# CHAPTER 1

## 2016 UPDATE TO THE REGIONAL TRANSPORTATION PLAN FOR THE PIONEER VALLEY METROPOLITAN PLANNING ORGANIZATION

The Pioneer Valley Regional Transportation Plan (RTP) outlines the direction of transportation planning and improvements for the Pioneer Valley through the year 2040. It provides the basis for all state and federally funded transportation improvement projects and planning studies. This document is an update to the current RTP (last published in 2011) and is endorsed by the Pioneer Valley Metropolitan Planning Organization (MPO).

The long range plan concentrates on both existing needs and anticipated future deficiencies in our transportation infrastructure, presents the preferred strategies to alleviate transportation problems, and creates a schedule of regionally significant projects that are financially constrained - in concert with regional goals and objectives and the Moving Ahead for Progress in the 21st Century (MAP-21) legislation.

Although the RTP focuses on transportation, it is a comprehensive planning document that has been developed and coordinated with other non-transportation planning efforts in the region. The Pioneer Valley Plan for Progress presents a strong case for improving our transportation infrastructure to encourage growth and economic development. The plan also recognizes that the region's cities and towns are experiencing changes which will affect its people, landscape, economy, and governmental institutions for decades. Changes in land use and development patterns are transforming the traditional visual character and function of the region and there is an increased awareness of the role transportation plays in influencing regional growth and change.

Strategic planning is a continuing process that produces planning documents and agendas which decision-makers can use to prioritize local needs. A truly effective planning process relies upon the input of the chief elected official(s), city and town staff, and the general public. In addition, the strategic planning process is based on a realistic assessment of external forces - political, social, economic, and technological - that can affect Pioneer Valley communities and residents. All recommendations generated through the strategic planning process must have a real potential for implementation. By developing the RTP for the Pioneer Valley in such a manner, the region will be able to conduct successful transportation improvement programming through the year 2040.

## A. REGIONAL VISION, GOALS, AND EMPHASIS AREAS

The Pioneer Valley Metropolitan Planning Organization developed a vision to provide a framework for the development of the RTP.

**VISION**

*The Pioneer Valley region strives to create and maintain a safe, dependable, environmentally sound and equitable transportation system. We pledge to advance performance based strategies and projects that promote sustainable development, healthy and livable communities, provide for the efficient movement of people and goods and advance the economic vitality of the region.*

### 1. Regional Goals

To support the realization of the Vision of the plan for the Pioneer Valley MPO, a series of thirteen transportation goals were developed that are consistent with MAP-21. Cooperation between federal, state, regional, and local decision makers will be necessary in order to achieve these goals. Through cooperative planning efforts the region can maintain a dependable transportation system and develop strategies to maximize the efficiency of transportation funding for the region.

| | |
|---|---|
| Safety | To provide and maintain a transportation system that is safe for all modes of travel users and their property. |
| Operations and Maintenance | To provide a transportation system that is dependable and adequately serves users of all modes. To give priority to the repair of existing streets, roads and bridges. |
| Environmental | To minimize the transportation related adverse impacts to air, land, and water quality and strive to improve environmental conditions at every opportunity and incorporate green infrastructure. |
| Coordination | To collaborate the efforts of the general public with local, state and federal planning activities. |
| Energy Efficient | To promote the reduction of energy consumption through demand management techniques and increase the use of energy efficient travel modes. |
| Cost Effective | To provide a transportation system that is cost effective to maintain, improve and operate. |

| | |
|---|---|
| Intermodal | To provide access between travel modes for people and goods while maintaining quality and affordability of service. |
| Multimodal | To provide a complete choice of adequate travel options that are accessible to all residents, visitors and businesses. |
| Economically Productive | To maintain a transportation system that promotes and supports economic stability and expansion. |
| Quality of Life | To provide and maintain a transportation system that enhances quality of life and improves the social and economic climate of the region. |
| Environmental Justice | To provide an equitably accessible transportation system that considers the needs of and impacts on low-income, minority, elderly and disabled persons. |
| Land Use | To incorporate the concepts of Sustainable Development in the regional transportation planning process and integrate the recommendations of the current Regional Land Use Plan into transportation improvements. |
| Climate Change | To promote and advance transportation projects that reduce the production of greenhouse gasses, such as CO2, and advance new energy technologies consistent with the Pioneer Valley Clean Energy Plan. |

## 2. Emphasis Areas

A total of five emphasis areas were identified to assist in the development of regional transportation needs and strategies to assist in the achievement of the regional goals. These emphasis areas are not intended to be a replacement for the regional transportation goals. Instead, they were established with the recognition that many of the transportation improvement strategies included as part of the RTP Update can meet multiple regional transportation goals. This coordination between the Regional Transportation Goals and Emphasis Areas is shown in Table 1-1.

