

## CHAPTER 10



*Photo: Solar Farm off Holyoke Street in Ludlow, MA*

### SUSTAINABILITY

In the Pioneer Valley we define sustainability as “meeting the needs of the present generation without jeopardizing the ability of future generations to meet their own needs.”<sup>4</sup> We also find the analogy of the three legged sustainability stool to be useful, with its balanced understanding of the importance and inter-dependence of equity, the environment and the economy.

Our transportation system can advance our sustainability goals: affirmatively furthering improved access to opportunity for people in the region who have been left out/kept out; sustainably growing our regional economy and respecting/nurturing the environment while maintaining/developing resilient thriving communities; or it can be an impediment. The majority of motorized vehicles consume fossil fuels to operate and as a result produce exhaust and other GHG emissions. This accelerates the climate crisis that threatens the resilience of our region, pollutes our air and exacerbates health problems such as asthma and emphysema. Complete

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<sup>4</sup> using the United Nations Bruntland Commission definition from 1984—

Streets, however, those that are safe and comfortable for all road users focus equally on pedestrians, bicyclists, transit users, cars and trucks. They also facilitate residents' healthy behavior, making it easier for people to walk and bike to work, school, and play, and reduce GHG emissions from transportation. Motorized vehicles require impervious surfaces, which pollute both ground and surface water sources as rain water runs across these surfaces, picking up gasoline, oil and other pollutants before being absorbed into surface water bodies or into groundwater.

Access to a vehicle, especially one that is safe, reliable and energy efficient, can help a family move out of poverty and into the middle class by making it easier and more efficient to consistently get to work, school, and appointments on time. Individual and neighborhood access to electric vehicles (EV) with a robust public and private EV charging station network can advance climate action goals. Lack of transit services, missing sidewalks and bicycle lanes all hamper the quality of life of people without vehicle access. A balanced transportation system is more sustainable, it meets more people's needs while using resources efficiently, and it facilitates regional economic development.

A goal of PVPC's sustainable transportation system is to consistently reduce VMT per population. This can be accomplished by providing more access to resource efficient transportation options, especially public transportation, as well as by improving the flow of existing traffic through signal timing, roundabouts, electronic toll collection and real ride-sharing (not on-demand ride hailing apps.) Expanding access to resource efficient transportation options can maximize social equity, increase social connectivity, and improve safety and resource efficiency. Transportation efficiency benefits society and reduces the negative impacts of motorized vehicles, which account for one-third of greenhouse gas emissions and 20-25% of average U.S. household expenditures.

Since our last RTP, the Commonwealth of Massachusetts has made dramatic strides in articulating and implementing a range of initiatives to advance sustainability across the State. In 2016, Governor Baker signed Executive Order 569, which lays out a comprehensive approach to further reduce greenhouse gas emissions, safeguard residents, municipalities and businesses from the impacts of climate change, and build a more resilient Commonwealth.

*"Massachusetts is a national leader in addressing the threat of climate change and proactively preparing for its impacts, and I am proud to sign this bipartisan bill to build on those efforts,"* said Governor Charlie Baker. *"The Commonwealth is now positioned to increase our resiliency to climate change, protect the environment, and improve recreational opportunities. We look forward to working with our legislative and local partners to build a cleaner and more sustainable Commonwealth."*

<https://www.mass.gov/news/governor-baker-signs-legislation-directing-24-billion-to-climate-change-adaptation>

On March 21, 2018, at a conference focused on recycling, a statement from Governor Baker was presented: “*The Commonwealth is committed to sustainability and protection of our environment, and working collectively, we can continue to increase the economic value and environmental benefit of recycling in all of our communities.*” In addition, Governor Baker’s administration recently committed \$10 million to Municipal Vulnerability Preparedness (MVP) to invest in climate-smart infrastructure and nature-based solutions to protect public health, safety, and property.

