoy, Becket, the Pioneer Valley Planning Commission, the Trustees of Reservations, the Massachusetts Riverways Program, National Park Service and the Berkshire Regional Planning Commission.

Through the efforts of this committee, each of the communities that the Westfield River flows through has adopted some version of the Westfield River Wild and Scenic Bylaw. This bylaw restricts industrial and commercial uses within 100 feet of the water line (150 in Huntington) and regulates land use types to prevent pollutants from entering the river. The Pioneer Valley Planning Commission is currently in the process of leading the effort to update this bylaw to set aside a 200 foot buffer and restrict the accumulation of trash and parked cars along the shoreline. Once PVPC has helped the member communities adopt and implement this bylaw, surface water contamination will be mitigated through further increasing the scenic and physical protections granted to the Westfield River.

### **4. Regulatory Framework for Promoting Ecologically Sound Landscapes**

Throughout the region, PVPC has led efforts to reform the outdated 1950’s era zoning regulations of many of the region’s cities and towns. This promotes development that is more in keeping with the historical character of New England, and has occurred through funding received from the Commonwealth’s Smart Growth Technical Assistance Program (FY 05, 06 & 07). PVPC has been a leader in the passage and implementation of cluster development bylaws, mixed use bylaws, low impact development standards, transfer of development rights programs, steep slope and open space overlay districts as well as revising subdivision regulations. In concert, these policies support a regional response to promoting development that preserves open space, encourages sustainability and is environmentally friendly.

## 5. Regional Planning For Open Space

### a) Farmland

PVPC has worked with stakeholder groups, non-profits, municipalities and private citizens to develop long-range visions for preserving the Pioneer Valley's most important environmental assets. In 2001, PVPC released *Growing Together: a Strategic Plan for Integrating Agriculture and Growth Management in the Connecticut River Valley of Massachusetts*. This document contained key actions steps for using economic development, zoning and public awareness to preserve the region's farmland.

PVPC has assisted four communities: Hadley; Hatfield; Easthampton; and Westfield to adopt Transfer of Development Rights bylaws or ordinances. These bylaws can help to mitigate the impacts of development on farmland by using private development funds to purchase development rights on farmland in return for high density development projects elsewhere in these communities. Hadley has also received contributions to its Route 9 mitigation fund from commercial developers along the Route 9 corridor; these funds have been used to preserve farmland.

### b) Greenways and Habitat Corridors

In 2001, PVPC prepared a regional map and plan for preserving the Pioneer Valley's greenways focus areas. This plan identified the Holyoke Range, the Metacomet-Manadnock-Metabessett (MMM) Trail, the Upper Westfield River, the Manhan River, The Upper Connecticut River Valley, the Scantic River and Mount Hitchcock as target areas.

To accomplish these goals and preserve the region's environmental legacy, PVPC has completed the following tasks:

- Worked with the National Park Service on a recent feasibility study for designating the MMM Trail as a National Scenic Trail.
- Crafted new regulatory protections for key sections of the Westfield River
- Promoted the passage of local funding mechanisms (the Massachusetts Community Preservation Act, chiefly) to secure local funding for land preservation efforts.

## 6. Water Quality Mitigation

PVPC has been a key collaborator and project leader on several water quality efforts within the region. The regional nature of water quality issues has required PVPC to straddle political boundaries and form coalitions that are capable of working towards the long term goal of high-quality surface and groundwater supplies throughout the region. These projects and programs listed below detail the extent of PVPC's mitigation efforts.

## 7. Source Water Protection Plans

PVPC has written and drafted Source Water Protection Plans for several member communities. A Source Water Protection Plan is a guidance document for the protection of municipal water supplies. A Source Water Protection Plan examines all the factors that affect the watershed of a water supply including existing land uses and potential land uses allowed under current zoning, protected open space, public access and recreation, wildlife, and any other concerns of the community related in reference to the water supply. These plans make recommendations on the best practices for addressing any problems identified during the course of the assessment and protecting the quality and quantity of the water supply. The towns of Cummington, Easthampton, Hatfield, Huntington, Russell and the

Granville Reservoir have worked with PVPC to develop action plans for preserving their water supplies.

