Pioneer Valley
SAFE STREETS





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Acronyms and Abbreviations

AARP: American Association of Retired Persons

AASHTO: American Association of State and Highway Transportation Officials

ACS: American Community Survey

ADA: American with Disabilities Act of 1990, 42 USC § 12101 et seq.

ADT: Average Daily Traffic

APP: Areas of Persistent Poverty

ATSSA: American Traffic Safety Services Association

ATTAIN: Advanced Transportation Technologies and Innovative Mobility Deployment

BUILD: Better Utilizing Investments to Leverage Development

CFWM: Community Foundation of Western Massachusetts

CHNA: Community Health Needs Assessment

CIP: Capital Improvement Plan

CMF: Crash Modification Factor

DPW: Department of Public Works

EJ: Environmental Justice

EMS: Emergency Medical Services

EOED: Executive Office of Economic Development

EOHLC: Executive Office of Housing and Livable Communities

EPDO: Equivalent Property Damage Only

FHWA: Federal Highway Administration

FTA: Federal Transit Administration

HAWK: High-Intensity Activated Crosswalk Beacon

HFST: High Friction Surface Treatment

HIN: High Injury Network

HRN: High Risk Network

HSIP: Highway Safety Improvement Program

IIJA: Infrastructure Investment and Jobs Act

ITS: Intelligent Transportation Systems

JTC: Joint Transportation Committee

LEAP: Local Early-stage and Actionable Planning

LEP: Limited English Proficiency

LRTP: Long Range Transportation Plan

MassDOT: Massachusetts Department of Transportation

MBTA: Massachusetts Bay Transportation Authority

MET: Massachusetts Environmental Trust

MPO: Metropolitan Planning Organization

MUTCD: Manual for Uniform Traffic Control Devices

NCREP: National Cooperative Research and Evaluation Program

NEPA: National Environmental Policy Act

NHTSA: National Highway Traffic Safety Administration

OSFG: One Step for Growth

OTP: Office of Transportation Planning

P3: Public-private Partnership

PHB: Pedestrian Hybrid Beacon

PVMPO: Pioneer Valley Metropolitan Planning Organization

PVPC: Pioneer Valley Planning Commission

PVTA: Pioneer Valley Transportation Authority

REJ: Regional Environmental Justice

REJ+: Regional Environmental Justice Plus

RFP: Request for Proposals

RRFB: Rapid Rectangular Flashing Beacon

RTA: Regional Transportation Authority

RTOR: Right Turn on Red

RTP: Regional Transportation Plan

SHSP: Strategic Highway Safety Plan

SRTS: Safe Routes to School

SS4A: Safe Streets and Roads for All

TIP: Transportation Improvement Plan

USDOT: U.S. Department of Transportation

VMT: Vehicle Miles Traveled

VRU: Vulnerable Road User

VRM: Value-for-money

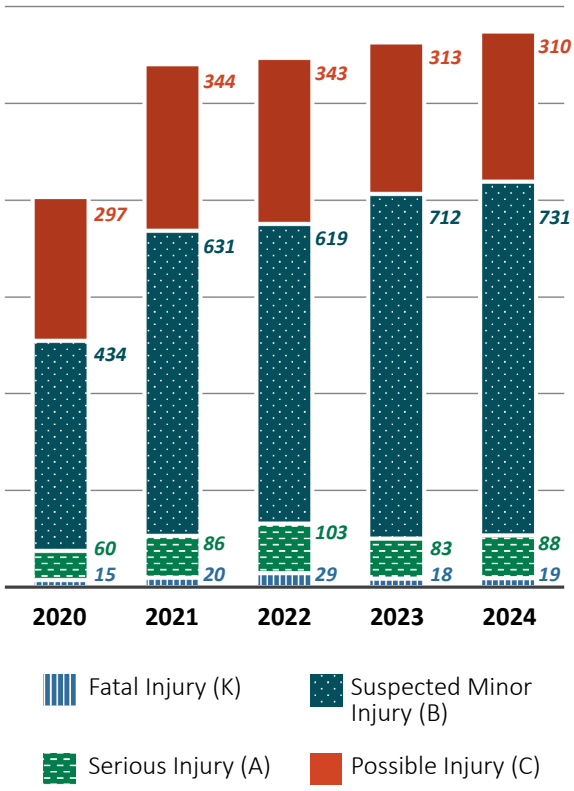
Executive Summary

The Massachusetts Pioneer Valley is a dynamic region of 43 cities and towns across Hampden, Hampshire, and Franklin counties. It ranges from the urban centers of Springfield, Holyoke, and Chicopee to small rural villages and college communities such as Amherst and Northampton. Home to roughly half a million residents, these communities encompass diverse neighborhoods, economic conditions, and transportation needs. They are united by a shared reliance on a multimodal roadway network that connects people to jobs, schools, health care, and essential services.

Regional Crash Trends

From 2020 through 2024, Pioneer Valley communities have experienced an increase in overall crashes along its roadway networks. During this five-year period, a total of 25,107[1] crashes occurred, with 521 fatal and serious injury crashes resulting in 101 fatalities and 420 serious injuries. While fatal and serious injury (FSI) crashes peaked in 2022 before declining in 2023, in 2024, the region saw an increase in both fatalities and serious injuries.

Figure 1: Injury Crashes 2020–2024



The Pioneer Valley region experiences a significant burden from fatal and serious injury crashes, with the highest number of fatalities occurring in West Springfield and Agawam. These severe crashes are estimated to cost the region approximately $0.86 billion each year in economic and societal impacts. Temporal patterns show that weekday afternoons and weekend late night periods see the greatest concentration of these serious incidents. Spatially, severe crashes are heavily concentrated on higher order roadways: in urban communities, principal and minor arterials together account for about three quarters of all fatal and serious injury (KA) crashes, while in rural areas, major collectors alone represent nearly 40 percent of rural KA crashes.

Certain behaviors, modes, and crash types are overrepresented in the region's most severe outcomes. Motorcycles make up only a small share of overall crashes but nearly one fifth of all fatal and serious injury crashes, and speeding is a factor in roughly 17 percent of K/A crashes. Single vehicle crashes represent the highest share of KA crashes, underscoring the importance of addressing roadway departure risk. Vulnerable road user (VRU) crashes—those involving people walking, bicycling, or using other mobility devices—constitute only a small share of total crashes but 17 percent of KA crashes, and a higher proportion of these VRU KA

1 This total number of crashes excludes crashes in Chicopee, Holyoke, Springfield, Ware and Westfield.

crashes occur in dark conditions, with or without street lighting. Erratic driving contributes to an additional 13 percent of KA crashes. Notably, most crashes overall occur in daylight and on dry roads, indicating that driver behavior, speed, and roadway design play a larger role in severe crash outcomes than adverse weather alone.

To address these significant safety challenges, the Pioneer Valley Regional Planning Commission, acting as staff to the Pioneer Valley Metropolitan Planning Organization (PVMPO), together with local communities, residents, state and federal partners, and the Pioneer Valley Joint transportation Committee (JTC), developed a data-driven Regional Safety Action Plan under the United States Department of Transportation (USDOT) a Safe Streets and Roads for All (SS4A) initiative. The plan provides a coordinated, data-driven framework for reducing fatalities and serious injuries, advancing equity, and supporting safe, reliable travel for all roadway users—whether they walk, bike, take transit, use mobility devices, or drive. It serves as both a strategic guide and an implementation roadmap that aligns local, regional, and state partners around common goals, priority corridors, and evidence-based safety countermeasures.

What is a Safety Action Plan?

The Pioneer Valley Safe Streets Plan solidifies the region's commitment to implementing a Vision Zero and Safe System Approach to safety for all road users in the region. The Plan sets a goal to reduce traffic-related fatalities and serious injuries to zero by 2050. The region's strategy aligns with the Safe System Approach, which recognizes that people will sometimes make mistakes and seeks to design and manage the transportation system—through safer roads, speeds, vehicles, and behaviors—in a way that prevents those mistakes from resulting in fatal or serious injuries.

Plan Components

Public Engagement

A broad range of engagement strategies including digital mapping tool, project website, public meetings, pop-up events, and stakeholder coordination sessions to engage more than 1,200 community members across the Pioneer Valley Region was central to the planning process. Outreach efforts were focused on reaching community members where they live, work, play, and study in the 38 communities included in the Pioner Valley Safe Streets Plan . In June 2026, the draft RSAP was released to a 21-day public comment period to gather direct feedback and ensure alignment with community needs.

Key Themes from Public Engagement

- Infrastructure gaps and condition create safety concerns
- Dangerous driver behaviors present a significant safety threat
- Road conditions create additional safety hazards
- Rural and Hilltown communities face unique safety challenges
- Transit access and connectivity do not meet community needs
- Schools and children are recurring safety concern

Crash Data Analysis

To develop the Pioneer Valley Safe Streets Plan, crash data from 2020–2024 was reviewed and analyzed to identify trends, common crash factors such as speeding and distracted driving, and common crash locations. Data analysis identified several key trends, including the high proportion of fatalities and serious injuries among vulnerable road users compared to a relatively low number of total crashes when compared to motor vehicles.

Safety Analysis

As part of the planning process, a regional high-injury network (HIN) and high-risk network (HRN) were identified using crash data from 2020–2024 along with existing roadway network. The HIN identifies roadway corridors and intersections with the highest safety concern based on crash frequency and severity.

Table 1: HIN Coverage—Segments

HIN Coverage Percentage	Total Length (Miles)	Percentage by Length	Percentage Coverage of KAB Crashes
5%	218	5.5%	46.3%
10%	424	10.7%	64.3%
Total Length of Roadways Analyzed	3965	100%	100%

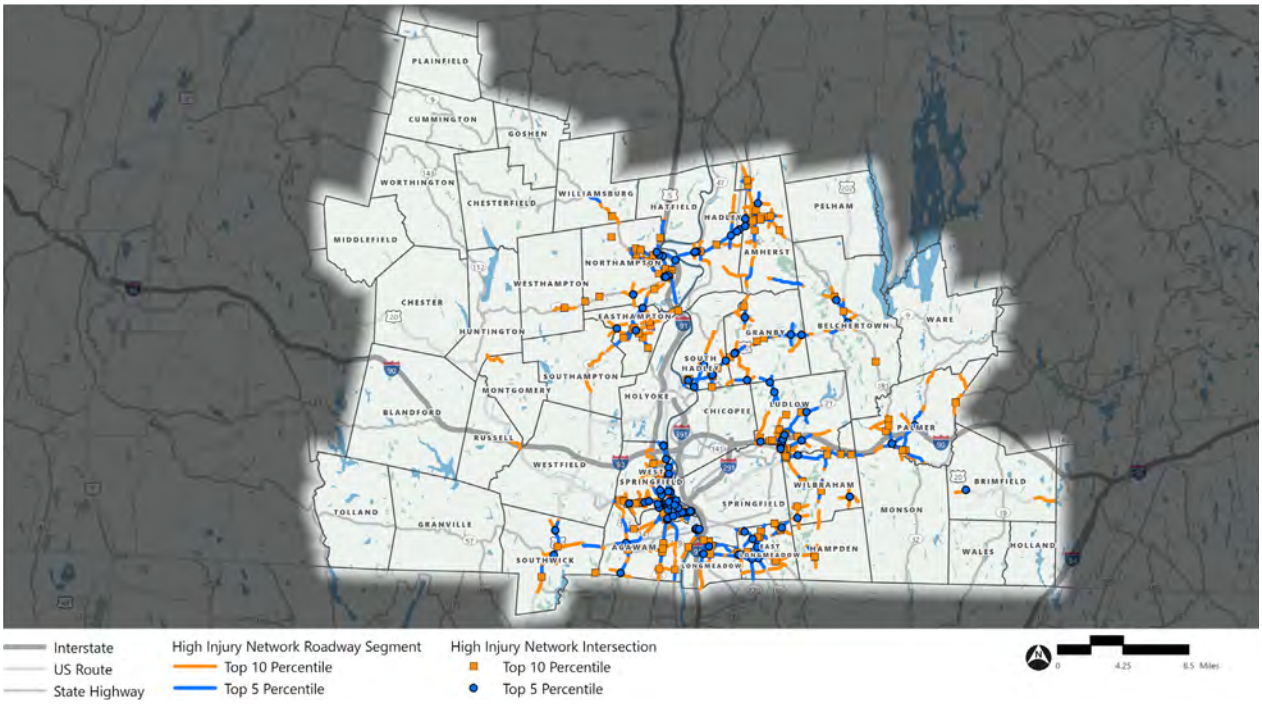
Table 2: HIN Coverage—Intersections

HIN Coverage Percentage	Total Number	Percentage Coverage of KAB Crashes
5%	110	33.7%
10%	249	53.7%
Total Length of Roadways Analyzed	2440	100%

The HRN represents a proactive method to identify roadway risk factors linked to fatal and serious injury crashes utilizing a systemic analysis of roadway network and crash data. This allows agencies to assess roadway networks based on site-specific risk levels to help identify, prioritize, and implement countermeasures at locations where fatal and severe crashes are most likely to occur. For this analysis, the following six crash types were selected to identify their HRNS:

- Lane departure crashes
- Intersection crashes
- Motorcycle crashes
- Speeding and aggressive driving crashes
- Bicycle crashes

Figure 2: Pioneer Valley High Injury Network



Countermeasures and Projects

The Pioneer Valley Safe Streets Plan presents a comprehensive toolkit that includes engineering countermeasures ranging from low-cost, high-impact improvements that can be implemented in the near-term to higher cost options that may be addressed as long-term solutions or larger projects. Strategies are generally divided into three categories:

- **Policy and Process Changes** focused on revising existing regional and local plans, policies, and guidelines, or to adopt new policies to prioritize safety
- **Engineering Countermeasures** such as high-visibility crosswalks, pedestrian lighting, curb extensions, signal head visibility, curb modifications, and geometry modifications
- **Non-Engineering Countermeasures** such as policies and programs to provide education, reduced vehicle trips, improve interactions between travel modes through direct and indirect vision enhancements, improve post-crash care response times, or enhance enforcement to increase driver awareness

These strategies were used to identify a list of regional projects for corridors and intersections, as well as a set of priority intersection and segments within each municipality.





Implementation and Next Steps

Pioneer Valley Planning Commission, with direction from PVMPO, will work closely with the 38 communities who participated in development of this Plan to identify opportunities to advance planning, design, and implementation of proposed projects through state and federal funding and technical assistance programs. This Plan enables these communities to pursue federal grant funding through the SS4A program to design and construct recommended solutions identified for regional and municipal corridors and intersections, positioning the region to pursue targeted, collaborative investments to advance projects that will have region-wide impact and advance Pioneer Valley's goal to reduce fatalities and serious injuries along the region's roadways.

This Plan represents a collaborative effort between the Pioneer Valley Planning Commission, municipal leaders, stakeholders, community members, and the Pioneer Valley JTC. Their role continues as the Pioneer Valley Safe Streets Plan moves into the implementation phase, as all regional safety stakeholders must take meaningful action together to achieve the Vision Zero goal.

1 Introduction



Purpose

The Pioneer Valley Region experienced 1,427 fatal and serious injury crashes from 2020–2024, resulting in 262 fatalities and 1,165 serious injuries. These events have consequences that reach far past the moment itself, impacting not only families and friends but also businesses, communities, first responders, witnesses, and the overall transportation system.

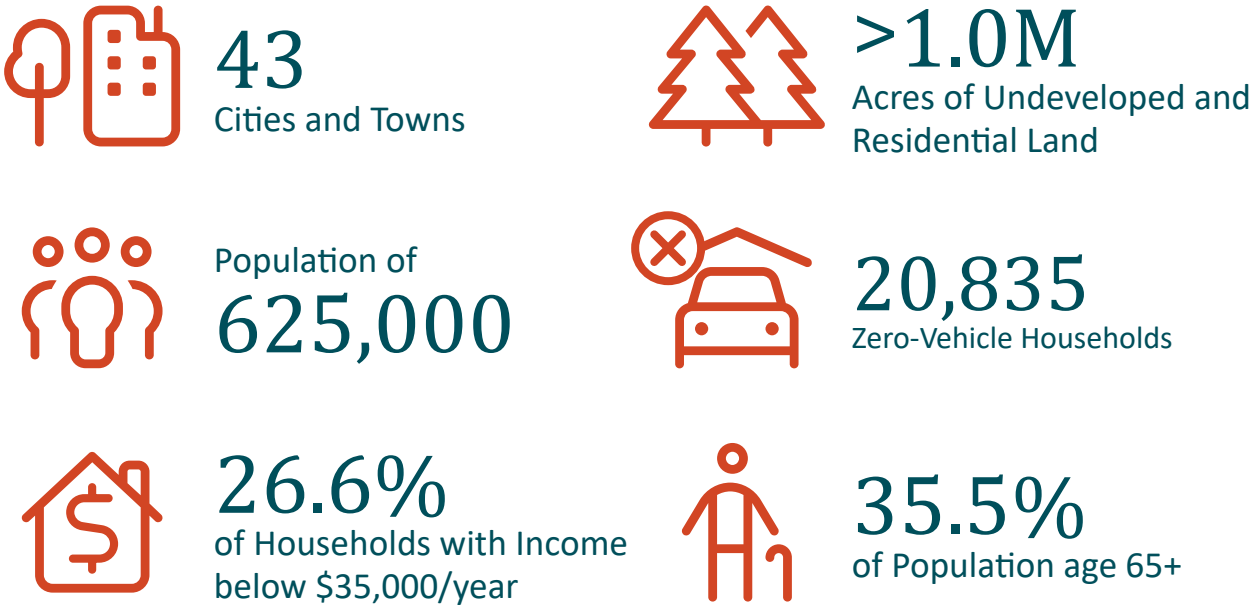
The Pioneer Valley Metropolitan Planning Organization (PVMPO) is dedicated to reducing, and ultimately eliminating, traffic-related fatalities and serious injuries through the adoption of Vision Zero principles and implementation of the Safe System Approach outlined in the National Roadway Safety Strategy.

Acting as staff to the PVMPO and representing 43 Central Massachusetts communities, the Pioneer Valley Planning Commission (PVPC) secured a Safe Streets for All (SS4A) planning grant from the United States Department of Transportation (USDOT) to develop this Regional Safety Action Plan, known as the ***Pioneer Valley Safe Streets Plan***. Five municipalities within the region obtained independent funding to establish separate safety action plans; consequently, these communities are excluded from this report, although coordination efforts were made to ensure alignment across all plans. The five municipalities include: Springfield, Holyoke, Chicopee, Ware, and Westfield.

This plan presents a data-driven framework identifying high crash locations and sites with elevated risk due to roadway characteristics or land use. It outlines both site-specific, systemic, and non-engineering safety enhancements designed to improve roadway safety and reduce the incidence of fatal or serious injuries among all road users, including pedestrians, bicyclists, motorcyclists, public transportation riders, and motorists.

The development of this plan was accomplished in collaboration with local communities, residents, state and federal partners, as well as the Pioneer Valley Joint Transportation Committee (JTC).

Figure 3: About the Region



What is Vision Zero?

Vision Zero represents a comprehensive, data-informed strategy aimed at eliminating all traffic-related fatalities and serious injuries within the roadway network. Founded on the principles that prioritize human life and health, acknowledge the inevitability of human error, and require a transportation system engineered to anticipate and accommodate such errors, Vision Zero underscores the collective responsibility of planners, engineers, policymakers, enforcement agencies, and community stakeholders.

The core Vision Zero principles as used in transportation safety and planning:

- Traffic-related deaths and injuries are **preventable**
- Integrate **human** error in approach as it is **unavoidable**
- **Human life and health** are the number one priority across **all modes of transportation**
- Safety work should **focus on system-level changes** above influencing individual behavior
- **Speed Reduction** is the **fundamental factor** in reducing crash severity
- **Data-driven** allows for transparent **decision-making**

Vision Zero in the Pioneer Valley Region

Vision Zero is a collaborative and ongoing effort, communities often share resources and insights from their own implementation. The most prominent resource for Vision Zero adoption in the United States is the Vision Zero Network, which provides case studies, webinars, and other tools to improve Vision Zero initiatives. In Massachusetts, communities such as Boston, Cambridge, Somerville, Worcester, Lynn and Lexington have proven that the Vision Zero approach can adapt to communities of varying sizes, respond to local needs, and improve transportation safety for residents across the state.

The Pioneer Valley Metropolitan Planning Organization (PVMPO) adopted their first Vision Zero Statement in 2023. With the development of this plan the PVMPO adopted an updated Vision Zero Statement on February 24, 2026, solidifying the region's commitment to implementing a Vision Zero and Safe System Approach to safety in the region. As part of the newly adopted statement, PVMPO has set a goal for fatal and serious injury reduction within the region.

Safe System Approach

The Safe System Approach serves as a comprehensive framework, prioritizing human vulnerability and the potential for error within decision-making processes. Consequently, this approach is integral to the implementation of Vision Zero and is broadly adopted in transportation safety planning and design.

- **Death and Serious Injuries are Unacceptable:** Transportation systems must be designed to eliminate all fatal and severe outcomes
- **Design for Human Error:** Mistakes are inevitable, but transportation systems can reduce harm through forgiving, human-centric design
- **Consider Human Vulnerability:** Transportation infrastructure should be human-centric and designed to minimize the risk of harm to vulnerable users
- **Shared Responsibility:** Transportation safety requires collaboration between all stakeholders to effectively reduce harm
- **Plan Proactively:** Systemic and localized safety issues must be identified and addressed before harm is caused, not after
- **Build Redundancy:** A transportation system must be strengthened at all levels, ensuring that if one mechanism fails, others may stand in place to reduce or prevent harm



Source: FHWA

Implementation of the Safe Systems Approach is arranged around five complementary objectives as shown in **Table 3**.

The Safe System Approach forms the basis of Vision Zero by offering practical strategies aimed at eradicating traffic-related injuries and fatalities. By prioritizing systemic change over individual responsibility, this approach integrates human safety into all facets of transportation planning, policy development, and design, thereby advancing the objectives of Vision Zero.

Table 3: Safe System Approach

Safe System Approach	
Safer People	Promotes safe and responsible driving practices among road users while establishing conditions that prioritize their safety and ensure they reach their destination without harm.
Safer Roads	Design Roadway environments should be designed to reduce the impact of human error, accommodate injury tolerances, promote safe behaviors, and enable secure travel for the most vulnerable users.
Safer Vehicles	Increase the availability of vehicle systems and features designed to prevent accidents and reduce their impact on both occupants and non-occupants.
Safer Speeds	Encourage safer speeds on every type of road by combining careful, fair, and context-sensitive roadway designs, setting proper speed limits, conducting focused education and outreach efforts, and enforcing regulations.
Post-Crash Care	Improve crash survivability by ensuring prompt access to emergency medical services, while establishing a secure environment for essential first responders and mitigating secondary collisions through comprehensive traffic incident management strategies.

Current Vision Zero and Safe System Statement

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while improving safety, increasing healthy, equitable mobility, and providing resilient infrastructure for all. **In 2024, 48 people died and 245 people were seriously injured** due to roadway crashes in the Pioneer Valley region. We acknowledge that deaths and severe injuries on our roadways are preventable and the Pioneer Valley Metropolitan Planning Organization's top priority is **ensuring the safety of all roadway users**: whether they are taking transit, walking, bicycling, or using any other mobility device; driving a vehicle, truck, or motorcycle; or riding as a passenger. One life lost or seriously altered is one too many.

> The Pioneer Valley MPO is committed to the goal **to achieve zero roadway fatalities and serious injuries by 2050.** Pioneer Valley will work towards this goal by applying the Safe System Approach into daily practice.

Consistent with the Safe System Approach and Safe Streets for All (SS4A) principles, the Pioneer Valley MPO embraces **shared responsibility** among transportation agencies, policymakers, planners, emergency responders, community groups, and all roadway users. **Safety is embedded as a foundational consideration** in all transportation planning, project development, operations, and funding decisions.

The MPO has incorporated elements from the Massachusetts 2023 Strategic Highway Safety Plan (SHSP) into its 2024 Update to the Regional Transportation Plan for the Pioneer Valley MPO (RTP). This provides a framework for how the MPO will work to make regional roadways safer for all road users. The RTP includes specific **safety strategies that can aid in achieving a Vision Zero regional transportation network in the Pioneer Valley.**

The Pioneer Valley Region will use **data-driven, equity-centered decision-making to prioritize investments in communities and corridors with the highest concentrations of fatal and serious injury crashes**, particularly where historically underserved populations are disproportionately impacted.

Through ongoing collaboration with federal, state, local, and community partners, we will implement policies, programs, and projects that advance SS4A goals and move our region toward a transportation system where no loss of life is acceptable and everyone can travel safely, regardless of age, ability, or mode of travel.

2 Community Engagement



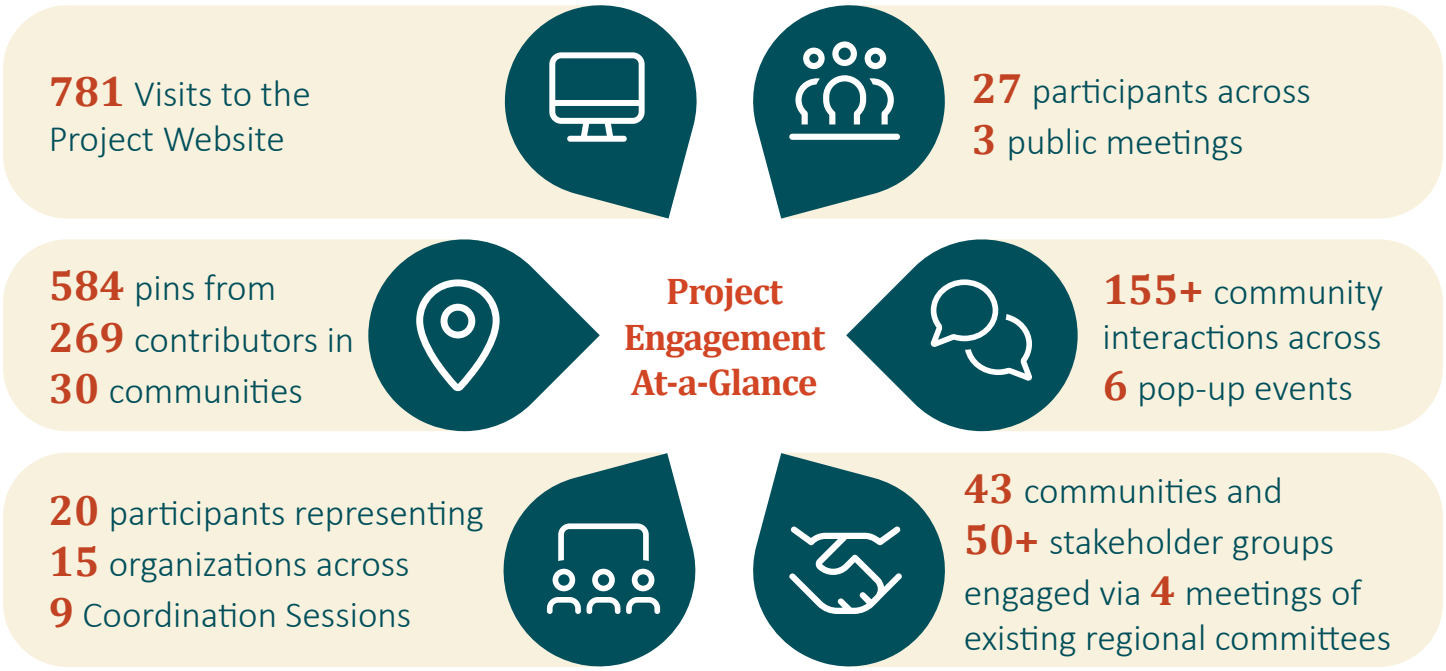
Role of Community Engagement

The Pioneer Valley Safe Streets project team collected input from the public and key regional stakeholders throughout the planning process. Community engagement served as foundational input for the technical safety analysis, helping to shape the locations studied, the risk factors prioritized, and the countermeasures ultimately recommended.