**Table 1-1 – Coordination of Regional Transportation Goals and Emphasis Areas**

| | Safety | Operations and Maintenance | Environmental | Coordination | Energy Efficient | Cost Effective | Intermodal | Multimodal | Economically Productive | Quality of Life | Environmental Justice | Land Use | Climate Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Safety and Security** | √ | | | √ | | √ | √ | √ | | √ | √ | | |
| **The Movement of People** | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| **The Movement of Goods** | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| **The Movement of Information** | | | √ | √ | | √ | √ | √ | √ | √ | √ | | √ |
| **Sustainability** | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |

The transportation emphasis areas consist of broad topics related to transportation planning that are related to each of the thirteen Regional Transportation Goals. Regional Transportation Needs, Strategies, and Improvements were developed for each emphasis area in this RTP Update to advance each of the thirteen goals without the need for repetitiveness. The following provides more information on each of the five emphasis areas:

### a) Safety and Security

The safety and security of the regional transportation system are vital to the efficient movement of people and goods. It is important to ensure that the transportation system is safe for all users across all modes. The RTP will identify locations for additional study that may benefit from recommendations to improve safety. Similarly, the security of our transportation infrastructure and operations centers will rely on the development of sound planning for their safeguard. The RTP will be coordinated with ongoing Homeland Security efforts in disaster mitigation and evacuation for the region.

### b) The Movement of People

The movement of people is generally what most people associate with the term “transportation.” This area consists of the identification of needs for all modes of transportation and how to increase their efficiency. Needs will be

identified to assist in reducing existing and anticipated future congestion in the region as well as improving the connections between the various transportation modes.

### c) The Movement of Goods

The Pioneer Valley Region is strategically located at a geographic crossroads in which more than one third of the total population of the United States can be reached by an overnight delivery. The availability of an efficient, multimodal transportation network to move goods through the region is essential to maintain economic vitality. Several modes of transportation are available in the region to facilitate the movement of goods. These modes include truck, rail, air, and pipeline.

### d) The Movement of Information

The movement of information consists of the ability to utilize technology to maximize the efficiency of the existing transportation system and to convey information to the traveling public. Intelligent Transportation Systems (ITS) technology can include devices that integrate with traffic signal systems, provide real-time schedule information, and electronic fare payment. In addition, information sharing between agencies can reduce duplicative data collection and assist in the completion of ongoing studies.

### e) Sustainability

Sustainability considers both the environmental and social costs of the transportation system. A sustainable transportation system improves access and mobility while reducing environmental impacts such as the production of greenhouse gas emissions and increased air pollution. Sustainable transportation projects also have a positive impact on society through a reduction in single occupant vehicle use, the promotion of transportation modes that have lower impact on air quality, the promotion of fuel-efficiency, advancing healthy lifestyles, and supporting healthy walk able and livable communities. Sustainable transportation projects are also consistent with the principles of the Commonwealth's GreenDOT Initiative.

## 3. Problem Statements

In order to advance the vision and goals of the RTP, a series of problem statements were developed. Problem statements are concise descriptions of the overarching issues that must be addressed through the implementation of the RTP. Each problem statement was developed based on the input received during the public outreach process for the Draft RTP. This process is described in detail in Chapter 3. The framework for the problem statements was developed early on in the update of the RTP through a series of five regional focus groups. Focus groups consist of a group of representatives

that participated in a 2 hour discussion to assist in the development of the goals and objectives of the RTP.

**Table 1-2 – RTP Focus Groups**

| Focus Group Topic | Meeting Date |
|---|---|
| Bicycle and Pedestrian | October 8, 2014 |
| Transit | November 5, 2014 |
| Environment, Sustainability and Climate Change | November 6, 2014 |
| Infrastructure | November 12, 2014 |
| Freight | November 20, 2014 |

Chapter 14 of the RTP identifies a series of transportation needs, strategies, and projects that also assist in advancing a solution to each problem statement. A total of seven problem statements were identified through RTP outreach efforts and are summarized below.