## 8. Combined Sewer Overflow Clean-Up

In 1995, the Massachusetts Department of Environmental Protection (DEP) noted in its report *Connecticut River Watershed Resource Assessment and Management Report* (DEP Office of Watershed Management, March 1995) that

“the water quality of the entire length of the Connecticut River main stem in Massachusetts does not support uses designated for Class B (fishable/swimming) waters. This non-support status is due to the presence of priority organics, in particular, PCBs (polychlorinated biphenols), which violate DEP’s new water quality standards for organics, along the entire length of the river. Below the Holyoke Dam, the water quality standards are not met due to pathogens (as measured by coliform bacteria) and suspended solids primarily from urban runoff, combined sewer overflows and unknown sources.”

In a 1997 report, the New England Interstate Water Pollution Control Commission (*The Health of the Watershed, EIWPCC, January 1997*) noted that the key water quality issues on the Connecticut River in Massachusetts are CSOs in the segment below the Holyoke Dam, PCBs in fish in the entire length of the river, coal tar in the river in Holyoke, and flow regulation and fish passage above the Turners Falls Dam.

One hundred thirty four combined sewer overflows (CSOs) were identified in the seven communities located in the southern reach of the Connecticut River below the Holyoke Dam, in a 1988 engineering study completed for the Massachusetts Division of Water Pollution Control. This study, the Lower Connecticut River Phase II Combined Sewer Overflow Study (Metcalf & Eddy, Inc.), identified CSO locations, water quality issues associated with CSOs, and steps and costs for addressing the problem. CSO issues in seven communities—Agawam, Chicopee, Holyoke, Ludlow, South Hadley, Springfield, and West Springfield—were addressed in this study. The study determined that ninety percent of existing CSO discharges would need to be eliminated within the seven communities to achieve the fishable/swimable goal, at a cost of \$377 million. In 2005, 72 CSOs in six communities remained. Agawam has eliminated all of its CSOs. This constitutes a forty percent reduction in the number of CSOs between 1988 and 2002. Dry weather overflows were reduced from thirty one in 1988 to zero in 2005.

Connecticut River communities have responded to EPA administrative orders with ambitious projects to develop Long-term CSO Control Plans and by accelerating the pace of needed CSO abatement projects. Holyoke has spent \$500,000 and Springfield has spent over \$1.1 million to date to develop CSO plans.

The City of Holyoke is facing an estimated \$45 million in costs to implement its plan for CSO control, which will raise local sewer rates by 61% to 81% to over \$500 per household. The City of Springfield is facing a total CSO cost of \$139.7 million, which will raise local sewer rates at least 66% to \$384 per household. The City of Chicopee is facing the largest CSO price tag of \$140 million. The total clean-up cost for the three cities is now estimated at \$325 million.

In 1999, the Pioneer Valley Planning Commission and the Interstate Coalition for Connecticut River Clean-up launched an interstate campaign to seek a federal budget line item to provide funding for clean up of CSOs. With the assistance of Massachusetts and Connecticut legislators, a total of \$9.5 million has been approved for this purpose over seven consecutive federal fiscal years between FY99 and FY07, and divided between Massachusetts and Connecticut communities. When combined with local match monies, the total value of CSO projects in Massachusetts and Connecticut funded under this campaign is \$17.2 million to date.

## **9. Barnes Aquifer Protection Advisory Committee**

The Barnes Aquifer is a sole-source aquifer west of the Connecticut River that serves as the municipal drinking water supply for four growing communities. The natural interdependence that results from sharing and directly impacting this regionally significant water supply gave rise to a collaborative effort, facilitated by PVPC, that is designed to protect and safeguard the Barnes Aquifer.

The Barnes Aquifer Protection Advisory Committee (BAPAC) is a coalition of four communities—Westfield, Holyoke, Easthampton and Southamptton—and the Pioneer Valley Planning Commission (PVPC), which work together to protect the Barnes Aquifer, an important regional groundwater resource. The chief elected official of each member community appoints three representatives to the committee. These municipal members currently represent water, planning, conservation, and community development departments. PVPC designates one representative for the committee.

