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3 EXISTING CONDITIONS

Nestled among the forests, farmland, and mountains on the banks of the Connecticut River, the Pioneer Valley is ideally suited for recreational hiking and biking. Our small towns and larger city neighborhoods are where you find great coffee shops, historically preserved buildings, musical performances, crowds of young and the young at heart, a strong local food movement, first-rate museums and art galleries, shops, restaurants, and residents eager to get outdoors in any season.

The Pioneer Valley is made up of 43 cities and towns with various travel patterns influenced by how land is developed. Changes in population growth leads to changes in travel needs. In general, as the population of urban areas has decreased, rural and suburban area populations have increased. A sprawling development pattern has made it increasingly difficult to walk or bicycle as a practical and safe way to get around.

There is a growing desire to reduce our dependence on the automobile and increase the availability of options for people of all ages and abilities to choose to bicycle or walk. There is also an interest in the use of non-motorized transportation to provide benefits that help improve quality of life such as:

- Improve air quality by reducing fuel emissions.
- Improve individual health by combating obesity and related diseases, especially for low-income inner-city populations and rural towns.
- Counter economic strain due to the cost of operating vehicles at the micro level (family-centered) and macro level (industry-centered).
- Combat sprawling land consumption of large-lot zoning that promotes gasoline-based travel in new communities.
- Reduce transportation related greenhouse gas emissions.
- Inspire safe neighborhoods through traditional housing development with small-scale business.
- Decrease dependence on imported foreign fuel.

Many factors can influence ones decision to walk or bicycle. These include:

- Lack of ability to walk or bicycle
- The need to transport large items or additional passengers such as children
- The need for a car at work
- Access to appropriate routes
- Environmental conditions such as hills and climate
- Availability of secure bicycle parking
- Access shower facilities.

A successful bicycle and pedestrian network can be measured in a variety of ways. Census data and crash statistics provide one measure of current conditions, surveys conducted at local bike and pedestrian facilities provide another measure by which to measure success. Infrastructure improvements including shared use paths, sidewalks and bike lanes also serve as a barometer. Finally, the policies, regulations and practices of government also measure current conditions influencing pedestrian and bicyclist behavior and infrastructure development in the region.

From bicyclists racing down a country road in the hill towns, to pedestrians on sidewalks in urban areas, and children in school crossings in the suburbs, pedestrians and bicyclists are everywhere in the Pioneer Valley. The infrastructure that accommodates this movement exists in varying degrees and is expanding.

3.1 Regional Network Overview

Massachusetts law requires providing access for bicyclists and pedestrians on all roadways except limited access and Interstate highways. There are 4,325 miles of functionally classified roadway in the Pioneer Valley. Eighty-seven miles are Interstate, where walking and bicycling are prohibited. Local cities and towns maintain the majority of roads in the Pioneer Valley region, a total of 3,441 miles. An online Bicycle Facility Inventory tool can be accessed to document and assess the current status of the regional network (Figure 3.1).

Currently there are approximately 47 miles of designated off-road bicycle facilities in our region and 37 on-road facilities (Table 3.1). These include bike lanes and designated bike lanes and bike routes in Agawam, Amherst, Belchertown, Brimfield, Chicopee, Easthampton, Granby, Hadley, Holland, Holyoke, Monson, Northampton, South Hadley, Southwick, Springfield, Wales, Westfield, West Springfield and Williamsburg. Many more of these bicycle design treatments are in the planning stages as communities work to implement the "complete street" approaches to design.

There are five general types of bicycle and pedestrian facilities according to the to the Guide for the Development of Bicycle Facilities [1]. These facility types include the following:

1) Shared use paths are facilities physically separated from motorized vehicular traffic by an open space or barrier and are either within the highway right-of-way or within an independent right-of way. Shared use paths may be used by bicyclists, pedestrians, skaters, wheelchair users, joggers and other non-motorized users.

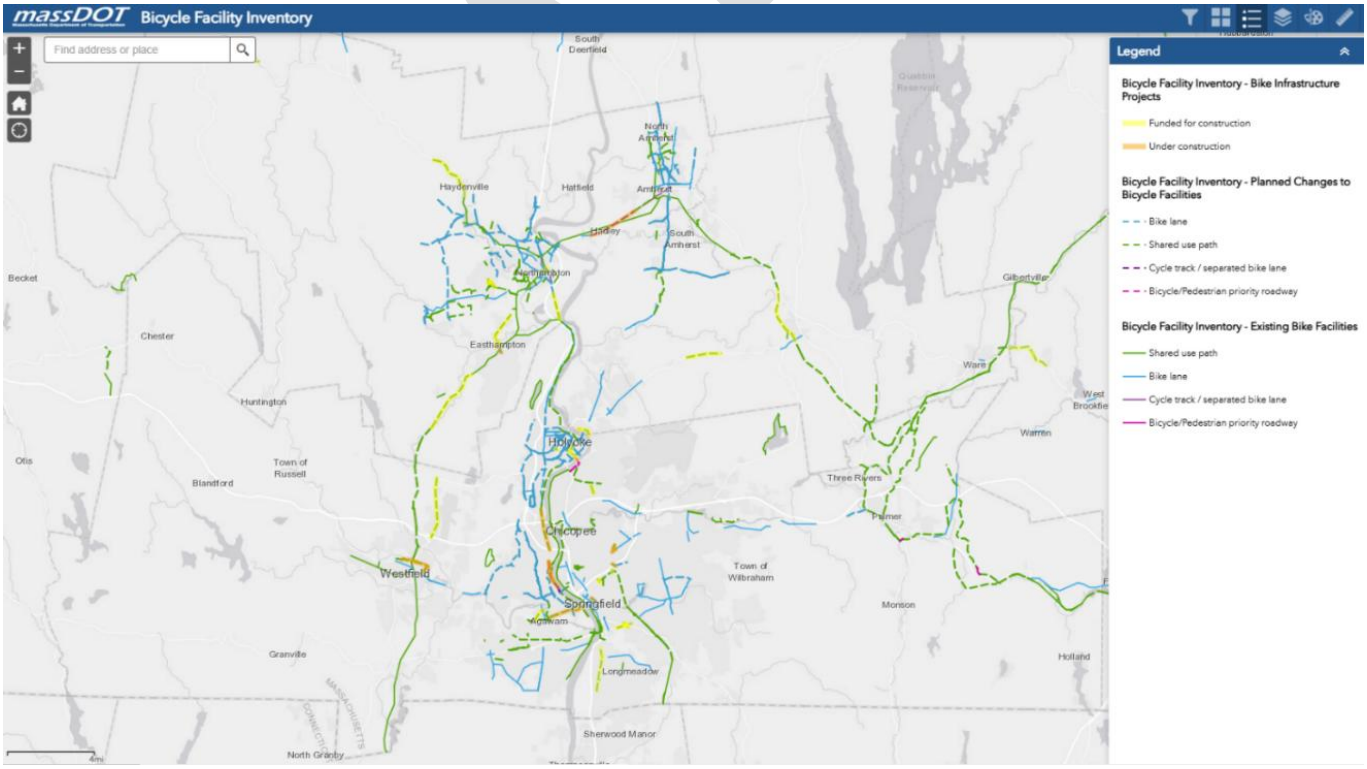
[1] AASHTO, 2012. Guide for the Development of Bicycle Facilities

2) Bike lanes are portions of roadways that have been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

3) Signed shared roadways (bike routes) are shared roadways that have been designated by signing as preferred routes for bicycle use.4. Shared roadways are roadways that are open to both bicycle and motor vehicle travel. They may be existing roadways, streets with wide curb lanes, or roads with paved shoulders.

4) Walkways are pedestrian facilities that can be either separated from roadways, such as sidewalks and paths, or part of roadways, such as crosswalks or wide shoulders. In addition to these types of on and off-street linear transportation facilities, a broad variety of nonlinear facilities exist that further support effective and convenient pedestrian and bicycle travel. They include, but are not limited to: bike lockers, bike racks, showers/dressing rooms, bike/pedestrian bridges, lighting, landscaping, curb-cuts, medians, refuge islands, curb ramps, benches, drinking fountains, restrooms and signage.

Figure 3.1 Bicycle Facility Inventory



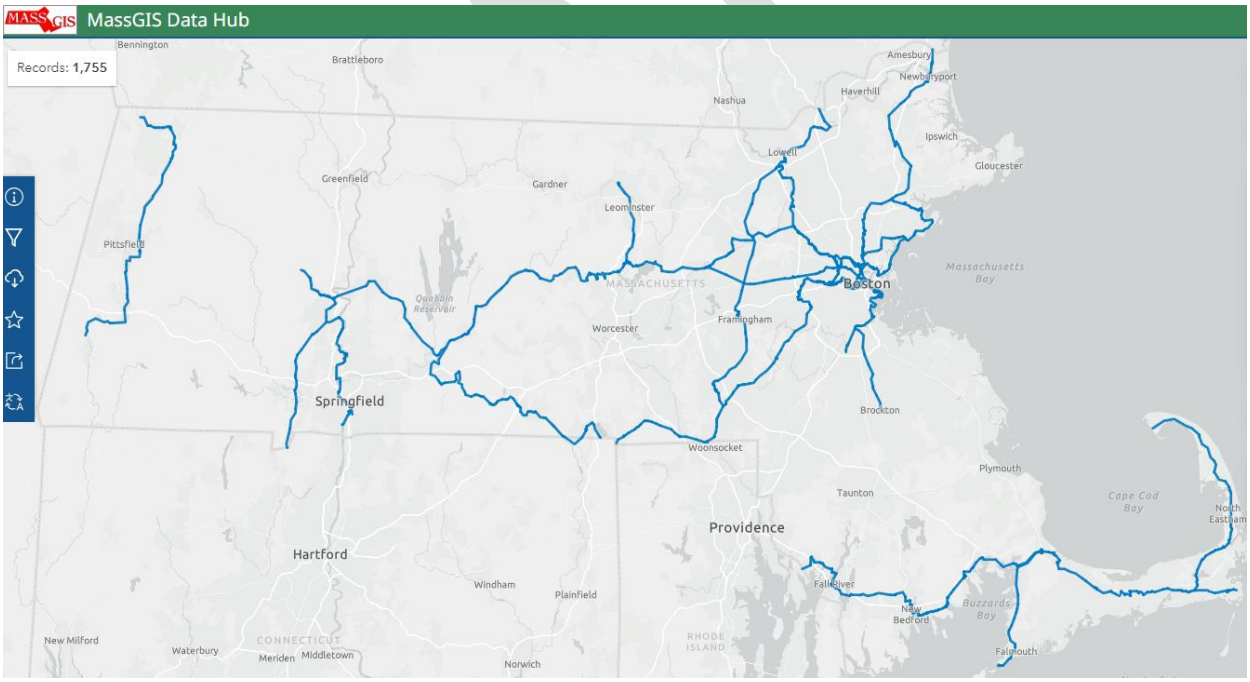
The original map above can be viewed online at this website link: https://massdot.maps.arcgis.com/apps/webappviewer/index.html?id=76fc33869d534c6ba0b16803d25ee990

Table 3.1 Pioneer Valley Existing Bicycle Infrastructure Inventory

Pioneer Valley Bicycle Facility	Communities	on/off road	Length (miles)	Date Opened
CT. River Riverwalk and Bikeway	Agawam	off	1.50	9/17/2004
Amherst Bike Route	Amherst	on	1.00	
Amherst Bikeway (Route 116)	Amherst	off	3.50	
Five College Bikeway	Amherst	on	6.00	
South Pleasant St. Bike Lanes	Amherst	on	0.25	7/15/2001
UMass Connector Bikeway	Amherst	off	1.90	5/15/2003
Norwottuck Belchertown Extension	Amherst/Belchertown	off	1.20	5/12/2000
Damon Road Sidepath	Northampton	Off		12/1/2024
Chicopee Center Canal Walk	Chicopee	off	0.20	5/21/2010
Redstone Rail Trail	East Longmeadow	off	1.57	9/9/2010
Manhan Rail Trail	Easthampton	off	4.20	6/19/2004
Dwight Street Bike Lanes	Holyoke	on	0.50	6/12/2005
Hampden Street Bike Lanes	Holyoke	on	0.60	5/13/2004
Route 5 Bike Lanes	Holyoke	on	1.20	7/8/2006
Holyoke Canalwalk	Holyoke	off	0.30	6/25/2010
Route 5 Bike Route	Holyoke/Northampton	on	8.00	6/25/1986
Springfield (Ludlow) Reservoir Trail	Ludlow	off	3.10	
MBW Trail	Monson, Brimfield, Wales	on	17.00	6/10/1998
Elm Street Bike Lanes	Northampton	on	0.80	6/15/2000
New Haven and Northampton Canal Rail Trail	Northampton	off	2.10	7/1/2005
MassCentral Rail Trail	Northampton	off	2.50	6/6/1984
Rocky Hill Trail	Northampton	off	0.50	
Norwottuck Damon Road to Woodmont	Northampton	off	0.80	5/1/2008
Norwottuck Look Park Extension to Grove St	Northampton	off	2.00	7/1/2005
South Street Bike Lanes	Northampton	on	1.10	9/10/2003
Northampton Canal/MassCentral Rail Trail	Northampton	off	1.00	9/26/1989
Norwottuck Rail Trail	Northampton/Hadley/Amherst	off	8.50	5/15/1993
Southwick Rails to Trails Phase I	Southwick	off	3.14	5/3/2010
CT. River Riverwalk and Bikeway	Springfield	off	3.70	7/18/2003
Westfield Riverwalk	Westfield	off	2.00	4/16/1998
116 Five College Bike Lane Extension	Granby/South Hadley	on	0.25	4/25/2015
Columbia Greenway (segment 2, 3)	Westfield	off		
Tunnel MassCentral Manhan Rail Trail	Northampton	off	0.10	2018
CT. River Riverwalk and Bikeway	West Springfield	off		2019
Ludlow Mills Riverwalk	Ludlow	off		
Agawam Connector Loop Bikeway	Agawam	on/off		
East Hadley Road Sidepath	Amherst	off		2019
Morgan-Sullivan Bridge	Agawam/West Springfield	off	0.10	2021
Route 116 Sidepath	Amherst	off		
CT Riverwalk and Bikeway	Chicopee	off	2.44	6/2022
Ware Accessible Trail (MassCentral)	Ware	off		2022
Western Avenue Bikeway	Westfield	off		2021
Grand Trunk Titanic Trail	Brimfield	off		
Total Mileage			83.05	

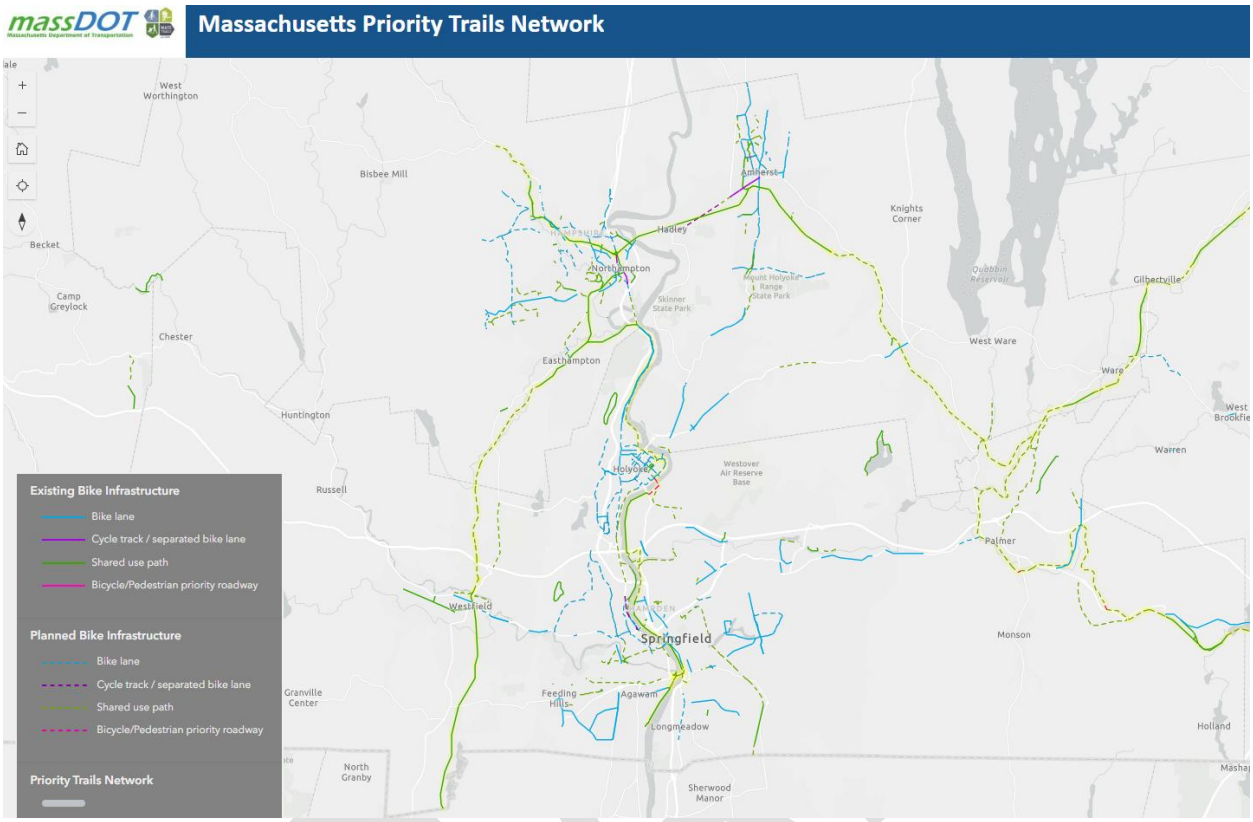
The Massachusetts Trails Team (MassTrails), an interagency collaboration between the state's Department of Conservation and Recreation (DCR), MassDOT, and municipalities, has published a new interactive Priority Trails Network vision map released in 2023 for current and future shared-use path projects throughout the Commonwealth (Figure 3.2). The map offers a centralized inventory of key rail trail projects that will help support an envisioned comprehensive statewide transportation trail network. Additionally, the map lists priority shared-use path project locations that either have been proposed for consideration or will be pursued for funding and development to help address key gaps in the network (Figure 3.3). Where off-road facilities do not exist, high-comfort on-road infrastructure is proposed such as separated bike lanes with sidewalks or side paths. The MassTrails Team works toward the realization of this statewide vision, in recognition of the transportation, recreation, environmental, economic, and other benefits trails provide. The trails identified on this map were selected from many envisioned by communities, trail groups, and agency staff. They represent priorities to be worked toward, but they are not the only places where attention and funding will be devoted. As key gaps in this network are completed, new priorities are identified and pursued.

Figure 3.2 Massachusetts Priority Trails Network Map



The original map above can be viewed online at this website link: https://geodot-massdot.hub.arcgis.com/datasets/3bf22008fbec4db59feb0dad94305706_0/explore

Figure 3.3 Pioneer Valley Region Priority Trails Network



The original map above can be viewed online at this website link: https://experience.arcgis.com/experience/75ad0564b18f48f5973657d65d2a775d/page/Page/

Pioneer Valley trails included in the Massachusetts Network Vision map are:

- Columbia Greenway Rail Trail
- Southwick Rail Trail
- Southampton Greenway Rail Trail
- Manhan Rail Trail
- Mass Central Rail Trail
- Northampton Bikeway
- Connecticut River Walk and Bikeway

MassDOT also prepared a series of statewide network analyses for different modes of active transportation. The results are shared via an online dashboard using an interactive state map rich with layers of data that can be turned on and off to show where certain attributes of the map intersect and reveal trip making patterns. The following sections of the regional network analysis borrow from two sources of active transportation trips and corridor data analysis conducted at the state and regional levels. The first source is a recent Bicycle and Pedestrian Infrastructure Gap Analysis

shared by MassDOT. The second source is from MassDOT's active transportation demand forecasting effort.