### a) There are insufficient resources to support the maintenance requirements of the regional transportation system.

This update to the RTP identifies a number of critical transportation improvement projects for the Pioneer Valley region, but in short, there are not enough resources to fund all the necessary improvements to keep the transportation system in a state of good repair. Chapter 14 of the RTP documents several needs and strategies geared towards identifying additional sources of revenue.

**Table 1-3 – Needs and Strategies Advocating for Additional Revenue**

| Need | Strategy |
|---|---|
| Secure adequate funding for a balanced regional transportation system | Invest in the repair and maintenance of the existing transportation system. |
| Identify dependable and equitable funding sources for the Pioneer Valley Transit System | Identify and advocate for additional revenue sources to bring the regional transportation system into a state of good repair. |
| | Identify sources of revenue for local transportation projects. |

*Poor pavement condition on East Street in South Hadley, MA.*

One obstacle is the disconnect between transportation revenue and the rising cost of transportation improvements. For the purpose of this RTP a 1.5% per year increase in transportation revenue is assumed versus a 4% per year increase in the cost of transportation projects. This is not sustainable. The rising cost of transportation improvement projects has resulted in many projects being pushed back into future years for construction. It also results in the development of several phased projects that can be constructed at a more manageable cost. Ultimately, this is a poor use of transportation funds as any cost savings in the short term are offset by inflated long term project cost.

Many communities have stated they no longer consider the TIP as a viable funding source for anything but the most expensive transportation improvement projects as the process from design to construct takes too long, the cost for project design is too expensive, and unforeseen project changes can create the need to reapply for necessary permits and acquire right-of-way.

On the national scale, the federal Highway Trust Fund is not able to keep pace with the current pace of transportation spending. The trust fund relies on federal gasoline taxes (18.4 cents per gallon of gasoline and 24.4 cents per gallon of diesel) yet the federal gasoline tax has not been adjusted in over 20 years. It is estimated that the federal government spends approximately $54 billion on highway and transit projects every year but only $35 billion is generated in revenue through the federal gasoline tax.[1]

*Route 116 Bridge from Holyoke to Chicopee closed for repairs*


[1] Ryan Alexander, "Bumps Ahead for the Highway Trust Fund," *US News and World Report*, 1 July 2014, http://www.usnews.com/opinion/economic-intelligence/2014/07/01/congress-needs-a-long-term-solution-for-the-highway-trust-fund, Web, 15 May 2015.

Recently, Massachusetts voters repealed a law that would have increased the state gas tax at a rate consistent with inflation. While this repeal does not mean the state gas tax cannot be increased, it does mean future increases will need to be tied to legislative action. As a result, future gas tax revenue cannot be considered for long range planning purposes.

At the local level, communities rely on Chapter 90 funding to advance necessary maintenance projects. Distributed on a formula basis, the Chapter 90 funding is tied to the passing of a Transportation Bond Bill by the state legislature. Massachusetts Governor Charlie Baker recently approved $300 million in Chapter 90 funds for local communities. This funding is critical to maintain local roads which are not eligible for federal transportation dollars. However a 2012 survey completed by the Massachusetts Municipal Association estimated that a total of $562 million/year would be required to keep roadways in a state of good repair. A complete breakdown of the need for additional transportation revenue is presented in Chapter 15 of the RTP.

### b) Residents desire expanded regional passenger rail service.

In 2014, construction was completed on the upgrade to the existing railroad track infrastructure for the Knowledge Corridor line. These improvements allowed passenger rail service via the “Vermonter” to return to this line and save nearly 40 minutes in travel time over the previous route alignment. The return and future expansion of this rail service is by far one of the most popular topics raised by local officials and residents during opportunities for public participation. This is a major focal point of the RTP and is addressed in the needs and strategies summarized in Table 1-4.