In Massachusetts sustainability means acting to reduce GHG emissions and protect the environment while maintaining economic value. The Commonwealth has long been a leader with respect to aggressive goals of GHG emissions reduction. However, Green House Gas (GHG) emissions from transportation are still 38% of MA GHG emissions and 32% in the Pioneer Valley. Single vehicle trips are still most common. Housing costs in MA are some of the highest in the country. Severe weather events cost the Commonwealth and its residents \$556,876,789,345. And just 6% of Pioneer Valley commuters do so on foot and only 4% on bike.

The Pioneer Valley region is committed to a sustainable future, working to reduce GHG emissions in accord with state goals, protect open space, catalyze sustainable economic and community development, build a balanced transportation system and advance municipal, regional and Commonwealth resilience. We are proud to partner so effectively with many state agencies and departments.

The Housing crisis in Massachusetts is related to how we use land and the transportation needs that result from our spread out development patterns. Massachusetts and California are two places in the country experiencing a surge in “super commuters”, people who have to travel for 90 minutes or more to get to their jobs because the cost of housing near jobs is too high for all but the wealthy to afford.<sup>5</sup>

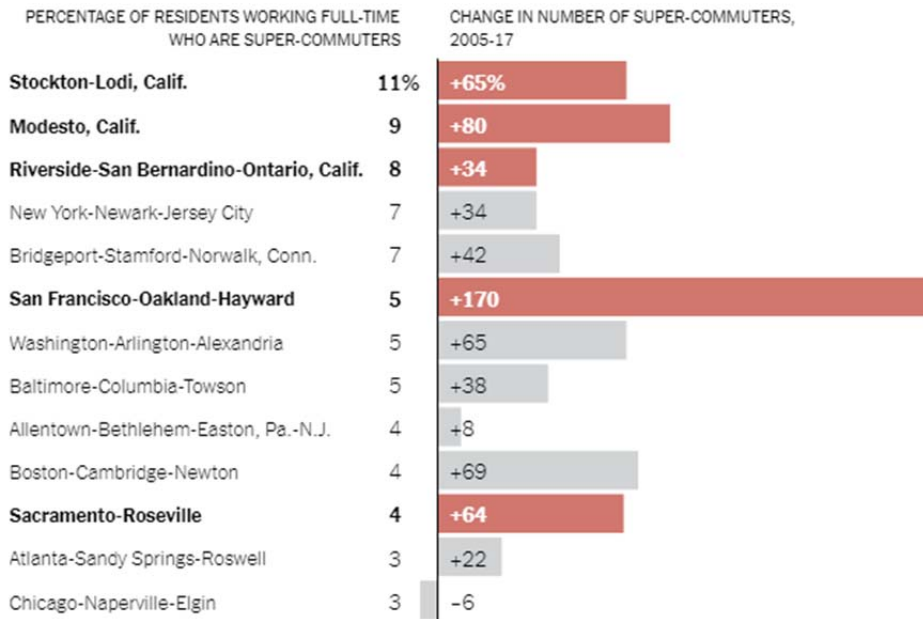
Our goal for sustainable transportation is keeping people and goods moving safely and efficiently throughout the Pioneer Valley by planning, designing, building and maintaining a balanced interconnected transportation system that includes expanded rail service, sidewalks, on and off road bike ways, airports, and miles of paved and unpaved roadways, while minimizing negative impacts on the region’s current and future air, land, water and people.

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<sup>5</sup> [https://www.ctps.org/data/html/studies/other/Long-Distance\\_Commuting/Long-Distance\\_Commuting\\_in\\_the\\_Boston\\_Region.html#\\_Toc496628576](https://www.ctps.org/data/html/studies/other/Long-Distance_Commuting/Long-Distance_Commuting_in_the_Boston_Region.html#_Toc496628576)

### Figure 10-1 – Cities with the Most “Super – Commuters”

Of the 100 largest U.S. metropolitan areas, these are the 20 with the greatest proportion of residents working full-time who spend 90 minutes or more getting to their jobs. (Nationally, 72 percent of these super-commuters drive.) Eight of these areas are in California; the San Francisco area has seen the most growth in ultra-commuters since 2005.