In this report, we will focus on the Pioneer Valley Region portion of this statewide analysis effort. A select set of data layers will be displayed to display observed patterns. The first map shows project short term priority sites (Figure 3.4). The second map shows the state roadway network analyzed by the MassDOT statewide effort where the roadway network is overlayed with the 2020 Census designated Urban Areas in the Pioneer Valley region (Figure 3.5). Maps are available for viewing on the MassDOT website at the following link, where various data layers can be easily turned on and off to create the various maps displayed in this chapter: https://experience.arcgis.com/experience/7f7ae2a91d9d4356b2d8e243c901500a#data_s=id%3Awidget_110_ouput%3A0

Figure 3.4 Short Term Project priority Sites

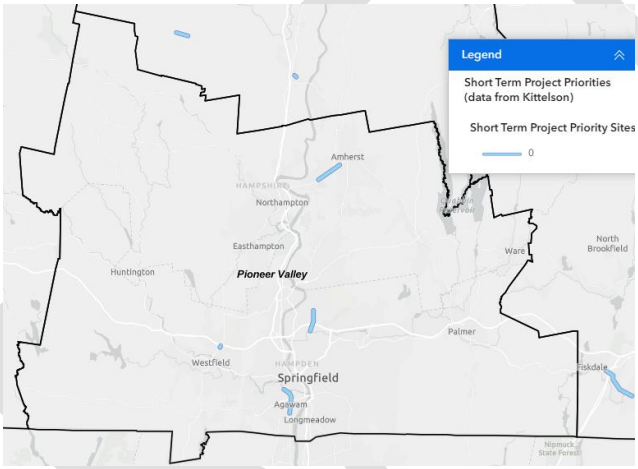
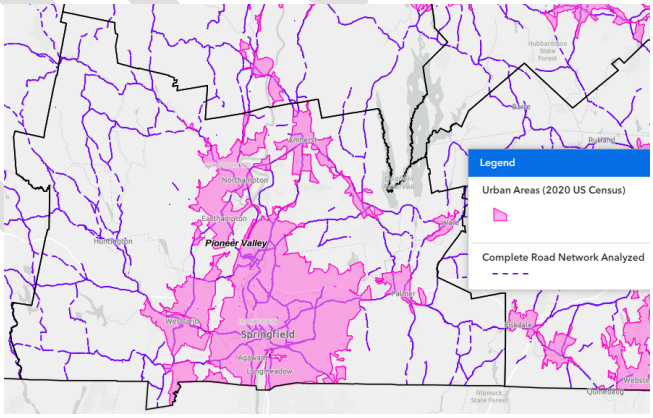


Figure 3.5 State Road Network with the 2020 US Census Urban Area Designations



The set of maps on the next page prioritize state roadways into districts for the pedestrian and the bicycle networks (Figure 3.6, Figure 3.7). These are followed by a set of maps of the Pedestrian and Bicycle Short Trips Vision Map Analysis of MassDOT Roads (Figure 3.8, Figure 3.9). The vision is that residents living or working along state roadways have access to high-comfort pedestrian and bicycle facilities for short

walking and biking trips. A high-comfort criteria assumes adequate space for lane/path width for bikes depending on volume/speed and utilizes a 5-foot sidewalk width for pedestrians. The short-trip analysis assumes a maximum distance of half mile for pedestrians and three miles for bicyclists. The infrastructure gap analysis offers priority ranking for corridors weighted by the percentage of roadways captured by the analysis tool in an MPO. It can display priorities for top-tier and mid-tier potential projects at the 2.5% and 5% level for bikes and the 5% and 10% for pedestrians.

Figure 3.6 Pedestrian Priority District

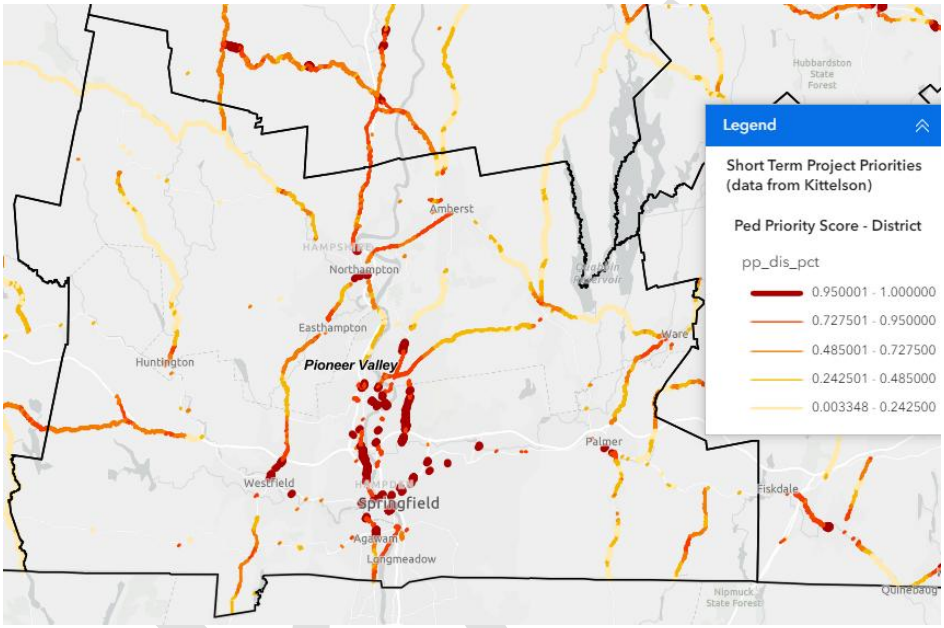


Figure 3.7 Bicycle Priority District

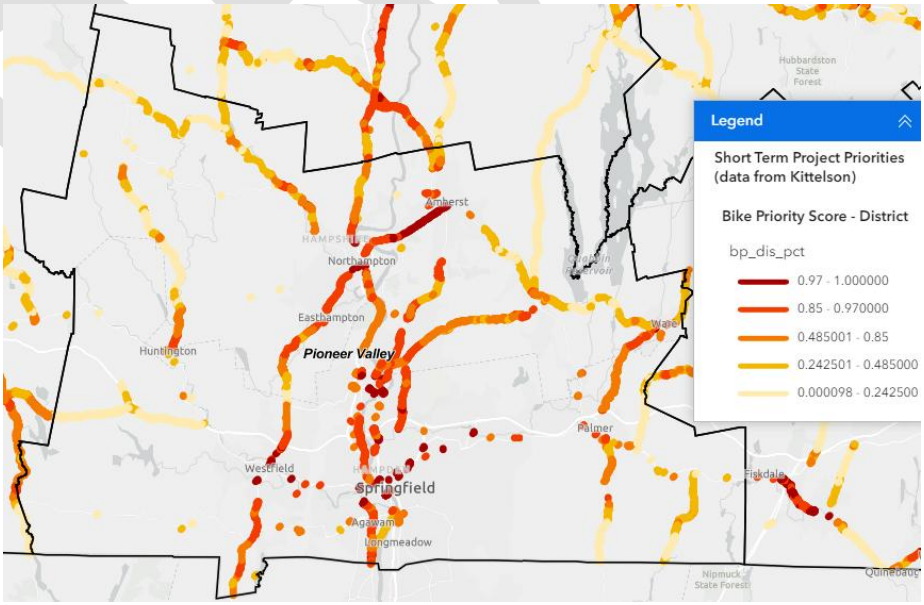


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Figure 3.8 Pedestrian Short Trips Vision Map Analysis of MassDOT Roads

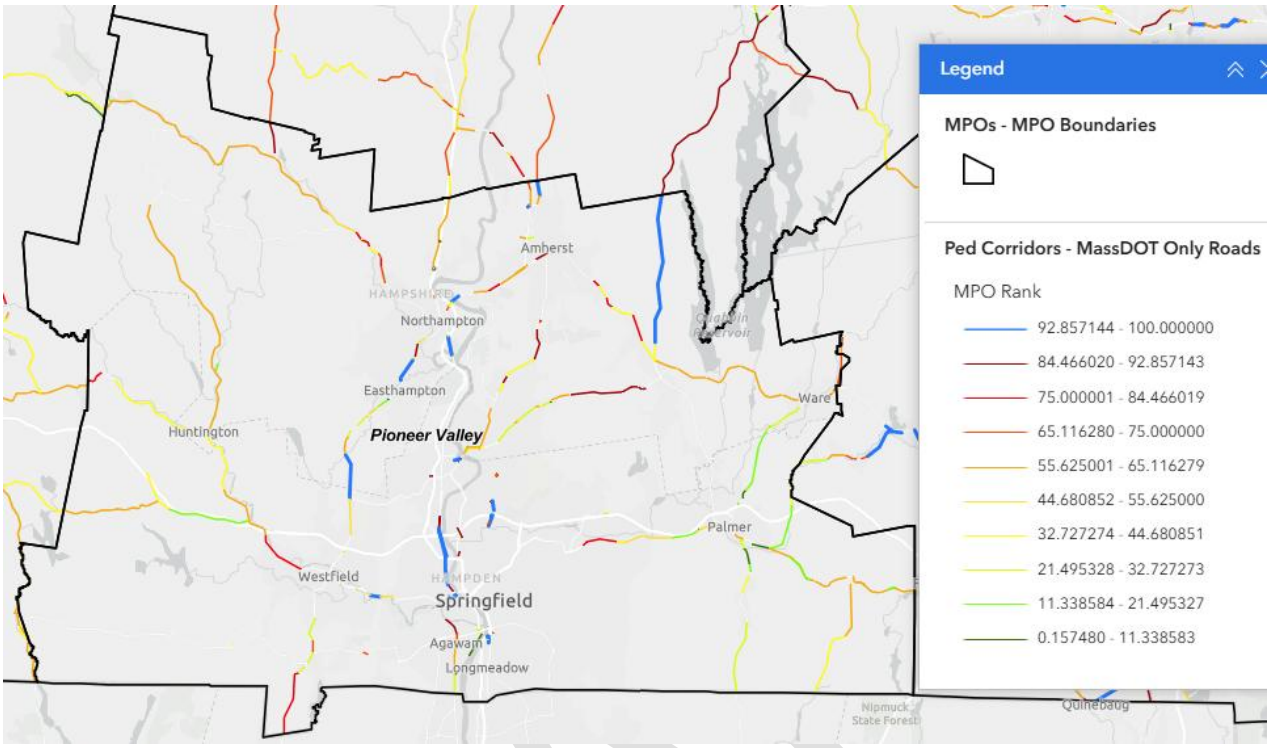
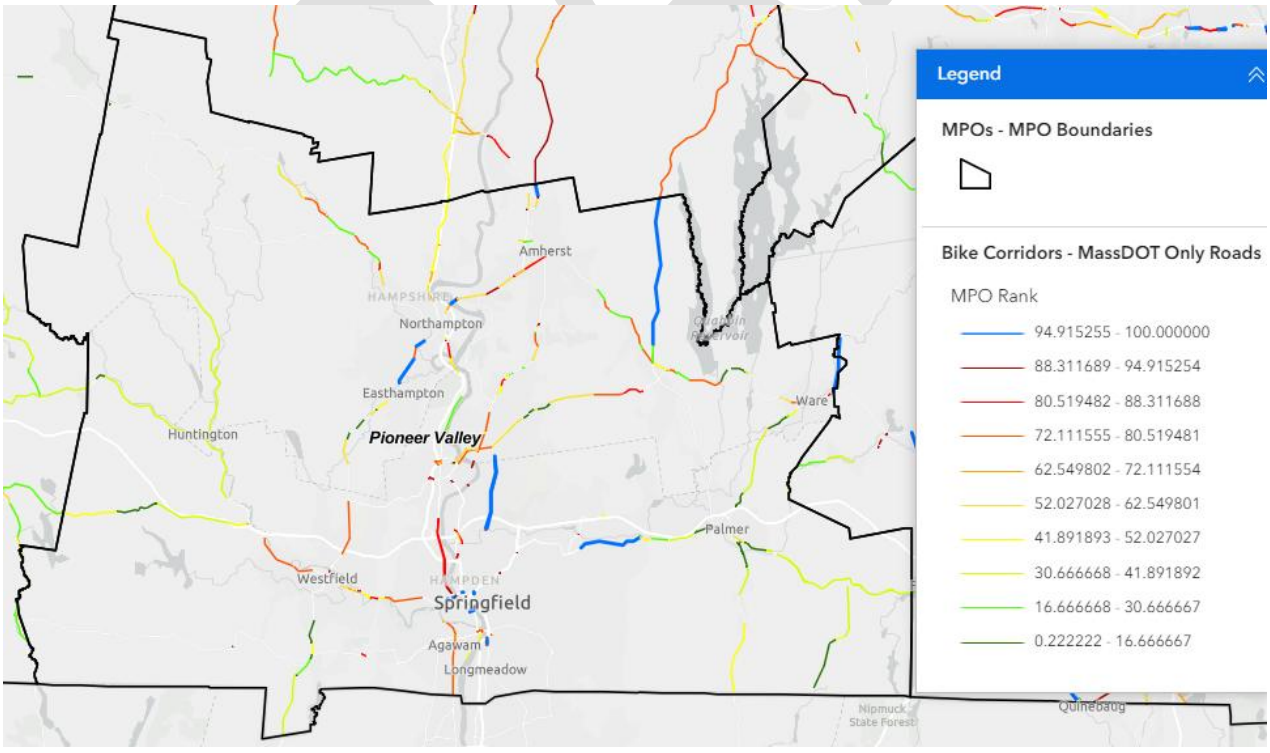


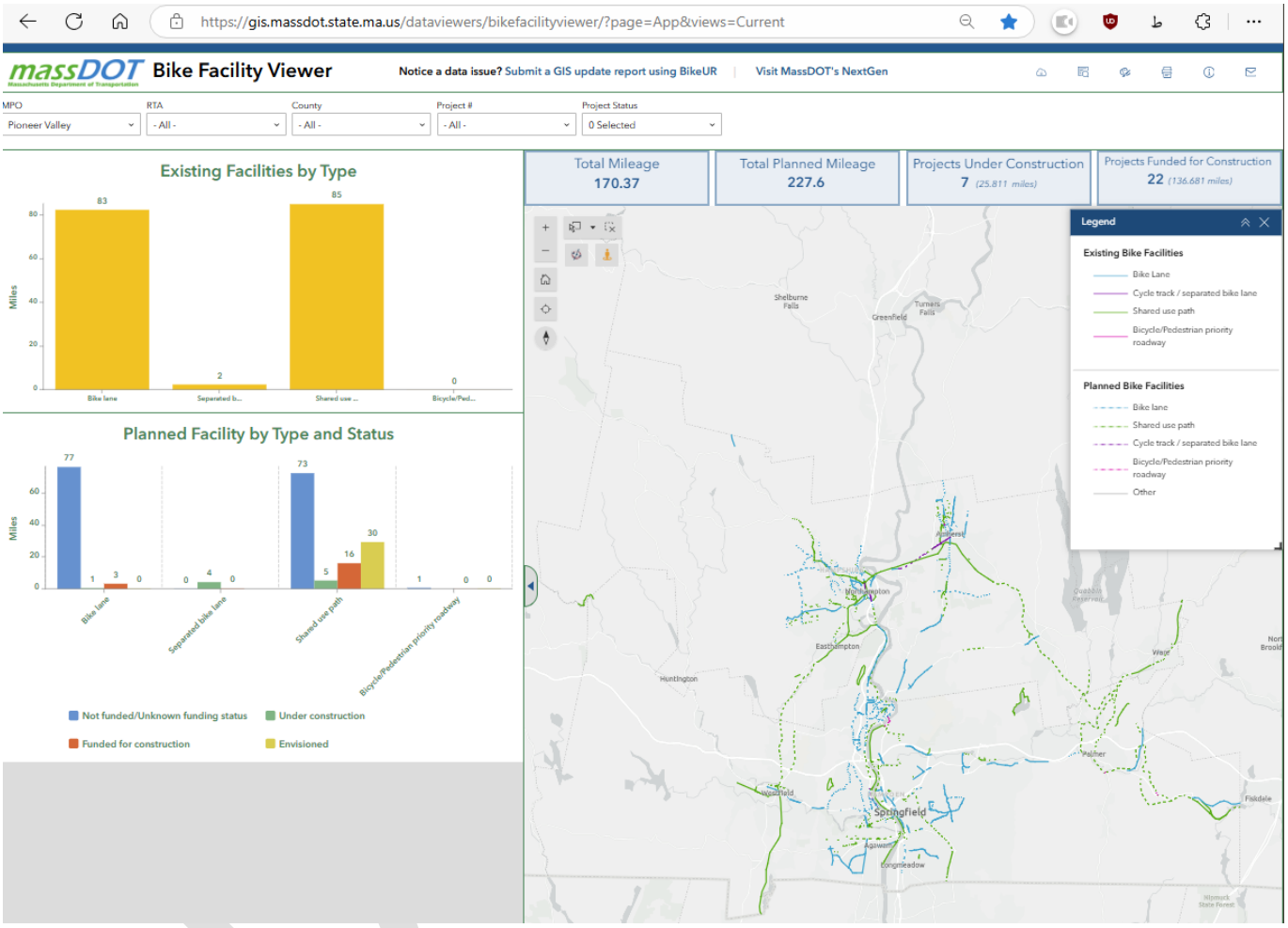
Figure 3.9 Bicycle Short Trips Vision Map Analysis of MassDOT Roads



The original maps above can be viewed online at this website link:
https://experience.arcgis.com/experience/7f7ae2a91d9d4356b2d8e243c901500a

MassDOT's Bike Facility Viewer is a useful online tool that displays existing and planned facilities by type (Figure 3.10). It can be viewed online at this website link: https://gis.massdot.state.ma.us/dataviewers/bikefacilityviewer/?page=App&views=Current

Figure 3.10 Bicycle Facilities by Type



Regional Highlights

The Pioneer Valley's regional non-motorized transportation network includes much more than MassDOT roads. It includes local jurisdiction roads as well as off-road facilities. Off-road facilities are comprised of shared-use paths, side paths, rail with trail, traditional bike paths, and rail trails. These off-road facilities allow new users to be introduced to the benefits of walking and bicycling while isolating them from potential conflicts with motorized traffic. They also provide economic benefits through bicycle tourism and downtown retail and restaurant foot traffic while reducing dependence on motor vehicle parking. Our strongest downtown business districts are in census blocks groups with the highest levels of walking and bicycling (See Appendix). The following are highlights of some of the popular projects in the Pioneer Valley region that were completed within the past decade.

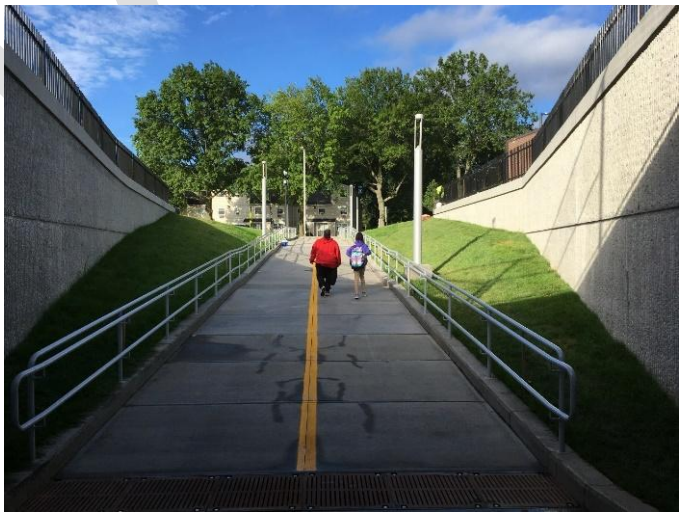
The Norwottuck Branch of the MassCentral Rail Trail is one example of the region's commitment to bicycling and walking. The ten-mile Norwottuck Trail links the communities of Northampton, Hadley, Amherst, and Belchertown, and facilitates travel to and from educational institutions, downtown commercial areas, major employment centers and residential neighborhoods. Weekend traffic counts show that 1,100 people per day on average utilize the trail when local colleges are in session. The Massachusetts Department of Conservation and Recreation (DCR) and MassDOT reconstructed the original 1992 "Norwottuck Rail Trail" (now part of the MassCentral Rail Trail) in June 2015. The reconstructed path is wider in most places and incorporates a number of accessibility and intersection improvements including new bridge decks.

In 2018 construction was completed on a MassDOT tunnel project by Northern Construction Services. The $4.4 million tunnel under the active north-south Amtrak rail corridor provides a significant connection between the MassCentral Rail Trail and the New Haven and Northampton Canal Greenway and the Manhan Rail Trail.

The Connecticut Riverwalk and Bikeway in Springfield, Agawam, Chicopee and Holyoke was expanded in 2019 to include the West Springfield section of the Connecticut Riverwalk and Bikeway addressing a need for visual access to the river while providing improved access to canoe launch areas.

The Springfield North End Underpass was completed in late 2021 (Figure 3.11). It created a safe pedestrian connection between the Brightwood and North End neighborhood. As part of the project, a fifty-two (52) foot long concrete underpass was constructed under the existing railroad tracks together with a new five hundred and thirty (530) foot long multi-use path connecting to existing sidewalks along Birnie Avenue and Plainfield Street in Springfield. The $6.7 million project created a new fully-accessible crossing that encourages pedestrian and bicycle access to area resources while also offering significant safety improvements for North End residents traveling between Birnie Avenue and Plainfield Street.

Figure 3.11 Pedestrian Railway Underpass in Springfield



In 2022 Chicopee's addition to the Connecticut Riverwalk & Bikeway was opened to the public. The city-owned shared use path along the Connecticut River flood control levee extends from the Medina Street boat ramp to Nash Field, a distance of 2.4 miles. This multi-use trail is composed of two parallel paths: a paved path for bikes located at the base of the dike and a gravel path located on top of the dike. The project includes overlooks to the river, way finding signs, parking locations, pathways over the levee to connect neighborhoods to the trails, root barriers, fishing access areas, benches at scenic vistas, and bike racks.