BAPAC educates and advises local governments, citizen groups, and small businesses about groundwater protection and effects on the aquifer. The committee reviews Developments of Regional Impact (DRI) within the aquifer and provides comments to approval authorities. DRI reviews evaluate both the proposed use and its potential for aquifer contamination and, provisions within the site plan for treatment and infiltration of clean stormwater. DRI comments evaluate the proposed project's level of compliance with the local aquifer protection zoning bylaw and recommends Best Management Practices for aquifer protection that may have been overlooked by the proponent.

BAPAC is a truly regional response to an environmental issue of regional significance.

## **D. REGIONAL AIR QUALITY PLANNING ACTIVITIES**

PVPC has formed partnerships with non-profits and municipalities to develop an action step for improving the region's air quality, specifically in relation to pollution that is a by-product of daily transportation uses. The following activities listed below detail the extent of PVPC's commitment to improving air quality.

### **1. International Council of Local Environmental Initiatives – Interstate 91 Assessment**

In 2006, PVPC began a partnership with the International Council of Local Environmental Initiatives (ICLEI) and the Cities of Holyoke, Northampton and Chicopee to assess the greenhouse gasses and other air pollution emissions coming from the region's transportation sectors. This assessment will provide local elected officials with a baseline analysis of the region's emissions profile, giving local elected officials a detailed understanding of steps that can be locally implemented to reduce greenhouse gasses. This analysis will provide decision makers with a clear picture of where greenhouse gasses originate from within the region and enable clear, practical approaches to reducing emissions in an incremental, cost-effective manner.

### **2. Voluntary Vehicle Recycling Program**

The Massachusetts Department of Environmental Protection and PVPC have partnered in a pilot program that has successfully removed older polluting cars from the region's streets and ways. The Voluntary Vehicle Recycling Program pays owners of cars that are legally operable a maximum of \$500 towards the trade-in value of a car that was built before 1994. Recycled vehicles are dismantled at a licensed scrap yard and the components are sold on the open market for their raw value. To date, PVPC has purchased 64 cars throughout the region and an estimated 319,000 pounds of Carbon Dioxide have been removed from the region's emissions stream.

### **3. Idling Reduction**

In 2006, PVPC worked with DEP to reduce idling vehicles in Amherst, Northampton and Easthampton. This involved a public awareness campaign that extended to municipal fleets, municipal signage, and the distribution of fliers and stickers within the school systems. Citizens were made aware of the five minute idling limit that exists in Massachusetts (M.G.L. Chapter 90 Section 16 A, Chapter 111, Section 142A, 310 CMR 7.11), and signs were posted to encourage citizens to comply with this five minute limit. This was designed to improve air quality and reduce the amount of air pollutants within the region's air column.

### **4. Regional Clean Energy Plan**

Beginning in 2004, PVPC initiated a two year partnership with the Massachusetts Technology Collaborative to involve citizens of the region in a long-term, sustained collaborative planning effort, the main focus of which was the development of a regional clean energy plan. Throughout the process, it became clear that the region wants to support the growing alternative energy economy while reaping the positive environmental benefits that would result from using cleaner electricity generating energy sources. The action steps that emerged from this regional planning exercise were:

- Reduce the region's demand for energy (electricity, heating, and transportation fuels) to 2000 levels by the end of 2009 and then reduce that by 15% between 2010 and 2020. This is equal to a reduction in our use of electricity by 4.4 trillion BTUs and our use of transportation fuels by 7 trillion BTUs by 2020. Achieving this reduction in energy use would have the same positive effects as removing 150,000 vehicles from Pioneer Valley roads.
- Site 100 Mega Watts of clean energy power capacity in the Pioneer Valley by 2009 and replace 15% of the total fossil and nuclear fuels used for lighting, heating, and transportation with renewables by 2020. This is equal to developing clean energy facilities generating 4.4 trillion BTUs in electricity and heating, as well as 7 trillion BTUs of clean transportation fuels by 2020. The environmental and public health benefits of this action, with respect to the vastly reduced emissions caused by clean energy sources versus fossil fuels, are equivalent to removing an additional 150,000 vehicles from Pioneer Valley roads.
- Reduce the region's greenhouse gas emissions by 3 percent on an average annual basis toward meeting a 30% reduction below year 2000 levels by 2020 and an 80% reduction by 2050 through a combination of reduced electricity use; transition of 'dirty' electricity to 'clean' electricity; reduced energy use due to 'green' building practices, alternative transportation and smart growth; technological improvements; replacement of carbon fuels with clean (bio) fuels; and other actions as detailed in the recommendations section of this plan.
- Create local jobs in the growing clean energy sector.