Outreach was designed to reach those who live, work, play, and study in the 38 participating municipalities, including residents of rural Hilltown communities, bicyclists, students, older adults, commuters, transit users, and underserved populations who may experience transportation safety challenges differently than the broader public.

To ensure that outreach efforts engaged a wide variety of community members, the project team deployed several strategies through the community engagement process. **Figure 4** summarizes the project's six-month engagement program, which generated more than 1,500 engagement touchpoints through the project website, public meetings, stakeholder coordination sessions, pop-up events, and the interactive mapping tool.

Figure 4: Project Engagement at-a-Glance



Key Themes from Community Input

Feedback collected through all engagement activities revealed recurring transportation safety concerns across the region. The themes presented in this section reflect issues that were consistently raised by community members, stakeholders, and regional partners through public meetings, pop-up events, regional committee discussions, stakeholder coordination sessions, and the digital mapping tool. There were no significant differences in the issues raised by participants based on engagement method or audience.

Infrastructure gaps and condition are top concerns.

Participants consistently identified missing, discontinuous, or poorly maintained sidewalks across the region. Dedicated bicycle infrastructure is limited on most roads, and existing bike lanes are often unprotected or poorly designed. Crosswalks were also frequently described as faded, unsignalized, or routinely ignored by drivers.

> *"One of the best things about the conservation area is that it's close to town, but it still feels like you're out in nature. I'd like to see safer walking and biking connections so more people can reach the trails without having to drive."*

Dangerous driver behaviors are perceived as a significant safety threat.

Speeding emerged as one of the most consistent concerns across urban corridors, rural roadways, and areas near schools. Participants also reported that drivers frequently fail to yield at crosswalks, run stop signs and red lights, and use mobile devices while driving. Many respondents also expressed concern about limited or inconsistent enforcement.

> *"There is zero enforcement of traffic laws. Drivers are constantly running red lights and ignoring crosswalks."*

Road conditions create hazards for all users.

Poor pavement conditions, particularly potholes, were frequently cited throughout the region and across all travel modes. In some locations, roadway conditions were described as severe enough to force cyclists to dismount or avoid certain routes altogether.

> *"Cracks, holes, unevenness, and sometimes the lack of sidewalks are a big safety hazard that forces pedestrians into the road."*

Rural and Hilltown communities face compounding safety challenges.

Participants from rural and Hilltown areas described layered transportation concerns that differ from those in more urbanized communities. Common issues included the absence of sidewalks, longer distances to essential services, limited transit access, and the needs of older adults and individuals with mobility limitations.

> *"Because there are no sidewalks, older adults need help getting around safely."*

> *"This is a fast, narrow rural road with many walkers and bikers. No white fog lines. People are at risk from wandering drivers."*

Transit access and connectivity are inadequate.

Bus stops are often difficult to reach safely on foot, service can be infrequent, and routes do not always connect effectively between communities. Shelters and benches are missing. Several respondents noted the region feels designed to require car ownership.

> *"Getting to the airport should be simple and reliable. Stronger transit connections between our cities and the airport would make life easier for residents, workers, and visitors."*

> *"As I get older, I need more bus connections to essential services like doctors' offices, grocery stores, and community centers."*

Schools and children are a recurring safety concern.

Unsafe walking and biking routes to school were identified throughout the region. Participants frequently cited challenges accessing schools safely, particularly in areas where sidewalk and crosswalk deficiencies coincide with speeding and other unsafe driver behaviors near school zones.

> *"My kids were using the crosswalk and nearly hit by a car. They would like to walk or bike to school. This intersection makes it hard for them to safely do so."*

> *"Sidewalks are crumbling and there is no bike infrastructure or shoulder width. This is an important connection to the new elementary school!"*

Public Engagement Activities

Public engagement activities provided opportunities for those who live, work, study, and play in the region to learn about the project, share local safety concerns, and help shape transportation safety priorities across the region.

The project website served as the central hub for project information, updates, and engagement opportunities throughout the planning process. **Figure 5** shows the project website, which provided access to meeting materials, announcements, the mapping tool, and project findings as they became available. The website was offered in multiple languages to support broader accessibility across the region. As summarized in **Table 4**, the website received 781 visits from 579 unique visitors and generated 862 pageviews as of June 1, 2026. **Table 5** presents the primary sources of website traffic, with direct visits accounting for the majority of website activity.

Figure 5: Pioneer Valley Safe Streets Website

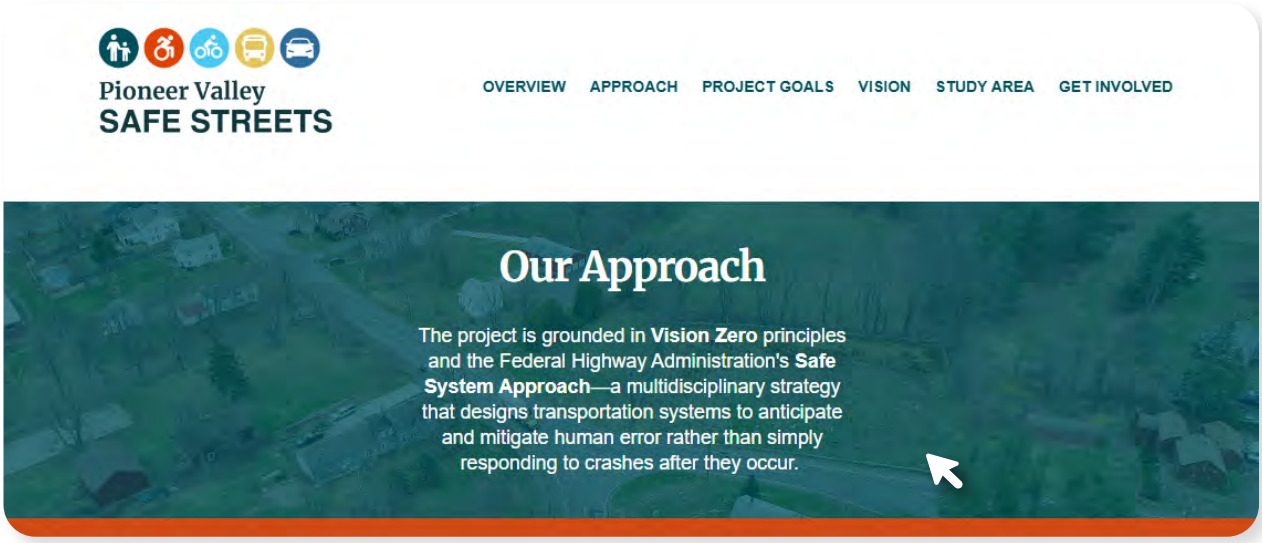


Table 4: Summary of Website Engagement (As of June 1, 2026)

Type	Visits
Website Visits	781
Unique Visitors	579
Pageviews	862
Mailing List Subscribers	9

Table 5: Primary Sources of Website Activity (As of June 1, 2026)

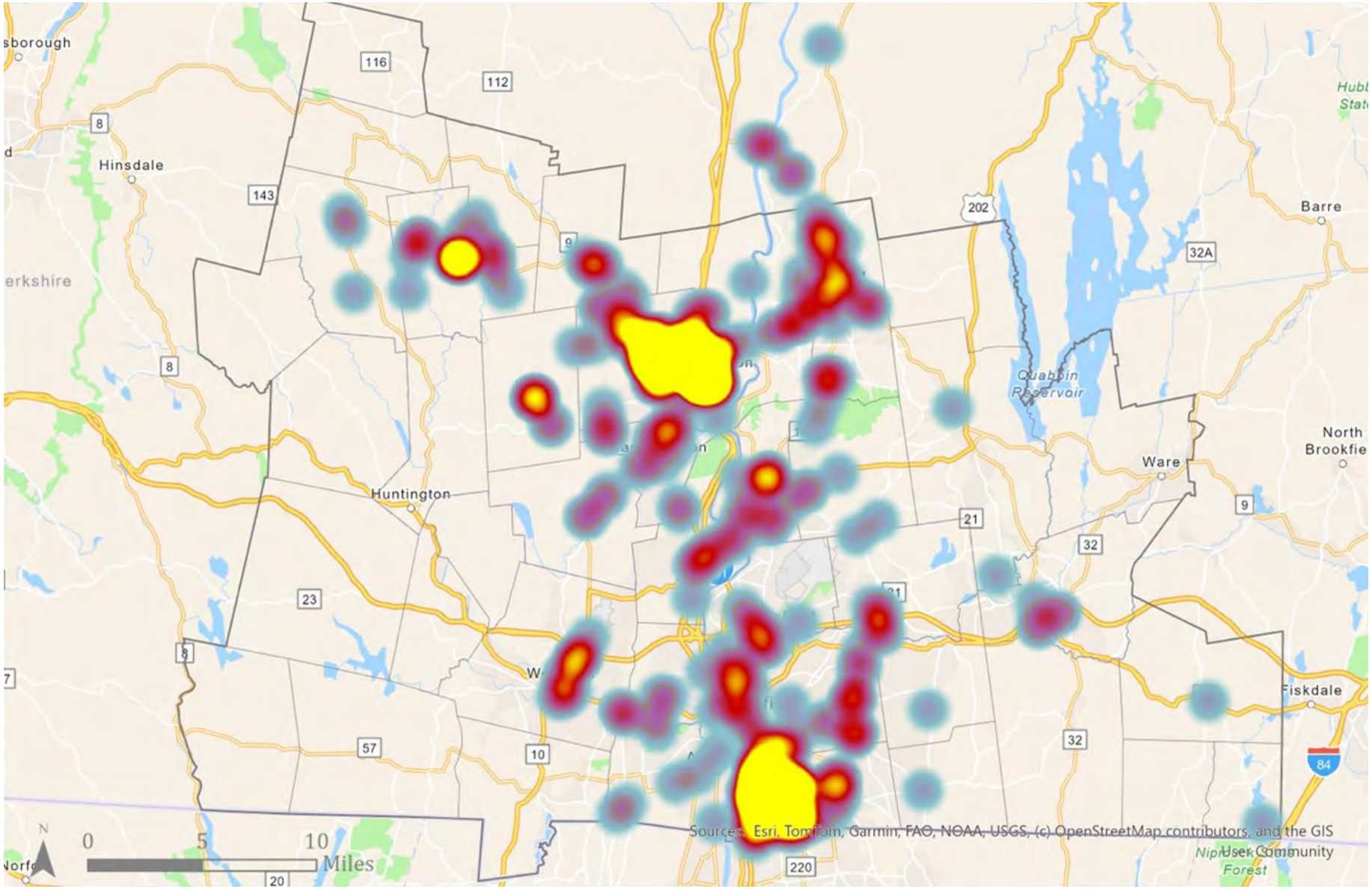
Source	% of Activity
Direct	67%
Referral	20%
Search	7%
Social	6%
Email	<1%

From January 20 to May 26, 2026, the public used an interactive digital mapping tool to identify transportation safety concerns and opportunities across the region. Participants could drop pins on a map to highlight unsafe conditions, examples of effective design, and ideas for improvement tied to specific locations. More than 584 pins from 269 contributors in 30 communities were submitted during the engagement period. **Figure 6** illustrates the geographic distribution of comments submitted through the mapping tool.

The mapping tool was open across the full road network, including Chicopee, Holyoke, Springfield, Ware, and Westfield, which are developing their own SS4A plans. This approach recognized that people routinely travel across municipal boundaries and that transportation safety issues are regional in nature. Comment data from those communities was shared with their respective planning teams to support a coordinated, region-wide approach to safety planning.

To expand awareness of the project, mapping tool, and upcoming engagement opportunities, the project team promoted the Pioneer Valley Safe Streets effort on Facebook, Instagram, and Nextdoor.

Figure 6: Mapping Tool Comment Heatmap



Data sources: Interactive mapping survey comments from PVPC Safe Streets, MassDOT (2025), MassGIS (2024)

Pop-Up Events

Pop-up events allowed the project team to engage community members while they were out in the community, at festivals, markets, and other events throughout the region. These informal outreach activities helped raise awareness of the project, promote the digital mapping tool, and collect location-specific transportation safety concerns and experiences from people who may not typically attend traditional public meetings. **Table 6** summarizes the location and dates of pop-up events. Figure 6 shows examples of project outreach conducted at these events.

At each pop-up event, participants could add sticky notes directly to an engagement board to share location-specific feedback, which was subsequently entered into the digital mapping tool to ensure all input was captured in a consistent format. Participants were also invited to identify the transportation modes they use most frequently through a brief interactive exercise, providing additional context for understanding local travel patterns and transportation safety needs.

Table 6: Pop-up Event Summary

Meeting	Date
Amherst Sustainability Festival	April 25, 2026
Hilltown CDC Resource Fair	April 25, 2026
Northampton Bike Week Breakfast	May 13, 2026
Grow Food Northampton Tuesday Farmers' Market	May 19, 2026
Sweet Alice Conservation Area Trail Head	May 29, 2026
Western Massachusetts Transportation Advocacy Network 4th Annual Transportation Forum	June 12, 2026



Community Members Participating in Pioneer Valley Safe Streets Pop-Up Engagement Activities

Public Meetings

Public meetings helped the team gather location-specific feedback, reach a broad cross-section of community members, and better understand how transportation safety challenges vary across different municipalities and user groups. They also served as an opportunity for the public to interact with, and ask questions of, the project team.

The project team organized three unique public meetings in both virtual and in-person formats. Collectively, these events engaged more than 41 people from across the region. **Table 7** summarizes the format, purpose, and key takeaways from each meeting. The photos below show images of the public interacting with the project team at public meetings.

Table 7: Summary of Public Meetings

Meeting and Date	Location/Platform	Overview	Key Takeaways
Virtual Listening Session *February 24, 2026*	Microsoft Teams	Introduced the project and Vision Zero framework and invited participants to share safety concerns.	• Speeding and aggressive driving are major concerns • Vulnerable road user safety should remain a priority • Communities face challenges balancing safety improvements and limited funding • Police, fire, and emergency responders should be engaged early
Open House *May 13, 2026*	Microsoft Teams and Pioneer Valley Planning Commission Office in Springfield, MA	Presented interim safety analysis findings, including the High Injury Network (HIN) and High Risk Network (HRN), and gathered corridor-specific feedback.	• Infrastructure gaps remain a top concern • Dangerous driver behaviors continue to impact safety • Vulnerable road user safety should remain a priority • Local knowledge and stakeholder input are critical to identifying safety needs
Public Presentation *June 16, 2026*	Microsoft Teams	Presented the study's findings, recommendations, and next steps.	• The region is designed for cars, and residents recognize it • Multimodal users (walking, biking, bus) are active and numerous, often exceeding driving in combined trips • Connectivity gaps, especially the "last mile," are the most dangerous part of trips • Driver behavior (speeding, red-light/stop-sign running, distracted driving) remains a persistent safety threat • Community-reported data validates technical analysis and surfaces locally specific hazards



Community members reviewing HIN and providing input at public open house



Community members reviewing findings from needs and access analysis

Stakeholder Engagement Activities

Community engagement activities prioritized making connections with Pioneer Valley residents through a variety of interactive formats designed to meet community members where they live, work, and play across the region. The project team also organized a series of stakeholder engagement efforts, focused on targeted outreach to organizations with a direct stake in transportation safety. Engagement included committee meetings, stakeholder coordination sessions, and participation at the Regional Transportation Forum.

Regional Committee Coordination Meetings

The Pioneer Valley Joint Transportation Committee (JTC) serves as the transportation advisory group to the PVMPO, helping incorporate federal, state, local, and public input into regional transportation planning and programming. Comprised of representatives from member communities and transportation organizations, the JTC coordinates transportation plans and review planning initiatives before formal PVMPO action.

The PVPC serves as the region's planning and policy-making body, bringing together representatives from member municipalities, county representatives, and other appointed stakeholders to guide regional planning efforts, establish priorities, and provide oversight of the Commission's programs and initiatives.

The project team met with these committees at key milestones throughout the planning process to review technical findings, discuss emerging safety priorities, provide regional and municipal perspectives, and guide development of the study's recommendations.

Table 8: Summary of Committee Meetings

Meeting and Date	Overview
Joint Transportation Committee/ Metropolitan Planning Organization *January 14, 2026/January 27, 2026*	Introduced the Pioneer Valley Safe Streets Plan, including the project scope, consultant team, regional safety data, and the Vision Zero and Safe System approaches guiding the study.
Joint Transportation Committee *April 8, 2026*	Provided an update on the Vision Zero statement and Regional Safety Compass, including progress identifying High Injury and High Risk Networks and summarizing completed and upcoming engagement activities.
PVPC Commission Meeting *April 9, 2026*	Presented the Regional Safety Action Plan, including project scope, safety analysis findings, engagement activities, and the public comment mapping tool, and discussed anticipated outcomes of the plan.
Joint Transportation Committee *June 10, 2026*	Provided an update on the Regional Safety Action Plan including engagement, safety analysis, priority project locations, and example countermeasures.

Stakeholder Coordination Sessions

Stakeholder coordination sessions were conducted throughout the planning process to gather input from regional agencies, municipal representatives, transportation partners, and other key organizations. These meetings helped guide the technical analysis, identify regional transportation safety priorities, and ensure coordination across jurisdictions and planning efforts.

Meeting invitations were distributed to organizations and agencies across the Pioneer Valley region. Representatives from the following communities and organizations participated:

- Town of Amherst—Department of Public Works
- City of Holyoke
- City of West Springfield
- Town of Chester
- Town of Southampton
- University of Massachusetts Amherst
- Mount Holyoke College
- Pioneer Valley Transportation Authority (PVTA)
- MassBike
- Trains in the Valley
- Educare Springfield
- Hilltown CDC
- Massachusetts Healthy Aging Collaborative
- Project Team supporting Complete Streets planning efforts in 14 rural communities in the region
- Project Team supporting SS4A planning efforts in Chicopee, Holyoke, and Westfield

Key themes from the stakeholder coordination sessions included:

- **Infrastructure improvements were consistently identified as the highest priority,** particularly sidewalks, crosswalks, bicycle facilities, traffic calming measures, and safer access to schools, transit, and community destinations
- **Speeding is a widespread concern across both urban and rural communities,** especially in town centers, near schools, and along high-speed state highways that pass through pedestrian-oriented areas
- **Pedestrian and bicycle safety remain significant challenges**, particularly where sidewalks, crossings, and dedicated bicycle facilities are missing or incomplete
- **Rural communities face unique transportation safety challenges,** including limited resources, aging infrastructure, high-speed roadways through town centers, and a lack of safe pedestrian accommodations despite demand for walkability
- **Crash data alone may not fully capture transportation safety concerns,** particularly in rural communities where near misses, perceived risk, and barriers to walking and biking are often more prevalent than documented crash histories
- **Transit access and transit stop safety require improvement,** including safer access to bus stops, better pedestrian connections, and improved accommodations for transit users
- **Regional coordination, local knowledge, and continued engagement are essential to implementation,** particularly in ensuring that smaller communities are represented and that safety improvements reflect local needs and conditions

Regional Transportation Forum

The Pioneer Valley Safe Streets project team participated in the “Bridging Transit Gaps in the 413” transportation forum hosted by the Western Massachusetts Transportation Advocacy Network at Mount Holyoke College on Friday, June 12, 2026. Over 20 people attended the panel, and attendees were able to learn about the project findings and recommendations by visiting the project information table and attending a presentation delivered by the Pioneer Valley Planning Commission. Carl Jackson, Principal Transit Planner at PVPC, presented alongside Jessica Atwood, Director of Planning at the Franklin Regional Council of Governments, and Nick Rousseau, Senior Transportation Planner at the Berkshire Regional Planning Commission, framing the Pioneer Valley plan within the region's broader Safe Streets for All efforts and the USDOT Safe System Approach. Moderated by Ben Berger of Bowman Consulting, a Q&A followed the panel, giving attendees the opportunity to raise questions and concerns directly with the planning teams.

Key themes from the regional transportation forum included:

- Vulnerable road users are significantly overrepresented in fatal crashes relative to overall crash volume. Carl cited **a jump from about 9% to nearly 17% when comparing overall crashes to fatal crashes** specifically.
- The high injury network and high-risk network **findings are spread widely across the region**, not concentrated in one area.
- **Community engagement through the digital mapping tool and pop-up events** was used alongside crash data and the high-risk networks to help identify where improvements are most needed.
- **A range of proven countermeasures** (high-visibility crosswalks, bike lanes, medians, pedestrian refuge islands, rapid flashing beacons) were identified for priority locations.

3 Safety Analysis



Overview

This chapter documents the findings of a comprehensive safety analysis undertaken to identify trends and risk factors associated with crashes in the Pioneer Valley region. The analysis evaluates key behavioral, environmental, infrastructural, and contextual variables that are prevalent in local crashes. The detailed technical work, included in **Appendix A** and **Appendix B**, constitutes a core analytical foundation for this Action Plan. The results of these analyses have informed the recommendations, linking data to actionable policy and infrastructure improvements that will improve safety on roadways throughout the region. The analysis in this chapter is based on crash data from the MassDOT IMPACT tool[2], between 2020 and 2024 that list the Pioneer Valley Planning Commission (PVPC) as the regional planning agency. The crash data for the calendar year of 2021 or later are not yet finalized and can vary or change.

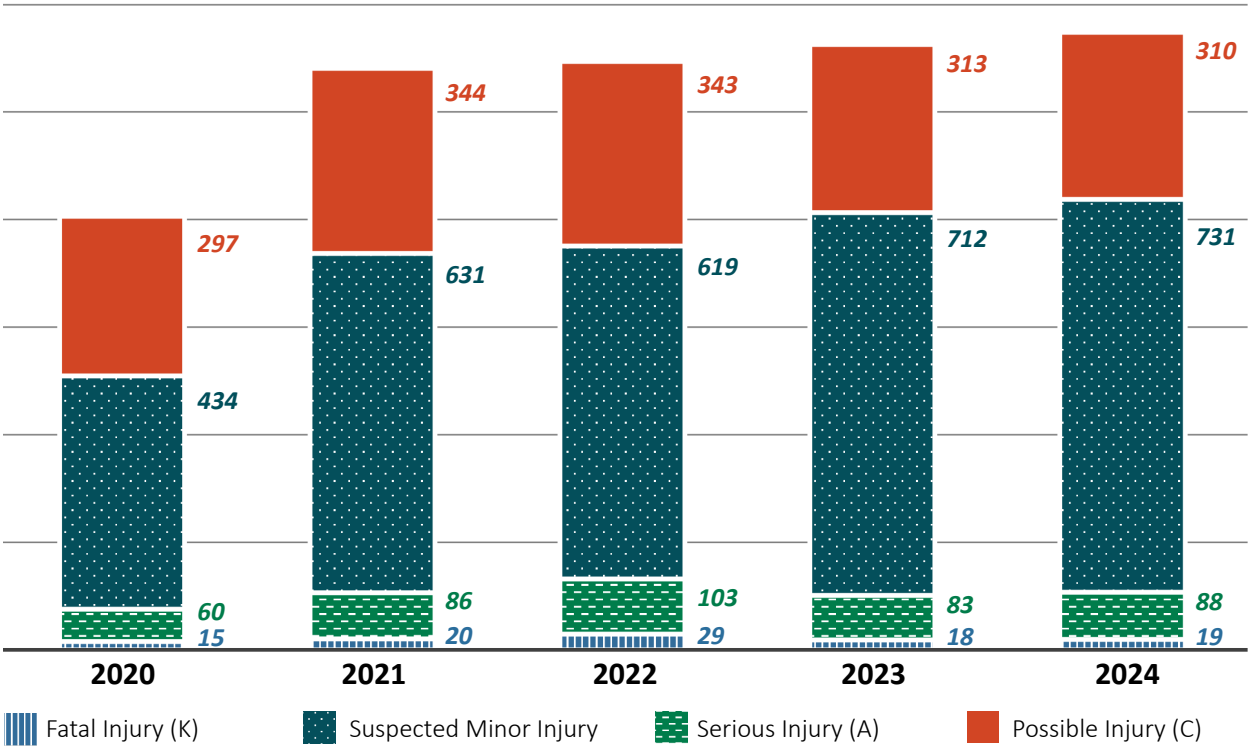
Key Crash Trends

Between the years 2020 and 2024, Pioneer Valley communities have seen consistent increase in the total number of crashes. Out of the 25,107 crashes that happened within the study period, about 25 percent resulted in injury. Both fatal and serious injury (KA) crashes peaked in 2022 before showing a decline in 2023. However, 2024 again showed an increasing trend for these crashes. **Figure 7** shows the year-by-year breakdown of all injury crashes.