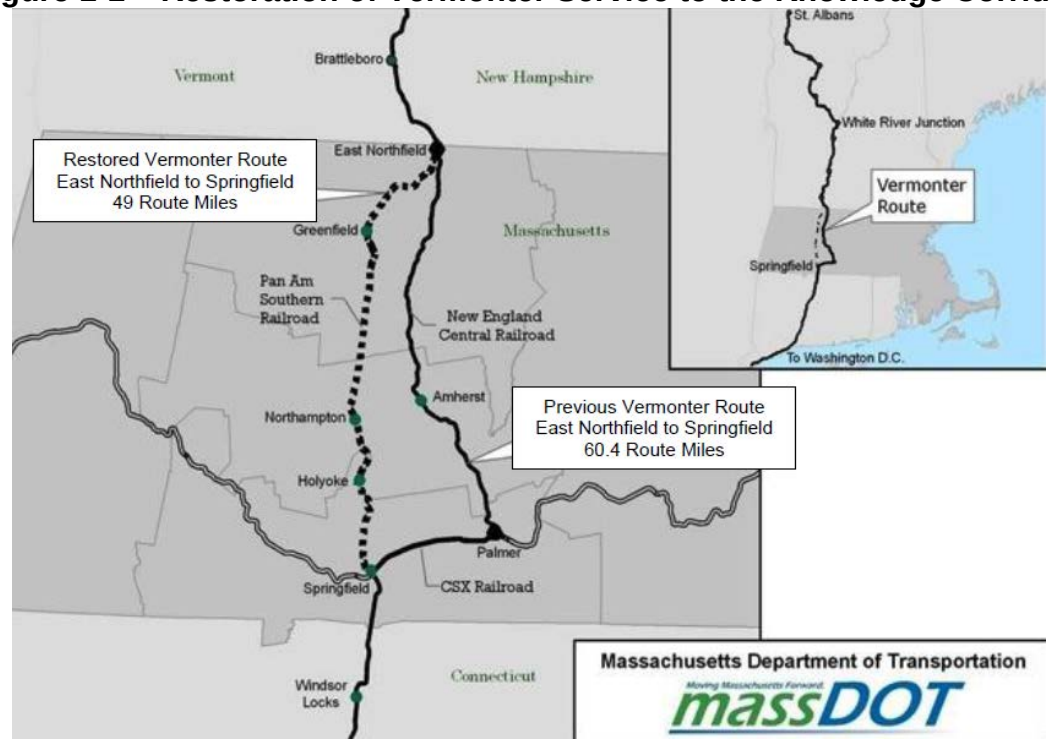
**Table 1-4 – Passenger Rail Service Needs and Strategies**

| Need | Strategy |
|---|---|
| Maintain and increase access to national passenger rail service in the Pioneer Valley. | Develop a comprehensive commuter rail network. |

The Massachusetts State Legislature recently identified expansion of passenger rail in the Pioneer Valley region as a priority and secured $30 million in the Transportation Bond Bill to support this effort. These funds could be used to initiate service between Greenfield and Springfield. A 2015 Action Plan for enhanced passenger rail service examined three service options. The plan recognizes this is not just a transportation enhancement but an economic driver that requires collaboration between RPAs, Chambers of Commerce, Regional Tourism Councils, individual communities, and other stakeholders to develop and promote a marketing plan. Another important element will be the development of a mode shift plan in cooperation with major employers and other transportation stakeholders. Finally, enhanced

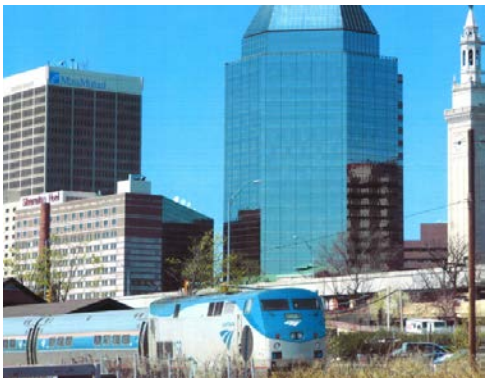
service will require permanent rail platforms to access the trains at all rail stations.

**Figure 1-1 – Restoration of Vermonter Service to the Knowledge Corridor**




In addition to enhanced passenger rail service along the Knowledge Corridor, there is a strong desire to expand passenger rail service in the east-west direction between Springfield and Boston. MassDOT and the Vermont Agency of Transportation, in collaboration with the Connecticut Department of Transportation, are conducting a study to examine the opportunities and impacts of more frequent and higher speed intercity passenger rail service on two major rail corridors known as the Inland Route and the Boston to Montreal Route. This Northern New England Intercity Rail Initiative is expected to be complete by 2015 and includes the following key elements:

- Service Levels and Service Development Plans
- Tier 1 Environmental Assessment and Documentation
- Infrastructure Provisions
- Ongoing Stakeholder Engagement and Public Meetings
- Methodology for Service and Infrastructure Provisions



*Amtrak service in downtown Springfield*

### c) There is a need for innovative, cost-effective solutions independent of the regional transit authorities to provide services to rural areas.