There are several Regional Hiking Trail Maps and bicycling guides available at bike shops, at local bookstores and online. The popularity of bicycling in the Pioneer Valley led to the production of several guidebooks specific to the region including the Rubel Bike Map to Western Massachusetts, Bicycle Touring in the Pioneer Valley (Nancy Jane), Bicycling the Pioneer Valley (Marion Gorhan), Touring Jacob's Ladder by Bicycle or Car (PVPC) and Jacob's Ladder Trail Western Region Off-Road Bicycle and Trail Guide (PVPC), New Haven and Northampton Canal Greenway by Robert Madison, Backroad Bicycling in Western Massachusetts by Andi Marie Cantele. The "Pioneer Valley Trails: A Hiking and Biking Guide," is sold at area bookstores and outdoor recreation retailers (Figure 3.12). The guide shows the locations of many hiking and biking trails in Hampden and Hampshire counties. The guide features a map on one side, showing the locations of 47 trails. The reverse side includes descriptions of each of the trails, including their location, whether they are paved or off-road, the length, types of permitted uses, and parking information.

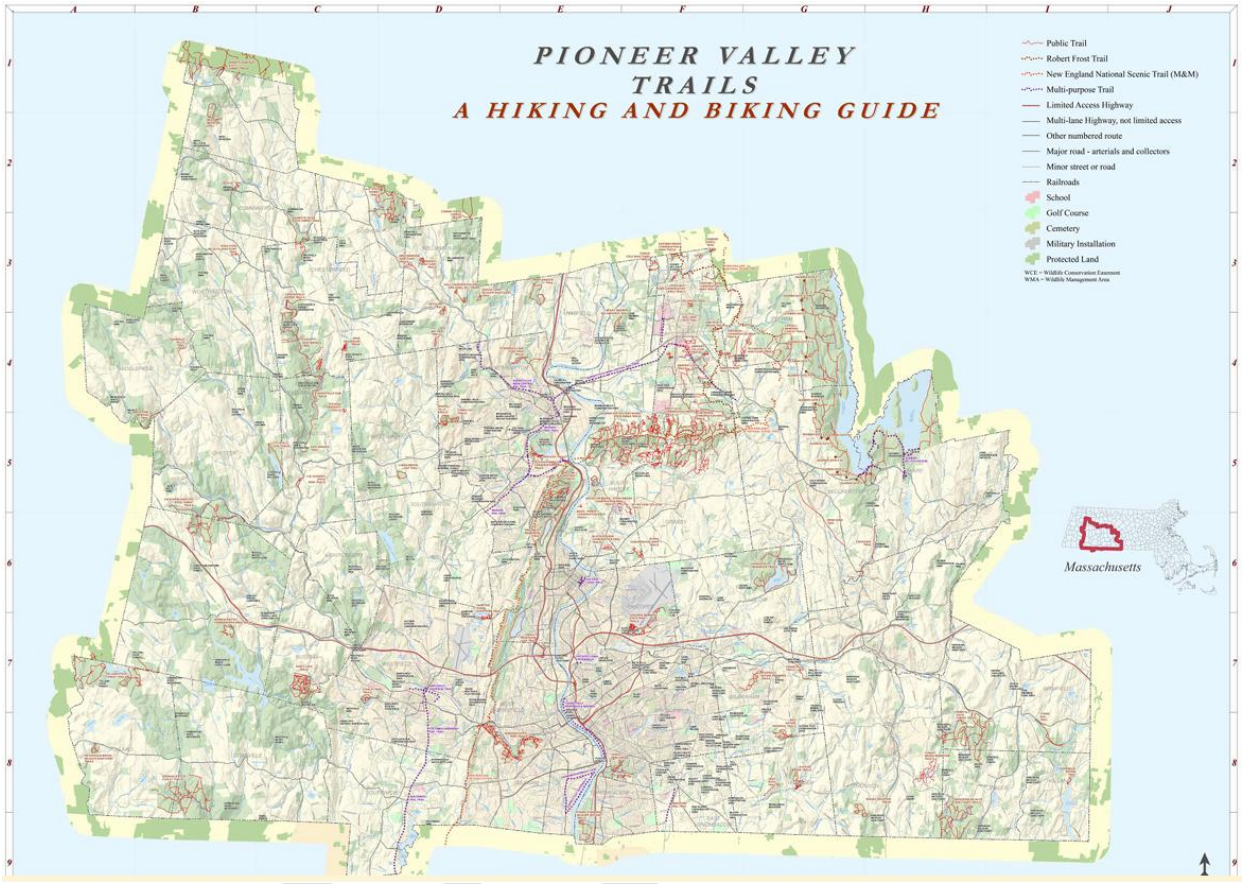
In brief, the current regional bicycle network offers:

- 90+ mile network across 17 communities.
- ~50 miles of on-road lanes
- Extended mobility range by public transit via bike racks on all fixed route transit vehicles, used 40,706 times in 2022.

The current regional pedestrian network:

- Varies by City and Town.
- Is more comprehensive in downtown and village centers
- Participates in the Massachusetts Safe Routes to School Program in 79 schools

Figure 3.12 Pioneer Valley Trails Map



The original map above can be viewed online at this website link: https://www.pvpc.org/sites/default/files/2016%20trail%20hike%20guide%20brochure%20FINAL%20sml.pdf.

The popularity of share use paths in the Pioneer Valley has brought new challenges and opportunities to those that use and manage these facilities. Interest in year-round use has pushed many communities to explore options for snow removal, and while recreation use still dominates trail activity many residents increasingly use the facilities for non-recreational trips. In 2018 PVPC commissioned a study of at-grade crossing on shared-use-paths to better understand the safety challenges that these unique intersections present. In 2025, the Department of Conservation and Recreation (DCR) started a pilot project to plow the Norwottuck Rail Trail (part the Mass Central Rail Trail/MCRT) from Woodmont Street in Northampton to Swift Way in Amherst connecting to UMass (Figure 3.13). To preserve the integrity of the trail, DCR will use specialized trail equipment to plow. No salt will be used along the trail to protect the surrounding ecological and agricultural landscapes, but spot sanding may be used to ensure the safety of all trail users.

Figure 3.13 Snow Removal on Norwottuck Rail Trail Hadley, MA

A major concern for pedestrians and bicyclists is the many bridges in the region. While most new or reconstructed bridge projects have followed state and federal guidelines for improving pedestrian and bicycle access, many bridges still lack sidewalks, and adequate shoulder width. The design and maintenance of these bridges directly influences the ability of people to walk or bicycle. In 2022, MassDOT completed the construction of the first separated bike lane on a bridge in Massachusetts (Figure 3.14). The project connects sidepaths in West Springfield and Agawam.

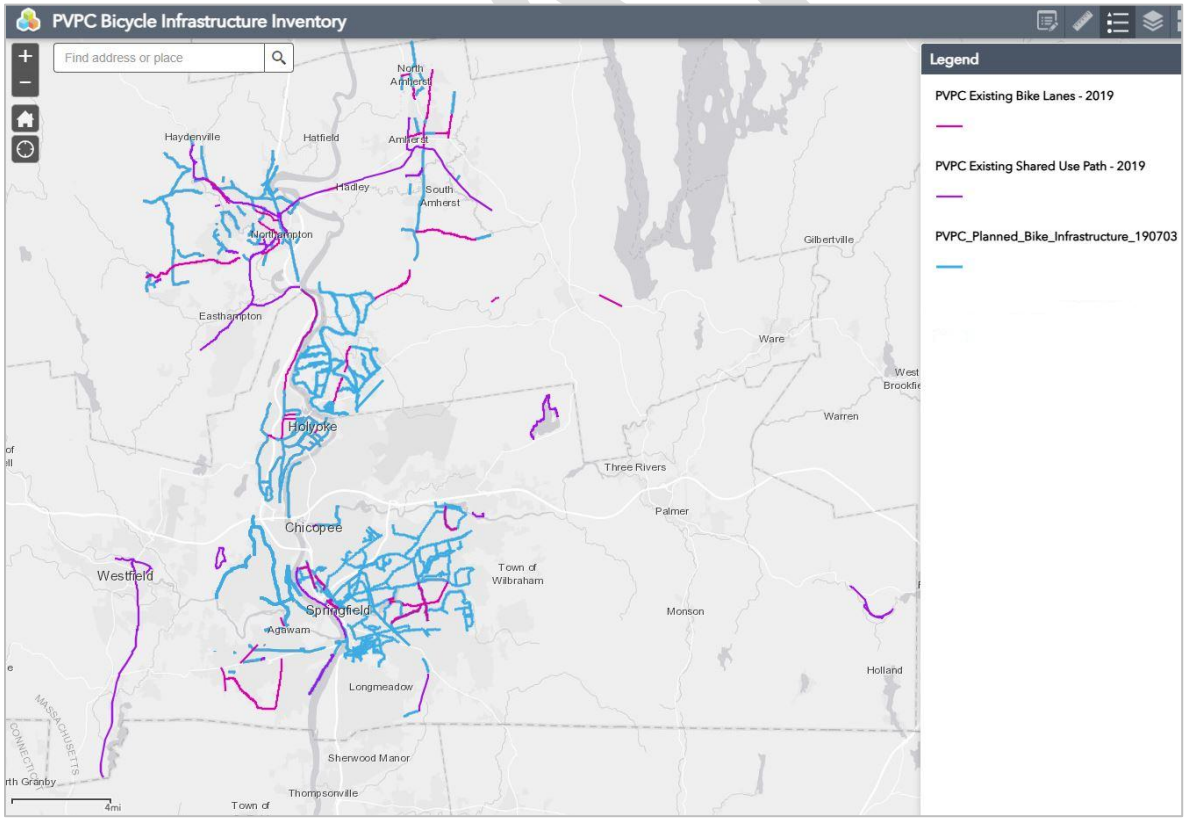
Figure 3.14 Agawam/West Springfield Bridge with Sidepath

3.1.1 Bicycle Network

The Pioneer Valley has much to offer for bicycling including bike lanes, shared use paths, side paths, striped shoulders, wide curb lanes, bike racks on transit vehicles, bike lockers, bike parking racks, employer-sponsored shower facilities, bike repair shops, maps, online rider resources, community bike share programs, bike rentals, organized rides, and sponsored races. Not far from the region's urban core, the rural roads of Western Massachusetts offer a vast array of quiet scenic New England country roads that can be explored for days on end. At the same time, our communities face challenges in meeting public expectations in expanding and connecting the Region's bikeway network. Many of the off-road and on-road facilities are disconnected and are hampered by pinch points that include bridges.

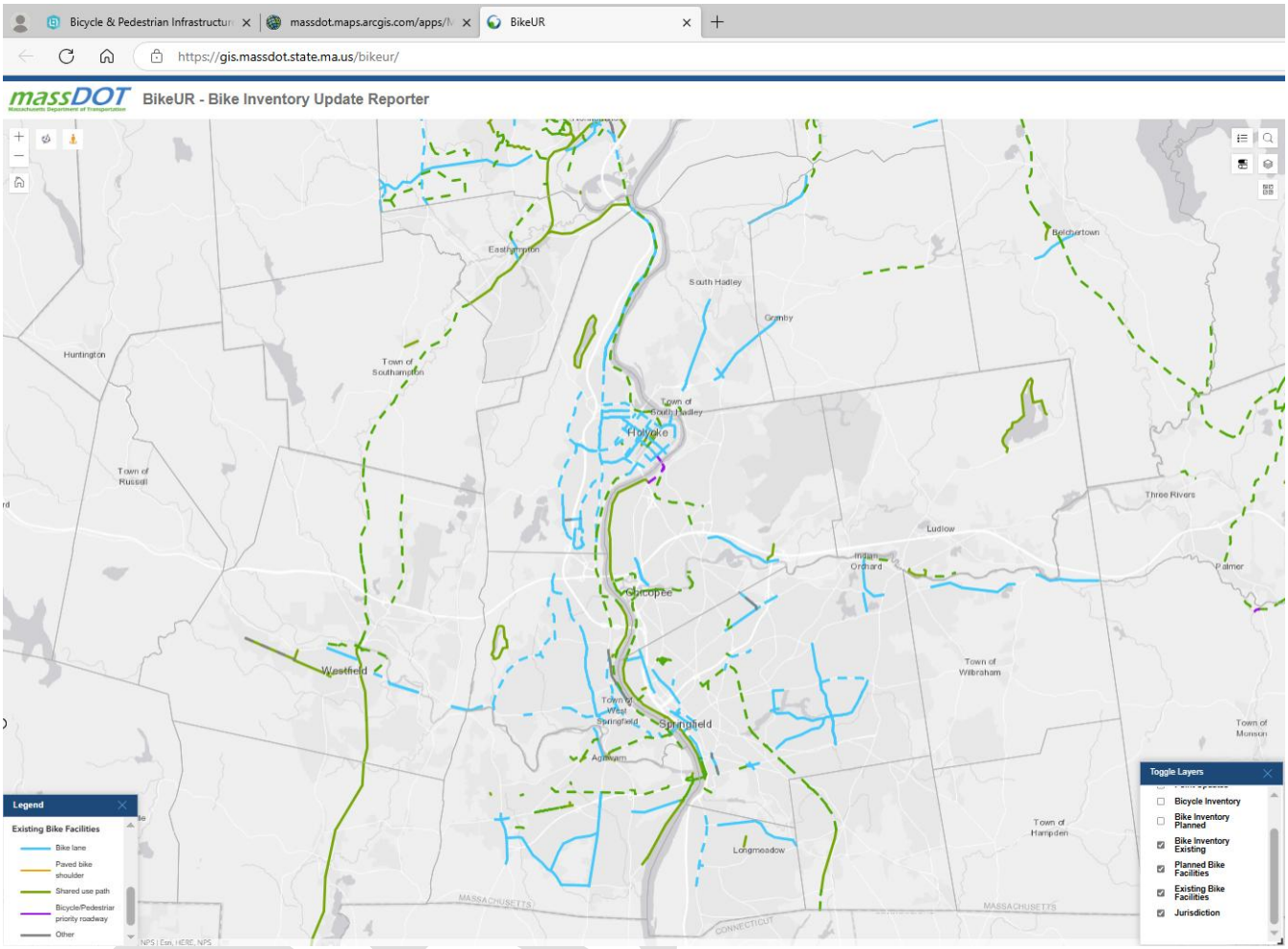
Currently seventeen communities provide over 90 miles of bicycle lanes, multi-use paths or "rail trails" in the region, while several communities have similar projects in the design phase. Twelve communities provide nearly 50 miles of designated on-road bicycle facilities. The Pioneer Valley Bicycle Infrastructure Inventory Map shows existing and proposed bicycle facilities (Figure 3.15). The next map shows the Statewide Bicycle Inventory Update Reporter Online Tool (Figure 3.16).

Figure 3.15 Pioneer Valley Bicycle Infrastructure Inventory Map



The above map can be viewed online at this website link: https://pvpc.maps.arcgis.com/apps/webappviewer/index.html?id=8643f065eb6b408388c8a7da0f46189b

Figure 3.16 Bicycle Inventory Update Reporter



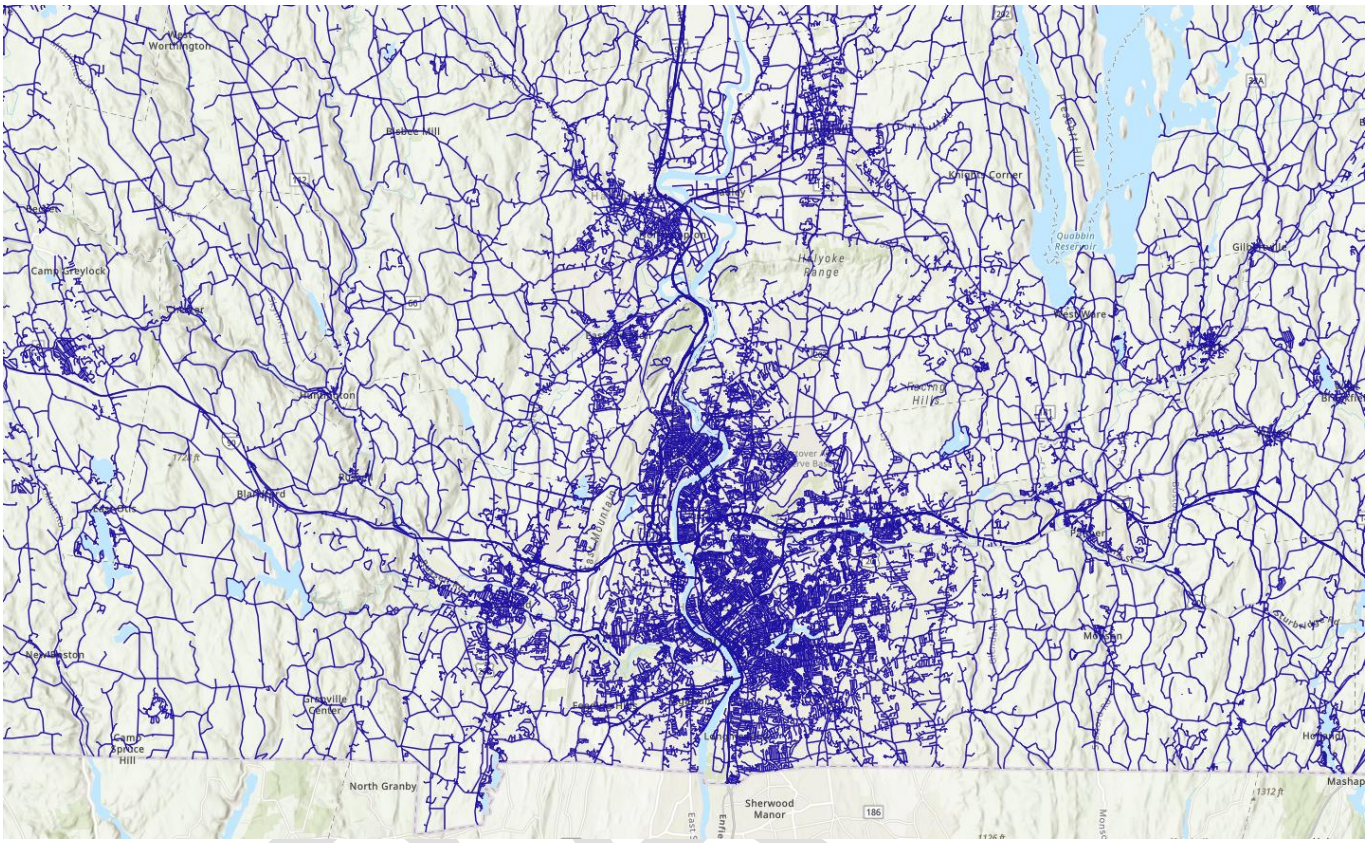
The above map can be viewed online at this website link:
https://gis.massdot.state.ma.us/bikeur/

3.1.2 Sidewalk Inventory

Pedestrian access and circulation are typically better in town or city centers due to the physical design of such places. Shops, offices, restaurants, and other amenities are generally clustered together and connected by a pedestrian network which is often more accessible and efficient than the vehicle network. Sidewalks are the most common infrastructure feature devoted to pedestrian circulation. Whether or not sidewalks are provided in a community can influence the area's overall character and function. In addition to the sidewalks themselves, crosswalks and points of access for persons with disabilities can influence the degree to which these pedestrian networks facilitate circulation.

An inventory of pedestrian facilities is available online by MassDOT as displayed in the following map (Figure 3.17).

Figure 3.17 Pedestrian Facilities



The above map is created online at this website link: https://www.arcgis.com/apps/mapviewer/index.html?panel=gallery&layers=45efedab4d114324a6c6c8f95de711d5

3.2 Walkability and Bikeability Analysis

A measuring tool was used to quantify and qualify the levels of the regional non-motorized network. This is the FHWA Bicycle Compatibility Index (BCI) which is used to evaluate road conditions for bicyclists. The BCI uses data collected on the roadway including travel lane width, shoulder width, vehicle speed, traffic volume and parking along each roadway segment. The FHWA analysis tool assigns an alphanumeric score to each roadway segment ("A" through "F"). An "A" score represents "perfect" roads for bicycling, whereas an "F" score indicates the least favorable roads for bicycling.

Data was collected for all the federal aid roadways in the Pioneer Valley Region. The BCI data is a useful tool for bicycle coordinators, transportation planners, traffic engineers, and others to evaluate existing facilities to determine what improvements may be required as well as determine the geometric and operational requirements for new facilities to achieve the desired level of bicycle service. Frequently used by the Pioneer Valley region, the BCI model has been applied in the following projects:

- Springfield Complete Streets Bicycle and Pedestrian Plan

- South Hadley Bicycle and Pedestrian Plan
- Granby Master Plan
- Southampton Route 10 Corridor Study
- Pioneer Valley Regional Bicycle Map

Many communities in the region have very "walkable" downtown areas The town centers of Holyoke, Springfield, Amherst, and Northampton have very high “walk scores” while more suburban neighborhoods and rural communities continue to struggle with obstacles and challenges for those desiring to bicycle or walk. A walk Score measures the walkability of any address and a Bike Score measures whether a location is good for biking (https://www.walkscore.com/methodology.shtml).