## **E. ENVIRONMENTAL REVIEW OF PROJECTS INCLUDED IN THE RTP**

All of the projects included as part of the Regional Transportation Plan for the Pioneer Valley Metropolitan Planning Organization were reviewed to assess their potential environmental impacts. This preliminary analysis was conducted using overlays of the following resource data:

- Registered Wetlands in the Pioneer Valley Region
- Registered Historic Districts in the Pioneer Valley Region
- National Heritage Endangered Species Program Priority Habitat Areas
- Valley Vision 2 Land Suitability Map for Development and Open Space

The projects identified in Chapter 5 and in Figure 5-9 were overlaid on the above referenced data to provide a review of their potential environmental impacts. Table 12-2 summarizes the potential impacts of each project. The “Construction” column identifies projects that have the potential to add to the existing highway system through the construction of a new roadway or bikeway, expansion of existing right way, or other associated development. The National Heritage Endangered Species Program (NHESP) Habitat column identifies projects that could potentially impact priority habitat areas under this program. Projects that were found to impact “Cultural Resources” could have potential impacts on registered Historic Districts, existing Town Common areas, and stone walls. Projects identified as having potential “Water Supply” impacts lie in close proximity to existing wetlands or aquifer protection areas.

**Table 12-2 – Environmental Impacts Matrix**

<b>Project</b>	<b>Community</b>	<b>Construction</b>	<b>Priority</b>	<b>NHESP Habitat</b>	<b>Cultural Resources</b>	<b>Water Supplies</b>
South End Bridge Improvements	Agawam	Yes	High	Yes-Riverine	No	No
Improvements to Route 5 Access Ramps	Agawam	Yes	High	Yes-Riverine	No	No
Route 5 Signal Coordination	Holyoke/W. Spring	No	High	No	No	No
I-91 Exit 19 Improvements	Northampton	Yes	High	Yes-Riverine	No	No
Pleasant Street and Conz Street intersection improvements	Northampton	Potentially	High	No	No	No
Damon Road Reconstruction: Rte. 9 to King St. (Rte. 5)	Northampton	Yes	High	Yes-Riverine	No	No
Commuter Rail - Springfield to New Haven	Regionwide	No	High	N/A	No	No
Track improvements Springfield to Northampton	Regionwide	No	High	N/A	No	No
Traffic signal coordination projects	Regionwide	No	High	N/A	No	No
PVTA fleet replacement	Regionwide	No	High	N/A	No	No
Southern I-91 ITS Improvements	Regionwide	Yes	High	No	No	No
Massachusetts Turnpike off ramp congestion improvements	Regionwide	No	High	No	No	No
I-291 congestion improvements	Regionwide	No	High	N/A	No	No
Regional Railroad Grade crossing improvements	Regionwide	No	High	N/A	No	No
Regional Park and Ride Lot improvements	Regionwide	Yes	High	N/A	No	No
Enhanced transit connection Springfield/Holyoke/Amherst	Regionwide	No	High	N/A	No	No
Community transit routes	Regionwide	No	High	N/A	No	No
Rack & Roll southern region	Regionwide	No	High	N/A	No	No
Transportation Improvement Program Primer for Local Officials	Regionwide	No	High	N/A	No	No
Transit Facility Improvements	Regionwide	Yes	High	N/A	No	No
Freight congestion improvements	Regionwide	No	High	N/A	No	No
Real time passenger information	Regionwide	No	High	N/A	No	No
AVL transit system integrator	Regionwide	No	High	N/A	No	No
511 implementation	Regionwide	No	High	N/A	No	No
I-291 Slip Ramp Project	Springfield	Yes	High	No	No	No
State Street Improvement Project	Springfield	Yes	High	No	No	No
Allen Street and Cooley Street intersection improvements	Springfield	Yes	High	No	No	No