The RTP focuses on a number of strategies to increase transit ridership however this can be difficult in rural areas that may not have the population density to support traditional fixed route transit service. Transportation for Massachusetts has identified the lack of public bus transportation in most rural communities as one of its top transportation challenges for Western Massachusetts. Table 1-5 summarizes the needs and strategies included as part of this RTP update that support the enhancement of regional transit service.

**Table 1-5 – Rural Transit Service Needs and Strategies**

| Need | Strategy |
|---|---|
| Enhance opportunities for inter-city, inter-regional passenger trips. | Seek innovative ways to increase transit ridership, including express routes and flex vans. |
| Increase the number of riders using transit to commute to work and school. | Identify locations for park and ride lots and supporting express transit service. |

*Route 112 in Worthington*

While enhanced services are desired, existing transit service models may not be cost effective. MassDOT has formed a series of Regional Coordinating Councils (RCC) to allow transit stakeholders to work together to identify and address transportation needs in their region. More information on the two RCCs in the Pioneer Valley region is provided in Chapter 5, section C.

Innovation is the key in the development of new rural transit service. This can consist of the identification of overlapping duplicative services, adaptation of existing underutilized services, and the development of partnerships with local business to provide new services. It will be important to continue to work with the newly established RCCs, the existing transportation providers, and human service providers to identify opportunities to develop cost effective and replicable models to provide rural transit service in the Pioneer Valley.

### d) A new intermodal facility is necessary to support and enhance ongoing transportation services in the City of Northampton.

Intermodal transportation facilities encourage the use of alternative transportation modes through the coordination of a variety of transportation modes at a strategic location. Amenities such as waiting areas, restrooms, and food service may also be provided. Larger facilities are often incorporated into developments that may include residential units as well as retail and office space. The Holyoke Transportation Center opened in 2010. Construction on the Union Station Intermodal Center in Springfield is scheduled to be completed in 2016. The Westfield Elm Street Urban Renewal Plan includes an intermodal center that could begin construction in the next few years. Table 1-6 summarizes the needs and strategies on regional intermodal facilities included in the RTP.

**Table 1-6 – Regional Intermodal Facilities Needs and Strategies**

| Need | Strategy |
|---|---|
| Promote transit oriented development and pedestrian friendly development. | Develop transportation facilities to support and promote smart growth in and around existing city and town centers. |


*Springfield Union Station Intermodal Center - Source: Springfield Redevelopment Authority*

The City of Northampton is served by fixed route transit service that pulses out of a bus stop located in front of the Academy of Music. Passenger rail service returned to the City of Northampton in 2014 at their Union Station site. Intercity bus services are provided by Peter Pan Bus Lines near the city's Roundhouse parking lot. There is limited coordination between the passenger rail and transit service and all three modes are located in different sections of the downtown. These transportation nodes are shown on Figure 1-2.

**Figure 1-2 – Existing Transportation Nodes in the City of Northampton**


The city has discussed the need to move its existing transit pulse point at the Academy of Music further east along Main Street. The relocation of this pulse point or the creation of a secondary pulse point closer to the heart of the city could assist in enhancing transit ridership and future connections to passenger rail service at Union Station. As a long term downtown improvement, the City of Northampton has discussed the need to evaluate locations for a multi-modal facility near the railroad tracks which could include an indoor train station, bus connections, and commuter parking. Additional analysis is necessary prior to the advancement and implementation of changes to existing transportation service in downtown Northampton. The identification of an appropriate site for an intermodal transportation center in the City of Northampton would improve the efficiency of existing transportation services and provide opportunities to enhance the local economy through transit oriented development.

### e) Increased and comprehensive resources and policies to improve sustainability in the transportation sector are necessary if the region is to meet its fair share of GHG reductions to comply with the Massachusetts Global Warming Solutions Act.