Unless otherwise mentioned, this chapter excludes:

- Fully Access-Controlled Facilities
- Crashes within Chicopee, Holyoke, Springfield, Ware and Westfield

Figure 7: Injury Crashes 2020–2024



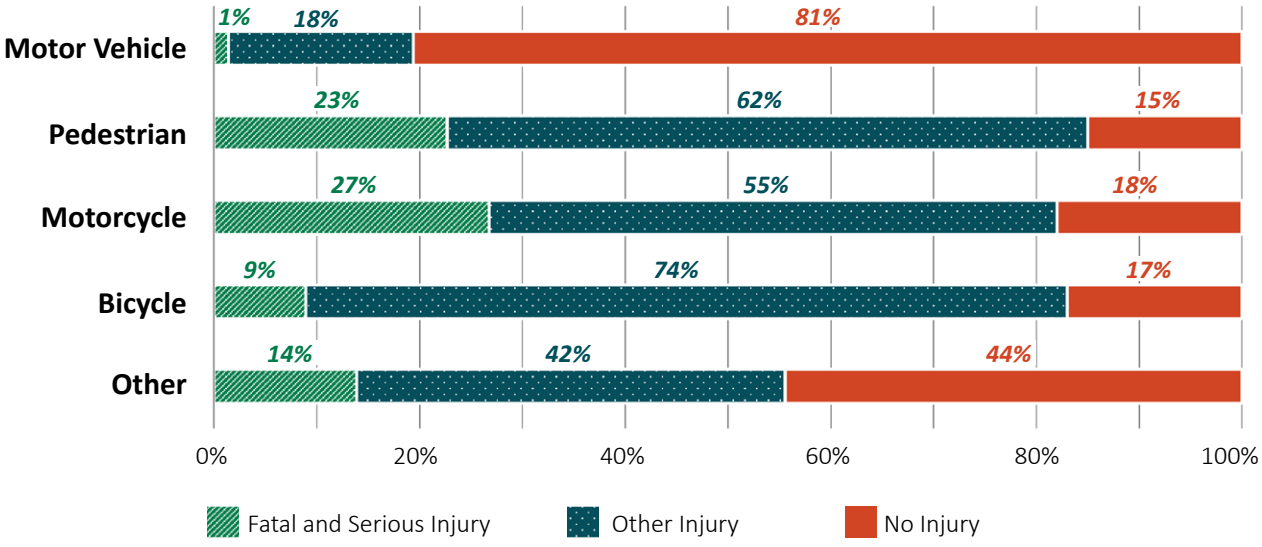
2 https://apps.crashdata.dot.mass.gov/cdp/home

Crashes impose financial, social, and emotional costs not only on victims and survivors but on the entire community. Between 2020 and 2024, crashes in the region generated an estimated $4.3 billion in total costs—about $860 million per year. KA crashes accounted for $2.4 billion, or 56 percent, of that amount. By identifying where and how these severe crashes occur, we can better understand their underlying causes and more effectively target safety improvements.

Who is at-risk?

Figure 8 shows the breakdown of crashes by mode. Motor vehicles have the lowest share of severe outcomes, with only 1% resulting in fatal or serious injury. In contrast, pedestrians and motorcyclists face much higher risks: pedestrians experience 23% fatal or serious injuries and 62% other injuries, leaving only 15% with no injury, while motorcyclists see 27% fatal or serious injuries, 55% other injuries, and 18% no injury. Bicyclists experience 9% fatal or serious injuries and 74% other injuries, with just 17% resulting in no injury. This statistic further highlights the heightened vulnerability of non motor vehicle users, who lack the structural restraints, and safety systems available to car occupants.

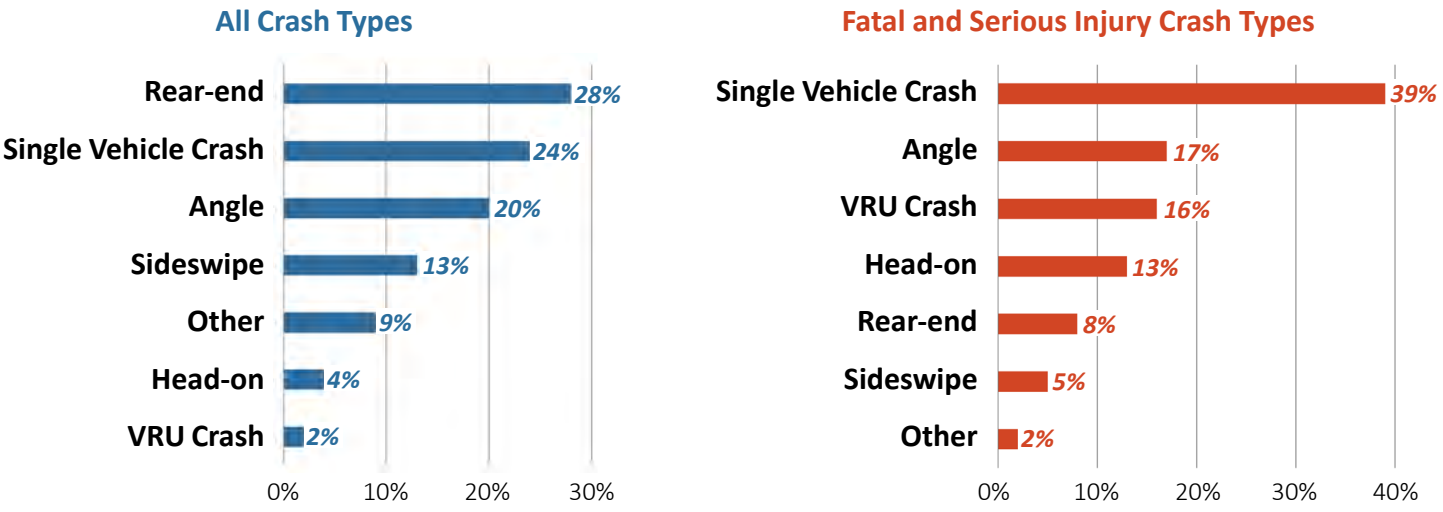
Figure 8: Crashes by Mode



How are the crashes happening?

Crash types can help reveal patterns that lead to the most severe outcomes and allow safety countermeasures to be focused on where they will have the greatest effect. As shown in 11, in Pioneer Valley region, rear-end crashes make up 28% of all crashes—the highest share of any type—yet only about 8% of rear-end crashes results in a fatal or serious injury. By comparison, single vehicle crashes account for 28% of crashes but they are the most dominant crash type for fatal and serious injury crashes. Most prominent pattern is observed for VRU crashes since they account for only 2% of all crashes but if we just consider fatal ad serious injury crashes, VRU crashes make up for 16% of those. Angle crashes were identified as the second highest crash types for fatal and serious injury and third highest crash type for all crashes.

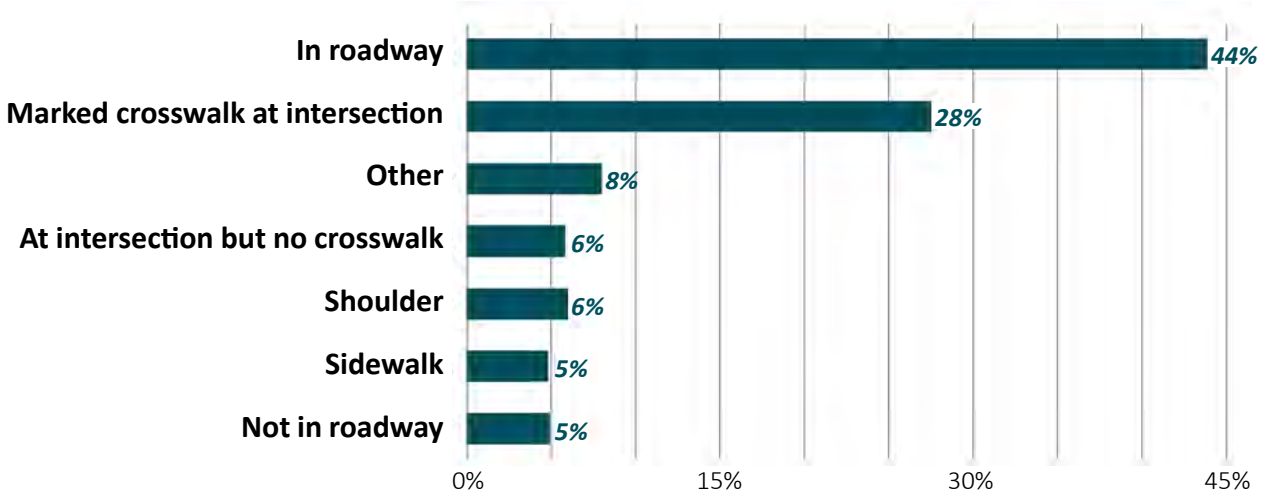
Figure 9: Crash Type Comparison



Where are the crashes happening?

Within the region, crash patterns by location type indicate that approximately two-thirds of all crashes and well over half of fatal and serious-injury (KA) crashes are segment-related, while intersections account for a little over one-third of all crashes and roughly one-third of KA crashes. Since vulnerable road users are at higher risk, their location during crash was analyzed separately. As seen in **Figure 10**, nearly 44% of these crashes occur on the roadway, meaning outside of any intersection influence area. Another large share, 28 percent, happens in marked crosswalks at intersections, indicating that even designated crossing areas are not entirely safe. Smaller but still notable proportions arise at intersections without crosswalks and on road shoulders, each representing 6 percent, suggesting that crossing or walking near traffic remains risky even outside formal lanes.

Figure 10: VRU Crash Location



Why are the crashes happening?

Crashes are a result of a combination of road, environmental, vehicle, and human factors. Road-related factors include poor design and geometry, unsafe roadside environments, and deficient traffic control features. Environmental factors cover adverse weather, as well as low visibility conditions Vehicle factors relate to mechanical condition, design and safety features, and vehicle type and use. Within Pioneer Valley, most crashes happened in daylight and dry weather conditions.

Human factors are often dominant and include unsafe driver behavior such as speeding, distraction, impairment by alcohol or drugs, aggressive driving, violating traffic rules etc. **Figure 11** shows the driver contributing factors for crashes in the region. It shows that while "no improper driving" is reported in a notable share of both crash types, certain risky behaviors are clearly over represented in the more severe collisions. Speeding, operating a vehicle in an erratic manner, and failure to keep in the proper lane or running off the road each account for a relatively small proportion of all crashes but a much larger share of fatal and serious injury crashes, highlighting how dangerous these actions are. Distracted or inattentive driving also appears frequently, though its share is somewhat higher among all crashes than among the most severe ones, suggesting that distraction often leads to minor incidents but can still have serious consequences.

On the following pages, **Figure 12** shows all fatal crashes within the region and **Figure 13** shows the locations of VRU crashes.

Figure 11: Driver Contributing Factors

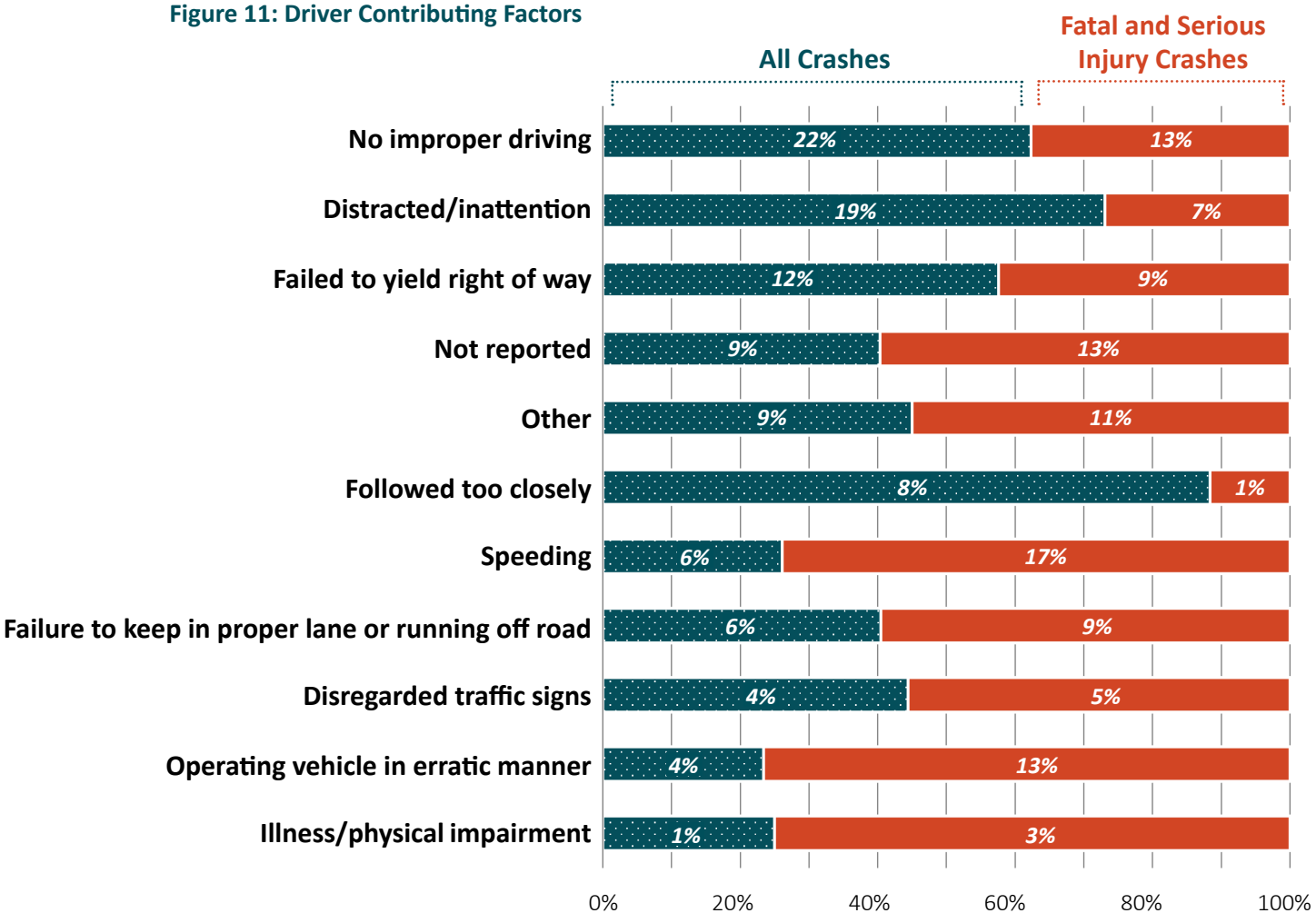


Figure 12: Fatal Crashes within Pioneer Valley Region

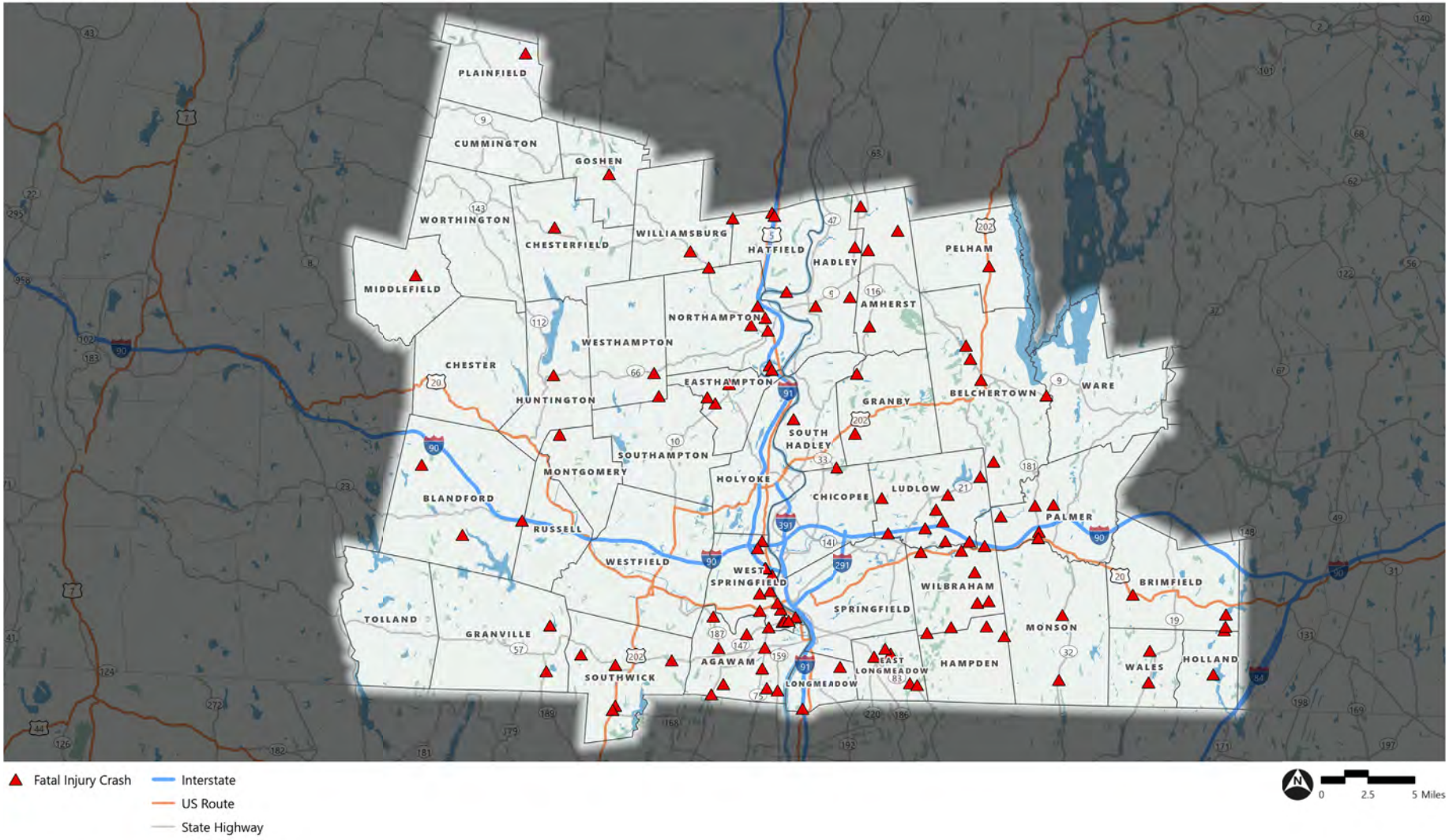
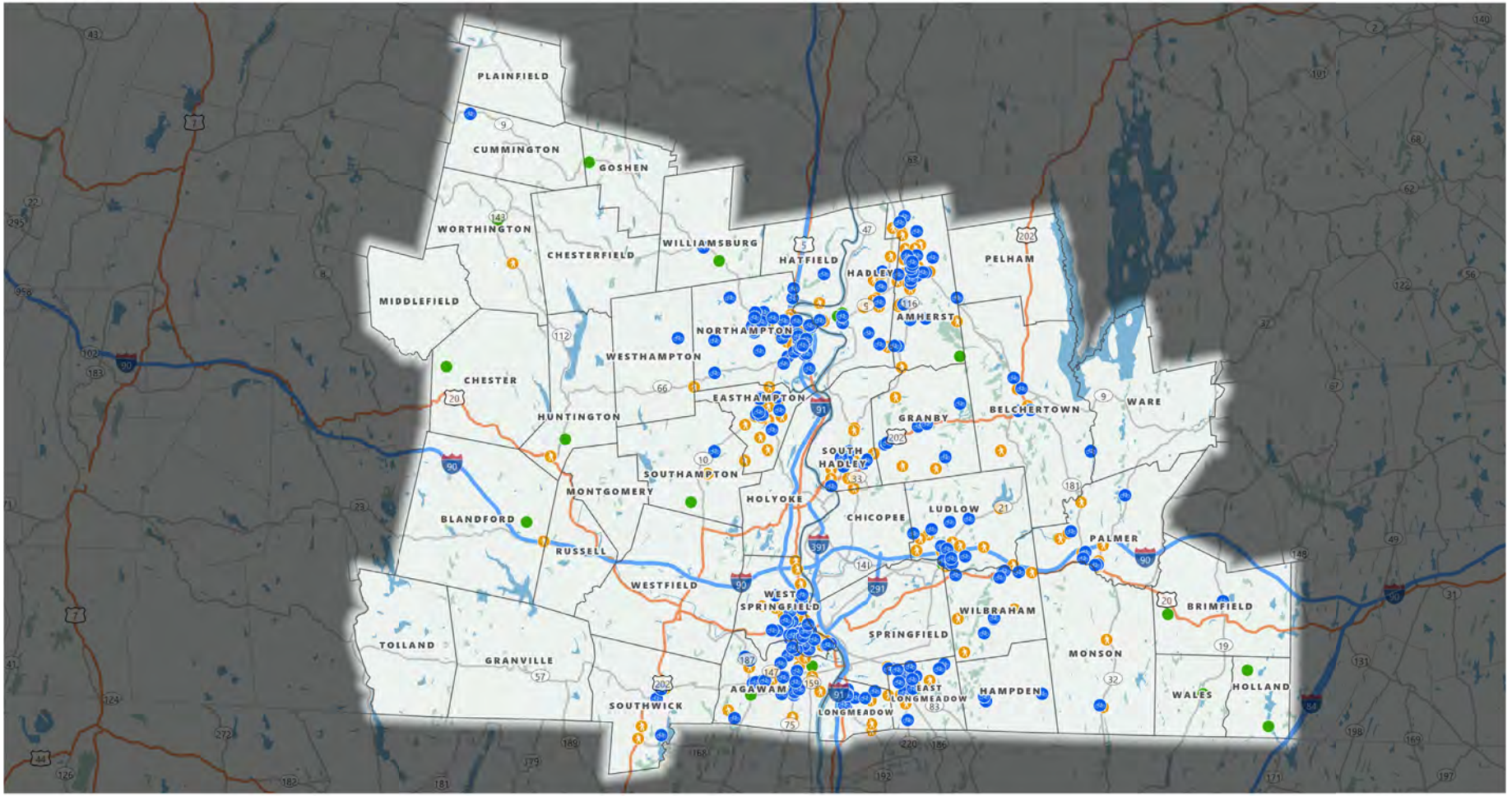


Figure 13: VRU Crashes within Pioneer Valley Region



Emphasis Areas

To further determine the major crash types this Action Plan should focus on, Pioneer Valley examined emphasis areas identified by the Massachusetts Highway Safety Improvement Program (HSIP)[3], which offers a helpful framework for identifying common crash issues, analyzing contributing factors, and linking them with a set of targeted countermeasures and strategies. In **Table 9**, emphasis areas that are more prevalent in the region compared to the Commonwealth are highlighted in bold.

Table 9: Emphasis Area Summary

Emphasis Area	Pioneer Valley Region		Massachusetts	
	Number of Fatal and Serious Injury Crashes	Percent of Total Fatal and Serious Injury Crashes	Number of Fatal and Serious Injury Crashes	Percent of Total Fatal and Serious Injury Crashes
Lane Departure	194	**32%***	2855	28%
Impaired Driving	41	7%	675	7%
Occupant Protection	161	**27%***	2129	21%
Speeding	90	**15%***	1097	11%
Intersections	182	**30%***	3043	29%
Pedestrians	62	10%	1644	16%
Older Drivers	75	12%	1370	13%
Motorcycle	113	**19%***	1650	16%
Younger Drivers	63	10%	1009	10%
Large Vehicles	4	1%	150	1%
Distracted Driving	33	5%	590	6%
Bicyclists	22	4%	601	6%

Note: Red text marked with an asterisk (*) denotes Pioneer Valley Region higher than Massachusetts Statewide.

The Lane Departure, Speeding, Intersections, Occupant Protection and Motorcycle emphasis areas were overrepresented when compared to the rest of the Commonwealth. These areas are also consistently highlighted by regional stakeholders as key areas of concern. Even though the pedestrian and bicyclist emphasis areas did not show higher percentage of fatal and serious injury crashes compared to the state, VRU safety is a major focus area for the region. Given their importance, pedestrian and bicyclist emphasis areas were also considered as key areas for further analysis.

Appendix A further describes the emphasis areas along with more detailed crash analysis.

3 https://www.mass.gov/info-details/highway-safety-improvement-program

Key Takeaways

West Springfield experienced **highest number of fatalities** (10), closely followed by Agawam (9)

Fatal and serious injury crashes cost the Pioneer Valley region approximately **$0.86 billion each year**

Weekday afternoons and weekend late night periods experience **highest number of fatal and serious injury crashes**

Motorcycles accounted for only **11% of total crashes** but **19% of fatal and serious injury crashes**

Speeding accounts for **17% of KA crashes**

Single-vehicle crashes had the **highest share of fatal and serious injury crashes** (39 percent)

In urban communities, principal arterials and minor arterials together account for about **three-quarters of all KA crashes**. In rural parts of the region, major collectors alone represented **nearly 40 percent of rural KA crashes**

VRU crashes comprise **only 2% of total crashes but 17% of KA crashes**

Erratic driving accounts for **13% of KA crashes**

Most crashes take place in **daylight conditions and when the road is dry**

A higher proportion of **VRU KA crashes take place in dark conditions** with or without street lighting

High-Injury and High-Risk Networks

To dive deeper into the safety data, Pioneer Valley carried out a network screening to identify and classify sites with road safety risks using a two-part approach. By addressing both specific and systemic safety needs, we build a Safe System through identification of a High Injury Network (HIN) and High-Risk Network (HRN).

High-Injury Network (HIN)

A crash data-based approach that identifies locations with the highest concentrations of past fatal and serious injury crashes based on historical crash data. This method targets locations with the greatest potential for safety improvement and supports site-specific safety issue diagnosis and countermeasure development.

High-Risk Network (HRN)

A proactive approach that focuses on sites with the highest risk of future fatal and serious injury crashes based on the presence of contributing risk factors from a systemwide perspective. This method enables the implementation of low-cost proven countermeasures across the network to prevent future severe crashes.