The most challenging obstacle to walking and bicycling is often vehicle travel speeds. Travel speed on our streets continues to rise despite recent efforts in Massachusetts to allow municipalities to adopt speed zoning and statutory speed limits. As of 2023 the communities of Springfield, Chicopee and Holyoke have adopted statutory speed limits.

3.2.1 Network Connectivity

Missing and insufficient pedestrian and bicycle networks along MassDOT roads were identified via a series of GIS map analyses in 2021. Both physical and quality gaps were identified on the statewide roadway network as part of the MassDOT Next Generation Pedestrian and Bicycle Vision Map. The MassDOT Bicycle and Pedestrian Infrastructure Gap Analysis GIS website is available at this link: https://experience.arcgis.com/experience/7f7ae2a91d9d4356b2d8e243c901500a

Two types of non-motorized network gaps are identified: Infrastructure Gap and Quality Gap.

Pedestrian Gap Analysis: (Figure 3.18)

- Infrastructure Gap: no physical sidewalk facility.
- Quality Gap: existing sidewalk is less than 5 feet wide.

(documented whether quality gap is one side or both sides)

Bicycle Gap Analysis: (Figure 3.19)

- Infrastructure Gap: no physical bicycle facility/shoulder.
- Quality Gap: existing bicycle facility does not meet FHWA recommended bicycle facility type based on traffic volume and speed conditions.
- No Physical Gap, Insufficient Data for Quality Gap: bicycle facility exists, but unable to assess compliance with FHWA guidance due to insufficient speed or volume data.

The infrastructure gap analysis conducted by MassDOT categorized the non-motorized network into five color coded categories as follows:

- Red: Infrastructure Gap
- Yellow: Quality Gap
- Bright Green: Sufficient Quality
- Olive Green: Insufficient Data for Quality Gap, No Physical Gap

Figure 3.18 Pedestrian Infrastructure Gap Analysis by MassDOT

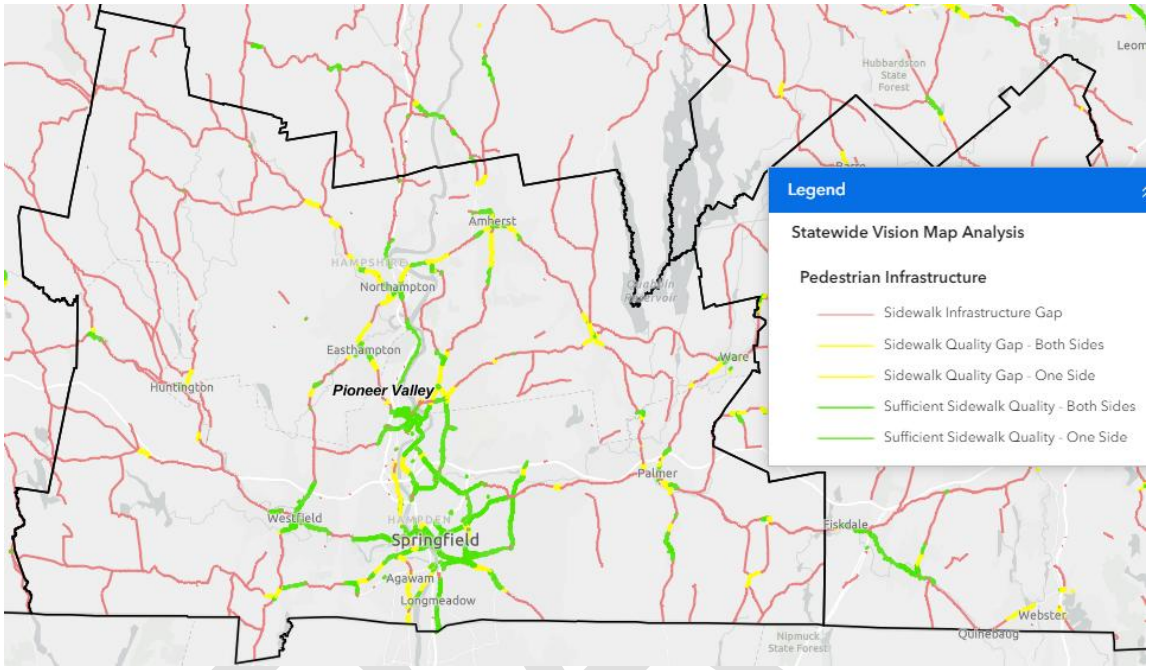
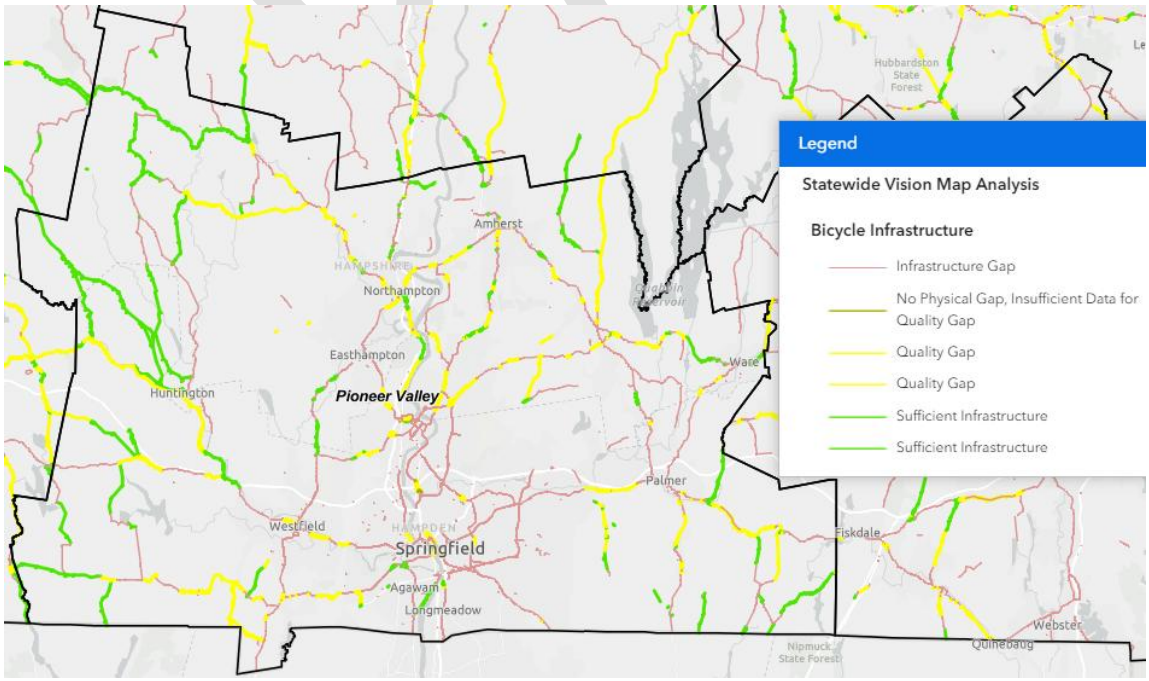


Figure 3.19 Bicycle Infrastructure Gap Analysis by MassDOT



The original maps above can be viewed online at this website link: https://experience.arcgis.com/experience/7f7ae2a91d9d4356b2d8e243c901500a

The built environment for walking, bicycling and transit is impacted by significant barriers that hamper the potential of active trip making. These barriers include narrow road and bridge cross sections, disjointed/unconnected off-road trail networks, lack of availability of sidewalks, lack of uniformity in signs/markings, limited transit access points and maintenance issues.

It is important to provide for the needs of pedestrians, bicycles and transit riders as part of the regional transportation network. The challenge lies in balancing the needs of the maintenance of the existing infrastructure while continuing to expand connections to the pedestrian, bicycle and transit network in a logical manner.

3.2.2 Travel Demand

The total number of bike and pedestrian commuters is difficult to quantify, but data in other sectors suggest numbers are increasing (Table 3.2). Police departments are increasing bike patrols, bike sales and service are up all across the country, and bike courier companies are experiencing a boom in business.

The only communities in the Pioneer Valley region that have bicycle commuting rates over the national average are Amherst, Hadley, Northampton and Pelham. Amherst and Northampton host Amherst College, UMASS and Smith College; Hadley is situated between the two communities which are connected by the region's first paved off-road shared use path, the Norwottuck section of the Mass. Central Rail Trail.

The communities that have walk commuting rates above the national average are Amherst, Northampton and South Hadley. (See the Appendix for a summary table showing the rates of commuting to work by bicycling and walking for each community in Hampshire and Hampden County.)

Table 3.2 Non-Motorized Commute Trips

	1990	2000	2010	2020	2023	Percent Change
Bike to Work	0.33%	0.36%	0.60%	0.70%	0.75%	0.07%
Walk to Work	6.29%	5.16%	3.50%	5.55%	4.80%	-1.14%
PVPC Total Commuters	275,710	275,932	273,534	293,290	299,768	0.02%

Roadway network segments were also categorized by the Average Annual Daily Travel (AADT) to establish a ranking for Pedestrian and Bicycle Corridor priorities. See the following two maps where the highest priority segments were given a yellow color and the lowest priority segments were given a purple color, with a gradation of colors in between the top and low ends (Figure 3.20, Figure 3.21).

Figure 3.20 Pedestrian Corridors Priority by AADT

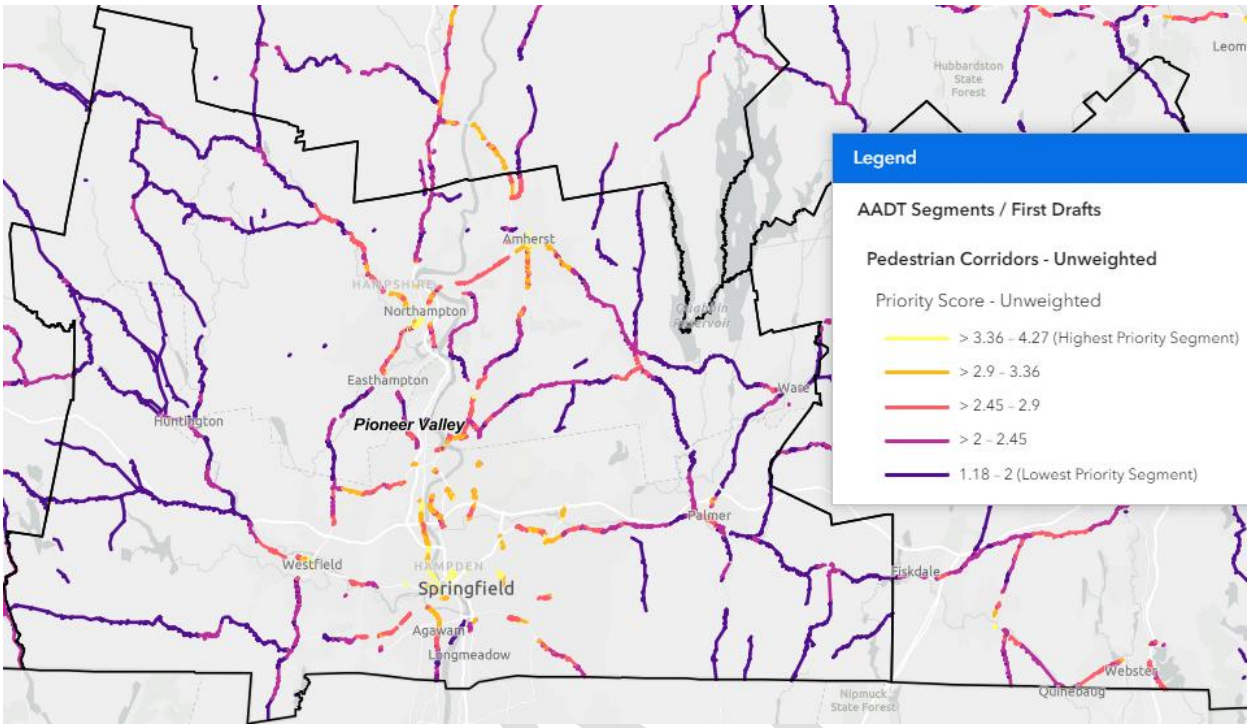
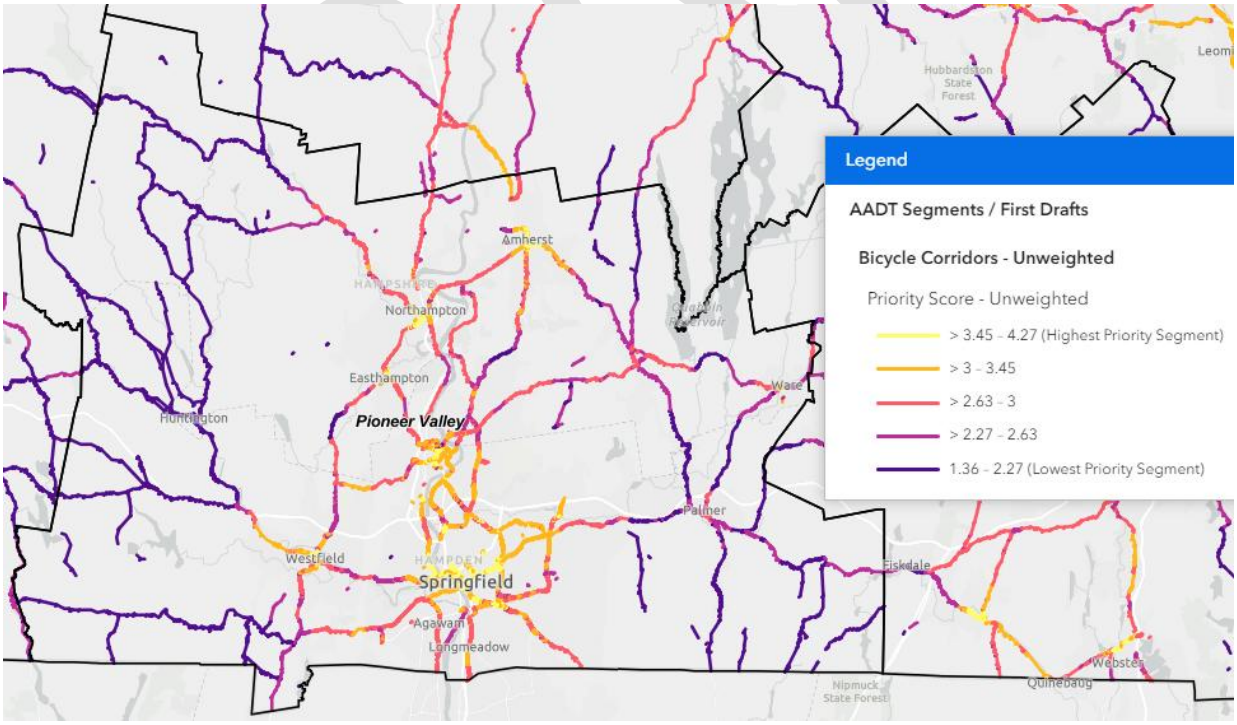


Figure 3.21 Bicycle Corridors Priority by AADT



The original maps above can be viewed online at this website link:
https://experience.arcgis.com/experience/7f7ae2a91d9d4356b2d8e243c901500a

These maps prioritize corridors within the urban centers of Springfield, Westfield, Holyoke, Easthampton, Northampton, and Amherst based on their AADT volumes.

3.2.3 Trip Potential

There are many factors that influence the choice to walk or bicycle over other means of travel. This includes distance between destinations, fearing that routes are not safe, environmental conditions, and availability of facilities. The regional network of shared-use-paths continues to expand with recent investments in the Westfield Columbia Greenway (New Haven to Northampton Canal Greenway) the Connecticut Riverwalk in Chicopee, and the Ware Accessible Trail on the Mass Central Rail Trail.

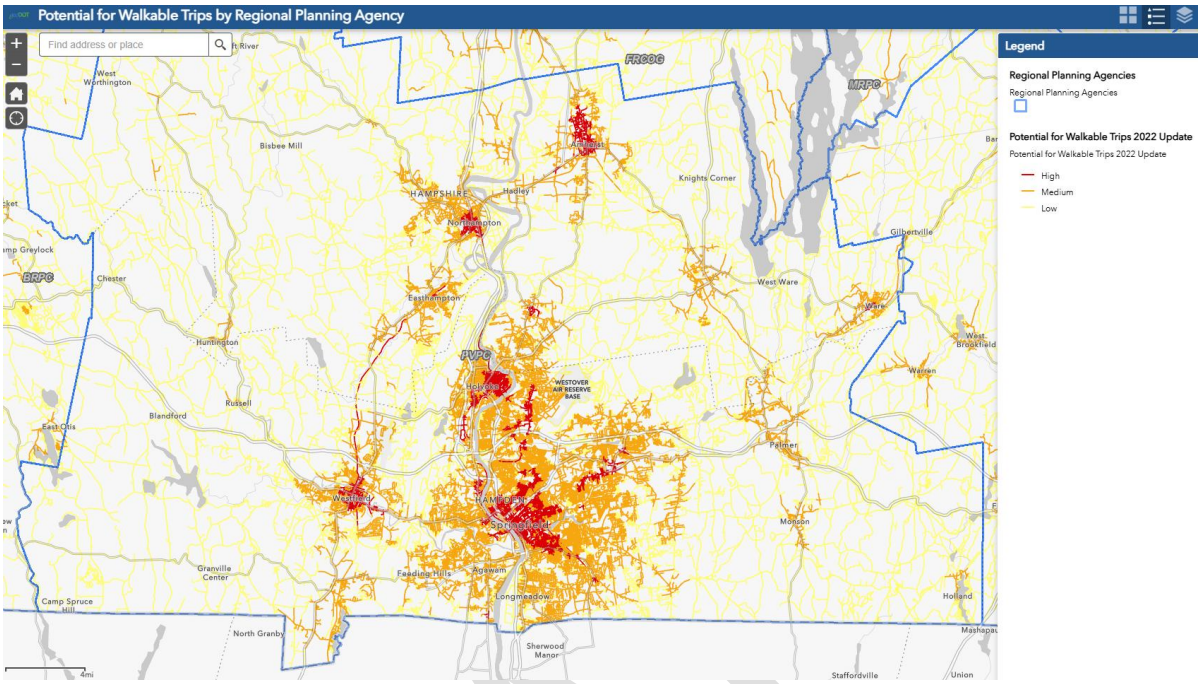
However, the built environment for walking, bicycling and transit is impacted by barriers that hamper the potential of active trip making. These barriers include narrow road and bridge cross sections, disjointed/unconnected off-road trail networks, lack of availability of sidewalks, lack of uniformity in signs/markings, limited transit access points and maintenance issues.

It is important to provide for the needs of pedestrians, bicycles and transit riders as part of the regional transportation network. The challenge lies in balancing the needs of the maintenance of existing infrastructure while continuing to expand connections to the pedestrian, bicycle and transit network in a logical manner. The availability of public transportation can encourage bicycle travel. Many stops on the PVTA connect people to the many bikeways across the pioneer valley. By making these trails more accessible to people without cars, it encourages usage and a healthier lifestyles for Pioneer Valley residents.

MassDOT modeled the potential for walking and biking and offered an update to the methodology in 2022. Using trip volumes provided by the “StreetLight” software, they added new metrics related to transportation access, crash data, demographics and social indicators to previous methodologies developed. The Potential for Everyday Walking and Biking layers display latent demand for active-mode trip making. The following two maps show the ranking of the regional roadway network with regards to potential roadway demand for active transportation trips (Figure 3.22, Figure 3.23).