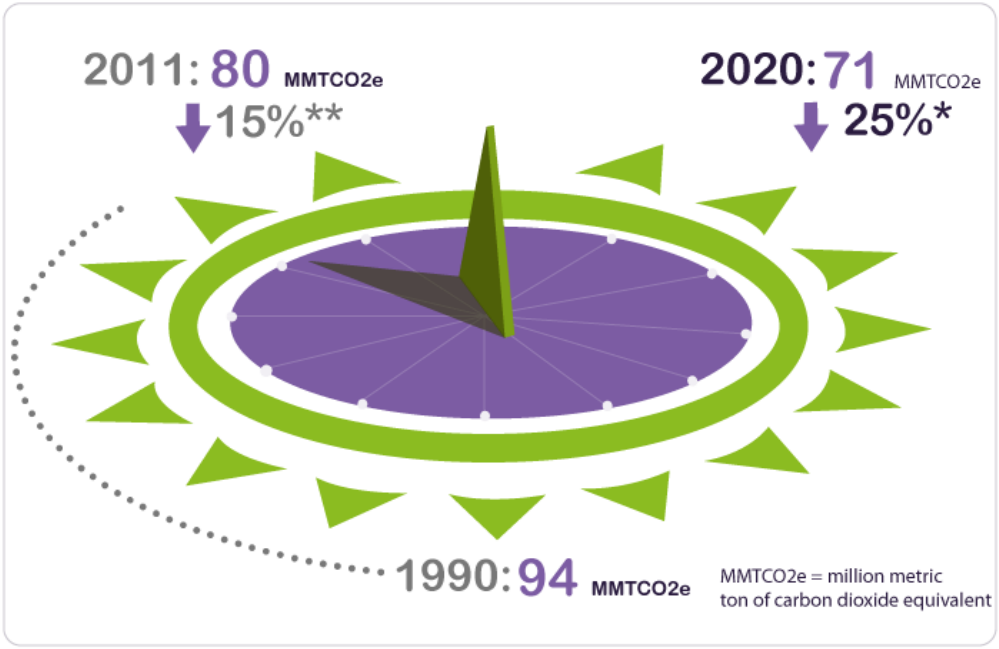
The Massachusetts Global Warming Solutions Act (GWSA) identifies a number of measures to assist the Commonwealth in achieving Greenhouse Gas emissions reduction goals. The GWSA is summarized in Chapters 2 and 16 of the RTP. A summary of the needs and strategies included in the RTP to assist in the implementation of the GWSA is shown in Table 1-7.

**Table 1-7 – Global Warming Solutions Act Needs and Strategies**

| Need | Strategy |
|---|---|
| Reduce vehicle miles traveled in the region to minimize impacts on air quality, green house gas emissions and energy consumption | Encourage local fleets to use clean fuel alternatives. |
| | Enforce idling reduction programs in major activity centers. |

The transportation sector is one of the largest contributors to greenhouse gas pollution. As of 2011, the Commonwealth has made measurable progress towards meeting its goal of a 25% reduction in GHG emissions by 2020.

**Figure 1-3 – Massachusetts' Progress towards Reaching GHG Emissions by 2020**




** Percentage Reduction below 1990 baseline level*
*** Source: MassDEP (2014). Massachusetts Annual Greenhouse Gas Inventory*

While regional specific targets are not included as part of the GWSA, the PVPC has developed a series of specific planning initiatives to assist in the documentation and reduction of GHG emissions. "Our Next Future" was created to chart a course for a more vibrant, competitive, sustainable and equitable region. This is a regional plan, designed to achieve success through promoting collaboration between communities on a regional basis. With this plan, we are seeking to build a sustainable prosperity in the Pioneer Valley. This includes a clean environment, safe and walkable neighborhoods, options for healthy exercise and play, and viable transportation alternatives. The plan

ultimately seeks to promote the sustainability of the world at large, by reducing our reliance on foreign oil, increasing our energy efficiency, cutting our greenhouse gas emissions and preventing water and air pollution. Specific elements include:

- A Climate Action and Clean Energy Plan to move towards a carbon neutral future.
- An Environment Plan to grow vibrant communities in our watershed.
- A Green Infrastructure Plan to promote clean water and the greening of our streets and neighborhoods.
- A Sustainable Transportation Plan to improve mobility while promoting bicycling, transit and walking.
- The Pioneer Valley Land Use Plan - Valley Vision 4 to grow in a logical manner while advancing initiatives to revitalize our community centers.

*PVPC GHG Monitor*

PVPC also uses a mobile GHG monitor to collect emissions as part of on-going planning activities. The monitor is currently used as part of on-going regional travel time data collection to identify the level of GHG emissions produced at various locations in the region. GHG reduction has also been incorporated into transportation project evaluation criteria used to prioritize projects for funding as part of the TIP.