High-Injury Network

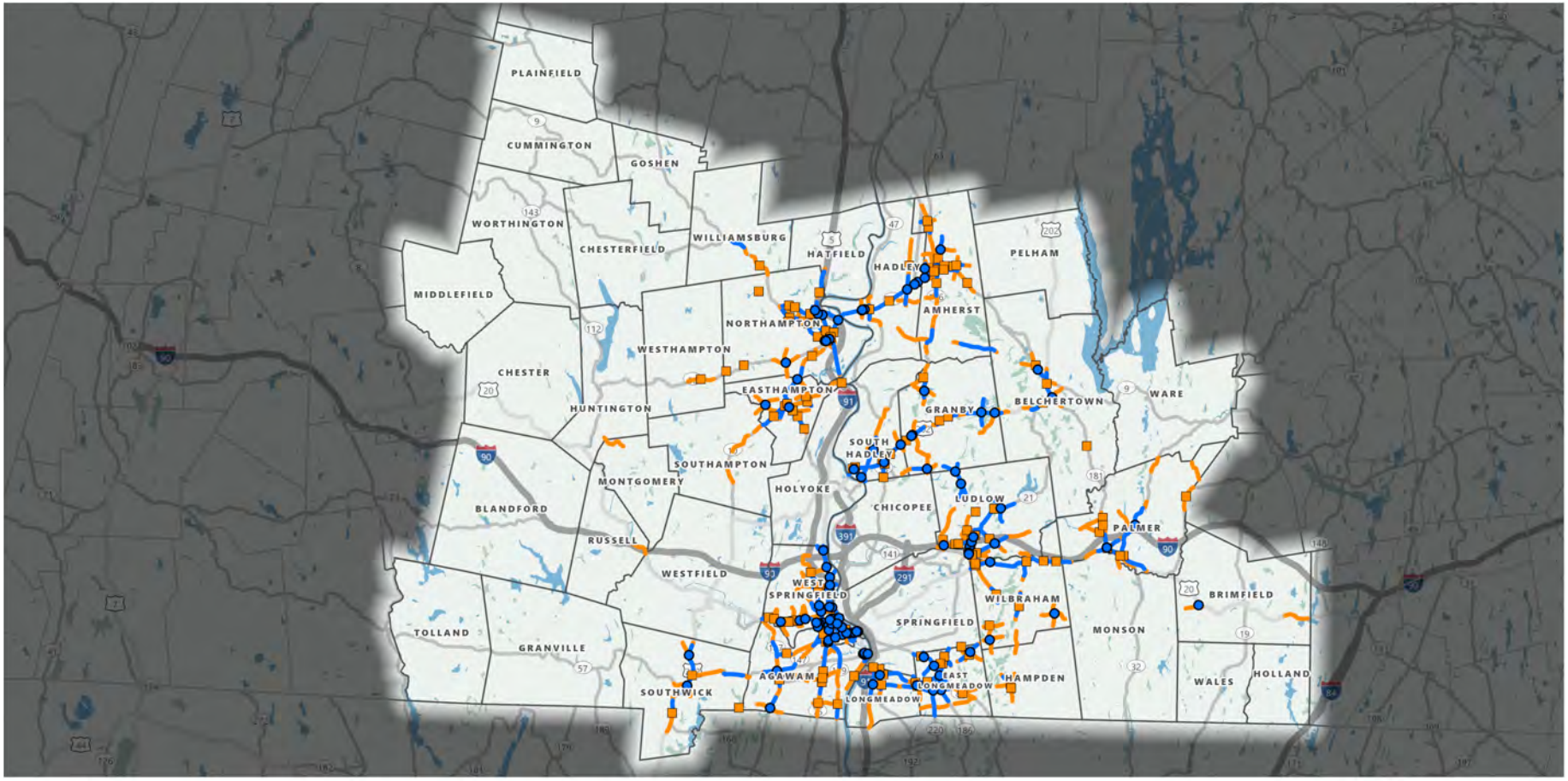
A central component of a safety action plan is the development of a High-Injury Network (HIN), a relatively small share of roadways and intersections in the region where a disproportionately high number of fatal and injury crashes occur. A HIN was developed for both roadway segments and intersections. This HIN uses data for 2020–2024 from the MassDOT IMPACT Crash Data Portal.

The high injury networks provide a powerful visual tool for highlighting segments and intersections which can be considered as crash hotspots. This can help guide and prioritize safety investments from a crash history perspective. **Figure 14** shows the HIN within Pioneer Valley. For this plan, a threshold was set to include the top ten percent of the roads to constitute the HIN. The top 10% HIN segments constitute the top 10.7% of the length of the roadways in the region and cover a total of 64.3% of the KAB Crashes. Similarly, the top 10% of intersections include 249 sites throughout the region which account for 53.7 % of all KAB Crashes in the region.

From the map, it is evident that the HIN is more concentrated in and around the region's largest population and employment centers, where local streets intersect with high-speed regional corridors, reflecting the combined effects of heavy traffic volumes, frequent intersections, and multimodal activity. Together, these clusters reveal not just isolated problem spots but continuous corridors of elevated risk, underscoring the need for corridor-wide safety strategies, context-sensitive speed management, and coordinated investments across municipal boundaries.

Appendix B provides detailed methodology for the HIN.

Figure 14: Pioneer Valley Region High Injury Network (HIN)



High-Risk Network

While the HIN identifies locations with a high concentration of crashes, the high-risk network (HRN) focuses on locations with a high risk of severe crashes, regardless of crash history. The HRN uses roadway features tied to the region's most severe crash types to identify corridors and intersections that share these features. Corridors and intersections that have many features in common with areas where severe crashes have already occurred are deemed to have the highest risk for future severe crashes. This proactive approach enables road owners to prioritize higher-risk locations for preventative safety improvements before a significant number of severe crashes take place.

The process to develop a HRN follows the process recommended by the Federal Highway Administration (FHWA) in its Systemic Safety User Guide. The process identifies facility types where the crashes are most likely to occur, then calculates a risk score where locations with higher risk scores are more likely to have crashes of a specific type. The risk score is then used to categorize either intersections, segments, or municipalities into the following types:

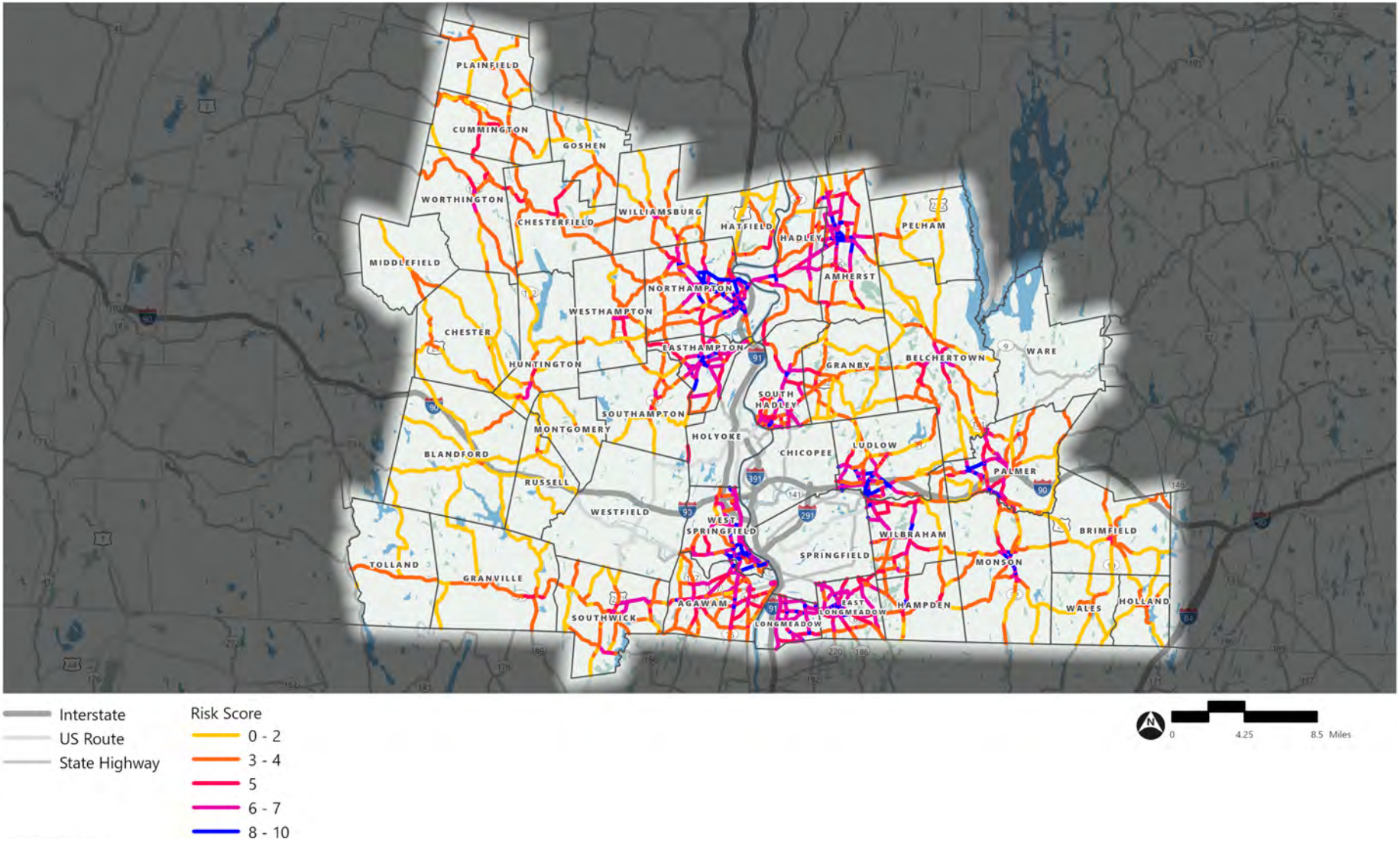
Pioneer Valley analyzed crash statistics for several crash types using IMPACT dashboard[4]. Based on that, following crash types were selected to identify their HRNs:

- Lane departure crashes
- Intersection crashes
- Motorcycle crashes
- Speeding and aggressive driving crashes
- Pedestrian crashes
- Bicycle crashes

Figure 15 shows an example of the HRN for speeding crashes. The full list of focus facility types and risk factors identified for each emphasis area is provided in **Appendix B**, along with a summary of risk category, a detailed methodology, and all underlying data. The focus crash types considered in the HRN are consistent with the Massachusetts SHSP Emphasis Areas and the supporting countermeasures are in alignment with MassDOT and FHWA guidance.

4 https://apps.crashdata.dot.mass.gov/cdp/dashboard-view/24

Figure 15: HRN for Speeding Related Crashes within Pioneer Valley Region



4 Equity Analysis



Overview

The Pioneer Valley region is diverse in its communities, transportation networks, and population characteristics. The Pioneer Valley Safe Streets Plan recognizes that underserved and environmental justice communities may experience unique transportation challenges and safety needs. As a result, the planning process considered the needs of these communities to help ensure that the benefits of safety improvements are broadly shared across the region.

This chapter presents the federal and state methodologies used to identify underserved and environmental justice communities within the project study area. Specifically, the U.S. Department of Transportation's (USDOT) Underserved Communities and the Massachusetts Department of Transportation (MassDOT) Regional Environmental Justice Plus (REJ+) tools were used to identify populations that may be disproportionately affected by transportation system changes.

Within the study area, underserved and environmental justice communities are concentrated in central and eastern portions of the Pioneer Valley region. Both federal and state screening tools identified underserved and environmental justice communities in Amherst, Hadley, Northampton, South Hadley, West Springfield, Agawam, Palmer, and Monson. Underserved and environmental justice communities were identified in Springfield, Holyoke, Chicopee, Westfield, and Ware using either tool were excluded from the analysis. These towns are conducting separate studies and are part of the Pioneer Valley region, but do not contribute any data to this analysis.

This chapter summarizes the distribution of underserved and environmental justice communities across the Pioneer Valley region and examines how transportation safety conditions and analysis results compare within these communities relative to the broader study area. **Appendix C** further elaborates the process of identifying areas with the highest relative transportation need.

USDOT Underserved Communities

USDOT identifies underserved communities using the Infrastructure Investment and Jobs Act (IIJA) Areas of Persistent Poverty (APP) criteria. Under this methodology, an area is considered underserved if it meets one of two criteria:

- It is located within a county (or equivalent jurisdiction) in which 20 percent or more of the population has continually lived in poverty, as measured by the 1990 Decennial Census, 2000 Decennial Census, and the most recent annual small area income and poverty estimate of the Census Bureau
- It is located within a census tract with a poverty rate of 20 percent or greater, based on the U.S. Census Bureau's American Community Survey (ACS) 2014–2018 five-year estimates

Within the study area, a total of 20 census tracts were identified as USDOT Underserved Communities. These tracts are located in Amherst, Hadley, southern Northampton, southwestern South Hadley, southeastern West Springfield, northern Agawam, western Monson, and southern and eastern Palmer. Because the USDOT Underserved Communities designation is based on persistent poverty criteria, poverty is the primary factor driving designation within the study area. Collectively, these tracts contain approximately 102,234 residents, representing 30.6% of the study area population.

REJ+

As part of the Massachusetts long-range transportation plan, Beyond Mobility, the MassDOT Office of Transportation Planning (OTP) developed the Regional Environmental Justice Plus (REJ+) metric to identify environmental and other equity priority populations at the regional level. REJ+ builds upon traditional environmental justice indicators by incorporating additional socioeconomic characteristics, including race, income, limited English proficiency, zero-vehicle households, disability status, and age. The dataset is based on the U.S. Census Bureau's American Community Survey (ACS) 5-Year Estimates (2023) and 2022 Census tract boundaries.

REJ+ communities are identified based on one or more demographic and socioeconomic indicators. Within the study area (excluding Chicopee, Holyoke, Springfield, Ware, and Westfield), 34 census tracts of the 69 census tracts qualify as REJ+ communities. Of the 34 REJ+ census tracts identified in the study area, 33 meet one or two REJ+ indicators and one meets three or four indicators. These communities are located in Plainfield, Cummington, Goshen, Worthington, Chesterfield, Williamsburg, Middlefield, Westhampton, Northampton, Hadley, northern Amherst, western Easthampton, northern South Hadley, southeastern Belchertown, eastern West Springfield, southern Ludlow, northern Wilbraham, southern and eastern Palmer, western Monson, Hampden, southern East Longmeadow, eastern Longmeadow, and southern Agawam. Collectively, these Census Tracts contain approximately 161,400 residents, representing 49.5% of the study area population.

Federal and State Equity Screening Results

To better understand the distribution of transportation needs and access challenges within the study area, federal and state equity screening datasets were reviewed. **Figure 16** illustrates the geographic distribution of USDOT Underserved Communities and Massachusetts Roadway Environmental Justice Plus (REJ+) communities, while **Table 10** summarizes the number of census tracts and residents meeting federal and state screening criteria. **Table 11** provides a breakdown of the individual REJ+ indicators present within the study area.

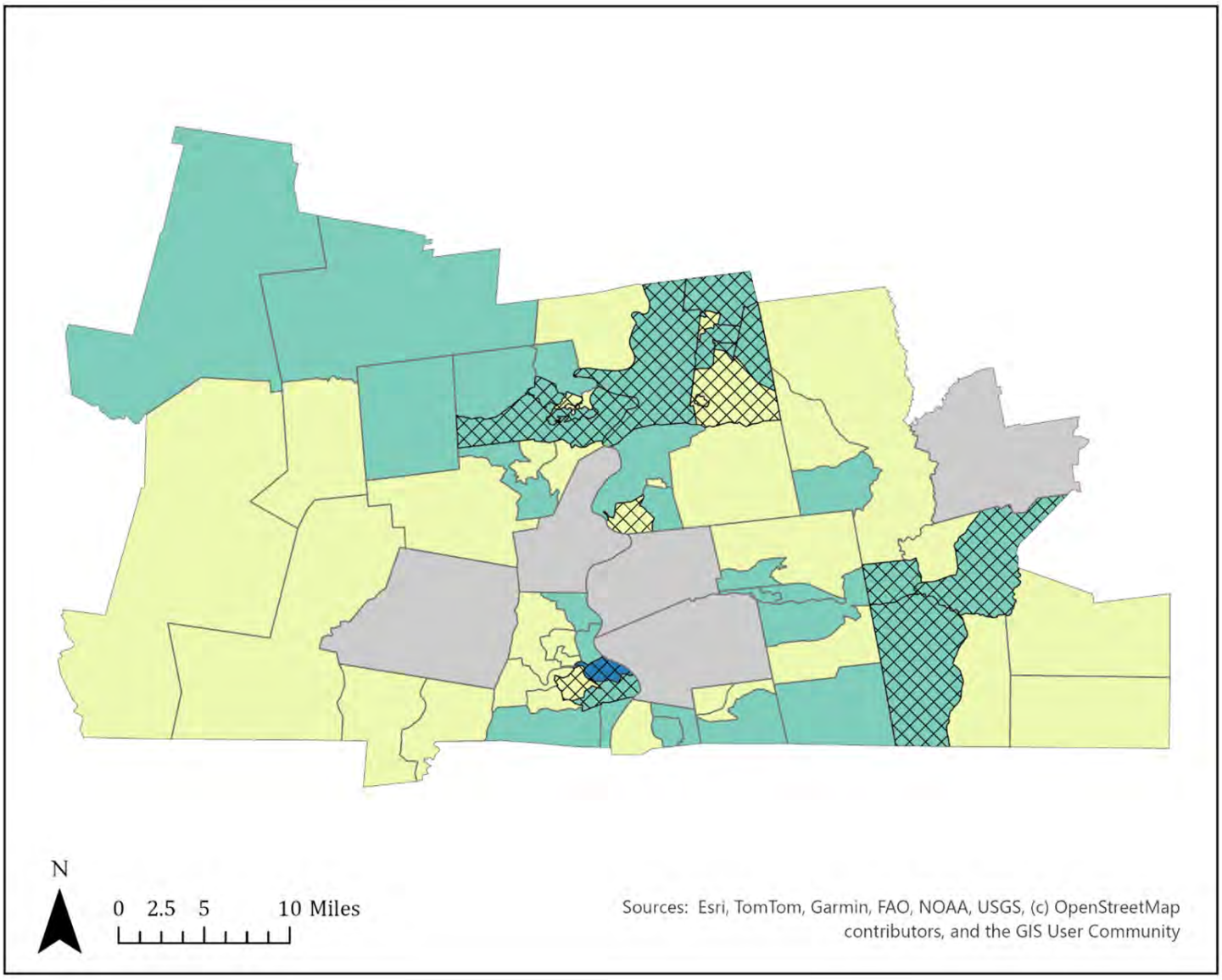
Table 10: Summary of Federal and State Needs and Access Screening Results

Needs and Access Screening Category	Census Tracts Meeting Criterion	Population	Percent of Study Area Population
REJ+ (1–2 Indicators)	33	155,254	47.6%
REJ+ (3–4 Indicators)	1	6,146	1.9%
REJ+ (5–6 Indicators)	None	None	None
USDOT Underserved Communities	20	102,234	30.6%

Table 11: REJ+ Indicator Screening Results

REJ+ Indicator	Census Tracts Meeting Criterion	Population	Percent of Study Area Population
Zero Vehicle Households	5	20,835	6.4%
Limited English Proficiency (LEP)	5	26,876	8.2%
Non-White	2	12,002	3.7%
Income	3	16,591	5.1%
Senior	24	115,597	35.5%
Disability	4	19,414	6.0%

Figure 16: Federal and State Equity Screening Results for the Study Area (Excluding Chicopee, Holyoke, Springfield, Ware, and Westfield)



Disparities In Severe Crashes

Regardless of what criteria are used to designate communities of concern, serious and fatal crashes are disproportionately concentrated in disadvantaged census tracts, where people are more likely to walk, bike, or rely on transit and often have fewer safe infrastructure options. As a result, inequitable crash patterns not only undermine transportation safety, but also limit access and opportunity for communities that already experience structural disadvantages.

As observed in **Figure 17**, half of the region's fatal crashes and more than half of the non-fatal injury crashes happen within the underserved census tracts. The disparities are more acute for vulnerable road users as seen in **Figure 18**. 65% of all bicycle crashes, 73% of all pedestrian crashes and 85% of other VRU crashes happen within the underserved tracts. These areas represent 31% of the study area population based on USDOT Criteria or 49.5% of population based on MassREJ+ criteria. All of this highlights the regional disparity concentration of severe injury and crash risk in these communities. This also indicates the need to prioritize safety investments—such as sidewalks, crosswalks, traffic calming, and protected bike facilities—in places where people are most exposed and least protected. **Figure 19** shows the fatal and injury crashes within these census tracts.

Figure 17: Injury Crashes within Underserved Communities

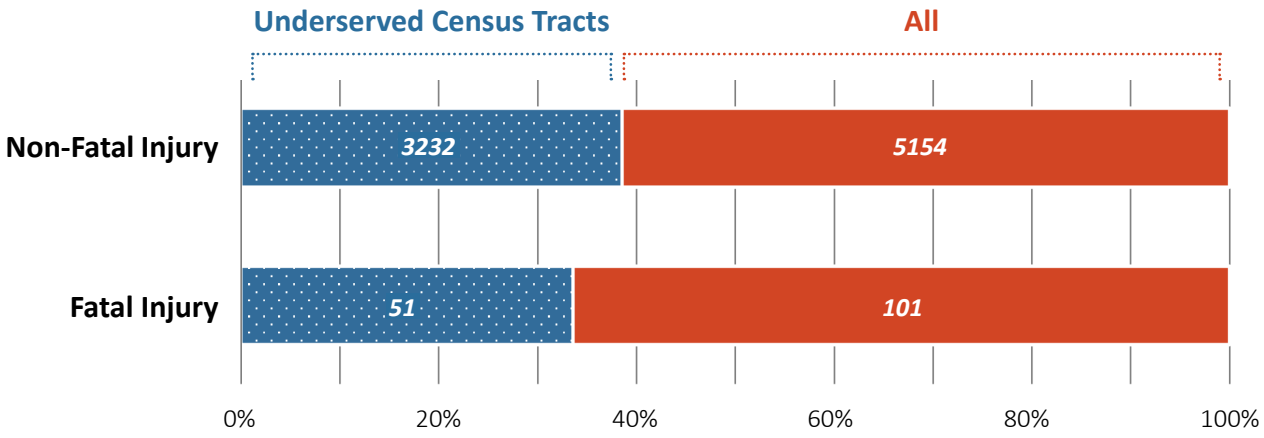


Figure 18: Vulnerable Road User Crashes within Underserved Communities

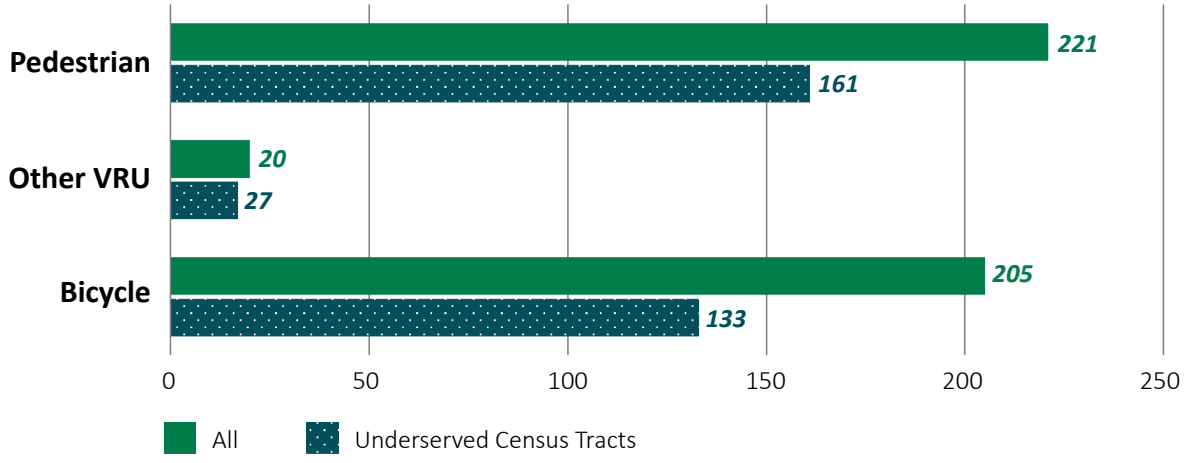
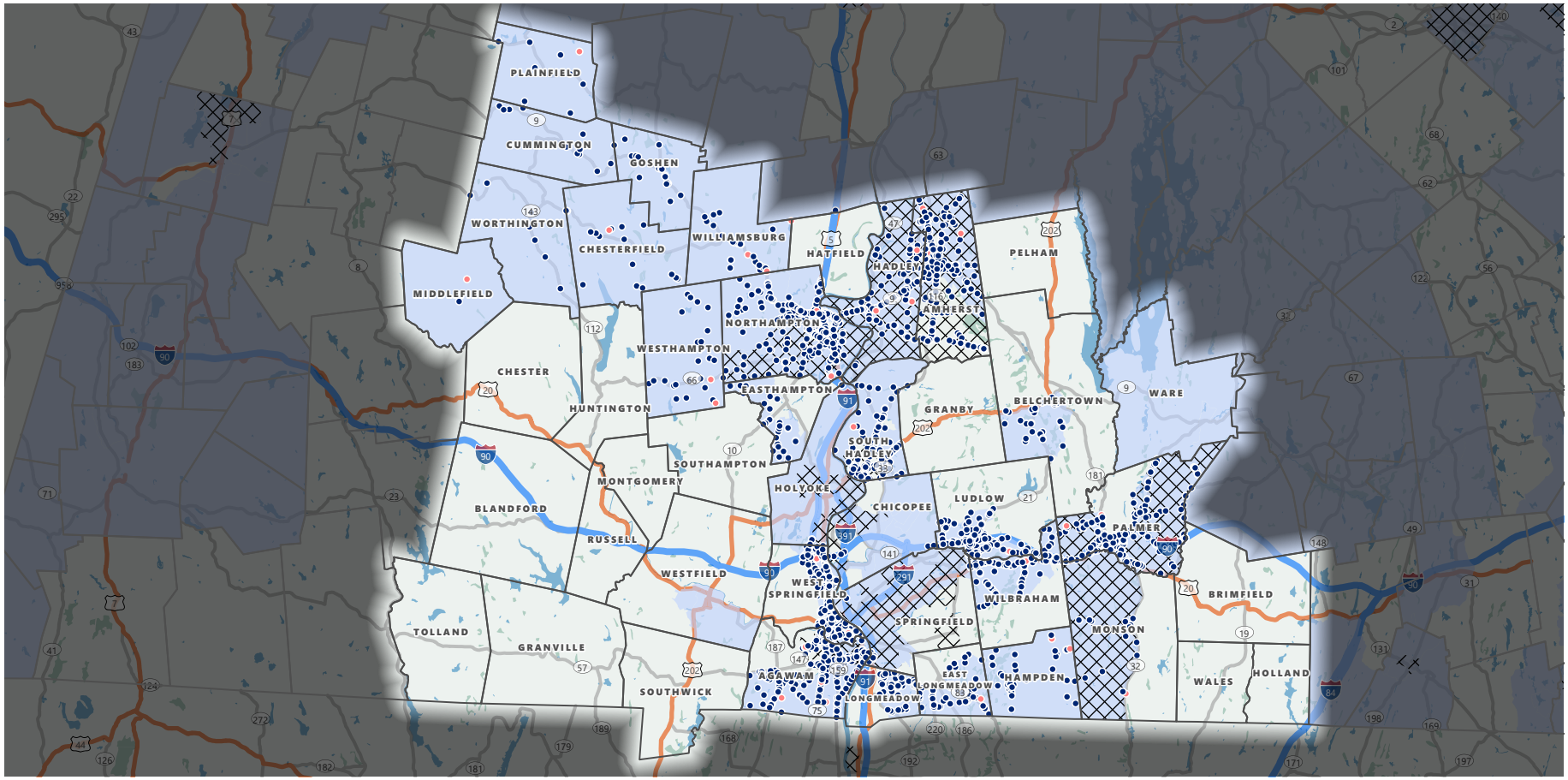


Figure 19: Fatal and Serious Injury Crashes in Census Tract



Source: MassDOT Impact, MassGIS

5 Policy and Process Changes



Overview

This chapter situates the Regional Safety Action Plan for the Pioneer Valley within the context of other plans, policies, and studies completed or ongoing at the state, regional, and local levels. The review focuses on transportation studies, comprehensive and master plans, and other plans to identify opportunities where a Regional Safety Action Plan can complement, support, or advance, or should incorporate, goals and initiatives identified in these plans.