**Table 12-2 – Environmental Impacts Matrix (cont.)**

<b>Project</b>	<b>Community</b>	<b>Construction</b>	<b>Priority</b>	<b>NHESP Habitat</b>	<b>Cultural Resources</b>	<b>Water Supplies</b>
Union Station Redevelopment	Springfield	Yes	High	No	No	No
Improvements to Union Street rail underpass	West Springfield	Yes	High	No	No	No
Great River Bridge Construction	Westfield	Yes	High	Yes-Riverine	No	No
Connector, Route 5 to Route 57 (over Route 5/57 rotary)	Agawam	Yes	High	No	No	No
South End bridge pedestrian link Agawam and Springfield Riverwalk	Agawam/Springfield	Yes	High	No	No	No
Transit Center	Holyoke	Yes	High	No	Yes-Historic	No
Transit Center	Westfield	No	High	N/A	No	No
Feeding Hills Center improvements	Agawam	Yes	Medium	No	No	No
Rt 9 transit priority	Amherst/Hadley/Nham	Yes	Medium	No	Yes - Hadley Center Historic District	No
Front Street reconstruction/replace signals	Chicopee	No	Medium	N/A	No	No
Davitt Bridge Improvements	Chicopee	No	Medium	N/A	No	No
Fuller Road Improvement Project	Chicopee	No	Medium	N/A	No	No
Rotary Improvements	East Longmeadow	No	Medium	N/A	No	No
Automated closure of Mountain Rd - Easthampton	Easthampton	No	Medium	N/A	No	No
Route 9 improvements	Goshen	No	Medium	N/A	Yes-Mountain Rest	No
I-91 exit 17 at Route 141 intersection improvements	Holyoke	Yes	Medium	No	No	No
Improved East-West Access Study	Holyoke	No	Medium	N/A	No	No
Lower Westfield Road at Homestead Avenue intersection improvements	Holyoke	No	Medium	N/A	No	No
Route 112 Bridge Improvements	Huntington	No	Medium	N/A	No	No
Route 5 Traffic Signal Improvements	Longmeadow	Yes	Medium	Yes-Riverine	Longmeadow Street / North Historic District	No
Route 9 at Bridge Road roundabout	Northampton	No	Medium	N/A	No	No
Manhan Rail Trail-Norwottuck Rail Trail Downtown Connector Link	Northampton	Yes	Medium	No	No	No
Manhan Rail Trail from Earle Street to Ferry Street	Northampton	Yes	Medium	Yes-Riverine	Yes-Hospital Hill	No

**Table 12-2 – Environmental Impacts Matrix (cont.)**

Project	Community	Construction	Priority	NHESP Habitat	Cultural Resources	Water Supplies
Transit Center	Northampton	No	Medium	N/A	Yes-Downtown Historic District	No
Track Expansion Palmer Ind Park	Palmer	No	Medium	N/A	No	No
East/West high speed rail	Regionwide	Yes	Medium	N/A	No	No
North/South commuter rail	Regionwide	Yes	Medium	N/A	No	No
Double stack improvements	Regionwide	No	Medium	N/A	No	No
Bikepath network continuity	Regionwide	Yes	Medium	N/A	No	No
On-street bike lanes	Regionwide	No	Medium	N/A	No	No
MUTCD Signal Upgrades	Regionwide	No	Medium	N/A	No	No
Inventory of locations with inadequate vertical and lateral clearance	Regionwide	Yes	Medium	N/A	No	No
Develop regional trip planner	Regionwide	No	Medium	N/A	No	No
Boston Rd between Parker St and Wilbraham town line	Springfield	Yes	Medium	No	No	No
CT Riverwalk pedestrian access improvements	Springfield	Yes	Medium	Yes-Riverine	No	No
Allen Street at Bicentennial Highway intersection improvements	Springfield	Yes	Medium	No	No	No
Bay St @ Berkshire Ave intersection improvements	Springfield	Yes	Medium	No	No	No
Improvements to 1st and 2nd St/Bridge St Railroad crossing	West Springfield	No	Medium	N/A	No	No
Route 20 corridor improvements	West Springfield	Yes	Medium	No	No	No
Morgan Road at Piper Cross Intersection Improvements	West Springfield	Yes	Medium	No	No	No
Westfield State College Access Road to Western Avenue	Westfield	Yes	Medium	No	No	No
Rte 187 traffic improvements-Highway and Bridge Improvement	Westfield	No	Medium	N/A	No	No
Track Expansion Westfield Ind Park	Westfield	No	Medium	N/A	No	No
Route 57 Phase II - Route 187 to Southwick Town Line	Agawam	Yes	Medium	Yes-Farmlands, Forest	No	No
Bikeway - Main Street to Robinson State Park	Agawam	Yes	Low	No	No	No
Route 116 Relocation: 5300ft. north from S. Hadley TL	Amherst	Yes	Low	Yes-Upland Forest	No	No
Replacement of UMass Transit Facility	Amherst	No	Low	N/A	No	No