#### A. MASSDOT- COMMISSION ON THE FUTURE OF TRANSPORTATION

The function of the Regional Transportation Plan (RTP) is to define an overarching vision of the future of the region, establish principles and policies that will lead to the achievement of that vision, and allocate projected revenue to transportation programs and projects that reflect those principles and policies. In order for our transportation system to be more sustainable, the Commission on the Future of Transportation in the Commonwealth developed the report *Choices for Stewardship: Recommendations to Meet the Transportation Future*. Executive Order #579 established the Commission and charged it with imagining Massachusetts in 2040. The Commission report identifies 10 key challenges facing transportation in Massachusetts over the next 20 years:

- We can't know the future.
- Disruptive technological change is inevitable.
- Massachusetts is growing and aging.
- The existing transportation system is made up of transportation haves and have-nots.
- Transportation needs vary across the Commonwealth and its communities.

- The transportation system needs to move more people in fewer vehicles.
- Land use and development decisions drive transportation patterns.
- The transportation system needs to be de-carbonized.
- Transportation infrastructure needs to be made resilient to a changing climate.
- Needed investments need to be prioritized and paid for.

They went on to emphasize the importance of affirmatively focusing on people with low-incomes, disabilities, limited access to public transit and other transportation options. This also includes communities of color who are disproportionately affected by many of the challenges currently facing our transportation system and related systemic issues, such as pollution, congestion, long commute times, rising housing costs, and unreliable public transportation. PVPC is committed to ensuring active representation and participation of these groups of people in our regional transportation planning processes.

Chapter 11 of the RTP details the Pioneer Valley’s plan, within the context of the Commonwealth of MA rules and regulations, to reduce GHG emissions from transportation: 10% -25% below 1990 levels by 2020 and an 80% reduction below 1990 levels by 2050. Based on information from the Commission on the Future of Transportation, almost 40% of GHG emissions in 2015 came from transportation infrastructure and vehicles.

## **B. REGIONAL SUSTAINABILITY INITIATIVES**

Over the last decade, the Pioneer Valley has taken great steps to integrate sustainability into all our regional planning work. Our regional efforts support the recommendations from the Commission on the Future of Transportation in the Commonwealth’s report as referenced above. In the Pioneer Valley, we are working on nine focus areas:

- Promote Smart Growth and assure integration of Land Use planning with Transportation, Housing, and Economic Development planning—continuing to collaborate with the Governor and others on zoning reform.
- Legislative changes to expand funding options—Regional Ballot Initiative (RBI) and the Transportation Climate Initiative (TCI).
- Electrify Buses and Cars—decarbonization of the fleet.
- Make all our streets “complete,” safe and comfortable for all road users, by building out a connected network of both on and off road protected bike lanes, paths, and trails, prioritizing carbon free modes of transportation where possible.
- Expand ValleyBike, our regions’ all electric bikeshare program a collaboration of PVPC and 5 member municipalities and UMASS.
- Maintain and strengthen our inter-disciplinary efforts to improve public health by facilitating Mass in Motion, Aging in Place, County Health Improvement Plans, Transforming Communities Initiative, Community Transformation Grant, Climate Action & Resilience plans and other public health work in our region.

- Advance Municipal Vulnerability Preparedness (MVP) and Hazard Mitigation work at the municipal level to assure strong and resilient communities.
- Advance and expand opportunities for North-South and East-West passenger rail.
- Collaborate to expand transit and other efficient multi-passenger forms of transportation.

## **1. Smart Growth—integrating transportation, land use and housing**

The region has researched, planned and worked collaboratively to implement a regional Smart Growth plan, Valley Vision, since 1998. The goals of Valley Vision, promoting compact, mixed use development in and around existing urban and town centers while protecting open space and natural resources, are in sync with the RTP. For more information on Valley Vision, please visit:

<http://www.pvpc.org/plans/valley-vision-4-land-use>.