Consistent with other parts of this report, this chapter also excludes local plans and policies for Chicopee, Holyoke, Springfield, Ware and Westfield as these towns are developing or have already developed their own safety action plan.

Key Themes

PVPC's transportation policies consistently emphasize safety, efficiency, and multimodal access. Regional priorities include reducing crashes and serious injuries for all users, promoting walking, biking, and transit by filling network gaps, improving ADA accessibility, and coordinating closely with PVTA. Climate resilience, system preservation, and data-driven, performance-based project selection further guide investments, ensuring limited resources are directed toward strategies that improve safety, support vulnerable road users, and maintain critical infrastructure in a state of good repair. This review of state, regional, and local plans revealed several common themes for safety improvements in the Pioneer Valley such as:

- Safety as a Core Priority
- Complete Streets and Multimodal Transportation
- System Preservation & State of Good Repair
- Accessibility and ADA Compliance
- Data-Driven, Performance-Based Planning
- Regional Collaboration and Local Capacity-Building
- Existing Programs

Vision Zero

MassDOT, PVPC, and local communities share a Vision Zero–aligned commitment to eliminating fatal and serious injury crashes. Regionally, PVPC supports "Vision Zero" and related "Toward Zero Deaths" efforts by helping communities systematically work toward eliminating traffic fatalities and serious injuries on the region's roadways. PVPC also integrates Vision Zero principles into initiatives like Safe Routes to School, Complete Streets planning, and regional transportation safety plans, aligning local projects with state and federal safety goals. Building on this foundation, municipalities within the Pioneer Valley Region can adopt local Vision Zero policies and Safety Action Plans that identify their own high-injury networks and implement design-focused, data-driven strategies to achieve zero deaths and serious injuries on their streets.

The Pioneer Valley MPO formally adopted a Vision Zero policy in 2023. **In 2026, Pioneer Valley Region updated their vision zero goal to achieve zero roadway fatalities and serious injuries by 2050**. Pioneer Valley's MPO will work towards this goal by applying the Safe System Approach into daily practice.

Complete Streets

MassDOT Complete Streets Policy provides a statewide framework to ensure transportation facilities are planned, designed, and operated to safely accommodate all users. PVPC assists communities in developing and adopting MassDOT-compliant local Complete Streets policies, preparing project-based Complete Streets Prioritization Plans grounded in safety, equity, and connectivity data, and applying for state construction funds under the Complete Streets Funding Program. For PVPC's member municipalities, this coordinated approach not only improves roadway safety conditions and supports implementation of small- and medium-scale safety projects but also ensures consistency with state design standards and maximizes opportunities to bundle safety projects with other federal and state funding sources.

PVPC Communities with Adopted Complete Streets Policies

- Agawam
- Amherst
- Chester
- Easthampton
- East Longmeadow
- Goshen
- Granville
- Holyoke
- Longmeadow
- Northampton
- Palmer
- South Hadley
- Springfield
- Wales
- Ware
- Westfield
- West Springfield
- Williamsburg

Safe Routes to School (SRTS)

The SRTS Program is a statewide initiative that promotes safe, convenient, and equitable walking and bicycling to and from schools for students of all ages and abilities through a combination of education, encouragement, engineering, and enforcement strategies. PVPC works with communities and schools to identify high priority school zones and corridors with documented safety concerns or gaps in pedestrian and bicycle infrastructure; assists in developing school travel plans and coordinates with MassDOT and municipal staff on planning and design of SRTS eligible projects.

A total of 152 schools in the Pioneer Valley region actively participate in the program. Local examples include infrastructure improvements at Roberta G. Doering Middle School and Robinson Park Elementary School in Agawam, participation by Rebecca M. Johnson Visual and Performing Arts Elementary School in Springfield, and the installation of bike racks in Springfield funded by a Live Well Springfield Community Transformation Grant.

Existing Planning Efforts

This Plan builds on prior planning and policy development efforts in the Pioneer Valley region focused on improving roadway safety. To identify recommendations for strengthening regional policies and processes, several relevant statewide, regional, and local planning initiatives were reviewed. **Tables 12–14** list the summarize the reviewed plans and relevance.

Table 12: Review of Existing Statewide Plans

Plan Name	Plan Description	Relevance to Pioneer Valley Safe Streets
Beyond Mobility: Massachusetts 2050 Transportation Plan	Beyond Mobility serves as a long-range transportation plan for the state of Massachusetts, assessing the state's needs through the next few years. The plan focuses on how to best accommodate mobility needs as climate change develops, population density changes, and commuting habits adjust. The plan specifically focuses on developing a safe, cohesive, reliable transportation system statewide.	This plan focuses on using crash data to find where safety problems and inequities are greatest; identifying practical, systemic safety improvements; and coordinating with municipalities to build and advance a strong pipeline of projects that protect vulnerable road users. The PVPC Safety Action Plan applies these same ideas at the regional level by using data to identify high injury locations, helping communities prioritize and program safety projects in local and regional plans, and providing technical assistance to speed up local safety planning and project implementation in line with MassDOT's statewide goals.
Massachusetts Freight Plan (2023)	The Freight Plan is a planning document that defines short and long-term vision for the freight system in the Commonwealth. The Plan includes multimodal elements such as air, rail, truck and maritime transport.	The freight plan identifies several education and policy changes such as education to raise awareness about safety for truck drivers and other drivers as well as strategies to harmonize oversize/overweight movements, permitting, and large truck restrictions across New England. The Plan also highlights the need to collaborate with MPOs and local governments to integrate freight planning into larger land-use planning decision-making to adequately address truck safety, particularly at grade crossings and along rail and highway corridors.
Massachusetts Strategic Highway Safety Plan (2023)	The SHSP emphasizes the state's priority for safer streets and provides a framework for achieving Vision Zero by adopting a Safe System Approach. Key policy and process recommendations in this plan focus on improving driver education, increasing enforcement to mitigate dangerous driver behaviors, implementing speed management strategies, and raising public awareness about roadway safety.	The SHSP establishes the overarching safety vision, emphasis areas, and performance targets that PVPC's regional work is expected to support. Aligning the PVPC Safety Action Plan with these priorities ensures consistency with statewide goals and helps the region to contribute measurably to reductions in serious crashes. The SHSP's detailed crash analysis, systemic risk factors, proven and promising countermeasures, multidisciplinary strategies, and emphasis area action items can be a reference point for PVPC to adapt and implement at the regional and local level.
Massachusetts Vulnerable Road User Safety Assessment (2023)	The VRU Safety Assessment outlines a set of goals and strategies for reducing the risks posed to VRUs on the road and promotes walking and biking. This document serves to outline recent safety performance and provide recommendations to municipalities which can be implemented to improve safety.	This plan provides a statewide, data driven picture of where people walking, biking, and using micromobility are at highest risk, and why. PVPC uses these statewide findings and methods to refine its own regional crash analysis, confirm and highlight high injury corridors for vulnerable road users in the Pioneer Valley, and prioritize systemic safety countermeasures such as traffic calming, safer crossings, and low stress bicycle facilities.

Table 12: Review of Existing Statewide Plans (continued)

Plan Name	Plan Description	Relevance to Pioneer Valley Safe Streets
MassDOT 2026–2030 Capital Improvement Plan	This plan describes planned capital spending for Massachusetts' transportation network over a five-year horizon. The document outlines funding sources and strategies to improve safety and reduce roadway fatalities.	The CIP emphasizes programs and projects such as intersection upgrades, roadway reconstruction with Complete Streets elements, bridge and corridor projects that address high crash locations, and targeted improvements for vulnerable road users in underserved communities. By aligning PVPC's Safety Action Plan recommendations and project lists with MassDOT's CIP investment categories and timelines, PVPC can help member municipalities position their priority safety projects for inclusion in the Transportation Improvement Program (TIP) and other CIP funded programs.
Massachusetts Pedestrian Transportation Plan (2019) **and** Massachusetts Bicycle Transportation Plan (2019)	The Bicycle Transportation Plan and Pedestrian Transportation Plan explain how Massachusetts will work to increase the percentage of everyday trips made by biking and walking, while working to eliminate fatalities and serious injuries at the same time.	Both plans include initiatives that focus on providing local, regional, and state partners with tools necessary to integrate safety, comfort, and convenience of people biking and walking into transportation and development projects. The Plan identifies providing technical assistance and funding to local, regional, and state partners to implement high-comfort bikeway and pedestrian projects as a critical action. The plans also identify policy changes such as speed enforcement, design guidance and standards, and education as strategies to improve bicycle and pedestrian safety.
MassDOT Transition Plan for the Public Rights of Way (2017)	The Transition Plan for the Public Rights of Way serves as MassDOT's re-evaluation of all policies, programs, services, and facilities to determine their respective accessibility to those with disabilities. A focus of this plan is ensuring mobility for those with disabilities through curb ramps and accessible crossings	The Transition Plan identifies common accessibility barriers, sets design and maintenance expectations for accessible routes along state and local roadways, and emphasizes systematic inventory, prioritization, and programming of ADA improvements. PVPC's Safety Action Plan builds on this framework by using crash data, equity indicators, and local knowledge to highlight where ADA and accessibility gaps overlap with high injury locations and vulnerable road user needs, and by recommending projects such as compliant curb ramps, accessible pedestrian signals, continuous sidewalks, and safer, shorter crossings.

Table 13: Review of Existing Regional Plans

Plan Name	Plan Description	Relevance to Pioneer Valley Safe Streets
Pioneer Valley Regional Bicycle and Pedestrian Plan (2025)	This plan establishes a collaborative framework through which government officials and community members can improve conditions for pedestrians, bicyclists, and other micromobility users. It serves as a practical resource for local staff and elected officials, and informs decisions related to walking and bicycling, supports the advancement of local projects toward implementation, and helps prioritize regional needs.	The PVPC Bicycle & Pedestrian Plan identifies where people walking and bicycling are most at risk through crash analysis, network gaps, and public input on unsafe locations, and it establishes regional goals, design guidance, and Complete Streets principles focused on protecting vulnerable road users. Aligning the safety action plan with these goals and principles will ensure that this action plan reflects a Safe System approach that systematically improves safety and comfort for all users of the transportation network.
PVPC Regional Transportation Plan (2024)	The RTP updates the region's vision, goals, and performance measures; inventories existing conditions across all modes, and identifies key issues such as safety, system preservation, congestion, transit access, and gaps in active transportation networks. It presents a fiscally constrained list of priority projects and strategies, coordinated with local and regional plans, which will guide Transportation Improvement Program (TIP) programming and other funding decisions over the next two decades.	The RTP sets the long-range, multimodal vision and goals for the transportation system, with safety as a key priority alongside mobility, equity, climate, and economic development. The Safety Action Plan works within this framework to focus specifically on reducing fatal and serious injury crashes in the near- to mid-term. It takes the RTP's broad safety goals and turns them into targeted strategies, priority locations, and fundable projects that can be advanced through the TIP and other programs.
Pioneer Valley Safety Compass (2021)	The Pioneer Valley Safety Compass overviews crash data trends to find top crash locations in the Pioneer Valley. The document focuses on reducing fatalities and serious injuries through identifying locations for each community which have high crash rates.	The PVPC Safety Compass sets the region's safety vision, identifies high crash locations, and sets performance measures for the region. The Safety Action Plan can function as a tool to achieve those safety performance measures and regional goals. The high-crash intersections identified in the safety compass also help in identifying priority locations for the safety action plan.
PVTA Comprehensive Regional Transit Plan Update 2020	This plan serves to outline PVTA's role in the region and highlight the needs and goals for the future. It assesses current ridership and service performance, identifies gaps in access to jobs, schools, healthcare, and key destinations, and recommends improvements such as more frequent service on key corridors, better evening, and weekend coverage, stronger first/last-mile connections, and enhanced amenities at stops and hubs.	The Regional Transit Plan is a key supporting document for this Safety Action Plan. Coordinated implementation of transit and safety projects will improve safe access to transit stops and stations, support mode shift away from single-occupancy vehicle travel, and advance regional goals for safety, equity, mobility, and sustainability.

Table 13: Review of Existing Regional Plans (continued)

Plan Name	Plan Description	Relevance to Pioneer Valley Safe Streets
Coordinated Public Transit-Human Services Transportation Plan 2025	This plan is designed to improve transportation services for people with disabilities, older adults, and people with low incomes in the Pioneer Valley Region by creating a more coordinated transportation system. It outlines a framework to help municipalities, towns, counties, tribal governments, regional transit authorities (RTAs), and private taxi operators develop projects that better meet the transportation needs of these groups. By encouraging public transportation providers and human service agencies to coordinate the transportation resources available through multiple FTA programs, the update aims to make services more effective and efficient.	A coordinated public transit–human services transportation plan identifies the mobility needs, travel patterns, and access barriers of older adults, people with disabilities, and individuals with low incomes—groups that often face higher risk of serious injury in traffic. By mapping key destinations, common routes to transit, and existing service gaps, the coordinated plan provides critical information for pinpointing high-risk locations and prioritizing safety improvements such as safer crossings, sidewalks, and accessible transit stops.

Table 14: Review of Existing Local Plans

Plan Type and Plans Reviewed	Plan Description	Relevance to Pioneer Valley Safe Streets
Community Master Plan • Community Development Plan (Agawam) • Complete Streets Prioritization Plan (Agawam) • Amherst Master Plan • Belchertown Community Plan • Blandford Resilient Master Plan • City of Easthampton Master Plan • Complete Streets Prioritization Plan (Easthampton) • East Longmeadow Resilient Master Plan • Hadley Master Plan • Hampden Master Plan • Hatfield 2040 Action Plan • Holland Community Development Plan • Longmeadow Climate Resilient Long-Range Plan • Monson Master Plan • Palmer Master Plan • Pelham Village Center Community Plan • South Hadley Master Plan • Southampton Master Plan Update • Southwick 2040 Master Plan • Wales Master Plan • Resilient Westhampton Master Plan	A community master plan is a long-range policy document, which sets a community's vision for land use, housing, economic development, transportation, and related topics, and guides major public and private investment decisions. The transportation or "circulation" element of the master plan typically describes existing mobility conditions and safety problems, identifies goals for safer, more accessible multimodal travel, and recommends policies and projects such as intersection upgrades, sidewalk and bikeway networks, traffic calming, and transit access improvements.	The PVPC Safety Action Plan builds on and supports these locally defined priorities by providing a regional, data-driven safety analysis and project pipeline that communities can use to update their master plans, shape capital improvement programs, strengthen grant applications, and ensure that local transportation and land use decisions consistently advance long-term safety outcomes for all road users.
Complete Streets Plan • Complete Streets Master Plan (Goshen)	A Complete Streets Plan is a policy and design framework that guides the community in planning, designing, and operating streets to be safe, comfortable, and accessible for all users, including people walking, biking, using transit, driving, and with mobility limitations.	The community's Complete Streets Plan directly supports this Safety Action Plan by providing the multimodal policy and design framework used to implement safety priorities. Together, they ensure that safety, accessibility, and equity are embedded in all transportation investments.
Pedestrian and Bicycle Plan • Northampton Comprehensive Pedestrian & Bicycle Plan	This plan defines recommended pedestrian and bicycle networks, outlines design guidance and support programs, and provides a prioritized project list and implementation approach, helping the town systematically invest in infrastructure and policies that improve safety, equity, and access for people walking and biking.	A community's pedestrian and bicycle plan is a core supporting document for the Safety Action Plan because it translates the community's safety vision for people walking and biking into specific networks, designs, and projects.

Recommended Policy and Process Changes

Pioneer Valley communities can consider revising existing plans, policies, and guidelines or adopt new policies in order to prioritize safety. The Table below identifies recommended plans, policies, and technical assistance that will advance the goals of this action plan.

Table 15: Policy Recommendations

Policy Recommendations	Lead Organization	Supporting Organizations	Cost
Timeline: Short-term			
Adopt or revise complete streets plans for all PVPC communities to align with action plan goals	• Municipal Planning Departments • Municipal Select Committees/ City Councils	• PVPC • MassDOT	Low
Commit to adoption of local vision zero policies, establishing a clear goal to eliminate traffic fatalities and serious injuries in each community	• Municipal Planning Departments • Municipal Select Committees/ City Councils	• PVPC	Low
Support municipalities in creating bicycle and pedestrian safety committees	• Municipal Planning Departments	• PVPC	Low
Adopt a municipal safe vehicle fleets policy	• Municipalities	• PVPC • MassDOT	Low
Evaluate and update curb management policies and plans to reflect the needs and safety for all types of road users	• Municipal Zoning Departments	• PVPC • MassDOT	Medium
Timeline: Medium-term			
Support municipalities in participating in MassDOT's safe routes to school (SRTS) program	• Municipal Planning Departments • Municipal Departments of Public Works (DPW)	• PVPC • MassDOT	Low
Implement the MassDOT guidance on speed management and speed limit setting	• Municipal Police Departments	• PVPC • MassDOT	Low
Support the pursuit of automated enforcement camera legislation in Massachusetts to capture and penalize drivers who run red lights and speed	• Massachusetts General Assembly	• PVPC • MassDOT • Municipalities	Medium-High
Change seat belt usage enforcement to a primary offense for all front and rear passengers	• Massachusetts General Court	• MassDOT	High

6 Countermeasure and Safety Strategies



Improving roadway safety in the Pioneer Valley region and its communities will require commitment and coordination from various partners. This section presents the Countermeasure Toolbox and Safety Strategies to make advancements in improving roadway safety across the region.

Countermeasure Toolbox

Improving roadway safety in the region and its communities will take a coordinated effort from various partners and viewpoints. This section presents the Engineering Countermeasure Toolbox to make advancements in improving roadway safety across the region. The recommendations are based on the crash and crash risk patterns and the following considerations discussed in previous sections. Each community may select countermeasures that meet their names or resonate with the communities' goals.

Countermeasure Selection

Crash Reduction Potential

Countermeasures that address the High Injury Network and the potential to reduce risk of fatal and serious injury crashes by removing severe conflicts, reducing vehicle speeds, managing conflicts in time, and increasing attentiveness and awareness.

Potential for systemic application

Countermeasures that can be applied systemically throughout the PVPC's Region and communities. The project team focused on systemic countermeasures that can address pedestrians, bicyclists, and speeding.

Community input

The countermeasures included in this chapter align with FHWA's Proven Safety Countermeasures or NHTSA's Countermeasures that Work. FHWA's Countermeasures are a collection of 28 countermeasures and strategies that have been proven effective in reducing roadway fatalities and serious injuries. NHTSA's Countermeasures the Work is a reference guide to help select effective, science-based traffic safety countermeasures. The countermeasures are organized by Safe System Approach Category:

- Safer People
- Safer Roads
- Safer Speeds
- Safer Vehicles
- Post Crash Care

Education and Enforcement based measures address more than one category and are therefore organized together for ease of reference.

Comprehensive information is provided for each countermeasure, including general advantages, common uses, and key design factors. It is advisable to implement multiple countermeasures where appropriate, as this can result in greater overall safety benefits than applying individual solutions separately. All engineering-based countermeasures must comply with FHWA's Manual on Uniform Traffic Control Devices (MUTCD). Additionally, ongoing maintenance should be addressed during the selection process to ensure sustained effectiveness.

Crash Modification Factors (CMF)

In order to quantify the effectiveness and aid in the selection of a countermeasure, the Crash Modification Factor (CMF) can be reviewed.

Highway safety experts have studied how different improvements can reduce crashes. They compare crash data from before and after implementing a safety measure to create a "crash modification factor" (CMF). A CMF predicts the expected number of crashes or projected reduction in crashes after applying a specific countermeasure at a location.

The Highway Safety Manual documents several CMFs. In addition, the CMF Clearinghouse is the central repository for all countermeasure CMFs, with over 3000 currently included, and it is maintained and reviewed by AASHTO for quality assurance.

Engineering Countermeasures

Safer People

Pedestrian Crosswalks

All crosswalks should be highly visible for all roadway users and placed strategically in order to best service pedestrians. All crosswalks should be reviewed to ensure proper placement. Crosswalks should be relocated and installed to accommodate pedestrians and provide ample sight visibility to and from the crosswalk.

Timeline: Short

Photo source: FHWA



Benefits:

- Improves the visibility of people walking and biking in crosswalks
- Enhances drivers' sight distance
- Encourages foot traffic and can make local establishments inviting

Typical Applications:

- Areas of high traffic for people biking and walking, such as bus stations, shopping centers, schools, and shared use paths
- Corridors with commercial activity

Design Considerations:

- Areas of high traffic for people biking and walking, such as bus stations, shopping centers, schools, and shared use paths
- Corridors with commercial activity

High Visibility Crosswalk Markings

High visibility crosswalk markings indicate parts of the road for pedestrian or bicycle crossing. Continental crosswalk striping, used at intersections and midblock crossings, should be installed at all marked and future warranted crossings. It should replace stamped concrete, brick, diagonal, and transverse lines unless local ordinances require otherwise.

Timeline: Short



Benefits:

- Provides awareness to drivers that people may be crossing
- Requires motorists to stop for people walking in crosswalk
- Relatively low cost

Typical Applications:

- Intersections of vehicle facilities with moderate to high vehicle volumes and speeds
- Mid-block locations, particularly when implemented with other treatments

Design Considerations:

- Minimum width is 6 feet, but wider crossings may be preferred in areas with a high number of people walking

Pedestrian Lighting

Lighting directed to illuminate the roadway, specifically in the vicinity of intersections and marked pedestrian crossings. Consider this countermeasure on sections of roadway with high volumes of nighttime non-motorized activity.

Timeline: Medium

Photo source: FHWA



Benefits:

- Improves the visibility of people walking and biking in crosswalks
- Enhances drivers' sight distance
- Encourages foot traffic and can make local establishments inviting

Typical Applications:

- Areas of high traffic for people biking and walking, such as bus stations, shopping centers, schools, and shared use paths
- Corridors with commercial activity

Design Considerations:

- Lighting should not be placed to block entrances or inhibit pedestrian flow
- Size and type of light fixture may vary depending on the surrounding context and available space

Sidewalk and Wheelchair Ramp Repairs

Sidewalks are usually paved and separated from the street by curbing and should be of appropriate width and slope for all vulnerable road users. Areas where there are tripping hazards, deteriorated conditions, or discontinuous sidewalks should be repaired or replaced. Sidewalks and Wheelchair Ramps should meet the latest ADA requirements.

Timeline: Medium to Long



Benefits:

- Provides adequate space for pedestrians to walk
- Eliminates tripping hazards and discontinuous sidewalks

Typical Applications:

- Areas with no existing sidewalk or gaps between sidewalks
- Ramps that do not meet current ADA requirements

Design Considerations:

- Right-of-way
- Drainage

Curb Extensions

Curb extensions (also known as bulb-outs, neckdowns, and chokers) are portions of the roadway where the curb extends into the parking lane or shoulder. This both visually and physically narrows the roadway to reduce vehicle speeds, improves visibility between pedestrians and motorists, and provides a shorter distance for pedestrian crossings. This countermeasure should be considered on sections of roadway where on-street parking is provided, there are high vehicle speeds, and pedestrian crossings are common.

Timeline: Long



Benefits:

- Shortens crossing distances
- Reduces vehicular turning speeds
- Increases visibility between people driving and walking
- Physically restrict parking

Typical Applications:

- Mid-block or intersection pedestrian crossings or transit stops
- Streets where on-street parking is provided

Design Considerations:

- Design vehicle for determining radius
- Provide accessible curb ramps and detectable warnings

Pedestrian Hybrid Beacon (PHB)

The Pedestrian Hybrid Beacon (also known as a HAWK) is one of the FHWA Proven Safety Countermeasures and is used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street at a marked crosswalk; a warrant analysis and study must be performed prior installation (refer to MUTCD Chapter 4F). The device consists of three signal sections with a yellow signal head centered below two horizontally aligned red signal heads. This countermeasure is for use at midblock crossings and intersections that do not warrant a signal.

Timeline: Long



Benefits:

- High rate of driver yielding behavior
- Improves safety for people walking and reduces pedestrian crashes

Typical Applications:

- Mid-block crossings with high pedestrian or bicycle demand and high traffic volumes
- Crossing treatment for shared use paths

Design Considerations:

- Push button placement should be easily accessible to people walking, in wheelchairs, and bicycling

Rectangular Rapid Flashing Beacon

A flashing beacon provides a warning to motorists about the presence of a crosswalk. A Rapid Rectangular Flashing Beacon (RRFB) is yellow, rectangular, and has a rapid "wig-wag" flash similar to police lights. This countermeasure is for use at midblock crossings and intersections that do not warrant a signal.

Timeline: Short



Benefits:

- Provides a visible warning to drivers at eye level
- Increases driver yielding behavior at crossings
- Allows drivers to proceed after yielding

Typical Applications:

- Mid-block crossings with high pedestrian or bicycle demand and high traffic volumes
- Crossing treatment for shared use paths

Design Considerations:

- Push button placement should be easily accessible to people walking, in wheelchairs, and bicycling
- Can be added in median island for multi-lane crossings

Leading Pedestrian Interval

This signal phasing modification allows pedestrians a "head start" to begin crossing during concurrent green phases with same-direction vehicular traffic. It is intended to reduce potential conflicts between vehicles and pedestrians at the end of the signal cycle, in addition to increasing the visibility of pedestrians in the intersection.

Timeline: Short

Photo source: North Carolina DOT



Benefits:

- Reduces pedestrian crossing time
- Increases pedestrian visibility
- Reduces pedestrian vehicle conflicts

Typical Applications:

- Intersections where right-turning vehicles do not yield to pedestrians
- Intersections with a crash history of vehicle-pedestrian crashes

Design Considerations:

- Pedestrian signal faces must be provided
- Interval should be 3–7 seconds

Pedestrian Signal Equipment

Curb extensions (also known as bulb-outs, neckdowns, and chokers) are portions of the roadway where the curb extends into the parking lane or shoulder. This both visually and physically narrows the roadway to reduce vehicle speeds, improves visibility between pedestrians and motorists, and provides a shorter distance for pedestrian crossings. This countermeasure should be considered on sections of roadway where on-street parking is provided, there are high vehicle speeds, and pedestrian crossings are common.