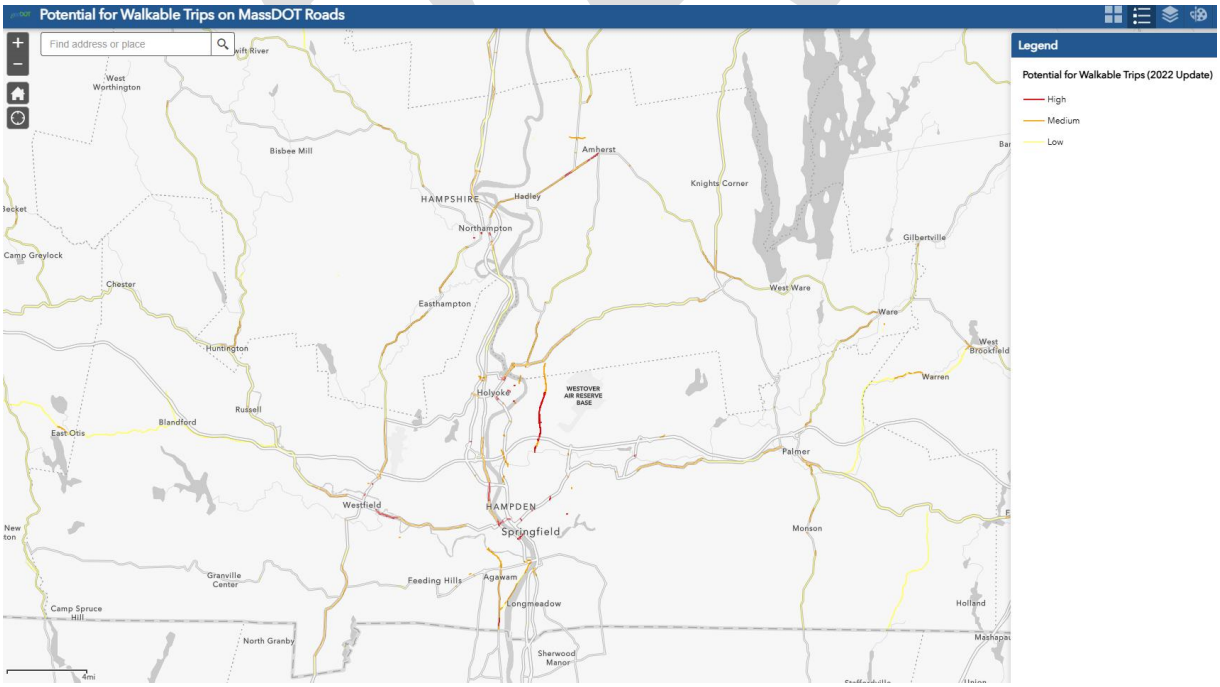
High potential roadways were identified by looking at the top 10% of roadways based on the Potential for Walking and Biking index. Medium potential roadways represent the top 60% of roadways on the index. Low potential roadways are the remaining 40% of roadways (note that this 40% is a majority of the mileage because these road segments tend to be in rural places and longer length roadways). The next map displays trip potential divided into three categories: High (Red), Medium (Orange), Low (Yellow). The following map figures have been taken form the MassDOT GIS website titled: “Potential for Everyday Biking by Regional Planning Agency”, 2022 update (Figure 3.24, Figure 3.25).

Figure 3.22 Potential for Everyday Walking in the Pioner Valley (3 Levels)



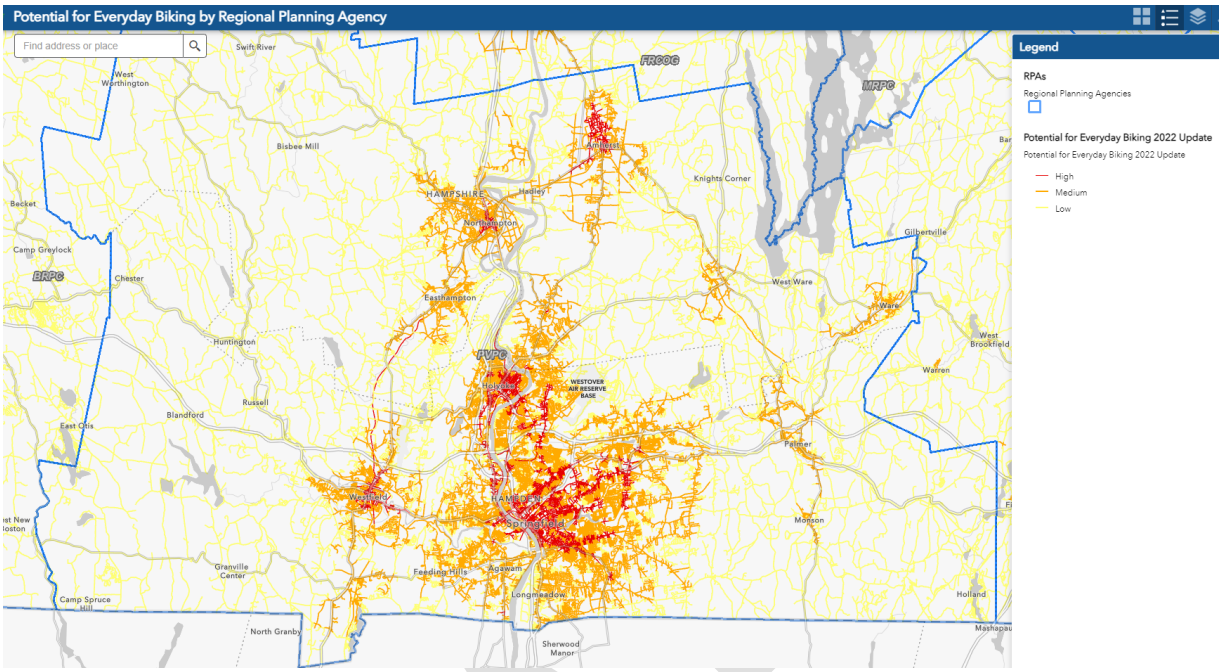
The original maps above can be viewed online at this website link: https://massdot.maps.arcgis.com/apps/webappviewer/index.html?id=abab2e8c3da446a5ae4b675cd35b5f4f

Figure 3.23 Potential for Walkable Trips in the Pioner Valley on MassDOT Roads



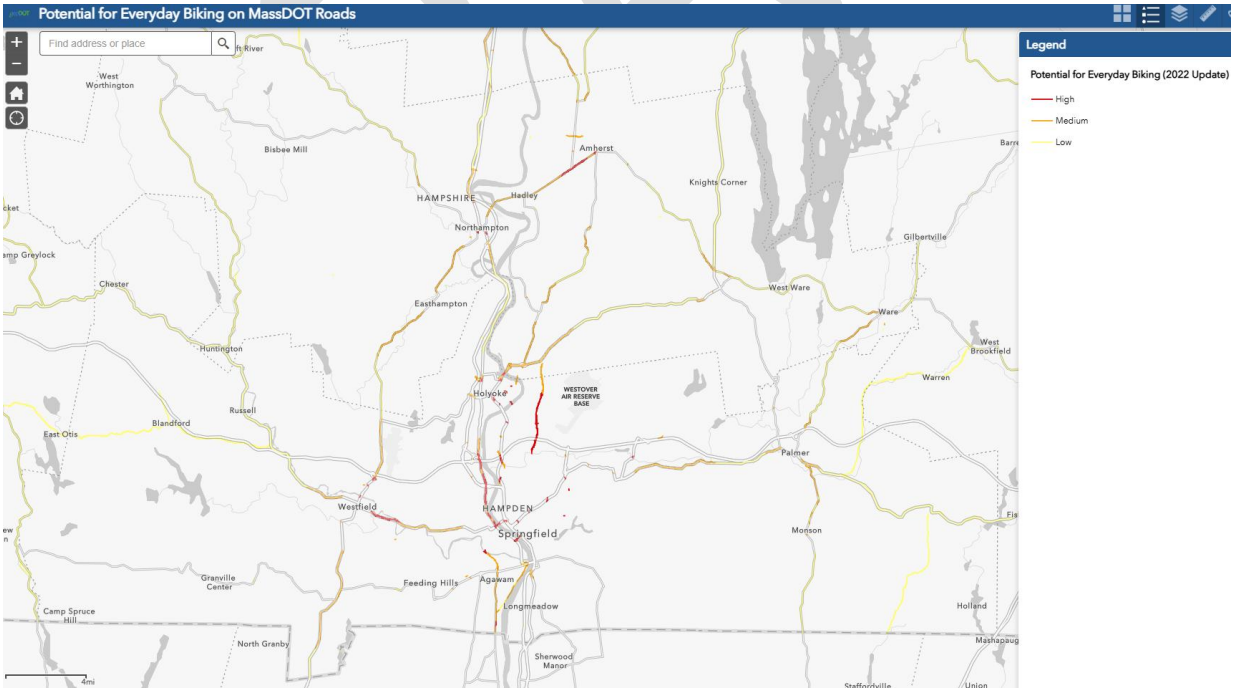
The original map above can be viewed online at this website link: https://massdot.maps.arcgis.com/apps/webappviewer/index.html?id=908cf743da4340d3bf2f02a17fc5cc69

Figure 3.24 Potential for Everyday Biking in the Pioner Valley (3 Levels)



The above map can be viewed online at this website link:
https://massdot.maps.arcgis.com/apps/webappviewer/index.html?id=371274be470c4f9db0543943398eb3d3

Figure 3.25 Potential for Everyday Biking in the Pioner Valley on MassDOT Roads



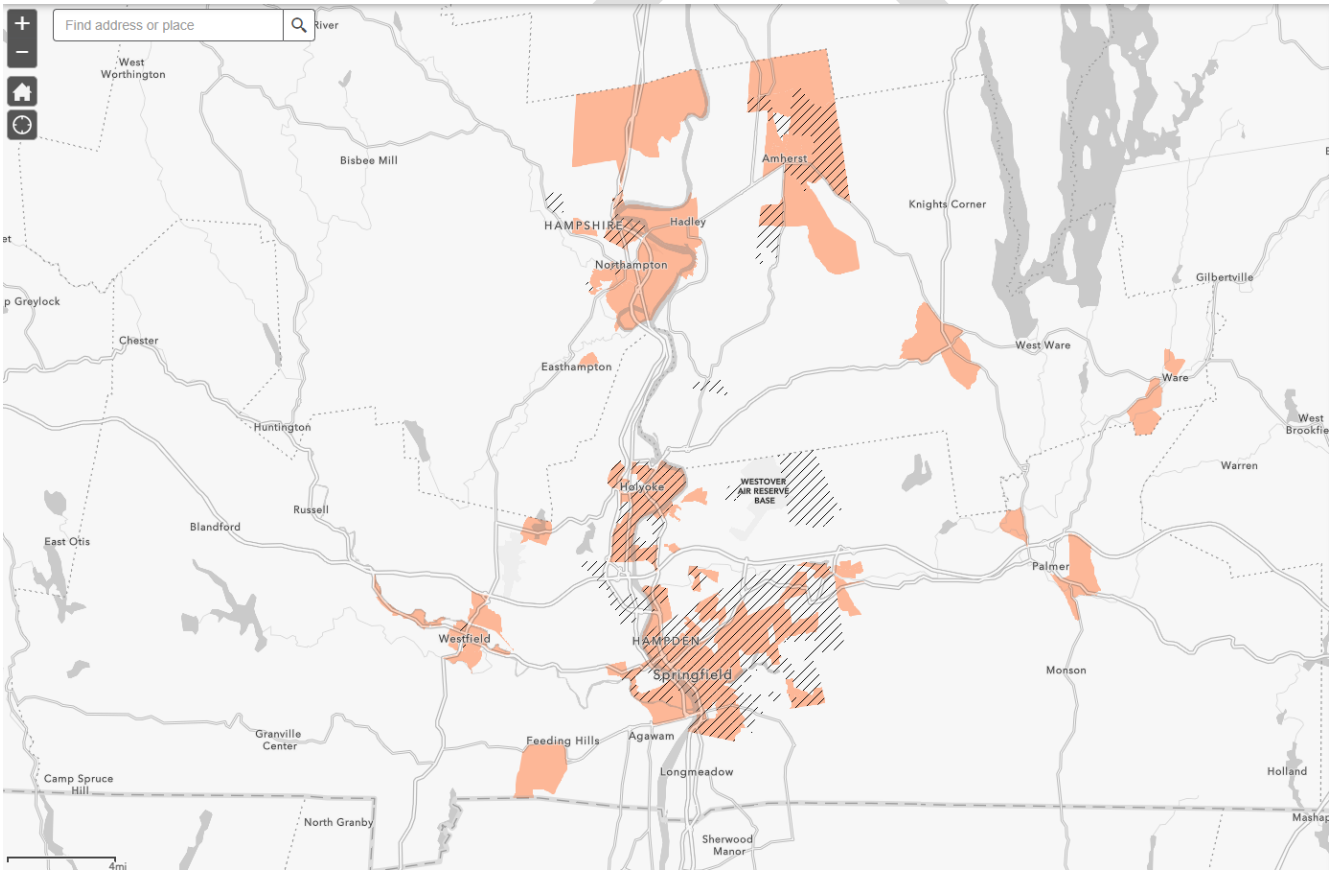
The above map can be viewed online at this website link:
https://massdot.maps.arcgis.com/apps/webappviewer/index.html?id=a1c48137a3c642c19b749e16ec509d3c

3.2.4 User Access

Our regional transportation system is not intended to be a "one size fits all" model. It is important to recognize that people will have different transportation needs. As a result, it is important to seek balance in the transportation system to provide travel modes that support all residents. The "Age Friendly" movement is a way to design a transportation system to allow all people to have access regardless of their age or ability. It is important to offer affordable, easy-to-use public transportation options connected to walking and bicycling amenities.

Census block groups areas identified as having a higher percentage than the statewide average of individuals from Title VI protected categories are displayed on the regional map below (Figure 3.26). Minority areas are represented by hashed gray color lines, while poverty areas are highlighted by orange color.

Figure 3.26 Minority and Poverty Areas Higher than the State Average



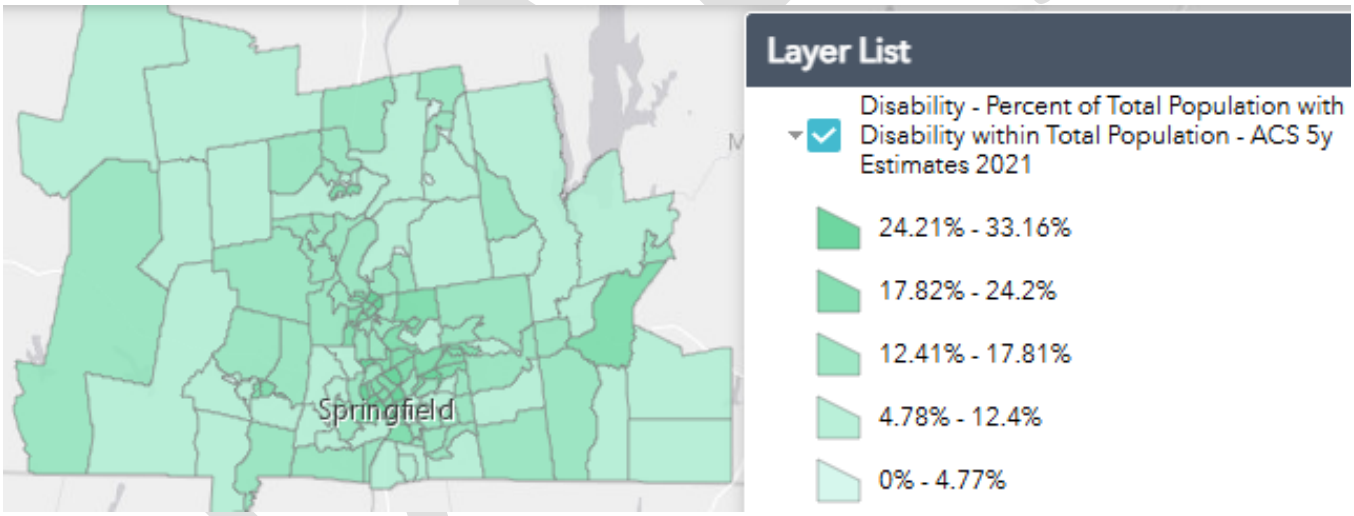
The above map can be viewed at the following website link with an ability to turn data layers on and off:
https://pvpc.maps.arcgis.com/apps/webappviewer/index.html?id=d124416bed674650bf51c65b6dd6abe4

It is critical that we improve the regional transportation system evenly throughout our region. The regional transportation planning process must be inclusive by providing

all who wish to participate a means to do so. Transportation improvements should be prioritized in a way to increase access to a variety of transportation alternatives that enhance health and wellbeing. It is necessary to remove barriers to use by people with physical disabilities by providing accessible bicycle and pedestrian facilities. New facilities must provide accessible features. The Americans with Disabilities Act (ADA), section II (1990) prohibits discrimination on the basis of disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications.

According to the ADA, all actions undertaken by state and local governments must fully accommodate people with disabilities. For this reason, the construction of all pedestrian facilities must meet the needs of citizens living with disabilities. The minimum space requirements are influenced by the characteristics of those who use wheelchairs or other assistive devices. To allow free passing of pedestrians, a walkway that is at least five-feet wide and clear of obstructions is required. Within the Pioneer Valley the percentage of people with disability is displayed in the map below using the 2021 ACS 5 year estimate (Figure 3.27).

Figure 3.27 Percentage of People with Disability by Area



The above map can be viewed at the following website link with an ability to turn data layers on and off:
https://pvpc.maps.arcgis.com/apps/webappviewer/index.html?id=d124416bed674650bf51c65b6dd6abe4

3.2.5 Shared Mobility

Our region was the first to launch a bike commute week, eventually the idea was taken over by the Commonwealth and expanded to Bike Month every May. Also, we were the first region to launch an electric-assist bike-sharing system, ValleyBike. We are also one of a select few pilot projects in the Massachusetts Clean Energy Centers' Act4All Electric Bikes project, working to distribute no cost e-bikes to economically and structurally disadvantaged residents in our region. These three initiatives demonstrate

our region's commitment to increase access to non-motorized modes of transportation to all sectors of our communities.

Bike-sharing programs provide convenient and affordable access to bikes, increase first and last-mile connectivity and make transit a viable option for a wider range of trips. Valley Bike, a docked, all electric-assist bicycle sharing system operated from 2018 - 2022 in Amherst (including UMass), Chicopee, Easthampton, Holyoke, Northampton, South Hadley, Springfield, and West Springfield. It has potential for growth by adding new partner communities.

History of ValleyBike:

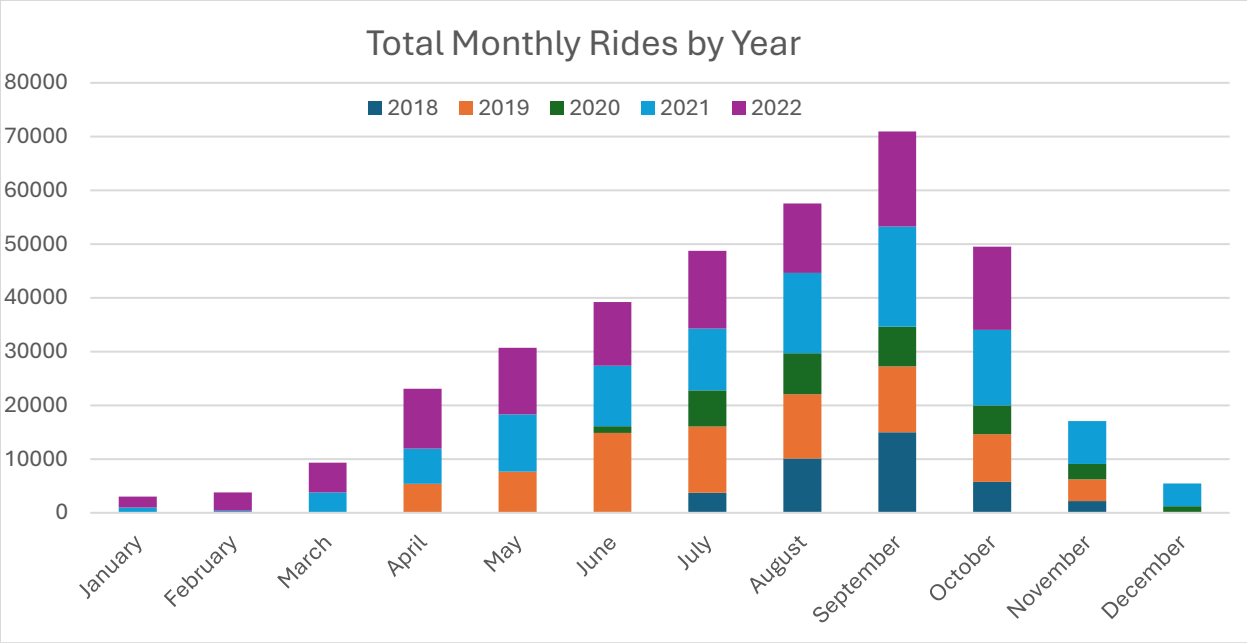
- June 2018: ValleyBike Share opens.
- November 2018: ValleyBike Share closes for the 2018 season.
- December 2018: Easthampton obtains a Massachusetts Housing Choice grant for ValleyBike and joins the regional consortium, growing it to six municipalities.
- 2019: A second CMAQ project to increase ValleyBike service and expand into Chicopee and West Springfield receives funding.
- 2020: The ValleyBike program, delayed by the Covid-19 Pandemic, opens in June 2020. The City of Springfield opts to keep their ValleyBike stations closed during the 2020 calendar year. Winter service begins at select locations.
- 2021: Chicopee and West Springfield become two new member communities to participate in the program. Additional Phase 2 expansion begins. The City of Holyoke receives funding under the Shared Streets and Spaces Grant Program to fund station pads and electrical supply. 2021 becomes the first year with the service available for all 12 months.
- 2022: Two new stations open. Service runs from January to October. The original vendor ceases ValleyBike operations.
- June 2024: ValleyBike reopens under a new Vendor – DropMobility.
- Expanding to Westfield in 2025.
- Potential future partners.