**Table 12-2 – Environmental Impacts Matrix (cont.)**

Project	Community	Construction	Priority	NHESP Habitat	Cultural Resources	Water Supplies
Transit Center	Belchertown	Yes	Low	N/A	Yes-Belchertown Center Historic District	Yes
Chicopee Riverwalk	Chicopee	Yes	Low	Yes-Riverine	Yes-Dwight Manufacturing Company Housing District	No
Connecticut Riverwalk Plainfield Street to Nash Field	Chicopee	Yes	Low	Yes-Riverine	No	No
Enhancements to Chicopee truck stop	Chicopee	No	Low	N/A	No	No
Rte 116: Repair: BR# C-13-012, H-21-030	Chicopee/Holyoke	Yes	Low	Yes-Riverine	No	No
Manhan Rail Trail-Northampton to Easthampton	E.Hamp./N.Hamp.	Yes	Low	Yes-Riverine	No	No
Construct Rail Trail: East Longmeadow to Springfield Line	East Longmeadow	Yes	Low	No	No	No
Intersection of Route 9 and Route 47 Improvements	Hadley	No	Low	N/A	No	No
Norwottuck Rail Trail Parking Enhancements	Hadley	Yes	Low	???	No	No
Holyoke Canalwalk	Holyoke	Yes	Low	Yes-Riverine	Yes-Holoke Canal System	No
Route 141 Traffic Signals at Jarvis Street	Holyoke	No	Low	N/A	No	No
Holyoke Mall congestion study	Holyoke	No	Low	N/A	No	No
Northampton Bikepath-Look Park Extension to Grove St	Northampton	Yes	Low	Yes-Riverine	Yes-Veterans Administration Hospital Center	No

**Table 12-2 – Environmental Impacts Matrix (cont.)**

<b>Project</b>	<b>Community</b>	<b>Construction</b>	<b>Priority</b>	<b>NHESP Habitat</b>	<b>Cultural Resources</b>	<b>Water Supplies</b>
Earle Street State Hospital property access	Northampton	Yes	Low	N/A	No	No
Business Park link with Route 66 and Route 10	Northampton	Yes	Low	Yes-Riverine	Yes-Hospital Hill	No
Route 32 Reconstruction: Stimpson St. to Ware TL	Palmer	Yes	Low	No	No	No
Feasibility study for improved access to Massachusetts Turnpike	Regionwide	No	Low	N/A	No	No
Regional sidewalk connectivity	Regionwide	No	Low	N/A	No	No
Identify potential TMA's	Regionwide	No	Low	N/A	No	No
Alternative energy source fueling stations	Regionwide	No	Low	N/A	No	No
Improved directional signage	Regionwide	No	Low	N/A	No	No
Fast lane vehicle tracking	Regionwide	No	Low	N/A	No	No
Weather sensors	Regionwide	No	Low	N/A	No	No
Overheight vehicle detection	Regionwide	No	Low	N/A	No	No
Route 10/202 Resurface: Westfield CL to CT SL	Southwick	No	Low	N/A	No	No
Southwick Rails to Trails Bikepath along Penn. Central Line	Southwick	Yes	Low	No	No	Yes
St James @ St James blvd intersection improvements	Springfield	No	Low	N/A	No	No
Central Street at Hancock Street intersection improvements	Springfield	No	Low	N/A	No	No
Ware River Valley Greenway Trail and Covered Bridge Preservation	Ware	Yes	Low	Yes-Riverine	No	No
Intersection improvements - Amostown Road at Dewey Street	West Springfield	Yes	Low	No	No	No
West Springfield Riverwalk	West Springfield	Yes	Low	Yes-Riverine	No	No
Columbia Greenway Rail Trail	Westfield	Yes	Low	No	No	No