Timeline: Medium

Photo source: MUTCD (FHWA)



Benefits:

- Instructs pedestrians when to cross
- Encourages more pedestrians to use push buttons
- Improves functionality of an intersection for users

Typical Applications:

- Intersections with pedestrian activity or adjacent land uses
- Intersections where no pedestrian facilities are provided

Design Considerations:

- Calculations for walk and flash don't walk intervals will be displayed
- May require retiming if existing signal phasing does not provide adequate time for crossing

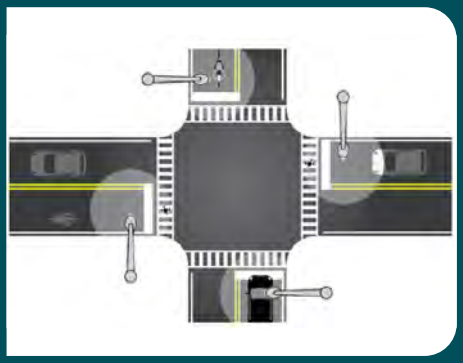
Safer Roads—Intersection Focus

Intersection Lighting

Lighting directed to illuminate the roadway, specifically in the vicinity of intersections and marked pedestrian crossings. Consider this countermeasure on sections of roadway with high volumes of nighttime non-motorized activity.

Timeline: Medium

Photo source: FHWA



Benefits:

- Improves the visibility of vehicles at intersections
- Enhances drivers' sight distance

Typical Applications:

- Rural areas with challenging geometry

Design Considerations:

- Lighting should not be placed to block entrances or inhibit pedestrian flow
- Size and type of light fixture may vary depending on the surrounding context and available space

Signal Equipment and Timing Upgrades

Upgrading signal equipment can improve intersection visibility by adding retroreflective backplates, larger signal lenses, new signal heads, or yellow retroreflective sheeting to backplates. Signal timing upgrades to meet current standards for vehicular clearance times. Upgrade left-turn signal phasing, consider flashing yellow arrow signal phasing and signal head indication.

Timeline: Short



Benefits:

- Increases signal visibility
- Reduces driver confusion or noncompliance

Typical Applications:

- Intersections that have not been maintained or were not installed recently
- Intersections on corridors where there are high vehicular travel volumes

Design Considerations:

- Consistency in types of improvement and look should be considered for long corridors
- Intersection skews may require additional improvements to ensure visibility for drivers

Signal Head Visibility

The replacement of signal heads to increase lens size and/or installing new signal heads to increase signal visibility. With new signal heads, the installation of retro-reflective backplates provides added visibility for motorists when approaching a signalized intersection. The backplates encase the traffic signal head and have a retro-reflective border. The use of retro-reflective backplates should be considered at locations with a history of red light running, crashes related to red light running, or where there are unexpected, signalized intersections.

Timeline: Short

Photo source: FHWA



Signal backplate framed with a retroreflective border.

Benefits:

- Increases signal visibility
- Reduces driver confusion or noncompliance

Typical Applications:

- Intersections that have not been maintained or were not installed recently
- Intersections on corridors where there are high vehicular travel volumes

Design Considerations:

- Consistency in types of improvement and look should be considered for long corridors
- Intersection skews may require additional improvements to ensure visibility for drivers

Curb Modifications

At intersections, large curb radii typically result in high-speed turning movements by motorists. This countermeasure includes reducing curb radii or modifying channelized right turn lanes.

Timeline: Long



Benefits:

- Shorter pedestrian crossings
- Reduced vehicle speeds
- Improves sight lines
- Improves wheelchair ramp positioning

Typical Applications:

- Intersections with large curb radii
- Intersections with long pedestrian crossings
- Intersections with channelized right turn lanes

Design Considerations:

- Truck turning envelopes
- Drainage
- Right-of-way

No Turn on Red Restriction

Restricts motorists from turning right during the red light. Implementing RTOR restrictions reduces conflicts between motorists and pedestrians.

Timeline: Short

Photo source: MUTCD (FHWA)



Benefits:

- Reduces conflicts between drivers and pedestrians

Typical Applications:

- Signalized intersections with people walking
- Signalized intersections near pedestrian or bike-trip generating uses

Design Considerations:

- Location of signage should be placed so it is easily visible to drivers

All-way Stop Control

All-way stop control can be implemented if warranted for intersections that are signalized or only have two-way stop control existing. This type of conversion can be effective for managing traffic.

Timeline: Short

Source: FHWA



Benefits:

- Facilitates frequent pedestrian crossings

Typical Applications:

- Signalized intersections where traffic volumes have decreased notably
- Unsignalized intersections where there is a demonstrated angle crash history that can be mitigated with an all-way stop

Design Considerations:

- Pedestrian volumes should be evaluated with vehicular volumes to determine if all-way stop control is warranted

Traffic Signal Control

Evaluate conversion from stop control to signalized traffic control intersection to effectively managing traffic

Timeline: Medium to Long



Benefits:

- Potential to correct intersection with angle crash history

Typical Applications:

- Unsignalized intersections where there is a demonstrated angle crash history that can be mitigated
- Unsignalized intersection where there has been an increase in volume

Design Considerations:

- Signal warrants per the MUTCD must be met

Convert Signal Equipment to Mast Arms

When signals are mounted on pedestals or span wires, converting these intersections to mast arms can improve visibility and aid drivers' advance perception of the upcoming intersection.

Timeline: Medium to Long



Benefits:

- Improve visibility of traffic signs and signals

Typical Applications:

- Signalized intersections in need of upgrades

Design Considerations:

- New signals may also be required to place on the mast arms

Convert to Roundabout

This treatment consists of installing a roundabout as intersection traffic control. A roundabout is a circular intersection without traffic signals or stop signs, where drivers travel counterclockwise around a center island. When entering the roundabout, drivers yield to existing traffic, then enter the circulatory roadway and exit in their desired direction. Roundabouts are designed to eliminate left turns conflicts by requiring traffic to traverse to the right around a central island.

Timeline: Long



Benefits:

- Manages vehicular speeds, reduce turning conflicts, and help traffic flow efficiently
- Higher cost, long-term countermeasure

Typical Applications:

- Signalized or unsignalized intersections that are operationally feasible based on traffic analysis

Design Considerations:

- Right-of-way and utility impacts
- Traffic operations

General Intersection Maintenance Improvements

A general intersection improvement includes a number of measures such as repaving, new pavement markings to clarify travel through the intersection, signal retiming, equipment, implementing automatic pedestrian recall, and enforce parking restrictions.

Timeline: Short

Benefits:

- Clarify the preferred path of travel through the intersection to help avoid potential conflicts
- Provides appropriate pedestrian signal timing

Typical Applications:

- Highway Safety Improvement Program (HSIP) cluster intersections
- Roadways with high traffic volumes and/or pedestrian activity

Design Considerations:

- Signal retiming should account for appropriate pedestrian crossing times
- Thermoplastic pavement markings are more durable

Access Management

Access management refers to the design, application, and control of entry and exit points along a roadway. This includes intersections with other roads and driveways that serve adjacent properties. Thoughtful access management along a corridor can simultaneously enhance safety for all modes, facilitate walking and biking, and reduce trip delay and congestion.

Timeline: Medium to Long

Photo source: FHWA



Benefits:

- Enhance safety for all modes of travel
- Facilitate walking and biking with fewer driveway conflicts
- Reduce trip delay and congestion with fewer driveway turning movements

Typical Applications:

- Corridors with a high density of driveways and uses
- Intersections with driveways located within close proximity

Design Considerations:

- Internal site design providing connections via one access point should be considered
- Vehicle turn restrictions may be appropriate

Safer Speeds

Speed Feedback Sign

A speed feedback sign is changeable message sign that displays the speed of approaching vehicles. A radar speed display signal should be considered where motorized vehicle speed is a concern.

Timeline: Short

Photo source: MUTCD (FHWA)



Benefits:

- Makes drivers aware of their traveling speed versus the posted speed limit
- Permanent and temporary applications

Typical Applications:

- High speed zones
- Areas with high pedestrian-related crash history

Design Considerations:

- Generally considered when the 85th percentile speeds exceed the posted speed limit by 5 mph or more
- A speed study should first be conducted to determine if a change in speed limit is appropriate

Set Appropriate Speed Limits

Set speeds based on conflict density and activity level. Review and adopt MassDOT's setting target speed guidance.

Timeline: Short to Medium

Road Reconfiguration (Road Diet)

A road diet is a redistribution of space in the roadway leading to a repurposing of the existing roadway cross section width. The road diet is one of the FHWA Proven Safety Countermeasures and may provide space for sidewalks, transit lanes, micromobility, or medians, and can help reduce motor vehicle speed. A traffic analysis is required to determine the feasibility of a road diet. Consider a road diet on segments with pedestrian crossings, multiple lanes of traffic, and high vehicle speeds.

Timeline: Short to Medium



Benefits:

- Calms vehicle speeds
- Reallocates space for transit or non-motorized road users.
- Provides vehicular access to commercial and business driveways

Typical Applications:

- Four-lane undivided roadways, which are converted to roadways with one lane in each direction and a two-way center left turn lane

Design Considerations:

- Can be implemented with resurfacing projects to incorporate a road diet at minimal additional cost
- Roadway ADT less than 10,000 will typically perform with similar capacity
- Follow FHWA design volume thresholds
- If multimodal feature is being consider, follow the specific design considerations from AASHTO and FHWA.

Median Islands/Vertical Deflection

Vertical deflection includes both speed bumps/humps, raised pedestrian crossings, bollards, and flexible delineators. By deflecting both the wheels and frame of a traveling vehicle.

Timeline: Short to Medium



Benefits:

- Encourage drivers to travel at a slow speed in both directions
- Allows pedestrians to cross roadways where the pedestrian walking surface is raised to the same level

Typical Applications:

- Corridors with pedestrians to use
- Relatively flat, straight, and low volume roads
- Roads one or two lanes wide

Design Considerations:

- Roadways with adequate space
- A series of speed humps are installed 150 to 250 feet apart to prevent speeding between them.
- Coordinate proposed installations with emergency services

Safer Roads—Roadway Departure Focus

Enhance Signage

Install signage to communicate roadway conditions (i.e., grooved pavement, edge drop offs, construction zones).

Timeline: Short



Benefits:

- Low-cost installation and maintenance
- Effective use of warning and delineation

Typical Applications:

- Horizontal Curves
- Rural Intersections

Design Considerations:

- Proximity to driveways or side streets to avoid reducing to sight lines

Roadway Conspicuity

A roadway conspicuity treatment is aimed at making pavement markings and signage clearer for drivers to see. This can include installing wider pavement markings, upgrading signs with fluorescent sheeting, adding reflective sign posts, improving edgelines/ centerlines, and adding roadside delineation system

Timeline: Short



Benefits:

- Creates continuous delineation of travel lanes
- Increase visibility of regulatory and warning signs
- Clarify the edge of the roadway and lane boundaries

Typical Applications:

- Signalized or unsignalized intersections
- Locations that require maintenance

Design Considerations:

- Use of thermoplastic pavement markings will improve conspicuity
- Edge lines should not be considered on roadways that do not have centerlines

Improve Sightlines

Remove trees within the clear zone to reduce the opportunity for crashes. Clear brush that blocks sight lines. Ensure sight lines are clear within the right-of-way to ensure stopping and intersection sight distances are met.

Timeline: Short

Photo source: FHWA



Benefits:

- Improve sight lines
- Clear trees to reduce severity of crash if vehicle left the roadway

Typical Applications:

- Within intersections
- Along corridors
- Near crosswalks (pedestrian, bike paths, trails, etc.)

Design Considerations:

- Right-of-way
- Roadway Context and Land Use
- Environmental impacts (historic properties, NEPA, etc.)

Install Guardrail

Implement guardrail improvements for areas with roadside obstacles including bridges, slopes, poles that cannot be removed or relocated outside the clear zone.

Timeline: Medium



Benefits:

- Reduces the severity of crashes
- Redirects vehicles back into the traveled way

Typical Applications:

- Where roadside conditions and features warrant guardrail protection per AASHTO

Design Considerations:

- Pedestrian accessibility
- Context of roadway (scenic, etc.)

Install Rumble Strips

Install centerline and/or edgeline rumble strips on two-lane rural roads with high risk of crossover and/or roadway departure crashes.

Timeline: Long

Photo source: FHWA, Michigan DOT



Benefits:

- Provides awareness for drowsy drivers
- Reduces opportunity of roadway departure and crossover crashes

Typical Applications:

- Rural corridors with minimal residential properties
- Low driveway density

Design Considerations:

- Distance from rumble strip to residential properties and other sensitive receptors.
- Driveway and side street density
- Passing zones

SafetyEdge and Paved Shoulders

The SafetyEdge technology shapes the edge of the pavement at approximately 30 degrees from the pavement cross slope during the paving process. If SafetyEdge isn't feasible then consider installing paved shoulders to remove gravel shoulders to avoid broken edges and debris.

Timeline: Long

Photo source: FHWA



Benefits:

- Reduces the potential for vertical drop-off at the pavement edge
- Minimal effect on project cost
- Can improve pavement durability by reducing edge raveling of asphalt

Typical Applications:

- Rural roadways with no curb or berm

Design Considerations:

- Consider roadway drainage
- Pedestrian accessibility

High Friction Surface Treatment

Install High Friction Surface Treatment (HFST) at horizontal curves and intersections that have high risk of wet weather or motorcycle crashes.

Timeline: Medium to Long

Photo source: FHWA



Benefits:

- Improves friction of roadway without paving
- Easy retrofit to reduce wet weather crashes
- Notable benefits with motorcycles maintaining control

Typical Applications:

- Horizontal curves
- Approaches to intersections

Design Considerations:

- Pavement condition including longitudinal or transverse cracking
- Consideration to existing pavement type and condition

Non-Engineering Countermeasures

Safer Vehicles

The following strategies and actions were selected to align with the Safe Vehicles element of the Safe Systems Approach.

Support policy and programs that reduce vehicle trips

Actions:

- Promote the reduction of overall vehicle trips by advocating for safer transportation options through bike-sharing, e-scooter programs, and encouraging walking, biking, and transit
- Advocate for state and federal policies that support safer, smaller, and lighter vehicles with speed control features

Improve interactions between modes through direct and indirect vision enhancements.

Actions:

- Promote Direct Vision principles and encourage installation of countermeasures on low vision vehicles through education and distribution of funding information
- Support local distribution events for bicycle mirrors, bells, and other devices that can improve user safety

Post Crash Care

Post Crash Care Strategies are designed to enhance the survivability of crashes through access to emergency medical care while creating a safe working environment for vital first responders.

Emergency Medical Services

As countermeasures are identified and implemented, municipalities should coordinate closely with local Emergency Medical Services (EMS) to ensure that improvements will not negatively impact response times and compromise the effectiveness of post-crash care. Municipalities should consider developing Rapid Response Plans to formalize roles during incidents and outline the following details:

- Associated staffing commitments
- A notification system for activating response team
- A data collection protocol for immediate deployment to evaluate pre- and post-improvement conditions
- A data sharing procedure. This program should be a direct conduit with local police who may shift, and advance recommendations based on incident data

Transportation to Trauma Center

- Improve responder and motorist safety through Traffic Incident Management Training and Technology Deployment
- Improve travel conditions on vital corridors for trauma center access
- Promote the implementation and use of red light preemption for emergency vehicles

Education

Education strategies are designed to impart road safety principles to users, addressing key components of the Safe System Approach such as Safe Road Users, Safe Vehicles, and Safe Speeds. These strategies may incorporate interactive activities, demonstration projects, comprehensive instructional materials, and guidance on delivering road safety messages both within schools and through external programs. Additionally, media campaigns, specialized training courses, and printed educational materials can be leveraged to address targeted aspects and enhance public awareness. The following education-related strategies have been identified for implementation within the Pioneer Valley Region.

- Road Safety Education for Children and vulnerable road users
- Develop printed resources for user protection (seatbelts, child restraints, helmets)
- Develop resources for vulnerable road users
- Develop and implement media campaigns
- Use everyday touchpoints with drivers and travelers to provide re-education messages
- Speed Monitoring Awareness Radar Trailer

Road Safety Education for Children and Vulnerable Road Users

Road safety education programs contribute to improved driver conduct by highlighting the importance of protecting vulnerable road users, including school children, cyclists, and pedestrians. Community and school-based events, along with demonstration projects, serve as platforms for distributing information and resources that foster greater awareness of safety practices.

Utilize printed resources for occupant protection

The National Highway Traffic Safety Administration (NHTSA) provides educational materials on seat belts, child car seats, automatic occupant protection systems, and bicycle helmets at their Traffic Safety Marketing website[5]. These resources, including graphics and flyers, are suitable for distribution at community events or placement in public spaces like libraries, community centers, and schools.

5 https://www.trafficsafetymarketing.gov/

Utilize resources specific to vulnerable road users

NHTSA offers a variety of safety resources, including curriculum for child pedestrian safety, materials for older adult pedestrians, bicycle and motorcycle safety guides, law enforcement safety training, neighborhood wayfinding pocket guides, and resources tailored for preteens and teens. The American Traffic Safety Services Association (ATSSA) also provides tools for creating effective programs and educational materials about vulnerable road users' rights and responsibilities.

Pioneer Valley has the opportunity to evaluate these resources and develop a local curriculum or programs that address these topics.

Utilize and implement media campaigns

Explore and/or develop social media campaigns as a method for raising and spreading awareness for educational resources available to communities and community members. These campaigns could be shared across several platforms including Facebook, Instagram, TikTok, X (formerly Twitter), and Bluesky can leverage national social media campaigns already developed by NHTSA. NHTSA's Communication Calendar provides information and resources for national campaigns such as Child Passenger Safety Week that can be utilized in campaigns. In 2019, the National Cooperative Research and Evaluation Program (NCREP) completed a study entitled Social Media Practices in Traffic Safety, which identified the following successful social media practices:

- Use pictures, videos, and links strategically to maximize impact
- Time posts to meet stakeholder needs
- Collaborate with other local and state accounts to expand reach for messaging
- Reuse messaging across multiple platforms

Enforcement

Even when engineering countermeasures are deployed, failing to adhere to state traffic laws and local ordinances can result in crashes. Police enforcement can increase driver awareness and consequently reduce crashes or severity of crashes. Potential enforcement strategies to address crash trends within the region are presented below. However, enforcement strategies should be taken with caution to avoid inequitable enforcement activities and evaluated to determine the strategy's impact. The following considerations can help lead to more successful outcomes for roadway safety enforcement strategies:

Distracted Driving

Provide training and resources for law enforcement on High Visibility Cell Phone Enforcement, in which law enforcement officers actively seek out cell phone users through a variety of enforcement techniques and then radio ahead to another officer when a driver using a cell phone is detected. This technique relies on media outreach to ensure the general public is aware of the activity and to increase the perception that being caught is likely.

Improve Reporting

Provide training and resources for law enforcement to improve crash reporting with the aim to better identify crash trends over time, understanding factors that contribute to accidents, and documenting findings comprehensively.

Conduct Increased Enforcement for Pedestrian Safety

Increased enforcement campaigns for pedestrian safety are strategic initiatives designed to raise awareness and improve compliance with traffic laws to protect pedestrians. These campaigns often involve a multi-faceted approach combining enhanced law enforcement presence, public education, and collaboration with community stakeholders. Targeted enforcement operations, such as focusing on high-risk areas like busy intersections and locations with a history of pedestrian crashes, can be effective in raising awareness for motorists. Officers may issue warnings or citations to drivers who fail to yield to pedestrians or violate crosswalk laws as part of targeted enforcement activities.

Automated Enforcement

Automated red light running enforcement is a traffic management solution designed to monitor and penalize drivers who fail to comply with red signal indications. This system generally consists of cameras installed at intersections, which are activated when a vehicle enters the intersection during a red phase. The cameras record images or video sequences of the violation, typically including the vehicle's license plate. The primary objective of automated red-light enforcement is to enhance intersection safety by discouraging red light infractions, thereby reducing the risk of serious collisions. Research indicates that these systems effectively decrease the frequency of red light violations and contribute to improved overall road safety.

Speed safety cameras, much like red-light running cameras, are used to monitor and penalize drivers who go over the speed limit. These cameras, equipped with speed detection technology, are placed in locations such as high-risk areas, school zones, and highways to record instances of speeding. Their main goal is to improve road safety by deterring speeding, which is a leading cause of traffic accidents and deaths. Research indicates that speed safety cameras can effectively decrease average vehicle speeds and lower crash rates. Nevertheless, similar to red-light cameras, they often spark discussions about privacy concerns, accuracy, and fairness in enforcement. In Massachusetts, automated enforcement is currently not permitted by law. The PVPC plans to assess the possibility of collaborating with state legislators to establish statewide laws for both red-light running and speed safety cameras.

Enforcement Campaigns Adapted for Each Community

Enforcement campaigns represent structured initiatives led by law enforcement agencies, often in collaboration with various stakeholders, to promote adherence to safety-related laws and regulations. These campaigns are strategically developed to address identified safety issues and enhance public awareness, with the ultimate goals of reducing incidents and improving community safety. Community-specific campaigns should incorporate several of the activities previously mentioned, such as targeted enforcement, public education and awareness initiatives, as well as robust partnerships and collaborative efforts. Furthermore, to optimize outcomes:

- Campaigns should be tailored to suit the needs of different neighborhoods and demographics and should be designed and carried out to avoid targeting disadvantaged communities
- Enforcement should be conducted with the help of staff support and awareness of the courts
- Enforcement operations should begin with warnings and fliers before moving on to issuing citations

Maintenance Considerations

Maintenance and preservation are essential for the longevity and safety of transportation infrastructure. When the system falls into disrepair, unsafe behaviors can occur—drivers may swerve into bike lanes to avoid potholes, or pedestrians might walk in the street due to uneven sidewalks, increasing accident risks. Maintenance covers tasks like repaving, updating pavement markings, signal retiming, equipment upgrades, automatic pedestrian recall, vegetation management, and parking enforcement. Simply providing transportation facilities does not ensure safety; maintenance should be a priority when selecting and implementing countermeasures and best practices.

- Outlining the party responsible for maintenance at the beginning of the process
- Establish practices for assessing the condition of the infrastructure and identification of maintenance needs
- Vegetation assessment and routine trimming should be incorporated where needed
- Consider upgrading materials or infrastructure during assessment of maintenance needs
- Update and improve fencing at all Pioneer Valley Transit Authority (PVTA) locations for advanced security
- Upgrade and enhance dashboard cameras on all PVTA fixed route buses









Top Left: New pavement marking installation
Top Right: Sign retro-reflectivity
Bottom Left: Roadside tree trimming maintenance
Bottom Right: Pavement maintenance

Photo source: *FHWA*

Pop-up Traffic Calming Demonstrations

Pop-up demonstration projects, also referred to as "better blocks," are temporary installations implemented to evaluate and illustrate strategies for enhancing road safety. These initiatives incorporate a range of traffic calming measures, such as:

- **Speed Bumps or Humps:** Temporary structures that encourage drivers to slow down
- **Chicanes:** Features that create a winding path for vehicles, thereby reducing speed
- **Curb Extensions:** Extensions or bulb-outs at intersections to narrow the roadway and reduce pedestrian crossing distances
- **Roundabouts or Traffic Circles:** Temporary circular intersections that slow down traffic and improve flow
- **Road Reconfiguration:** Lane reductions or reconfigurations to decrease vehicle speeds and improve pedestrian safety
- **Signage and Pavement Markings:** Additional signs and painted graphics to alert drivers to slow down or pay attention to pedestrian areas

Pop-up demonstrations typically engage community members and gather their feedback to evaluate the effectiveness and public acceptance of proposed measures prior to implementing permanent changes. These initiatives offer local governments and transportation authorities cost-effective and adaptable approaches to pilot solutions for traffic-related challenges.