The 2022 calendar year was the fifth year of operation of ValleyBike Share program. During its first two years, operations were halted during the winter season and the system operated from April - November. During the 2020 calendar year, ValleyBike did not start until the month of June because of the Covid-19 pandemic. The City of Springfield chose not to participate during the entire calendar year of 2020. ValleyBike service resumed in the City of Springfield in May2021. Utilization data showed an increase in usage of ValleyBike in both 2021 and 2022 (Table 3.3). ValleyBike Share yearly summary report data can be viewed online at this weblink: https://pvmpo.pvpc.org/valley-bike-share-yearly-summary-report/. A tally of the total monthly riders taken during the first five years of the program show that September was the most popular months to ride these bikes, followed by August and then July and October (Figure 3.28).

Table 3.3 ValleyBike Total Rides 2018-2022

	2018	2019	2020	2021	2022
January				1,019	1,969
February				371	3,429
March				3,768	5,530
April		5,397		6,520	11,155
May		7,632		10,677	12,421
June	134	14,738	1,263	11,252	11,804
July	3,732	12,309	6,736	11,488	14,465
August	10,089	11,974	7,629	14,947	12,956
September	14,959	12,291	7,382	18,607	17,626
October	5,743	8,895	5,340	14,041	15,548
November	2,183	4,047	2,842	8,012	30
December			1,223	4,262	
Total	36,840	77,283	32,415	104,964	106,933

Figure 3.28 Monthly Rides Compared by Year



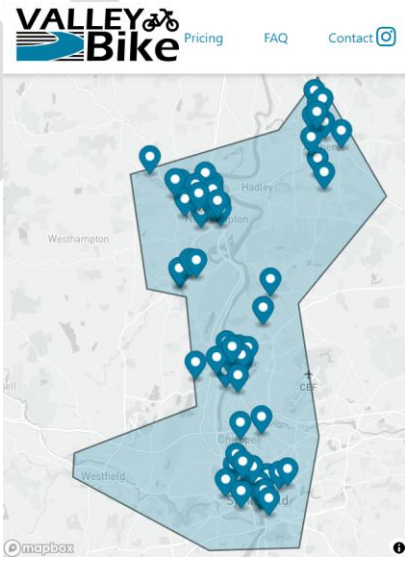
Bikeshare rides taken by select communities were tabulated by each month of the year as well as by station host community. The 2021 rides by station location map can be viewed at the following website link:

https://public.tableau.com/app/profile/pvpc/viz/ValleyBikeShare_202205121720/DB_PRIMARY?publish=yes

In the summer of 2024, the ValleyBike program was restarted by a new vendor to serve the partner municipalities including the new addition of Westfield (Figure 3.29). The current membership subscription has a higher fee than the previous program to join. Hopefully, this will make for a more sustainable model to allow for the continuity of the service (https://valleybike.org). There are discounts available for individuals on limited income. The current regional bikeshare system provides a total of 75 stations located in eight communities in the Pioneer Valley (Figure 3.30). More information about the new service can be found online at this website: https://www.northamptonma.gov/1599/ValleyBike

Figure 3.29 ValleyBike Share Stations in Springfield, MA (Left: earlier system. Right: new system)

Figure 3.30 ValleyBike Share Station Locations 2024



3.2.6 Crashes

Safety concerns unite all components of a community and a region to act to protect vulnerable road users (VRU). VRUs are generally non-motorists such as pedestrians, bicyclists, anyone working along a road, individuals on skateboards, scooters, roller skates, wheelchairs, and other micromobility devices. Evaluating safety at the same time as one is promoting increased walking and bicycling is challenging because with more people out on their feet and bicycles—the more they are exposed to danger. Building safe facilities for pedestrians and bicyclists is the best way to ensure their safety, but limited funds and space make this most effective solution also the most inefficient.

The Pioneer Valley Planning Commission has established a Vulnerable Road User (VRU) Safety Study Program to analyze and improve non-motorist safety in the region by working in partnership with local communities and other VRU advocacy groups. Under this program, the PVPC works in cooperation with the JTC and the Bike Ped sub-committee to identify and prioritize locations of concern in the region where there are existing VRU safety issues. These locations are studied by analyzing existing conditions and historic trends. Feedback from VRU advocacy groups and local stakeholders is collected and finally short and long-term recommendations are drafted to improve transportation safety.

To make the transportation network friendly for all users, agencies and communities were encouraged to participate in the complete streets program. As of 2020, many communities in the Pioneer Valley region have participated in the Complete Streets Program as follows:

- 28 communities participating
- 18 communities adopted policies
- 12 funded improvement projects

"An Act to Reduce Fatalities" was signed into law in Massachusetts in December 2022. This law requires motor vehicles to pass vulnerable users at a safe distance of not less than 4 feet and at a reasonable and proper speed. In May of 2023, MassDOT notified all cities and towns of an opportunity to request free regulatory signs to notify operators of motor vehicles of the requirements of the law that can be installed on roadways within their jurisdiction.

Several national trends are negatively influencing walking and bicycling in the Region. One of them is the reliance on personal handheld devices which has expanded rapidly. In Massachusetts cell phone use creates more instances of distracted driving. The other is an increase in vehicle speeds that began during the Covid-19 pandemic that contributed to a higher number of crashes resulting in a fatality or serious injury.

The number of non-motorist fatalities and serious injuries decreased dramatically in 2020 at the start of the pandemic (Figure 3.31). This was followed by an increase in serious injuries and fatal crashes in 2021, and yet another increase in 2022 (Figure

3.32). A comparison between statewide and regional crash trends are depicted in the following chart of five-year averages between 2008 to 2024.

Figure 3.31 Non-Motorized Serious Injuries and Fatalities 5 Year Averages

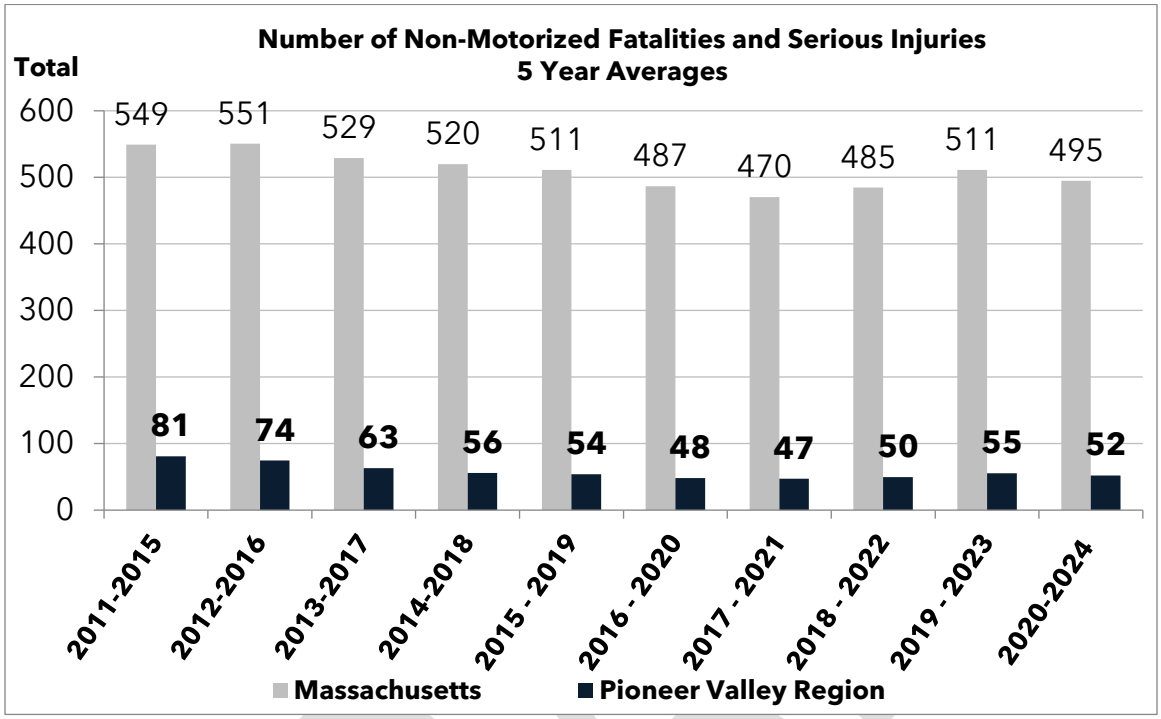
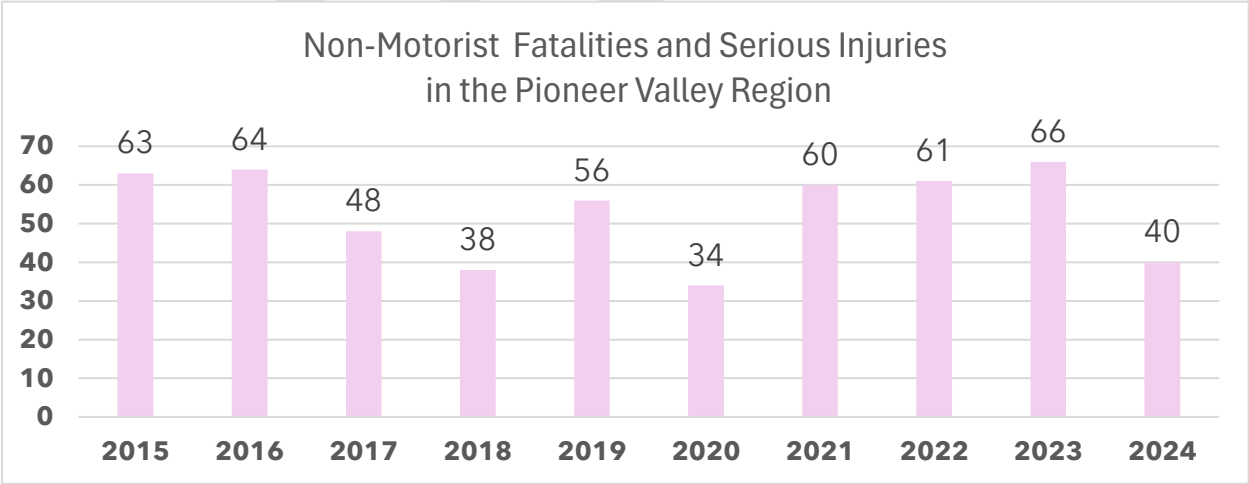


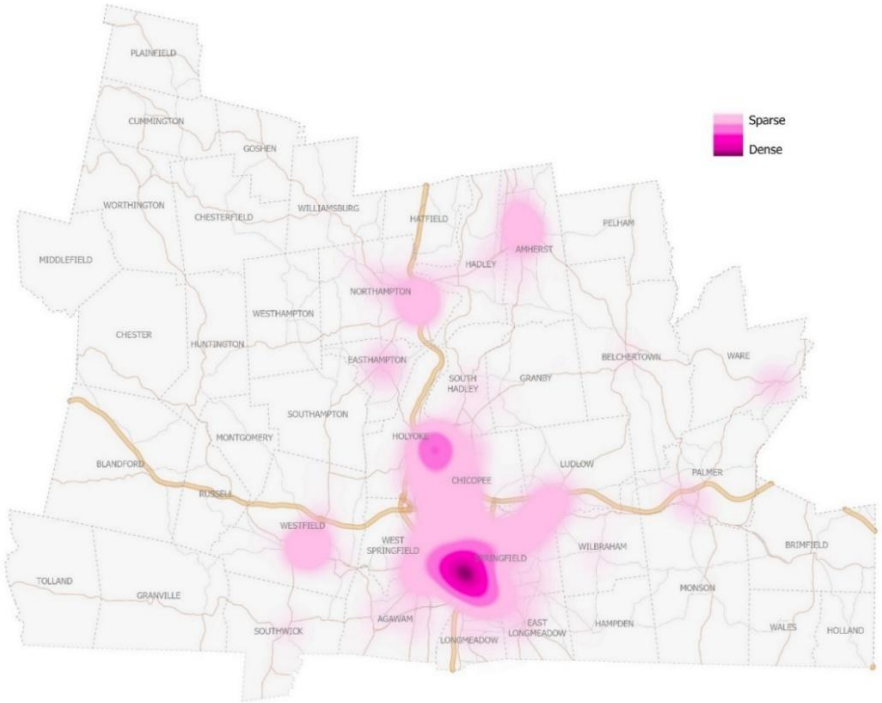
Figure 3.32 Non-Motorized Serious Injuries and Fatalities Regional Totals



As observed from the above graphic, the total number of non-motorist fatalities and serious injuries decreased by more than 60% from 2023 to 2024. This trend, however, is not witnessed significantly in the five-year averages yet because of the substantial increase in all types of crashes during the immediate aftermath of the pandemic in 2020. The recent decrease in the number of these crashes is an encouraging trend and this data must be closely monitored in the coming years to observe long-term impact and change.

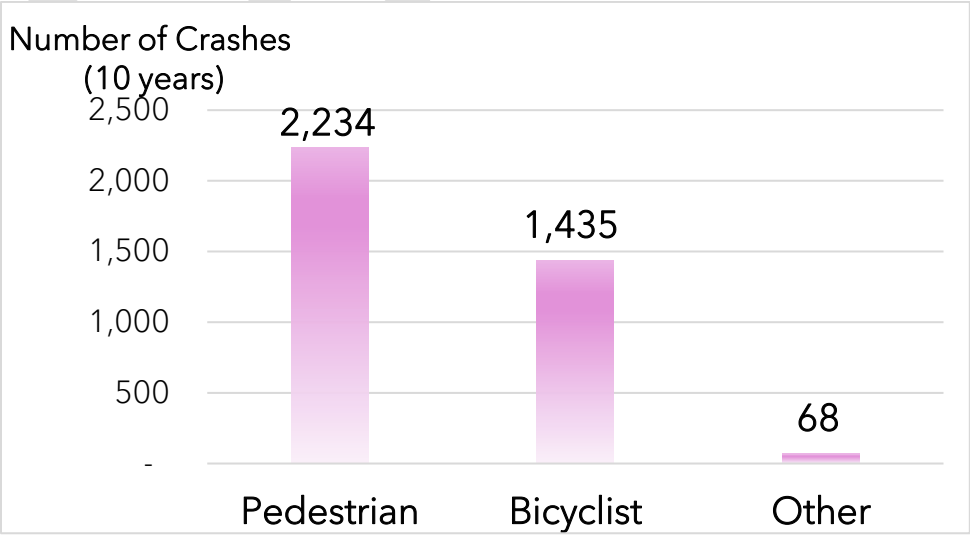
The areas in the Pioneer Valley with the maximum concentration of the non- motorist crashes appear to center around the largest urbanized areas (Figure 3.33). As expected, the urban areas of Springfield, Holyoke, and Chicopee experienced most crashes, followed by Northampton, Amherst, and Westfield. The darkest region on the map corresponds to the maximum crash density amongst all other sub regions in the Pioneer Valley.

Figure 3.33 Non-Motorized Crash Density (2015-2024)



A total of 3,737 non-motorist crashes were observed in the Pioneer Valley region during the last 10 years. Almost two thirds of these crashes involved pedestrians (60%), 38% bicyclists, and 2% other non-motorized road users (Figure 3.34).

Figure 3.34 Vulnerable Road User Crashes by Type (2015-2024)



Crashes are depicted as point locations on the map of the region below (Figure 3.35). Different types of vulnerable road users are depicted by a different color as illustrated in the legend. The density map on the previous page did not indicate the isolated locations in the rural areas. These crashes are rare and lower in number, however, are significant to mention due to the increased potential for severe injury crashes along roadways in rural areas where motor vehicles are travelling at higher speeds (Figure 3.36).

Figure 3.35 Non-Motorized Crash Types 10 Year (2015-2024)

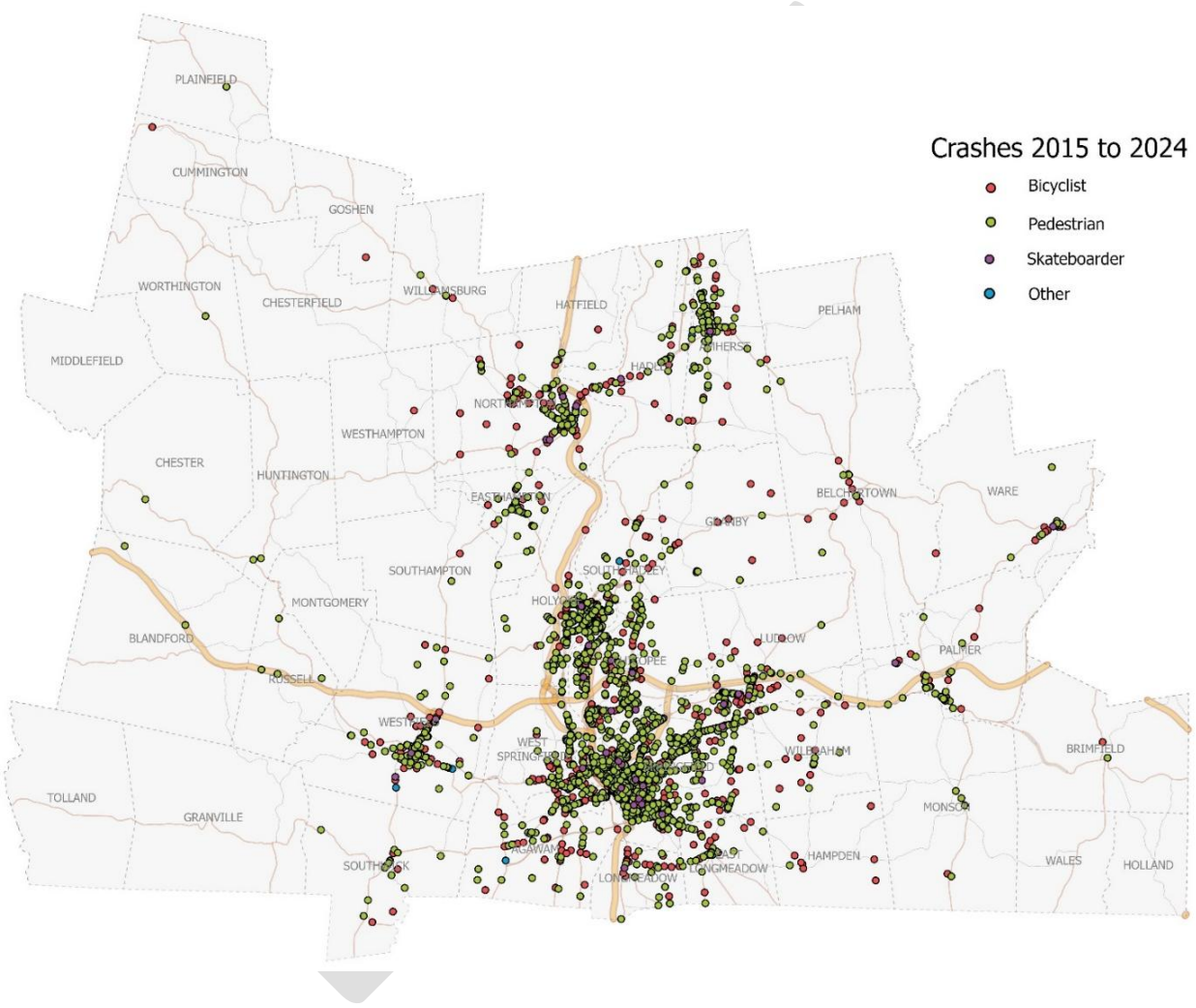
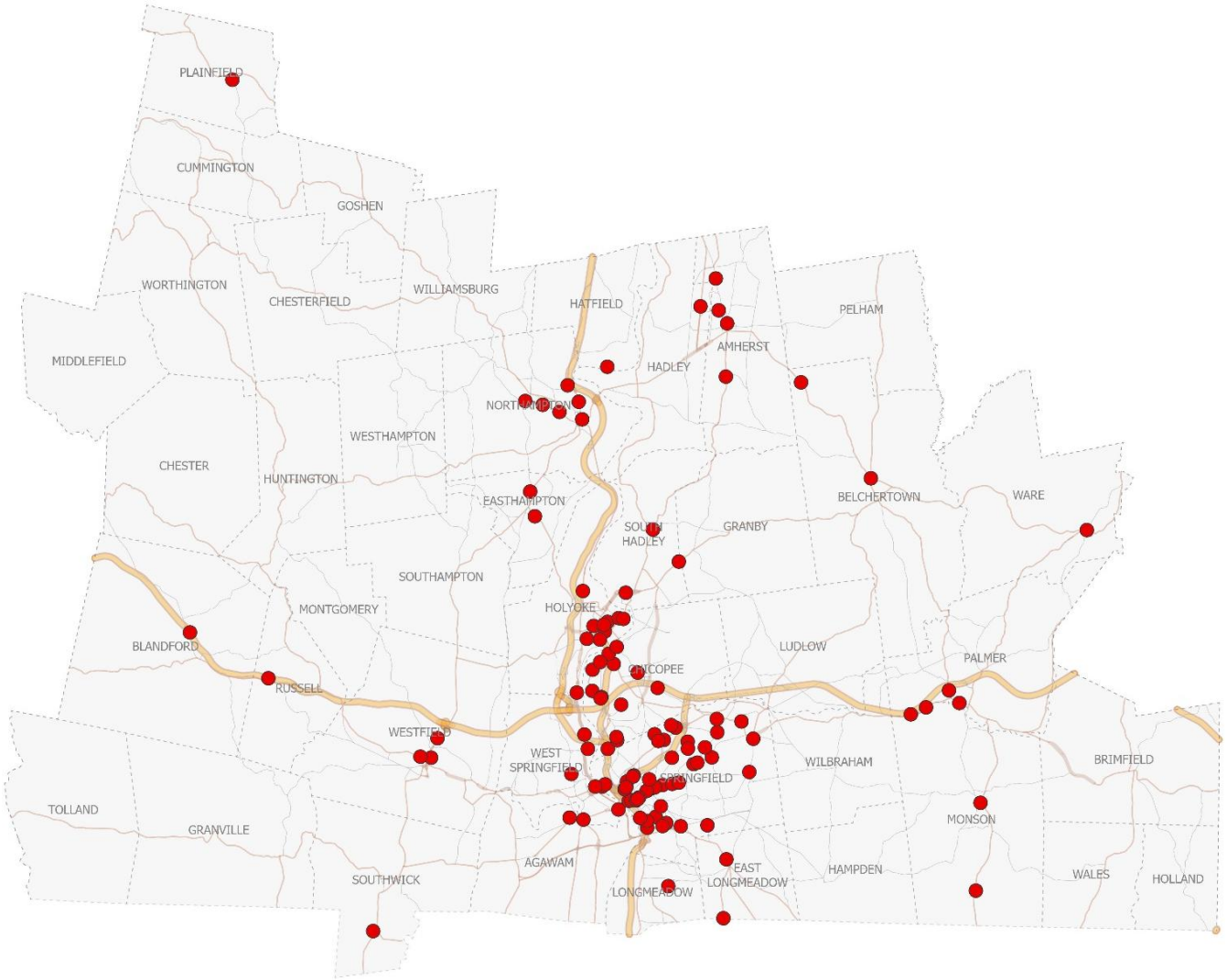