The Commonwealth has continually funded District Local Technical Assistance (DLTA) for the last 12 years, helping our region advance smart growth planning. In addition the Executive Office of Energy and Environmental Affairs (EEA) has launched Land Use Planning Grants over the last three years, helping our municipalities and our region to advance smart growth. Some of our member municipalities are making great progress promoting infill, housing rehabilitation and new affordable and market rate housing development where there is existing infrastructure to support it.

## **2. Legislative Changes to Expand Funding Options**

### **a) Zoning Reform**

The effort to update Massachusetts zoning laws, widely recognized as the most out of date in the United States of America, is ongoing. Governor Baker is leading significant support to a new initiative to expand housing choice, which, could help reduce the need to drive if there was more of a range of housing choices - especially affordable housing. A recent study by a Boston University professor reveals how local Boards seem to prioritize the voices of established property owners who abut proposed new affordable housing over the needs of the rest of the community, highlighting the need for training and new perspectives of residents to serve on these boards.

### **b) Regional Ballot Initiatives**

Massachusetts municipalities and regions would benefit from enabling legislation for Regional Ballot Initiatives (RBI), which would allow a city or town or a group of cities or towns to raise revenue through higher property taxes or sales taxes or another source. The revenue would have to be used for a specific transportation project. Approving a new tax would require a vote of the town's governing body

and approval by town voters on the ballot. The ballot question would specify the size and duration of the tax and the specific projects it would be used for. RBIs were supported by the Senate in the last legislative session, but did not make it into the final approved legislation.

### **c) Transportation and Climate Initiative**

The Transportation and Climate Initiative (TCI) is a regional collaboration of 12 Northeast and Mid-Atlantic States and the District of Columbia that seek to improve transportation, develop the clean energy economy and reduce carbon emissions from the transportation sector. The participating states are: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia. The initiative builds on the region's strong leadership and commitment to energy efficiency and clean energy issues, and its programs to reduce carbon emissions in the power sector, which have resulted in the region becoming one of the most energy efficient areas in the nation. At the same time, the effort underscores the sense of urgency shared by all 13 jurisdictions, and their collective aspirations to become the leading region for sustainability and clean energy deployment in the country.

The TCI is directed by state and district agencies located within the 13 TCI jurisdictions. Each agency is free to determine whether and how they will participate in individual projects and working groups. The initiative is facilitated by the Georgetown Climate Center.

### **3. Electric Charging—Decarbonization of the Fleet**

In 2017, PVPC advanced a regional EV charging station plan and working group (<http://www.pvpc.org/projects/ev-charging-station-planguide> ). The work affirmed that all municipalities, businesses and institutions that receive customers for an hour or more, should add EV charging stations. Both Eversource and National Grid, the two investor owned utilities that serve our region, currently offer incentive programs to advance EV charging stations. While our municipal utilities are not yet offering EV charging station subsidies, the Commonwealth continues to fund the Massachusetts Offers Rebates for Electric Vehicles (MOR-EV) program, offering funds to offset up to half the cost of an EV charging station as well as a rebate on the purchase of electric vehicles.

Thanks to the efforts of our certified Green Communities, and to some foresight from major employers in the region, we have a good start on a connected network of EV charging in our region and we continue to assist our municipalities and collaborators to advance this work.

The PVTA currently has 3 electric buses in their fleet of fixed route transit vehicles with plans to acquire more. When the PVPC worked with the city of Springfield on

their Climate Action & Resilience plan, we highlighted that a complete electrification of PVTA buses could result in reductions of 18,260 metric tons of CO<sub>2</sub>.

#### **4. Complete Streets**

Many communities in the Pioneer Valley still lack adequate bicycle and pedestrian infrastructure. However, in the last few years communities in the region have had some success improving bicycle infrastructure, repairing and adding new sidewalks and developing new shared use paths, thanks in part to MassDOT's Complete Streets program. Through this program our communities have initiated projects to make local streets safer and more inviting for people to walk, run, and bike. These efforts will also improve the health of Pioneer Valley residents through improved opportunities stay active, reducing chronic disease. More information on the Complete Streets program is included as part of the Appendix to the Regional Profile Chapter of the RTP.