### f) The regional transportation infrastructure does not sufficiently accommodate the needs of the trucking industry.

Trucking is the dominant mode for freight transportation in the Pioneer Valley due to its flexibility to provide both short and long haul connections to facilities that may lack convenient access to other freight modes. As a result, it is important to have appropriate design elements in the regional transportation system to safely and efficiently accommodate truck movements. Table 1-8 summarizes the needs and strategies included in the RTP to support the trucking industry.

## Table 1-8 – Trucking Needs and Strategies

| Need | Strategy |
|---|---|
| Improve and coordinate the logistics of freight movement in the Pioneer Valley | Incorporate appropriate design measures in roadway improvement projects to accommodate freight movements. |
| Promote the efficient use of the highway network by freight carriers. | |

Truck movements are often hindered due to route restrictions as a result of poor bridge conditions, inadequate vertical clearance, oversize loads, hazardous cargo, and municipal regulations. Many intersections also lack the proper turning radii to safely accommodate truck movements.

*Truck stuck under a low clearance underpass in West Springfield*


*Truck navigating a narrow intersection in Ware*

Projects that include design elements to reduce freight congestion are awarded points under the region's Transportation Evaluation Criteria. Planning and safety studies completed as part of the UPWP identify measures to improve freight mobility through improvements to roadway geometry, clearance, and improved guide signs.

Truck stops and rest areas are also an important element of the highway system as drivers must comply with hours of service regulations set by the Federal Motor Carrier Safety Administration. MassDOT's 2010 Freight Plan identifies the need to develop safe and efficient truck stops along the Interstate system to reduce idling and provide for adequate locations for truck staging.

*Truck Stop in Chicopee*

**g) The built environment for bicycling and walking is hampered by significant barriers that include; narrow road and bridge cross sections, disjointed off-road trail networks, a lack of sidewalks, and maintenance issues.**

It is important to provide for the needs of bicycles and pedestrians as part of the regional transportation network. The region has greatly expanded its network of on and off-road bicycle and pedestrian facilities over the last 20 years. GreenDOT also requires that bicycles and pedestrians be accommodated in all roadway improvement projects. The challenge lies in balancing the needs of the maintenance of the existing infrastructure while continuing to expand the bicycle and pedestrian system in a logical manner. The needs and strategies for the regional bicycle and pedestrian system are summarized in Table 1-9.

**Table 1-9 – Bicycle and Pedestrian Needs and Strategies**

| Need | Strategy |
|---|---|
| Promote Complete Streets | Promote the implementation of bicycle lanes where practical. |
| Maintain and expand the regional bike network connectivity. | Provide accommodations for pedestrians, transit users, and bicyclists in roadway and bridge design and the maintenance of existing facilities. |
| Increase opportunities for non-motorized transportation use. | |
| Identify deficiencies to make major routes more suitable for non-motorized traffic and transit users. | |

*Non ADA compliant pedestrian crossing*

Many existing roadways do not encourage bicycle and pedestrian activity. Wide travel lanes with narrow shoulders can encourage higher travel speeds and do not provide an adequate buffer between bicycles and vehicles. Many existing sidewalks are in need of repair, do not conform to current ADA standards for accessible design, and can abruptly end at inconvenient locations. It is critical to maintain the regional infrastructure to safely accommodate bicycles and pedestrians. This must be done in a manner that will also allow for additional connectivity to encourage more people to walk or bike instead of driving.

**Figure 1-4 – Complete Street Concept for Main Street in West Springfield**

PVPC advocates for a "Complete Streets" approach as part of its transportation planning activities. Complete Streets is an approach to configure local roads to better balance the needs of all people who use a street: motor vehicle drivers, public transit riders, pedestrians, bicyclists, people with disabilities, shoppers, school children, and others. A "Complete Street" improves livability by improving public safety, increasing usable public space, and making it easier to share the street. It also creates a more welcoming environment for local businesses.

*New pedestrian crossing in Brimfield*

*New bike lane on Route 5 in Holyoke*

The identification of gaps in the bicycle and pedestrian network is a critical task to identify existing barriers and eliminate gaps that restrict travel options. Proper maintenance ensures the continued expansion of bicycle and pedestrian travel options in the future.