Figure 3.36 Non-Motorized Fatal Crash Locations 10 Year (2015-2024)



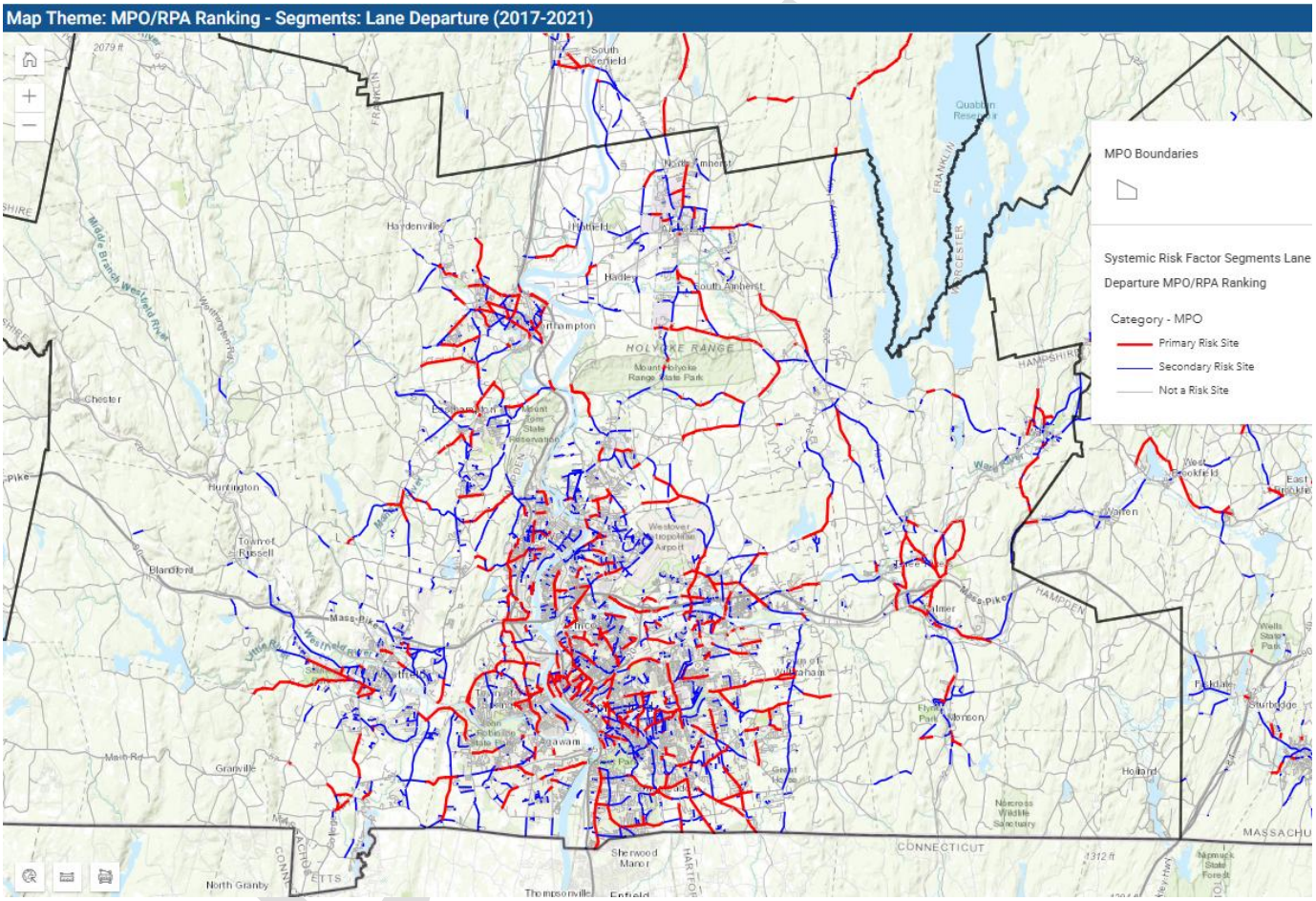
A societal trend impacting the type of crashes has been an increase in the size and mass of personal vehicles. Larger/heavier vehicles are increasingly seen as contributing to bicycle and pedestrian fatalities. While the region's population has grown modestly, a preference for large vehicles continues to grow.

Another useful online portal to identify locations of concern is the Network Screening – Systemic/Risk Based tool. This tool can be used to access data about and visualize the top risk sites for each of the Strategic Highway Safety Plan emphasis areas based on specific risk factors developed for each emphasis area. Top risk sites statewide as well as top risks sites within each MPO/RPA are available to view on an online map (Figure 3.37). Each emphasis area focuses on certain road types. Not all roadway segments are included.

Details on the specific risk factors and how they were developed for each emphasis area can be found in the MassDOT Network Screening Risk Based Methodology

Reports. Details on the queries used to identify crashes for each emphasis area can be found on the IMPACT Emphasis Area Definitions webpage: https://www.mass.gov/lists/network-screening-methodology-reports#reports-. The locations identified were categorized into primary risk site and secondary risk site by applying a systematic risk factor for lane departures, highlighted on the following map by red and blue color consecutively. The crash risk maps to follow can be viewed at this website link: https://apps.impact.dot.state.ma.us/sat/NetworkEmphasisArea.

Figure 3.37 Lane Departure Risk Locations 5 Year (2017-2021)



Risk sites for pedestrians and risk sites for bicyclists are also identified on maps shown on the next page (Figure 3.38, Figure 3.39). This analysis is based on a five-year crash data from 2017-2021. Comparing the two maps shows many similarities in locations of risk sites for both pedestrians and bicyclists who are labeled as vulnerable road users previously in this section. Among the apparent differences between the two types of users are certain corridors in Agawam, Amherst, Chicopee, Easthampton, Northampton, Springfield, Westfield, West Springfield.

Figure 3.38 Pedestrian Risk Locations 5 Year (2017-2021)

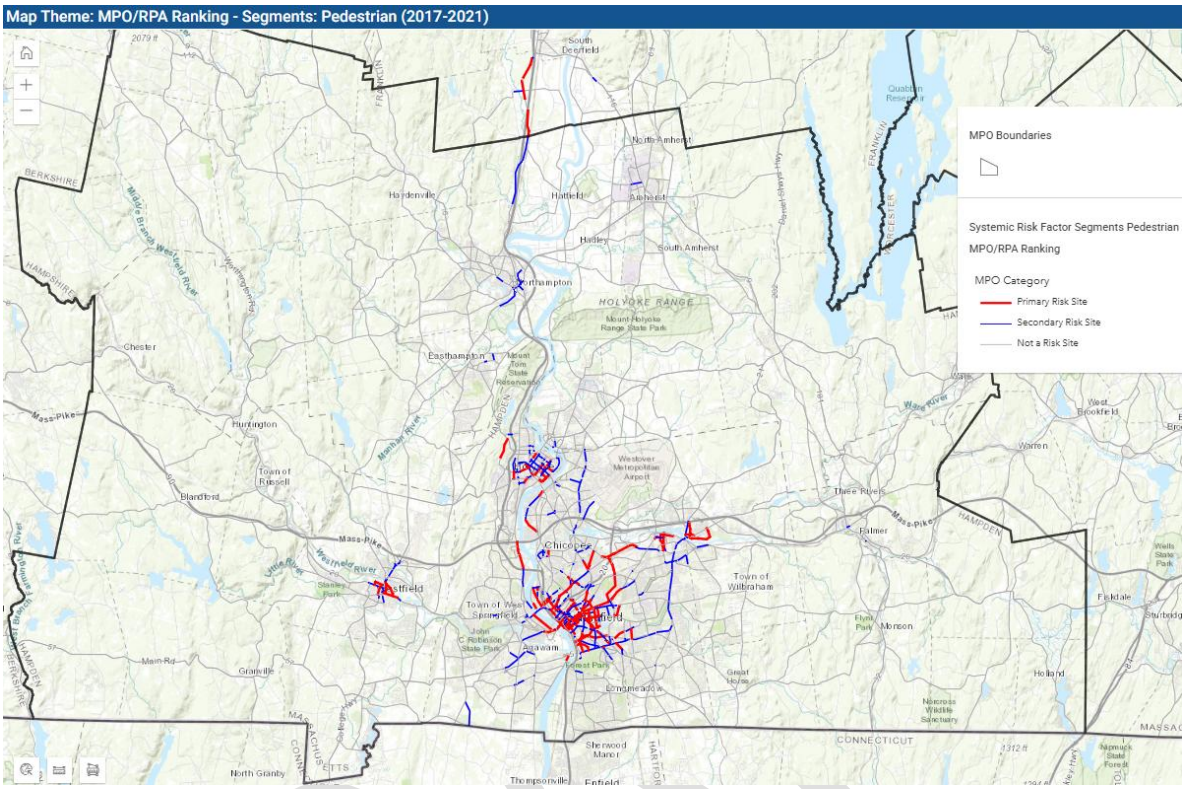
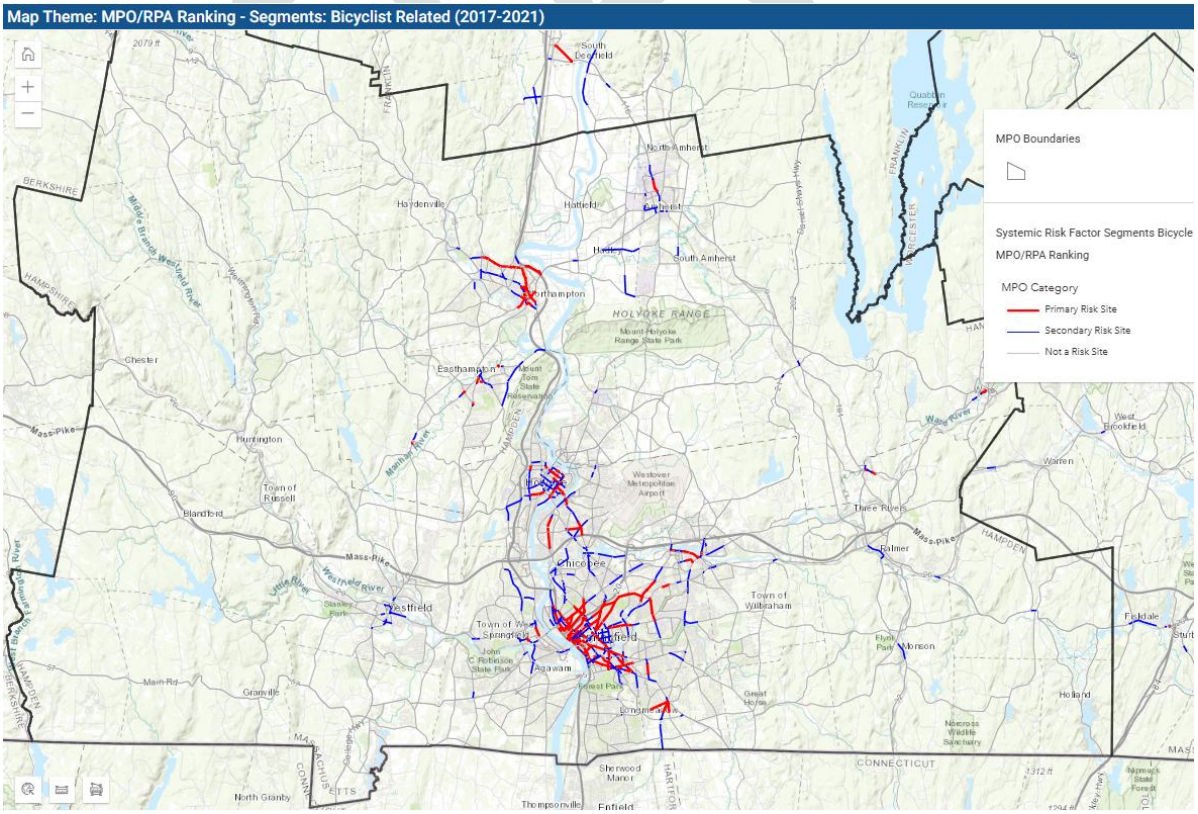


Figure 3.39 Bicyclists Risk Locations 5 Year (2017-2021)



3.3 Environmental Impact

The Pioneer Valley Planning Commission is working with a cross-section of the transportation, employment, education, industry, governmental, and resource conservation sectors to build a "Green Infrastructure" that connects critical natural and built features to protect them. Increasing the total miles of travel routes that can be accessed on foot or on bicycle is one of the critical features of a sustainable infrastructure, and a long-term strategy for the region.

Active transportation, such as walking and biking, offers a sustainable alternative to traditional single occupancy vehicle transportation. Compared to the average passenger vehicle, which emits nearly 400 grams of CO2 per mile, walking or cycling only produces about 25 grams of CO2 per mile. Given that almost 80 percent of Americans drive to work every day, traveling an average of 41 miles, transportation is a significant contributor to greenhouse gas emissions and air pollution. Opting to walk, bike, use a scooter/skateboard, or take public transportation has a big impact on reducing local and global air pollution which pose health risks to humans and animals in the environment.

When more people walk or bike, the number of cars on the road, overall traffic congestion and travel times are reduced, further reducing emissions. Biking can also be a source of mechanical and electrical energy. On average a biker can produce 100 kilowatts per hour, which creates enough energy to power a lightbulb. Choosing an active transportation over a single occupancy vehicle option can significantly reduce an individuals' carbon footprint and contribute to a more sustainable future.

3.4 Health Impact

Walking and biking offer numerous health benefits, including reduced risk of heart disease, stroke, diabetes, obesity and promote mental well-being by reducing stress and anxiety. The physical activity of biking or walking can leave the individual feeling more energized for the rest of the day. The prevalence of a sedentary lifestyle coupled with dependence on automobile travel for transportation has had a negative impact on individuals health. Two factors contribute to this problem more than other possible causes. They are inner city poverty and car-oriented suburban development. Obesity is linked to poverty and is highest among black women who are also the poorest segment of the population. According to the Massachusetts Department of Public Health 59% of all adults in western Massachusetts are overweight or obese.

To combat these health impacts the state developed a program called Mass in Motion that "promotes opportunities for healthy eating and active living in the places people live, learn, work and play." Sixty communities across the state are Mass in Motion communities. Eight of those are in the Pioneer Valley Region and include Amherst, Belchertown, Northampton and Williamsburg (working under the name, Healthy Hampshire), Holyoke, Springfield, and West Springfield and Palmer. The City of Northampton is the lead agency for the four 'Healthy Hampshire' communities, and the cities of Holyoke and Springfield secured funds directly from the Massachusetts

Department of Public Health (MDPH). The Pioneer Valley Planning Commission collaborated with the health agents in Palmer and West Springfield, to help these communities become Mass in Motion communities.

These cities and towns are actively working toward health in all policies, increasing awareness of walking and bicycling opportunities in the community, improving safety for walkers and bicyclists, and working to increase access to healthy food through community gardens, working with local restaurants to assure healthy dining options and working with corner stores to assure healthy food options throughout each community.

3.4.1 Enhancing Safety

Safety from automobile crashes as well as from crime is the greatest concern for neighborhood residents. Safe streets and sidewalks offer the greatest hope of increasing physical activity and the long-term physical health of neighborhood residents, especially low-income neighborhoods. Recognizing this, concerned citizens formed the Springfield Walks campaign to change the conditions that prevent people from being able to walk safely. The current group of Neighborhood Councils and Healthy Hill Advocates are now called Walk Bike Springfield came out the LiveWell Springfield initiative in 2014. Since its inception, several successes and accomplishments helped make the city safer for pedestrians and bicycle users such as increased participation in the Safe Routes to School program and the city passing some Complete Streets policies.

Such is the effort required by local groups to make the region's neighborhoods safer for all travelers with special attention to vulnerable road users such as pedestrians and cyclists. Some towns have focused on making their communities age friendly. This includes accessible and barrier free pedestrian network with way finding elements. A little more information about these approaches follows.

a) Safe Routes to School

A major factor driving the safe routes to school funding is the desire to promote children's physical activity, while also reducing automobile use. Traffic congestion and air pollution combined with children's lack of physical activity are the targets of safe routes to school initiatives. Statewide the Massachusetts Safe Routes to School program supports several initiatives. Past initiatives have included "Walking School Bus", "Footloose Fridays", "Fuel up to Play" and several educational campaigns. The Massachusetts Safe Routes to School Program is a central source of safe route services to all interested schools in the state and currently provides services to 43% of public K-8 schools. The program provides safety training, classroom visits, presentations to parents and community members, special events, encouragement programs, free promotional items, infrastructure improvements and summer programs.

The Massachusetts Safe Routes to School program promotes healthy alternatives for children and parents in their travel to and from school. The program aims to reduce

congestion, air pollution, and traffic conflicts near participating schools, while improving health and mobility of school-aged children population. Safe Routes to School is a national movement to create safe, convenient, and fun opportunities for children to bicycle and walk to and from schools. The program's goal is to reverse the decline in children walking or biking to school. Nationally, only 15 percent of schoolchildren walk or bike to school compared to 50 percent in the 1950's. Most parents prefer to drop their children off at school using their personal automobile. The result is often increased congestion and higher vehicle emissions around the schools.

A total of 109 schools in the Pioneer Valley actively participate in the Massachusetts "Safe Routes to School Program" promoting healthy alternatives for children and parents in their travel to and from school. The program educates students, parents, and community members on the value of walking and bicycling and provides funding for sidewalks, crosswalks, and traffic calming measures. Funding for construction projects is also available through the Safe Routes to School Infrastructure Program. The Roberta G. Doering Middle School and Robinson Park Elementary School have implemented infrastructure projects in Agawam (Figure 3.40). In Springfield, the Rebecca M. Johnson Visual and Performing Arts Elementary School is participating in the Safe Route to School infrastructure program. Past participation includes the William E. Norris School in Southampton, Jackson Street School in Northampton, Blueberry Hill School in Longmeadow, and Bridge Street School in Northampton.

Figure 3.40 Bike Racks at School in Agawam

PVPC purchased bike racks through a Live Well Springfield Community Transformation Grant to support the "The Safe Routes to School Program" in Springfield. The Springfield Safe Routes to School program is coordinated by the Springfield Safe Routes to School Alliance and is supported by the Springfield Housing Authority, the Talk/Read/Succeed program, Baystate Health Safe Kids program and Brightwood Health Center, the state Department of Public Health,

Springfield Health and Human Services, Mass in Motion, Partners for a Healthier Community, the YMCA of Greater Springfield, and other groups.

b) Age Friendly Initiatives

One of the main goals of the age-friendly movement is to eliminate physical and social barriers for older adults. Age-friendly communities support policies, services, and infrastructure to support and enhance residents' physical and mental health throughout their lives. These efforts allow residents to continue to learn, grow and make decisions, remain mobile, to build and maintain a social network, and to contribute in meaningful and fulfilling ways to their communities.