Bicycle safety education program events

Table 16: Engineering Countermeasure Summary

Engineering Countermeasure Summary	Lead	Timeline	Cost
Safer People			
Pedestrian Crosswalks	• Municipal • MassDOT	Short	Low
High Visibility Crosswalk Markings	• Municipal • MassDOT	Short	Low
Rectangular Rapid Flashing Beacon	• Municipal • MassDOT	Short	Low
Leading Pedestrian Interval	• Municipal • MassDOT	Short	Medium
Pedestrian Lighting	• Municipal • MassDOT	Medium	Medium to High
Pedestrian Signal Equipment	• Municipal • MassDOT	Medium	Medium to High
Sidewalk and Wheelchair Ramp Repairs	• Municipal • MassDOT	Medium to Long	Medium to High
Curb Extensions	• Municipal • MassDOT	Long	Medium to High
Pedestrian Hybrid Beacon (PHB)	• Municipal • MassDOT	Long	Medium
Safer Roads—Intersection Focus			
Signal Equipment and Timing Upgrades	• Municipal • MassDOT	Short	Medium
Signal Head Visibility	• Municipal • MassDOT	Short	Medium
No Turn on Red Restriction	• Municipal • MassDOT	Short	Low
All-way Stop Control	• Municipal • MassDOT	Short	Low
Intersection Lighting	• Municipal • MassDOT	Medium	Medium to High
Traffic Signal Control	• Municipal • MassDOT	Medium to Long	High

Table 16: Engineering Countermeasure Summary (continued)

Engineering Countermeasure Summary	Lead	Timeline	Cost
Convert Signal Equipment to Mast Arms	• Municipal • MassDOT	Medium to Long	Medium
Curb Modifications	• Municipal • MassDOT	Long	High
Safer Roads—Intersection Focus (continued)			
General Intersection Maintenance Improvements	• Municipal • MassDOT	Short	Low
Access Management	• Municipal • MassDOT	Medium to Long	High
Convert to Roundabout	• Municipal • MassDOT	Long	High
Safer Speeds			
Speed Feedback Sign	• Municipal • MassDOT	Short	Low
Set Appropriate Speed Limits	• Municipal • MassDOT	Short to Medium	Medium
Road Reconfiguration (Road Diet)	• Municipal • MassDOT	Short to Medium	High
Median Islands/Vertical Deflection	• Municipal • MassDOT	Short to Medium	Low to Medium
Safer Roads—Roadway Departure Focus			
Enhance Signage	• Municipal • MassDOT	Short	Low
Roadway Conspicuity	• Municipal • MassDOT	Short	Low
Improve Sightliines	• Municipal • MassDOT	Short	Low to Medium
Install Guardrail	• Municipal • MassDOT	Medium	Medium
High Friction Surface Treatment	• Municipal • MassDOT	Medium to Long	Low

Table 16: Engineering Countermeasure Summary (continued)

Engineering Countermeasure Summary	Lead	Timeline	Cost
Safer Roads—Roadway Departure Focus (continued)			
Install Rumble Strips	• Municipal • MassDOT	Long	Low
SafetyEdge and Paved Shoulders	• Municipal • MassDOT	Long	Medium

Table 17: Non-Engineering Safety Strategies Summary

Engineering Countermeasure Summary	Lead	Timeline
Safer Vehicles		
Promote Direct Vision principles and encourage installation of countermeasures on low-vision vehicles	• PVPC • Municipal	0–1 year
Support local distribution events for bicycle mirrors, bells, and other safety devices	• PVPC • Municipal	0–1 year
Promote reduction of overall vehicle trips through bike-sharing, e-scooter programs, walking, biking, and transit advocacy	• PVPC • Municipal	1–3 years
Advocate for state and federal policies supporting safer, smaller, and lighter vehicles with speed control features	• PVPC • MassDOT	3–5+ years
Post Crash Care		
Coordinate with EMS to ensure safety improvements do not negatively impact emergency response times	• PVPC • Municipal	Ongoing
Develop Rapid Response Plans outlining staffing commitments, notification systems, data collection protocols, and data sharing procedures	• PVPC • MassDOT	0–1 year
Improve responder and motorist safety through Traffic Incident Management Training and Technology Deployment	• PVPC • MassDOT	0–3 years
Promote implementation and use of red-light preemption for emergency vehicles	• PVPC • MassDOT	1–3 years
Improve travel conditions on vital corridors for trauma center access	• PVPC • MassDOT	2–5 years
Education		
Provide re-education safety messaging through everyday driver and traveler touchpoints	• MassDOT	Ongoing

Table 17: Non-Engineering Safety Strategies Summary (continued)

Engineering Countermeasure Summary	Lead	Timeline
Education (continued)		
Utilize community and school-based events to distribute roadway safety information and resources	• PVPC • Municipal	Ongoing
Conduct road safety education programs for children and vulnerable road users	• PVPC • Municipal • MassDOT	0–1 year
Develop and distribute printed resources for occupant protection including seatbelts, child restraints, and helmets	• PVPC • Municipal	0–1 year
Develop resources tailored to vulnerable road users	• PVPC • Municipal	0–1 year
Develop and implement media campaigns promoting roadway safety awareness	• PVPC • Municipal • MassDOT	0–1 year
Deploy Speed Monitoring Awareness Radar Trailers	• PVPC • MassDOT	0–1 year
Utilize NHTSA educational materials related to occupant protection and bicycle safety	• PVPC • Municipal	0–1 year
Implement social media campaigns leveraging existing national safety campaigns and communication calendars	• PVPC • Municipal	0–1 year
Evaluate and develop local curriculum or programs addressing vulnerable road user safety	• Municipal	1–2 years
Enforcement		
Conduct increased enforcement campaigns focused on pedestrian safety in high-risk areas	• PVPC • Municipal	Ongoing
Begin enforcement campaigns with warnings and informational flyers prior to issuing citations	• Municipal	Ongoing
Provide training and resources for High Visibility Cell Phone Enforcement initiatives	• Municipal	0–1 year
Improve crash reporting through law enforcement training and resources	• MassDOT	0–1 year
Develop community-specific enforcement campaigns with targeted outreach, education, and partnerships	• Municipal	0–1 year

Table 17: Non-Engineering Safety Strategies Summary (continued)

Engineering Countermeasure Summary	Lead	Timeline
Enforcement (continued)		
Evaluate and advocate for automated red-light running enforcement legislation	• PVPC • Municipal	3–5+ years
Evaluate and advocate for speed safety camera enforcement legislation	• PVPC • Municipal	3–5+ years
Maintenance Considerations		
Establish maintenance responsibility early in project development	• PVPC • MassDOT	Ongoing
Conduct vegetation assessment and routine trimming where needed	• Municipal	Ongoing
Implement repaving, pavement markings, signal retiming, and automatic pedestrian recall maintenance activities	• PVPC • MassDOT	Ongoing
Establish practices for assessing infrastructure condition and identifying maintenance needs	• PVPC • MassDOT	1–2 years
Consider upgrades of materials or infrastructure during maintenance assessments	• MassDOT	2–5 years
Pop-up Traffic Calming Demonstrations		
Incorporate community participation and feedback into demonstration project evaluation	• PVPC • Municipal	Ongoing
Conduct pop-up traffic calming demonstration projects ("better blocks")	• PVPC • Municipal	0–1 year
Install temporary speed bumps or humps as demonstration traffic calming measures	• PVPC • Municipal	0–1 year
Install temporary chicanes to reduce vehicle speeds	• PVPC • Municipal	0–1 year
Implement temporary curb extensions/bulb-outs at intersections	• PVPC • Municipal	0–1 year
Conduct temporary road reconfigurations and lane reductions	• PVPC • Municipal	0–1 year
Install temporary signage and pavement markings to improve driver awareness	• PVPC • Municipal	0–1 year
Install temporary roundabouts or traffic circles	• PVPC • Municipal	0–2 years

7 Strategies and Project Development



Overview

This chapter documents the process of priority location identification and project development process. During the development of this safety action plan, the high-injury network, high-risk network, and public feedback were used to identify candidate projects to ensure an effective and transparent approach to improve safety within the transportation system. It is necessary to have a clear project prioritization process because safety needs and funding are both limited, so PVPC must make deliberate, defensible choices about where to invest. A structured, data-driven approach helps ensure that decisions are based on crash risk, equity, and measurable safety benefits. It also increases transparency and public trust, since residents and stakeholders can see how and why certain locations or strategies were selected.

Priority Location Methodology

Intersections and segments that were identified in the high-injury network, high-risk network, or both were prioritized to form a list of priority locations for project development consideration. For each high-risk network, thresholds were set based on the highest risk score available for that category. For the high-injury network, scoring was based on whether the location was part of the HIN or not. Additional criteria such as equity and population were also considered to ensure that disadvantaged communities and rural municipalities with less population get a fair representation.

The locations were prioritized and scored from 0 to 100 using the screening elements and weights shown in **Table 18** and **Table 19**. By assigning scores or weights to various criteria, the matrix helps identify high-priority locations that balance reactive and proactive safety issues. The score or weight for each criterion is determined by needs and priorities. Incorporating these elements in the safety action plan's priorities allows projects to address significant safety challenges while meeting the priorities of the SS4A Program.

Table 18: Priority Location Scoring Matrix—Intersections

Criteria	Maximum Score
High Injury Network	**40**
Yes	40
No	0
Intersection High Risk Network	**35**
Risk Score 5–8	35
Risk Score 3–4	30
Risk Score 1–2	1
Risk Score 0	0
Disadvantaged Community	**5**
Yes	5
No	0
Population	**20**
<1000	20
1000–5000	15
5000–10000	10
>10000	0

Table 19: Priority Location Scoring Matrix—Segments

Criteria	Maximum Score
High Injury Network	**20**
Yes	20
No	0
Lane Departure High Risk Network	**10**
Risk Score 4–5	10
Risk Score 3	5
Risk Score 1–2	1
Risk Score 0	0
Speeding High Risk Network	**20**
Risk Score 6–10	20
Risk Score 4–5	15
Risk Score 3	10
Risk Score 1–2	1
Risk Score 0	0
Pedestrian High Risk Network	**10**
Risk Score 6–9	10
Risk Score 4–5	8
Risk Score 3	5
Risk Score 1–2	1
Risk Score 0	0
Bicycle High Risk Network	**10**
Risk Score 5–7	10
Risk Score 3–4	5
Risk Score 1–2	1
Risk Score 0	0
Motorcycle High Risk Network	**10**
Risk Score 4–5	10
Risk Score 3	5
Risk Score 1–2	1
Risk Score 0	0
Disadvantaged Community	**5**
Yes	5
No	0
Population	**15**
<1000	15
1000–5000	10
5000–10000	8
>10000	0

Project Development Process

Once the priority locations were identified, total scores were checked and a score of 40 was identified as a threshold for any location to get considered for inclusion in a project. All segments with a priority score of 40 or above were checked for continuity and length. Segments between major intersections were combined and a revised average score was calculated. This step ensured that each segment has an appropriate length to be considered for a project.

In coordination with PVPC, a revised priority score of 75 was selected as a threshold for regional project consideration. Any segments or intersections meeting this criterion were considered for regional priority project. While developing the projects, practical implementation was taken into consideration in addition to the scoring. For example, if there is a small length of segment scoring below 75 that is between two segments with scores above 75, then the segment with below 75 scoring was also included in the project for continuity purposes.

During the regional level review, many municipalities did not have many or any intersections or segments that fell within the criteria above. Therefore, as part of this plan, locations were identified on both a regional level and a municipal level to compare the locations on a regional level and on a municipal basis. For each municipality, top ten segments and intersections based on priority scores were selected for potential projects. For some towns, there were less than 10 locations that made it to the priority location list.

List of Selected Projects and Strategies

Regional Level

Table 20 and **Table 21** summarize the associated strategies and improvements for the selected regional projects for corridors and intersections, respectively. This list helps illustrate how PVPC can use the prioritized projects to start on locations with the highest potential for safety benefit.

Mapping tool of ranked projects at regional level with scoring can be found on the project website[6].

6 https://www.pioneervalleysafestreets.com/

Table 20: Potential Regional Projects—Corridors

Town	Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
Agawam	MA-187	S Westfield Street	Henry E Bodurtha Hwy	Shoemaker Lane	?	?	✓	✓	✓	✓	✓	?	✓
Agawam	MA-187	S Westfield Street	Shoemaker Lane	Springfield Street	?	?	?	?	✓	?	✓	?	?
Agawam	Ma-147	Springfield Street	North Street	Columbus Street	?	?	✓	?	✓	✓	?	?	✓
Agawam	MA-147	Springfield Street	Suffield Street	Walnut Street	?	?	✓	?	✓	✓	?	?	✓
Agawam	MA-147	Suffield Street	Springfield Street	Town Line	?	?	?	?	✓	?	?	?	✓
Amherst	-	Meadow Street	N Pleasant Street	MA-116	?	✓	✓	?	✓	✓	✓	?	?
Amherst	-	Massachusetts Ave	Butterfield Terrace	Town Line	?	✓	✓	?	✓	✓	?	?	✓
Amherst	MA-9	College Street	S Pleasant Street	East Drive	?	?	✓	?	✓	✓	?	?	✓
Amherst	MA-116	Northampton Road	University Drive	Town Line	?	?	✓	?	✓	✓	?	✓	✓
Amherst	-	University Drive	Northampton Road	USPS Entrance	?	?	✓	?	✓	✓	?	?	✓
Amherst	MA-116	S Pleasant Street	E Hadley Road	Amherst Public Works	?	✓	✓	?	✓	?	✓	?	?
Amherst	MA-116	S Pleasant Street	Walnut Street	Sellen Street	?	?	✓	?	✓	✓	✓	?	✓
Amherst	-	N Pleasant Street	Butterfield Terrace	Fearing Street	?	✓	✓	?	✓	✓	?	?	✓
Belchertown	US-202	Main Street	Maple Street	Jackson Street	?	✓	?	?	✓	✓	?	?	?
Belchertown	MA-181	S Main Street	N Washington Street	Maple Street	?	✓	?	?	✓	✓	?	?	?
Easthampton	MA-10	Main Street	Union Street	MA-10	?	✓	✓	?	✓	✓	✓	✓	✓
Easthampton	MA-141	Union Street	Cottage Street	Main Street	?	?	?	?	✓	?	✓	?	?
Easthampton	MA-141	Cottage Street	Clark Street	Union Street	?	?	?	?	✓	✓	✓	?	?
Easthampton	MA-10	-	Pleasant Street	West Street	?	?	?	?	✓	✓	✓	?	✓
Hadley	MA-47	Middle Street	Bay Road	Russell Street	?	✓	✓	?	✓	✓	?	?	✓
Hadley	MA-9	Russell Street	Middle Street	East Street	?	?	✓	?	✓	?	?	?	✓
Hadley	MA-9	Russell Street	West Road	Middle Street	?	✓	✓	✓	✓	✓	?	?	✓
Hadley	MA-9	Russell Street	Bay Road	West Road	?	✓	✓	?	✓	✓	?	?	✓
Hadley	MA-116	Northampton Road	S Maple Street	Amherst Town Line	?	?	✓	?	✓	✓	?	✓	✓
Hampden	-	Wilbraham Road	Somers Road	Raymond Drive	?	✓	✓	?	✓	✓	?	?	?
Ludlow	-	East Street	Park Place	Sewall Street	?	?	?	?	✓	✓	?	?	✓

Key: ✓ *Yes* ? *Possible*

Table 20: Potential Regional Projects—Corridors (continued)

Town	Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
Ludlow	-	Center Street	Ludlow Ave	Harding Ave	?	✓	?	?	✓	✓	✓	?	✓
Northampton	MA-9	Main Street	State Street	Pleasant Street	?	✓	✓	?	✓	✓	?	?	✓
Northampton	-	Pleasant Street	Main Street	Randolph Place	?	✓	✓	?	✓	✓	?	?	✓
Northampton	-	Pleasant Street	Randolph Place	Hockanum Road	?	✓	✓	?	✓	✓	?	?	✓
Northampton	-	Pleasant Street	Hockanum Road	Pleasant Street Roundabout	?	✓	✓	?	✓	✓	?	?	✓
Northampton	-	Pleasant Street	Pleasant Street Roundabout	Pleasant Street Roundabout	?	✓	✓	?	✓	✓	?	?	✓
Northampton	-	Mt Tom Road	Pleasant Street Roundabout	I-91 Ramp	?	✓	✓	?	✓	✓	?	?	✓
Northampton	MA-9	Main Street	Pleasant Street	Hawley Street	?	✓	✓	?	✓	✓	?	?	✓
Northampton	MA-9	Elm Street	Franklin Street	College Lane	?	✓	✓	?	✓	✓	?	?	✓
Northampton	MA-9	Elm Street	College Lane	Seeley Drive	?	✓	✓	?	✓	✓	?	?	✓
Northampton	MA-9	Bridge Street	Coolidge Ave	Bridge Street Roundabout	?	?	?	?	✓	?	?	?	✓
Northampton	MA-9	Locust Street	Hatfield Street	N Elm Street	?	✓	✓	?	✓	✓	✓	?	?
Northampton	MA-9	Main Street	Maple Street	S Main Street	?	?	✓	?	✓	✓	✓	?	?
Northampton	MA-9	N Main Street	Hayward Road	Maple Street	?	✓	✓	?	✓	✓	✓	?	✓
Palmer	MA-181	Sykes Street	Main Street	183 Sykes Street	?	✓	✓	?	✓	✓	?	?	?
Palmer	MA-181	Sykes Street	183 Sykes Street	Wright Street	?	✓	✓	✓	✓	✓	?	?	✓
Palmer	MA-32	Thorndike Street	N Main Street	Pleasant Street	?	✓	✓	?	✓	✓	✓	?	✓
Palmer	MA-32	Thorndike Street	St. Thomas Parish Center	Lawrence Street	?	✓	✓	✓	✓	✓	?	?	✓
Palmer	MA-32	Thorndike Street	Park Street	St. Thomas Parish Center	?	✓	✓	?	✓	✓	✓	?	✓
Palmer	MA-181	N Main Street	Wilbraham Street	Wright Street	?	✓	✓	?	✓	✓	?	?	?
South Hadley	MA-116	Woodbridge Street	Hadley Street	Silver Street	?	✓	✓	?	✓	✓	?	?	?
South Hadley	MA-33	Lyman Street	Granby Road	Newton Street	?	✓	✓	?	✓	?	✓	?	?
South Hadley	-	Newton Street	Camden Street	Lyman Street	?	?	?	?	✓	?	?	?	?
South Hadley	MA-116	Bridge Street	Main Street	Lamb Street	?	✓	✓	?	✓	✓	?	✓	✓
South Hadley	-	Lamb Street	Bridge Street	Gaylord Street	?	?	✓	?	✓	✓	?	✓	✓

Key: ✓ *Yes* ? *Possible*

Table 20: Potential Regional Projects—Corridors (continued)

Town	Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
South Hadley	-	Lamb Street	Gaylord Street	Ramps to US-202	?	?	✓	?	✓	✓	?	✓	✓
Southwick	MA-57	Granville Road	Bugbee Road	US-202	?	?	?	?	✓	✓	✓	?	?
Southwick	US202	-	Town Hall	Bonnieview Road	?	?	?	?	✓	?	✓	?	?
Southwick	US202	College Highway	Bonnieview Road	Feeding Hills Road	?	✓	✓	✓	✓	✓	?	?	✓
Southwick	-	Feeding Hills Road	Shirley Terrace	Great Brook Lane	?	?	?	?	✓	✓	✓	?	?
West Springfield	-	Park Street	Kelso Street	River Street	✓	?	?	?	✓	✓	?	?	✓
West Springfield	-	Elm Street	Park Street	Park Ave	?	✓	✓	?	✓	✓	?	?	✓
West Springfield	US-20	Westfield Street	Cedar Ave	South Blvd	?	✓	✓	?	✓	✓	?	?	✓
West Springfield	US-20	Westfield Street	South Blvd	Elm Street Roundabout	?	✓	✓	?	✓	✓	?	?	✓
West Springfield	US-20	Westfield Street	Nelson Street	Cedar Ave	✓	?	?	?	✓	✓	?	?	✓
West Springfield	MA-147	Memorial Ave	Roundabout	Town Line	?	✓	✓	?	✓	✓	?	?	✓
West Springfield	-	Park Street	Western Ave	Kelso Street	✓	?	?	?	✓	✓	?	?	✓
West Springfield	US-20	Elm Street	Westfield Street	Park Street	?	✓	?	?	?	?	?	?	?
West Springfield	US-20	Park Ave	Union Street	Town Line	?	✓	✓	?	✓	✓	?	?	✓
Williamsburg	MA-9	Main Street/ Williams Street	Buttonshop Road	River Road	?	?	?	?	✓	✓	?	?	✓

Key: ✓ *Yes* ? *Possible*

Table 21: Potential Regional Projects—Intersections

Town	Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Mods	Signal Head Visibility	Pedestrian Signal Timing Mods	Pedestrian Signal Equipment	Curb Mods	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Agawam	Suffield Street & Shoemaker Lane	Signalized	?	?	?	?	✓	?	?	✓	?	?	✓	?	?	?
Agawam	Suffield Street & Silver Street	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	?	?	?
Agawam	Springfield Street & Walnut Street	Signalized	?	?	✓	?	✓	?	?	?	?	?	?	?	?	?
Agawam	Suffield Street & Mill Street	Signalized	?	?	✓	?	✓	?	?	✓	?	?	✓	?	?	?
Agawam	Suffield Street , Springfield Street & Main Street	Signalized	?	?	✓	✓	✓	?	✓	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Table 21: Potential Regional Projects—Intersections (continued)

Town	Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Mods	Signal Head Visibility	Pedestrian Signal Timing Mods	Pedestrian Signal Equipment	Curb Mods	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Agawam	S Westfield Street & Shoemaker Lane	Signalized	?	?	✓	?	✓	?	?	✓	?	?	✓	?	?	?
Amherst	E Pleasant Street & Strong Street	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Amherst	Main Street & Triangle Street	Signalized	?	?	✓	?	✓	?	✓	?	?	?	?	?	?	?
Amherst	Amity Street & University Drive	Signalized	?	?	?	?	?	?	?	?	?	?	?	?	?	?
Amherst	Main Street & S East Street/N East Street	Signalized	?	?	?	?	✓	?	✓	?	?	?	?	✓	?	?
Amherst	Main Street & S Whitney Street/N Whitney Street	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Amherst	E Pleasant Street & Triangle Street	Roundabout	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Amherst	N Pleasant Street & Meadow Street	Signalized	?	?	?	?	✓	?	✓	?	?	?	✓	?	?	?
Amherst	S Pleasant Street & Memorial Drive	Uncontrolled	?	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Amherst	College Street, East Drive, & Dickinson Street	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Amherst	Northampton Road & University Drive	Signalized	?	?	✓	?	✓	?	✓	?	?	?	?	✓	?	?
Amherst	Belchertown Road & Gatehouse Road	Signalized	?	?	?	?	✓	?	✓	?	?	✓	✓	?	?	?
Amherst	S Pleasant Street & College Street	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	✓	?	?
Belchertown	State Street & Front Street	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	?	?	?
Granby	Pleasant Street & W State Street	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	?	?	?
Hadley	S Maple Street, N Maple Street & Russell Street	Signalized	?	?	?	?	✓	?	✓	?	✓	✓	?	✓	?	?
Hadley	Route 116, Westgate Center Drive & Russell Street	Signalized	?	?	✓	?	✓	?	?	?	?	✓	✓	?	?	?
Hadley	West Street & Russell Street	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Hadley	West Street & Russell Street	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Hadley	Campus Plaza Road, Greenleaves Drive & Russell Street	Signalized	?	?	✓	?	✓	?	✓	?	?	✓	✓	?	?	?

Key: ✓ *Yes* ? *Possible*

Table 21: Potential Regional Projects—Intersections (continued)

Town	Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Mods	Signal Head Visibility	Pedestrian Signal Timing Mods	Pedestrian Signal Equipment	Curb Mods	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Hadley	Russell Street & Middle Street	Signalized	✓	?	✓	?	✓	?	✓	?	?	?	?	?	?	?
Hadley	Russell Street & Whalley Street	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	?
Hadley	Russell Street & Goffe Street	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	?
Hadley	Russell Street & East Street	Signalized	?	✓	?	?	✓	?	✓	?	?	✓	?	?	?	?
Ludlow	Russell Street, West Avenue & West Street	Signalized	?	?	?	?	✓	?	✓	✓	?	?	✓	?	?	?
Ludlow	East Street & Chapin Street	Signalized	?	?	?	?	✓	?	✓	✓	?	?	?	?	✓	?
Ludlow	East Street & State Street	Signalized	?	✓	?	?	✓	✓	?	?	?	?	✓	?	?	?
Ludlow	Center Street, Ludlow Ave & East Street	Signalized	?	?	✓	?	✓	?	?	✓	✓	?	?	?	✓	?
Ludlow	Chapin Street & Fuller Street	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	✓	?
Ludlow	West Street & Cady Street	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	✓	?
Ludlow	Center Street & West Ave	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	✓
Ludlow	East Street & Sewall Street	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	?	?	?
Ludlow	Center Street & Sewall Street	Unsignalized	?	✓	?	?	?	?	?	?	?	?	?	?	?	✓
Ludlow	Center Street & Windsor Street	Unsignalized	?	✓	?	?	?	?	?	?	?	?	?	?	✓	✓
Ludlow	Center Street & Cherry Street	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	?	?	?
Ludlow	Center Street & Arch Street	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	✓
Ludlow	Center Street & Silver Terrace	Unsignalized	?	?	?	?	?	?	?	?	?	?	?	?	✓	✓
Ludlow	Center Street & Park Terrace	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Ludlow	East Street , Winsor Street & Hampden Street	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	✓
Ludlow	Center Street & Harding Ave	Signalized	?	?	?	?	✓	?	✓	?	?	✓	✓	?	?	?
Northampton	Reservoir Road, Mulberry Street & River Road	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	✓	✓
Northampton	Bridge Road & N Maple Street	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Table 21: Potential Regional Projects—Intersections (continued)

Town	Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Mods	Signal Head Visibility	Pedestrian Signal Timing Mods	Pedestrian Signal Equipment	Curb Mods	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Northampton	Prospect Street & Prospect Ave	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Northampton	Hatfield Street & Cooke Ave	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	✓	?
Northampton	Florence Road, Rocky Hill Road, & Westhampton Road	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	?	?	?
Northampton	Cooke Avenue, Jackson Street & Bridge Road	Signalized	?	?	✓	?	✓	?	✓	?	?	?	?	?	✓	?
Northampton	Bridge Road, Damon Road & US-5	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	?	?	?
Northampton	State Street & Trumbull Road	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Northampton	Bridge Street & Damon Road	Roundabout	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Northampton	Mian Street , Elm Street & State Street	Signalized	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?	?	?
Northampton	Us-5 & Finn Street	Signalized	?	✓	✓	?	✓	?	✓	?	?	?	?	?	?	?
Northampton	Main Street & Old S Street	Unsignalized	?	✓	✓	✓	?	?	?	?	?	?	?	?	?	?
Northampton	Main Street & Pleasant Street	Signalized	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?	?	?
Northampton	Us-5 & North Street	Signalized	?	✓	✓	✓	✓	?	✓	✓	?	?	✓	?	?	?
Palmer	Park Street & Central Street	Signalized	?	?	✓	?	✓	?	?	?	?	?	?	?	?	?
Palmer	Shearer Street & North Main Street	Unsignalized	?	✓	✓	✓	?	?	?	✓	✓	?	?	✓	?	✓
Palmer	Main Street, North Main Street & Thorndike Street	Signalized	?	✓	✓	?	✓	✓	✓	✓	✓	✓	✓	?	?	?
South Hadley	Main Street & Bridge Street	Signalized	?	?	?	?	✓	?	✓	?	✓	✓	?	?	?	?
South Hadley	Abbey Street & Memorial Drive	Signalized	?	?	?	?	✓	?	✓	?	?	✓	?	?	?	?
South Hadley	Granby Road & Old Lyman Road	Signalized	?	✓	?	?	✓	?	✓	?	✓	?	?	✓	?	?
South Hadley	Lyman Street & Newton Street	Signalized	?	?	?	?	✓	?	✓	?	?	?	?	?	?	?
Southwick	Feeding Hills Road & College Highway	Signalized	?	?	?	?	✓	?	✓	?	?	?	?	?	?	?
Southwick	Depot Street, Granville Road & College Highway	Signalized	?	?	?	?	✓	?	?	✓	?	✓	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Table 21: Potential Regional Projects—Intersections (continued)

Town	Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Mods	Signal Head Visibility	Pedestrian Signal Timing Mods	Pedestrian Signal Equipment	Curb Mods	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
West Springfield	Union Street & Bliss Street	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	✓	✓
West Springfield	Union Street & Sprague Street	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	✓
West Springfield	River Street , Sears Way & Baldwin Street	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	✓	?	?
West Springfield	Main Street & Century Way	Unsignalized	✓	✓	✓	✓	?	?	?	?	?	?	?	?	?	?
West Springfield	Memorial Ave & US-5	Roundabout	?	✓	✓	?	?	?	?	?	?	?	?	✓	?	?
West Springfield	Memorial Ave & Bridge Street	Unsignalized	✓	?	✓	✓	?	?	?	?	?	?	?	?	?	?
West Springfield	Riverdale Street & Highland Ave	Signalized	?	?	✓	?	✓	?	✓	?	?	✓	?	?	?	?
West Springfield	Elm Street & Park Ave	Signalized	✓	✓	✓	?	?	?	✓	✓	✓	✓	?	✓	?	?
West Springfield	River Street , South Blvd & Park Street	Signalized	?	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?
West Springfield	Park Ave & Park Street	Signalized	✓	✓	✓	?	✓	✓	✓	✓	✓	✓	✓	?	?	?
West Springfield	Elm Street & Park Street	Signalized	?	✓	✓	✓	✓	?	✓	✓	✓	✓	?	✓	?	?
West Springfield	Elm Street & Kings Hwy	Signalized	?	?	✓	?	✓	?	?	?	?	?	✓	?	?	?
West Springfield	Morgan Road & Craig Drive	Signalized	?	?	?	?	✓	?	?	✓	?	?	?	?	✓	?
West Springfield	Westfield Street & Van Deene Ave	Signalized	?	?	✓	?	✓	✓	✓	✓	?	✓	?	?	?	?
West Springfield	US-5 & N End Bridge	Roundabout	✓	✓	✓	?	?	?	?	?	?	?	?	✓	?	?
West Springfield	Memorial Ave & Heywood Ave	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	?	?	?
West Springfield	Memorial Ave & Exposition Terrace	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
West Springfield	Memorial Ave & Circuit Ave	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
West Springfield	Riverdale Street & Morgan Road	Signalized	?	?	?	?	✓	?	✓	?	✓	?	?	?	?	?
West Springfield	Memorial Ave & Memorial Bridge	Roundabout	?	✓	✓	?	?	?	?	?	?	?	?	✓	?	?
West Springfield	Union Street & Day Street	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	✓	✓
West Springfield	Memorial Ave & River Street	Signalized	?	✓	✓	?	✓	✓	✓	✓	✓	✓	?	✓	?	?
West Springfield	Westfield Street & North Blvd	Signalized	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?	?	?