#### **5. ValleyBike**

Bikeshare in the Pioneer Valley, known as ValleyBike, is the culmination and realization of state, regional and municipal goals articulated in the region's 2014 sustainability plan, Our Next Future, as well as in municipal and state plans and goals. Bikeshare is an integral component of the region's path to a regenerative and sustainable future and strives to promote healthy habits and reduce greenhouse gas producing vehicle trips. If managed effectively and expanded appropriately, ValleyBike could also mitigate the need for expensive road repairs and expansion, and has the potential to improve the effectiveness of our region's transit system.

ValleyBike had great success in its first five months of operation. Riders rode 83,735 miles (equivalent to 3.3 trips around the earth!), on 26,353 bicycle trips. ValleyBike officially launched on June 28th, 2018 and remained open until November 30th hosting a total of 26,353 rides, an average of 170 per day. An average of 167 bikes were available at any given time throughout the season at 43 stations spread amongst five cities and towns (Amherst, Holyoke, Northampton, South Hadley, and Springfield). The ValleyBike program was originally designed to have 500 bikes at 50 stations. Twenty-six stations were opened at the launch in June and 17 more opened in July and August. The remaining seven stations should be opened in Year Two. The average rides per bike for the entire season was approximately 157.8, and the average rides per bike per day was just over 1. Easthampton joined ValleyBike in 2019 increasing the number of stations to 55.

#### **6. Social Determinants of Health—Transportation and the Built Environment**

Health-related impacts of transportation projects, particularly those on environmental justice populations, have been factored into our local TIP scoring process. The impacts of the aging population is receiving greater consideration, as well as access to medical care and sources of healthy foods for all segments of the population.



PVPC is assisting the communities of South Hadley, Chicopee and Holyoke with an Age-Friendly assessment and many of our member communities are moving forward with this designation on their own, including Springfield, Palmer, Agawam, West Springfield, Northampton, and Monson. Both Springfield and Holyoke are “urban food deserts” with portions of the community lacking easy access to full-line grocery stores. PVPC has worked with Springfield and Healthy Hampshire to complete food access mapping projects, helping the local government assess and respond to food insecurity. More information is available here:

<http://www.pvpc.org/HampshireFoodAssessment>.

## **7. Adapting to the Changing Climate/Risk Management**

Transportation planning in our region is addressing the issue of adaptation to climate change. As our member municipalities complete their Municipal Vulnerability Preparedness (MVP) Community Resilience Building (CRB) processes and update their Hazard Mitigation plans, they are prioritizing the transportation assets in greatest need of maintenance, such as specific portions of roadway that would do the most damage if they were to fail, especially under-sized or poorly maintained culverts. They are all prioritizing the need to improve the capacity of culverts while minimizing roadway stream crossing impacts all while advancing ecologically and sensible alternatives to reduce roadway washouts. These are referred to by Governor Baker as “Nature Based Solutions.” PVPC worked with the city of Springfield Department of Public Works to develop a Green Infrastructure Design Guide to facilitate nature based solutions in the city with Land Use Planning funding from EOEEA that could serve as a model for other municipalities.

In addition to the above, we also continue to work to promote technology and other measures to reduce the need to drive.

### **a) Avoided Trips**

PVPC continues to support expansion of comprehensive internet access for our entire region, and to encourage home-based businesses, because just like in buildings, the most sustainable energy is the energy you do not use. We are working to make it possible for people to telecommute, shop, and take classes on-line, reducing the need for many vehicle trips.

### **b) Technology-Enhance Capacity of Existing Infrastructure**

PVPC continues to advocate for and integrate Intelligent Transportation System (ITS) technologies into our existing transportation systems. This includes real-time traffic congestion monitoring and transit schedule information as well as ride and car sharing programs linked to smart phones. The use of highway medians and other transportation property for solar energy production is being studied and implemented, and the use of recycled roadway materials is encouraged on roadway projects carried out by MassDOT and municipal DPWs.