In the Pioneer Valley Region, people over 65 are the fastest growing age group. Many of our communities are working to make safe and reliable transportation options a priority, including affordable and easy-to-use public transportation, walking and biking paths, and rideshare access.

In 2022, with a grant from Tufts Health Plan Foundation, PVPC began helping local communities achieve their AARP Age and Dementia Friendly designations and convene community and regional partners quarterly to hear from experts and share best practices in the designation, assessment, and implementation of strategies to make communities great places to live for people of all ages. Community partners include Agawam, Amherst, Belchertown, Hadley, Monson, Northampton, Palmer, South Hadley, and Ware.

The Pioneer Valley Planning Commission in collaboration with the City of Springfield, and other Live Well Springfield partners installed new map signs on the Connecticut Riverwalk and Bikeway in Springfield. In partnership with WalkBoston (now WalkMassachusetts) and with funding through Mass-in-Motion, 151 pedestrian wayfinding signs with distance markers were installed in Springfield, Belchertown, and Northampton. PVPC has worked with MassDOT and local partners to install bike route signs along Route 5 in Holyoke, "share the road" signs on many popular cycling routes, directional signs in Northampton, and signs on the Connecticut Riverwalk and Bikeway. PVPC also partnered with MassDOT and DCR on the installation of "Bay State Greenway" signs on the Manhan Rail Trail, the Southwick Rail Trail, Norwottuck Rail Trail and sections of Route 9 in Williamsburg.

c) Complete Streets Program

Massachusetts launched the Complete Streets program in 2014. Many Pioneer Valley communities are actively participating in the program and have committed to transforming our region's roads and streets to make them safe and comfortable for all road users. This has encouraged more people to walk, bike and use transit instead of driving a single occupant vehicle.

PVPC advocates for a "Complete Streets" approach as part of its transportation planning activities. A "Complete Street" improves livability by improving public safety,

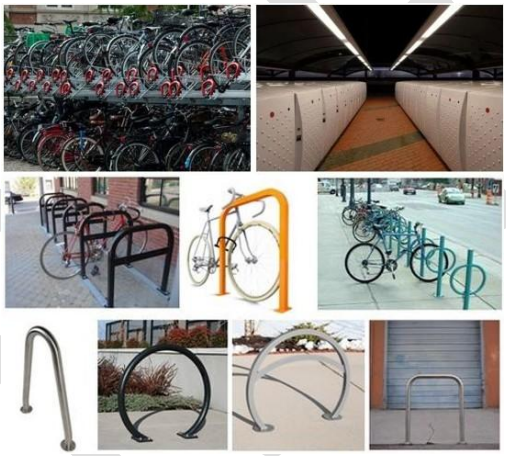
increasing usable public space, and making it easier for all modes of travel to share the street. It also creates a more welcoming environment for local businesses.

As of June 2023, 28 out of 43 communities in the region have participated in the Complete Streets Program and attended training through Baystate Roads. New infrastructure such as the Springfield Brightwood/ North End neighborhood underpass to the new Brightwood-Lincoln Elementary School on Plainfield Street enhances bicycle and pedestrian safety by eliminating at-grade crossing on roads with high traffic volumes and travel speeds.

d) Bicycle Parking

Having a safe and convenient place to lock bicycles and scooters is an important feature for a safe neighborhood. Not only does providing bicycle racks allow riders to secure their non-motorized vehicles but also encourages them to store them away from pedestrian paths to avoid blocking accessible pedestrian and wheelchair movement (Figure 3.41).

Figure 3.41 Bike Parking Types



The PVPC has worked with local communities to upgrade and expand existing opportunities for bicycle parking. Through a series of Transportation Demand Management funding commitments, PVPC has worked with local communities to install parking for more than 700 bicycles. Parking racks have included “U” style racks, ribbon racks, “rib” racks and bicycle lockers. PVPC purchased bicycle racks for several “Save Routes to School” partner schools in Springfield. PVTA initiated a bike rack purchase program to locate bike racks at high frequency bus stop locations. PVPC also coordinated the purchase of bike lockers for use at park-and-ride facilities.

These facilities offer designated sites for locking the bikes at desirable destinations and allow for safe keeping without obstructing movement along the pedestrian pathways. The availability of bicycle parking facilities indicates that bicyclists are welcome and that their driving mode of choice is valued for safe keeping. To assist in the installation of bike racks PVPC created a series of training videos. These and other

videos are available on the PVPC YouTube page:
https://www.youtube.com/watch?v=um6oagL7bfk

3.4.2 Improving Accessibility

Certain locations in the pedestrian network present certain users with barriers to independent active travel modes. The physically challenged, the elderly, and persons experiencing common physical ailments often require adequate rest areas and lighting along accessible pedestrian paths to facilitate safe movement. Lack of these also prevents them from relying on public transit for their travel needs if they cannot reach a bus stop safely or cannot wait while standing for long periods. While there are paratransit and senior van options offered by the regional transit authority, most individuals do not meet the functional disability or age-related eligibility criteria required to use these door-to-door services.

3.4.3 Increasing Mobility

To address bicycle and pedestrian needs on transit the Pioneer Valley Transit Authority implemented a bikes on bus program called "Rack and Roll" to improve access to transit in 1997. As part of the program bicycle racks were installed on the front of buses serving the Five-College area of Hampshire County. Early surveys of "Rack & Roll" users found that the new service increased transit ridership and also increased the number of bicycle trips, providing a viable alternative to the automobile. Many bicyclists use the racks to complete one leg of a journey, while others claim to use the bus for return trips during periods of inclement weather.

In 2003, PVPC secured funding from the Massachusetts Transportation Demand Management (TDM) Program (a sub-category of Congestion and Air Quality Mitigation (CMAQ) funds) for a comprehensive bicycle encouragement program called, Share the Road. Funding was used to update the very popular Pioneer Valley Bicycle commute map and to purchase and distribute bike parking racks as well as "Share the Road" signs for heavily-used bike routes. Member communities that were willing to participate in the program received this equipment free of charge. Since its implementation, PVPC has distributed bike lockers and "Share the Road" signs in conjunction with the Franklin County Regional Council of Governments. In addition to funding these programs, TDM funds have assisted in implementing PVTA'a Rack N' Roll Program, acquiring Sheldon Field and bicycle lockers for Northampton's Park & Ride Project. Providing bike racks on buses has extended the reach of our regional transit service area by facilitating the option to complete the first or last segment of a passenger's trip by bicycle. This has allowed for increased mobility of users by closing the first mile and last mile service gaps present in many of our rural communities.

The Pioneer Valley Transit Authority supports the popular "Rack and Roll" bikes-on-buses program in the entire region (Figure 3.42). All fixed route buses in the PVTA fleet are equipped with racks, allowing cyclists to transport their bikes on public service transit lines throughout much of Hampden and Hampshire County. This helps

increase the reach of transit to many residents whose destination is beyond a comfortable walking range, thus solving the problem of the last mile. In FY 2022 the PVTA bike racks were used 40,706 times (excluding UMass shuttle trips) (Figure 3.43). The Pioneer Valley Transit Authority's bikes on bus program "Rack and Roll" has dramatically improved access for bicyclists to transit and given thousands of people another choice in their mode of travel (Figure 3.44).

Figure 3.42 Loading a Bicycle on the Bus Rack in Northampton

Figure 3.43 Bikes on Bus Usage (PVTA)

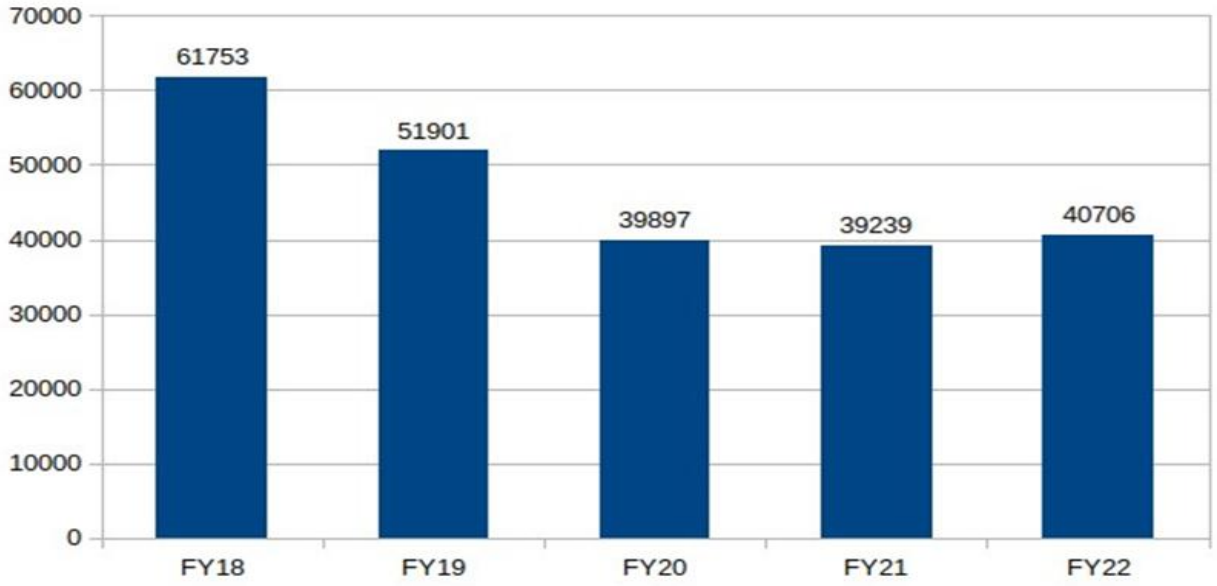
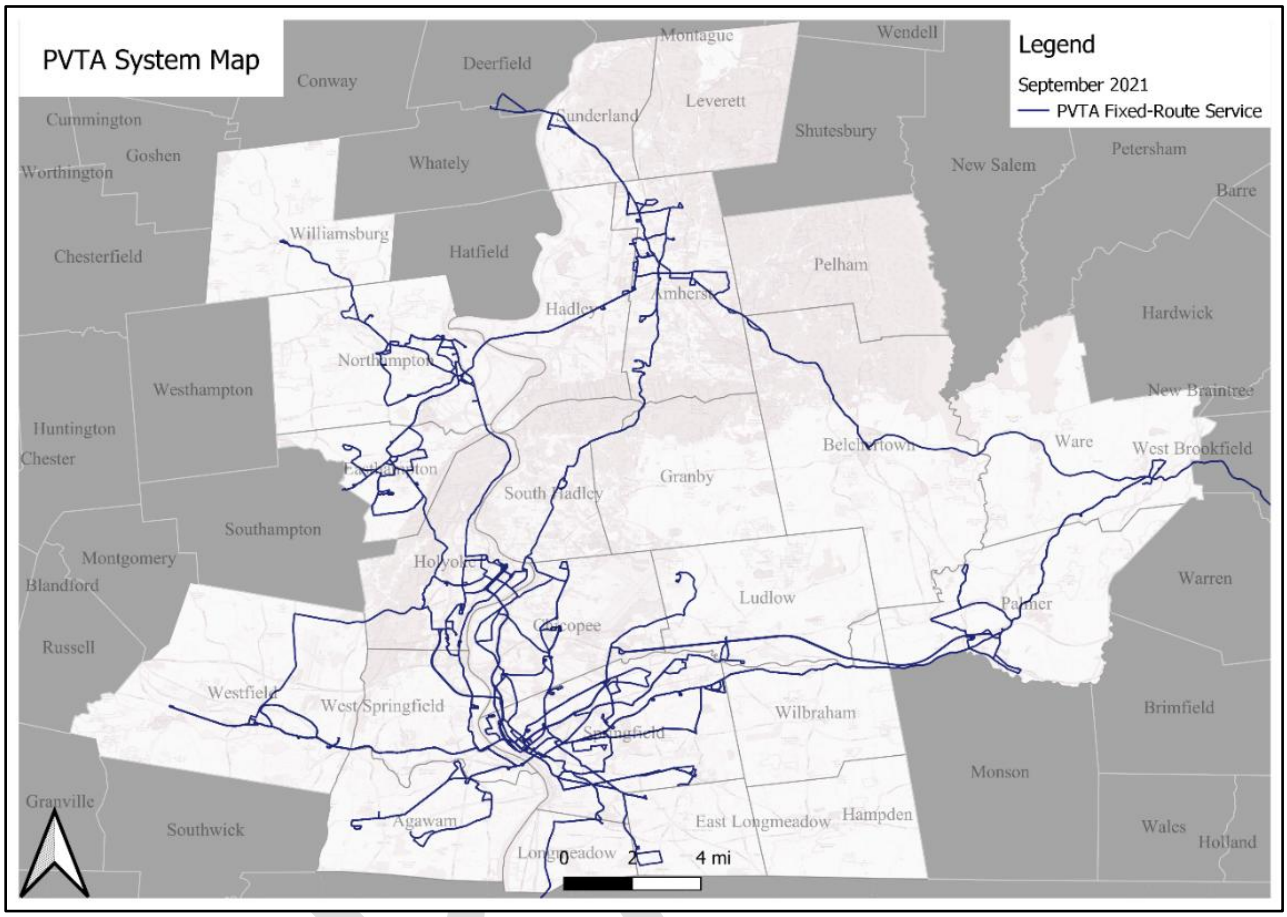


Figure 3.44 Bus Routes in PVTA Communities



Increased marketing and promotion for the service included an instructional video to acclimate new users. The video is available online in English and in Spanish at: https://www.youtube.com/watch?v=pNcW-ZaoEfg.

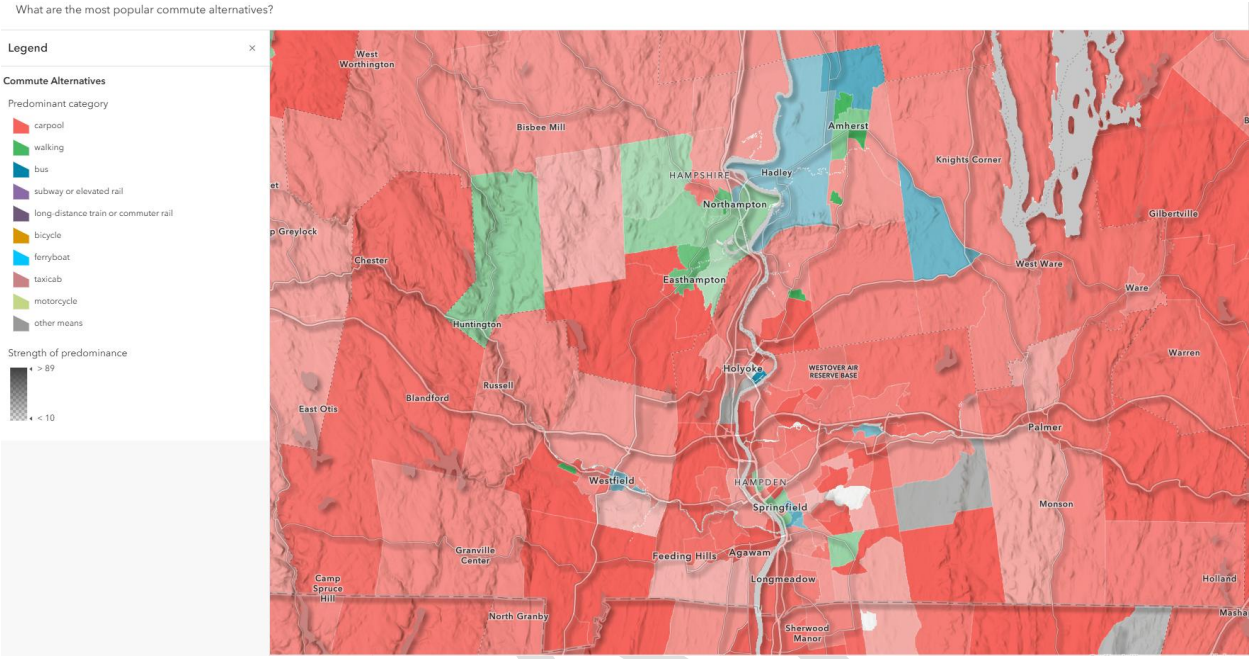
3.4.4 Reducing Economic Strain

Nationwide, families already spend 20% of their budget on transportation costs related to automobile travel. With more people commuting greater distances to work more public and private money is spent on transportation costs. Nationally, 70% of all state and local law enforcement activities are expended on traffic management and 20% of state budgets are consumed by cars. Active transportation can help reduce expenditure on fuel, car maintenance, and insurance.

Bikes are an affordable way to increase transit accessibility. People who live within a two-mile radius of local transportation might find that the walk is too far; but biking provides a faster solution to alleviate such transit deserts. This increases transit ridership as well as connectivity for people to access the places they need. Additionally, bike parking near transit stops will communicate to community members that bike travel is safe and encouraged. The most popular commute alternatives to

driving was analyzed in a form of a color themeatic online map (Figure 3.45). In the Pioneer Valley region these alternatives include carpooling, walking, and bus.

Figure 3.45 Most Popular Commute Alternatives



The above map can be viewed at the following website link: https://www.arcgis.com/apps/mapviewer/index.html?webmap=cabbd03603ce405bbacac205034b7143

Offering an accessible public transit service that is reliable and frequent extends the reach for pedestrians and bicyclists. This in turn offers travelers the flexibility to conduct most of their trips via modes that much more economic than a personal automobile. The PVTA's service area begins at the Connecticut state line and stretches north to Leverett, MA. PVTA serves 24 communities with a total population of 582,800 (2020 U.S. Census). A 2019/22 passenger survey found that 47% of PVTA riders on southern routes and 81% of riders on northern routes use the bus to commute to work or school. A total of 71.5% of riders report earning less than $20,000 per year and nearly 50% of riders report they do not have a driver's license or own a vehicle.

3.5 Bike Month

Calendar year 2024 was the 25th year of Bike Week that became Bike Month a few years ago in the Pioneer Valley. Bike Commute Week, the region's annual celebration of bicycle commuters, has steadily drawn participants and continues to be a prominent attraction in the spring. PVPC staff continue to use this event as an outreach and public awareness campaign. In the past the distribution of the area Bike Map aimed at increasing the rates of bicycling, by assisting potential cyclists in plot out a course using the safest routes. Today, the prevalence of smart phones, software applications, and online sites give access to similar virtual tools to cyclists. Education

about the availability and use of such resources remain a necessary service to the general public.

The bike month listing of events have grown to include educational sessions related to safety and maintenance, social gatherings, cultural tours, natural excursions, memorials of significant events, celebrations of community accomplishments, advocacy actions, sharing of resources for non-motorized travelers. They offer networking avenues for residents, agency staff, business owners, and elected officials. This annual month of events that are spread throughout the Pioneer Valley region during the month of May has become a catalyst for participation in active transportation and interagency collaboration on matters supportive for non-motorized transportation such as safety, accessibility, facility availability, accommodated, and policies.

The growing support of regional cycling businesses is testimony to the unique quality and growing popularity of bicycling in the Pioneer Valley. The region is also home to a local fixed base touring companies such as River's Edge Cycling and hosts nationally ranked races such as the Verge Northampton International Cyclocross.

Local bicycle shops provide a critical supporting role and many are active advocates and partners in the community and many such as New Horizons Bikes in Westfield have hosted numerous events, annual rides, and activities during bike week. Joe's Garage in Haydenville, Competitive Edge, Northampton Bicycle, Full Circle Bike Shop, Peak Performance Bicycles, Pro Bike, FJ Roberts, Valley Bike & Ski Werks, Hampshire Bicycle Exchange, New England Bicycle, Custom Cycle Bike Shop and Laughing Dog Bicycles are just a few of the many bike shops that play a critical role in supporting a vibrant cycling economy.

The Pioneer Valley has a long history of strong support and advocacy for bicycling. RadSpringfield is a volunteer-run bike shop in Springfield. Springfield is the largest city in New England without a commercial bike shop and RadSpringfield fills for the purchase of bikes, skill development and community.

Several communities in the Pioneer Valley have established bike advocacy or trails groups that volunteer their time and expertise to promote and improve bicycle facilities while supporting a strong bicycle culture. Some of these include, Williamsburg Mill River Greenway Committee, Holyoke Bike/Walk Committee, Walk/Bike Springfield, UMass Cycling Club, Pioneer Valley NEMBA, Friends of the Belchertown Greenway, Brimfield Trail Association, MassCentral Rail Trail Coalition, East Quabbin Land Trust, Northampton Cycling Club, Springfield Cyclonauts, MassBike Pioneer Valley, Friends of the Columbia Greenway Trail, Friends of the Manhan Rail Trail, Friends of Northampton Trails and Greenways. (See Appendix- Map of Existing bike lane& Shared use paths).