# CHAPTER 13

## PIONEER VALLEY MPO ENDORSEMENT

### PIONEER VALLEY MPO ENDORSEMENT SHEET

The signatures below signify that all members of the Pioneer Valley Region's Metropolitan Planning Organization, or their designees, have met on March 6, 2007 and discussed the following item for endorsement: The Pioneer Valley Regional Transportation Plan Update (RTP) for 2007. *As amended, EPS 3/6/07*

#### Executive Office of Transportation (EOT)

I, Secretary of the Executive Office of Transportation, hereby  
 Endorse  Do Not Endorse the above referenced item.

*for* *Keith S. Laska* *3/6/07*  
Bernard Cohen  
Secretary - EOT  
Date

#### Massachusetts Highway Department (MHD)

I, Commissioner of the Massachusetts Highway Department, hereby  
 Endorse  Do Not Endorse the above referenced item.

*for* *Albina Stegemann* *03/06/07*  
Luisa Paiewonsky  
Commissioner - MHD  
Date

#### Pioneer Valley Planning Commission (PVPC)

I, Chair of the Pioneer Valley Planning Commission, hereby  
 Endorse  Do Not Endorse the above referenced item.

*Hank Barton* *3/6/07*  
Hank Barton  
Chair - PVPC  
Date

#### Pioneer Valley Transit Authority (PVTA)


I, *AS Amended* Chair of the Pioneer Valley Transit Authority, hereby  
 Endorse  Do Not Endorse the above referenced item.

*Richard Theroux* *3-6-07*  
Richard Theroux  
Chair - PVTA  
Date

**City of Holyoke**

I, Mayor of the City of Holyoke, hereby

Endorse  Do Not Endorse the above referenced item.

  
\_\_\_\_\_  
Michael Sullivan  
Mayor-Holyoke

3-6-07  
Date

**City of Chicopee**

I, Mayor of the City of Chicopee, hereby

Endorse  Do Not Endorse the above referenced item.

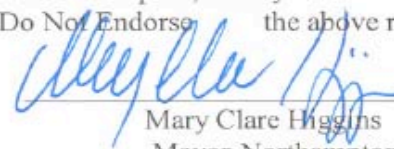
\_\_\_\_\_  
Michael Bissonnette  
Mayor-Chicopee

\_\_\_\_\_  
Date

**City of Northampton**

I, Mayor of the City of Northampton, hereby

Endorse  Do Not Endorse the above referenced item.

  
\_\_\_\_\_  
Mary Clare Higgins  
Mayor-Northampton

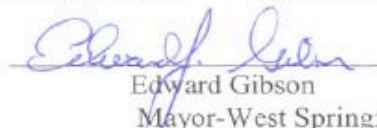
3/6/07  
Date

**Town of West Springfield**

I, Mayor of the Town of West Springfield, hereby

Endorse  Do Not Endorse the above referenced item.

*As Amended*

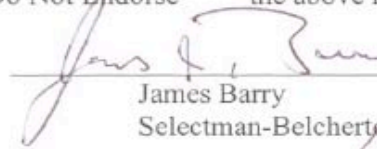
  
\_\_\_\_\_  
Edward Gibson  
Mayor-West Springfield

March 6, 2007  
Date

**Town of Belchertown**

I, Board of Selectmen member of the Town of Belchertown, hereby

Endorse  Do Not Endorse the above referenced item.

  
\_\_\_\_\_  
James Barry  
Selectman-Belchertown

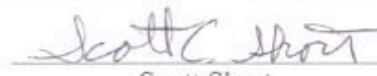
3/6/07  
Date

**Town of Granville**

I, Board of Selectmen member of the Town of Granville, hereby

Endorse  Do Not Endorse the above referenced item.

*as amended*

  
\_\_\_\_\_  
Scott Short  
Selectman-Granville

3/6/07  
Date