Key: ✓ *Yes* ? *Possible*

Municipal Level

MassDOT Complete Streets Policy provides a statewide framework to ensure transportation facilities are planned, designed, and operated to safely accommodate all users. PVPC assists communities in developing and adopting MassDOT-compliant local Complete Streets policies, preparing project-based Complete Streets Prioritization Plans grounded in safety, equity, and connectivity data, and applying for state construction funds under the Complete Streets Funding Program. For PVPC's member municipalities, this coordinated approach not only improves roadway safety conditions and supports implementation of small- and medium-scale safety projects but also ensures consistency with state design standards and maximizes opportunities to bundle safety projects with other federal and state funding sources.

Table 22 shows a summary of segments and intersections that were selected for potential projects for each municipality.

Table 22: Number of Prioritized Locations for Each Town

Town	Intersections	Segments	Town	Intersections	Segments
Agawam	10	11	Ludlow	9	10
Amherst	4	10	Middlefield	2	2
Belchertown	9	10	Monson	12	9
Blandford	12	9	Montgomery	11	4
Brimfield	18	9	Northampton	15	12
Chester	9	8	Palmer	10	7
Chesterfield	6	10	Pelham	8	5
Cummington	9	10	Plainfield	5	6
East Longmeadow	9	7	Russell	12	7
Easthampton	9	10	South Hadley	7	7
Goshen	9	8	Southampton	2	6
Granby	9	9	Southwick	3	9
Granville	7	10	Tolland	0	4
Hadley	21	9	Wales	8	5
Hampden	11	9	West Springfield	6	10
Hatfield	8	7	Westhampton	7	8
Holland	8	4	Wilbraham	9	10
Huntington	10	8	Williamsburg	10	9
Longmeadow	15	9	Worthington	8	7

Appendix D summarizes the details of priority locations for each municipality.

8 Funding Opportunities



This chapter identifies potential funding opportunities to advance projects and strategies identified in Chapter 8: Strategies and Project Development. This chapter explores federal, state, and private funding sources. Federal funding opportunities are based on the current Infrastructure Investment and Jobs Act (IIJA).

Identifying potential funding opportunities is a critical component of successful project development. PVPC's regional priorities focus on reducing fatalities and serious injuries for all users, advancing complete streets design to promote walking, biking, and transit, improving ADA accessibility, promoting resilience, and preserving the existing transportation system. These priorities align closely with several federal, state, and private funding programs, identified in the following sections.

Federal Funding Programs

In November 2021, Congress passed the IIJA, authorizing more than $551 billion to United States Department of Transportation (USDOT) for approximately 100 discretionary grant programs available to states, local governments, metropolitan planning organizations (MPOs), and other organizations. As of February 28, 2026, approximately 67 percent of IIJA funds had been obligated. The Regional Transportation Improvement Program is one of the primary avenues to fund a roadway improvement project. The current version of the program can be found here: PVPC FFY 2027–2031 TIP Document

Discretionary Grant Programs

Better Utilizing Infrastructure to Leverage Development (BUILD)

The U.S. Department of Transportation's (USDOT) Better Utilizing Investments to Leverage Development (BUILD) grant program funds multi-modal, multi-jurisdictional surface transportation projects that deliver significant local or regional benefits but are often difficult to advance through traditional funding sources. By allowing a broad range of sponsors—including state and local governments, counties, Tribal governments, transit agencies, and port authorities—to apply, BUILD aims to support transformative infrastructure investments that improve connectivity, safety, and economic vitality across communities.

BUILD funds may be used for both planning and capital projects involving eligible surface transportation infrastructure. Award amounts range from $1 million for rural capital projects and $5 million for urban capital projects to a maximum of $25 million. Planning grants have no award minimum and a maximum of $25 million.

BUILD Grant Activities

- Highway and Bridge
- Planning and Design
- Public Transit Projects
- Feasibility Studies
- Passenger or Freight Rail Projects
- Comprehensive Plans

Safe Streets and Roadsfor All (SS4A)

USDOT's SS4A Program funds local, regional, and tribal initiatives to prevent roadway deaths and serious injuries. Its purpose is to support the development and implementation of comprehensive safety action plans and projects that move communities toward zero traffic fatalities and serious injuries (often called "Vision Zero" or "Toward Zero Deaths"). SS4A is aimed primarily at local-level safety leadership, encouraging data-driven, community-informed strategies that address high-risk corridors, multiple road users (such as pedestrians and motorists), and disadvantaged communities.

Eligible applicants generally include cities, towns, counties, transit agencies, metropolitan planning organizations (MPOs), and federally recognized Tribal governments, as well as multijurisdictional groups formed through partnerships among these entities. Award amounts vary by grant type and funding round.

SS4A Grant Activities

- Prevent Injury Crashes
- Low Cost, High Benefit Strategies
- Engage Public and Stakeholders
- Equitable Investments
- Context Appropriate Designs/Elements
- Evidence-based Strategies and Innovation

SS4A funds two main types of awards:

1. **Action Plan Grants** to help communities develop or complete a comprehensive safety action plan
2. **Implementation Grants** to carry out projects and strategies identified in an existing eligible safety plan

Advanced Transportation Technologies and Innovative Mobility Deployment (ATTAIN)

The U.S. Department of Transportation's ATTAIN program supports the large scale deployment of advanced transportation technologies that improve safety, reduce congestion, enhance system performance, and expand access to mobility. Its purpose is to help state and local agencies integrate cutting edge intelligent transportation systems (ITS) and smart infrastructure—such as connected vehicle technologies, real time traffic management, transit priority systems, and integrated data platforms—into everyday operations. By funding real world deployments rather than small pilots, ATTAIN aims to demonstrate replicable models that other regions can adopt to improve travel reliability, safety outcomes, and multimodal accessibility.

Eligible applicants generally include state departments of transportation, local governments, transit agencies, metropolitan planning organizations (MPOs), and other

Eligible ATTAIN Activities

- Traffic Signal Modernization
- Smart Transit Tools
- Corridor Management
- Freight Safety Systems
- Data Driven Decision Tools
- Work Zone Safety Systems

public agencies responsible for transportation management or operations; applicants often apply individually or as part of a consortium. Award amounts are substantial and intended for full deployment rather than small trials; while exact ranges vary by funding round, individual awards commonly reach into the multi million dollar range to support multi year implementation, system integration, and performance evaluation.

Rural Communities

Rural and Tribal Assistance Pilot Program

The Rural and Tribal Assistance Pilot Program provides grant support for legal, technical, and financial advisors to help move infrastructures project in rural and tribal communities forward. This program, created by the IIJA, is administered by the Build America Bureau, an agency within USDOT that supports transportation projects through innovative financing methods, including credit opportunities, grants, and technical assistance.

To be eligible for Rural and Tribal Assistance Pilot Program funds, communities must be located outside a United States Census Bureau designated Urban Area according to the 2020 census or located within an Urban Area with a population of less than 150,000. Federally recognized tribes are also eligible to apply for funds through this program.

Eligible Rural and Tribal Assistance Activities

- Project Planning and Feasibility Studies
- Preliminary Engineering and Design
- Environmental Reviews
- Financial Analyses[7]

The Pioneer Valley Region is home to three 2020 Census Urban Areas, Amherst Town-Northampton-Easthampton, and Springfield, MA-CT. The Springfield, MA-CT Urban Area has a total population of 442,145, making any communities located within this area ineligible for funds through this Program.

Rural Surface Transportation Grant

The Rural Surface Transportation Grant program provides funding for transportation infrastructure projects in rural communities, defined as communities located outside of urban areas with populations over 200,000. As with the Rural and Tribal Assistance Pilot Program, all Pioneer Valley Region communities except those located within the Springfield, MA-CT Urban Area are eligible to apply for funds through this program.

For most projects, the minimum award is $25 million, though smaller awards are available for selecting projects as part of the small projects set-aside.

Eligible Rural Surface Transportation Activities

- Project Planning and Development
- Construction Phase

7 To assess benefit-cost ratios, public benefit studies, value-for-money (VRM studies, financing opportunities, and revenue forecasting)

Massachusetts State Grant Programs

Safe Routes to School (SRTS)

The SRTS Program is a nationwide movement designed to make walking and biking to school safer and more appealing for students of all ages and abilities. The national SRTS program was established in 2005, and all fifty states and the District of Colombia have active SRTS programs.

In Massachusetts, the SRTS program is administered by MassDOT and provides federal funding for programs and infrastructure projects through a suite of programs, including:

Eligible ATTAIN Activities

- Sidewalk Improvements
- Traffic Calming/ Speed Reduction
- Pedestrian and Bicycle Crossings
- On- and Off-Street Bicycle Facilities
- Secure Bicycle Parking Facilities
- Traffic Diversion Improvements

- **Signs and Lines Program:** This program provides design services and up to $100,000 in construction funding to support low-cost infrastructure projects around a public school in a community. Only SRTS Program schools who have been SRTS partners for at least six months, and that receive public funding, can receive Signs and Lines program funds.
- **SRTS Infrastructure Program:** This program supports design and construction for infrastructure projects between $300,000 and $2 million that improve safety and encourage walking, biking, or rolling to school. Only SRTS Program schools in communities who have reached at least Tier II of MassDOT's Complete Streets Program and compliant with the MBTA Communities Act are eligible to apply for SRTS Infrastructure Program Funds.
- **Bike Rack Grants:** This Program provides new bike racks for schools that lack them, replaces old, worn, or damaged bike racks, or adds more bike parking spaces for schools with overflowing bike racks. Only SRTS Program schools who have been SRTS partners for at least six months

Currently, there are 152 schools in the Pioneer Valley region actively participating in the program, as discussed in **Chapter 6: Policy and Process Changes.**

MassDOT Complete Streets Program

MassDOT's Complete Street Program provides municipalities with tools and financial support to ensure transportation facilities are planned, designed, and operated to safely accommodate all users. MassDOT provides two types of financial assistance for Complete Streets projects:

- **Technical Assistance** for developing a Complete Streets Prioritization Plan. Up to $38,000 per community with a Complete Streets policy is available.
- **Construction Grants** support up to $1 million in funding to implement projects to redesign intersections and roadways, implement traffic calming measures, modify pedestrian crossings, improve pedestrian and bike networks, make transit improvements, and invest in environmental and streetscape improvements. Municipalities are only eligible to receive one grant per grant round.

Eligible Complete Streets Improvements

- Geometry Modifications at Intersections/Along Roadways
- Transit Connectivity and Accessibility Improvements
- Traffic Calming
- Pedestrian Crossing Improvements
- Bicycle Improvements
- Streetscape Improvements

MassDOT Shared Streets and Spaces Program

MassDOT's Shared Streets and Spaces Program provides funding to municipalities and public transit authorities to implement quick-build improvements to public spaces. Applicants are eligible to request up to $150,000 in design funding and up to $1 million in construction funding. Grant requests for equipment and materials can be up to $250,000.

Primary program goals include supporting public health, safe mobility, and strengthened commerce in communities through projects that can be implemented quickly, flexibly, and at relatively low-cost.

Eligible Shared Streets and Spaces Program Activities

- Purchasing Bike Share Equipment
- Bicycle/Pedestrian Infrastucture Improvements
- Transit Supportive Infrastructure
- Public Space Redesign

MassDOT Local Early-stage and Actionable Planning (LEAP) Program

MassDOT's LEAP Program, launched in 2025, provides support for project planning and early-stage design for priority projects within municipalities across the Commonwealth. All communities are eligible to apply for LEAP funding, but the program prioritizes rural communities and gateway cities.

MassDOT provides $25,000 to $100,000 in support through MassDOT staff and on-call consultants to complete a wide range of activities, including:

- Concept development
- Design and engineering for Complete Streets Projects
- Safe Streets Network Strategy Development
- Grant Application Development
- Safety Analysis
- Traffic Analysis
- Design Documentation Support
- Cost Estimation Visual and Mapping Support
- Technical Analysis
- Site Investigation and Data Collection

Pioneer Valley Gateway and Rural Communities

Gateway Cities:

Chicopee	Springfield
Holyoke	Westfield

Rural Cities:

Belchertown	Huntington
Blandford	Middlefield
Brimfield	Monson
Chester	Montgomery
Chesterfield	Pelhma
Cummington	Plainfield
Goshen	Russell
Granby	Tolland
Hadley	Wales
Hampden	Water
Hatfield	Westhampton
Holland	Williamsburg

MassDOT Local Bottleneck Reduction Program

MassDOT's Local Bottleneck Reduction Program funds innovative solutions to modernize traffic signals and address congestion bottlenecks on local roadways. Applications may include single municipalities or a group of municipalities for improvements on municipally owned and operated roadways. Municipalities may also partner with Regional Transit Agencies (RTAs). The maximum funding for a project is $1 million in a single year.

MassDOT Chapter 90 Program

The Chapter 90 program provides funding for improvements along local transportation networks. Chapter 90 funding is disbursed to communities annually based on a funding formula.

Most communities rely on Chapter 90 funding to make state of good repair improvements such as paving, sidewalk repair, and minor structural improvements along municipally owned and operated roadways.

Typical Chapter 90 Project Categories

- Construction
- Equipment
- Consultant Services
- Other[8]

8 E.g., software, salt storage sheds, garages, or mass transit parking facilities

Massachusetts Community One Stop for Growth (OSFG)

The OSFG program is a single application portal and collaborative review process for 12 housing and community development grant programs offered through the Executive Office of Economic Development (EOED), the Executive Office of Housing and Livable Communities (EOHLC), and MassDevelopment Finance Agency (MassDevelopment). Programs such as the MassWorks and HousingWorks Infrastructure Programs, the Rural Development Fund, the downtown Initiative Capital Program, and the Housing Choice Grant program support both planning and construction grants for infrastructure improvements that support housing and mixed-use development in communities or transform town/village centers.

Program eligibility criteria and activities vary, and awards range from $100,000 for planning activities to as much as $5 million for infrastructure construction projects. OSFG provides communities with an opportunity to partner with private sector developers to support application development and in some case, preliminary engineering for infrastructure improvements that may be required for proposed developments. Through collaboration and partnership, projects can often be expanded in scope to include beneficial improvements for municipalities.

Private Funding Sources

In addition to federal and state funding opportunities, safety improvement projects can also advance by utilizing private funds. Traditional sources of private grant funding typically include family and independent foundations, corporate foundations and giving programs, and philanthropic organizations such as charitable trusts and donor-advised funds. While private grant funding has been an effective tool for many communities, in recent years, public-private partnerships (P3) have become increasingly effective for communities as a strategy for implementing transportation improvements. This section identifies provides a high-level summary of several private grant opportunities as well as a discussion of P3s.

Private Grant Opportunities

Table 23: Selected List of Private Grant and Funding Opportunities for Safety Improvements

Organization Name	Grant Program(s)	Eligible Applicants	Eligible Safety Improvements	Typical Award Range
Community Foundation of Western Massachusetts (CFWM)	Competitive Grants/Donor-Advised Funds	Municipalities and nonprofits may both be eligible in some cycles (confirm each RFP)	Walkability and bike ability projects tied to health or equity; safe routes to parks and schools; crosswalks and lighting near community facilities; public realm improvements that enhance safety	**$5,000–$50,000+** (donor-advised funds can be higher; varies widely)
Massachusetts Environmental Trust (MET)	General Grants/ Partnership Grants	Municipalities, regional planning agencies, and nonprofits	Green streets and stormwater-management street retrofits that also improve pedestrian and bike safety	**$10,000–$50,000** (some larger multi-year awards)
Eversource Foundation	Eversource Community Impact Grants	Municipalities, public agencies, and nonprofits in the Eversource service area	Public safety and community improvement projects, including lighting upgrades, safe routes to community facilities, and resilience projects that include safe evacuation and transport	**Often $2,500–$25,000** (sometimes higher for strategic projects)
AARP	AARP Community Challenge	Municipalities, tribal governments, and nonprofits	Quick-build infrastructure such as crosswalks, curb extensions, traffic calming, parklets, benches, lighting, wayfinding, and safe crossings near senior housing or senior centers	**Roughly $10,000–$50,000** (depending on small vs. large grant tier and year)
PeopleForBikes	Industry Community Grant Program	Municipalities and other public agencies, plus nonprofits	Bike lanes and paths, protected intersections, bike parking, trail connections, and other bike infrastructure where safety is a core benefit	**Usually up to about $10,000** (often 10–50% of total project cost)
Baystate Health Foundation/Baystate Community Benefits (Baystate Medical Center, Noble, Wing, Franklin)	Community Benefits Grants/Community Health Initiatives (varies by hospital and Determination of Need process)	Nonprofits, health, and community coalitions, sometimes municipalities as partners or sub recipients; PVPC and local health departments often good leads or collaborators	Sidewalk and crosswalk improvements near hospitals, clinics, and schools; traffic calming in high-injury neighborhoods; safe routes to health services and healthy food; injury-prevention projects combining infrastructure (e.g., lighting, crossings) and education; active transportation projects that address CHNA-identified priorities (e.g., chronic disease, equity, injury)	**$10,000–$100,000 per project cycle** (some funds can be larger for multi year or capital projects depending on the hospital and project scope)

Note: Award ranges are indicative and may change; always confirm current program guidelines on the funder's website or by contacting program staff.

Public-Private Partnerships

P3s present communities with unique opportunities to secure financial support for infrastructure improvements from private partners. This has become increasingly important as communities work to construct more housing and mixed-use development. These developments often require significant off-site transportation improvements, which can be paid for by private developers as a condition of a zoning or building permit. Municipalities throughout Massachusetts have also been successful in partnering with private developers to apply for grants such as Community One Stop for Growth's MassWorks or HousingWorks Infrastructure Program, to secure funds to make more comprehensive and expansive infrastructure improvements associated with development. In most cases, the private developer provides financial support for grant application development, preliminary design and engineering, and often contributes to local match. As communities throughout the Pioneer Valley region continue to address the demand for housing and new development, strategic P3s can be leveraged to accomplish safety goals while supporting overall economic growth.

9 Measuring Progress



The Pioneer Valley Safe Streets Plan demonstrates an important advancement in the region's dedication to eliminating traffic fatalities and serious injuries by 2050. Its success will depend on ongoing collaboration and deliberate, proactive implementation. Although the plan establishes a regional framework, its true impact will be determined by the collective efforts of all stakeholders—from state agencies and municipalities to community organizations and individual road users.

This section reviews current safety performance measures and introduces new measures that will be reported annually, in alignment with PVPC's Vision Zero Resolution. Pioneer Valley will continue to monitor safety trends across the region by routinely analyzing crash data, identifying emerging safety concerns and community needs, and staying current with best practices and proven safety countermeasures.

PVPC's Role

PVPC will continue to play a central role in measuring progress for the Pioneer Valley Safe Streets Plan by establishing clear regional safety performance measures, tracking data over time, and reporting results back to partners and the public. They will link these metrics to funding and planning decisions—evaluating whether investments, policies, and programs are reducing severe crashes and advancing equity—and use annual or periodic reporting to document progress toward Vision Zero or other safety goals. Through this continuous evaluate-and-adjust cycle, Pioneer Valley can ensure that the Pioneer Valley Safe Streets Plan remains accountable, data-driven, and responsive to changing conditions in the region.

Figure 20: PVPC's Role in the Pioneer Valley Safe Streets Plan



Coordinate

Bring agencies, municipalities, and communities together around shared safety goals



Plan

Embed Safe System principles into the LRTP, TIP, and other planning efforts



Fund

Allocate funding to High Injury Networks and projects that advance safety



Educate

Conduct outreach and campaigns to build public awareness of key safety issues



Evaluate

Monitor Performance, analyze crash data, and identify emerging risks

Performance Measures

Establishing a formal method to evaluate and monitor safety performance will strengthen accountability and build on the PVMPO's existing performance-monitoring practices, and the measures established by FHWA and MassDOT. Using this Plan, the region will track and report regional safety progress each year against the plan's goals, drawing on both outputs and outcomes. Outputs will document the PVMPO's efforts to support, promote, and lead safety initiatives, programs, policies, plans, and projects. Outcomes will assess how effectively these activities and investments reduce the frequency and severity of crashes, and the resulting evaluation findings will be used to reinforce successful strategies and refine or discontinue those that are not producing the desired safety benefits.

In terms of specific regional output measures, the following will tracked annually for the Region:

- Number of **Fatal and Serious Injury Crashes**
- Number of **Fatalities and Serious Injuries** (1-year and 5-year rolling averages)
- **Fatal and serious injury rates** per 100 million VMT
- **Fatal and serious injury rates** per 100 million population
- Total **pedestrian serious injuries and fatalities** per calendar year
- Total **bicyclist serious injuries and fatalities** per calendar year
- Number of **safety projects/strategies in the Plan completed** regionally and by community
- Number of **projects implemented in EJ communities** year by year

Annual Reporting

To continuously improve and better align strategies with regional transportation safety needs and goals, Pioneer Valley will implement a transparent, data-driven system for monitoring and reporting progress. Each year, it will prepare and distribute a Vision Zero progress report or report card that highlights key safety trends, accomplishments, and ongoing challenges. In line with SS4A requirements, the PVMPO will also publish an annual, publicly accessible report documenting progress toward reducing roadway fatalities and serious injuries, including both outcome and implementation performance measures over time. This report will be posted on the MPO's website, presented at an MPO meeting, and shared with USDOT, to keep stakeholders and community members informed and actively engaged in the region's safety efforts.

Updating the Plan

After five years, the safety trends and prioritized projects within the Pioneer Valley Region may have changed. At this point, PVMPO will evaluate whether an update to the plan is needed to update the project lists, strategies and safety analysis using new crash data and any new understanding of safety countermeasures that may have evolved. This effort may be added to the regular updates to the Regional Transportation Plan.

PIONEER VALLEY MPO ENDORSEMENT SHEET

The signature below signifies that all members of the Pioneer Valley Region's Metropolitan Planning Organization, or their designees, have met on June 23, 2026, and discussed the following item for endorsement: The Pioneer Valley Regional Safety Action Plan. The MPO agreed at the June 23, 2026 meeting to a conditional endorsement if no adverse comments were received. No adverse comments were received therefore the amendment is approved.

_____ For

Phillip Eng Interim Secretary and Chief Executive Officer
Massachusetts Department of Transportation
Chair, Pioneer Valley MPO

Appendix
Descriptive Crash Analysis

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Background

The Pioneer Valley Planning Commission (PVPC), acting as the Metropolitan Planning Organization (MPO) for the Pioneer Valley region of western Massachusetts, has prepared this Regional Safety Action Plan to satisfy federal Safe Streets and Roads for All (SS4A) program requirements and to guide data driven safety investments. A core element of the plan is a clear picture of existing conditions and recent safety outcomes, offering a regional snapshot of crashes, and the key risk factors that influence them. The Pioneer Valley Region includes 43 municipalities that span a wide range of community types, from dense downtowns in older industrial cities to small rural hill towns and highly productive agricultural landscapes in the Connecticut River Valley. This diversity creates a complex mix of roadway settings and travel needs, and it presents distinct safety challenges across the region.

This appendix provides an overview of historic crash trends and identifies high-crash clusters throughout the Pioneer Valley Region. The analysis offers a data-driven basis for determining which safety policies and countermeasures are most suitable and for determining the intersections and roadway segments with the greatest need for safety improvements.

General Trends

Between 2014 and 2025, Massachusetts fatal crash rates have increased by 9%. The 5-year average fatal crash rate in 2018 was 0.58 fatal crashes per 100 million vehicle miles traveled (VMT). The rate decreased slightly till 2020 and then consistently increased between 2020 and 2025. In 2025, the fatal crash rate was 0.63 per 100 million VMT. The statewide serious injury crash rates showed a similar pattern. It decreased between 2014 and 2021 before showing a rising pattern till 2025. Overall, the serious injury 5-year crash average decreased from 4.8 crashes per million VMT in 2018 to 4.62 crashes per million VMT in 2025, a 4% decrease.

Compared to the state, Pioneer Valley Region has experienced a higher spike in fatality rate in recent years. The 5-year average fatal crash rate increased consistently from 0.78 fatal crashes per 100 million VMT in 2018 to 1.08 per 100 million VMT in 2024, before decreasing slightly to 1.01 per million VMT in 2025. Due to higher rates of speeding caused by decreased vehicle miles traveled (VMT) amid pandemic shutdowns in 2020 and the lingering impacts in 2021 and 2022, roadway fatalities were increasing relative to previous years. Serious injury crashes in the region have dropped dramatically from a 5-year average of 5.9 serious injury crashes per 100 million VMT in 2018 to 5.08 crashes per 100 million VMT in 2021. But it increased rapidly after 2021, due to pandemic related travel restrictions and reached 5.42 crashes per 100 million VMT in 2024 before decreasing slightly in 2025. In comparison to the statewide average, both fatal and serious injuries crashes in the Pioneer Valley Region are rising significantly.

Figure A–1 and **Figure A–2** on the following page include all 43 Pioneer Valley Region communities and all roadways including Interstates, Freeways, and Limited-Access Highways.

Figure A–1: Long-Term Fatality Trend

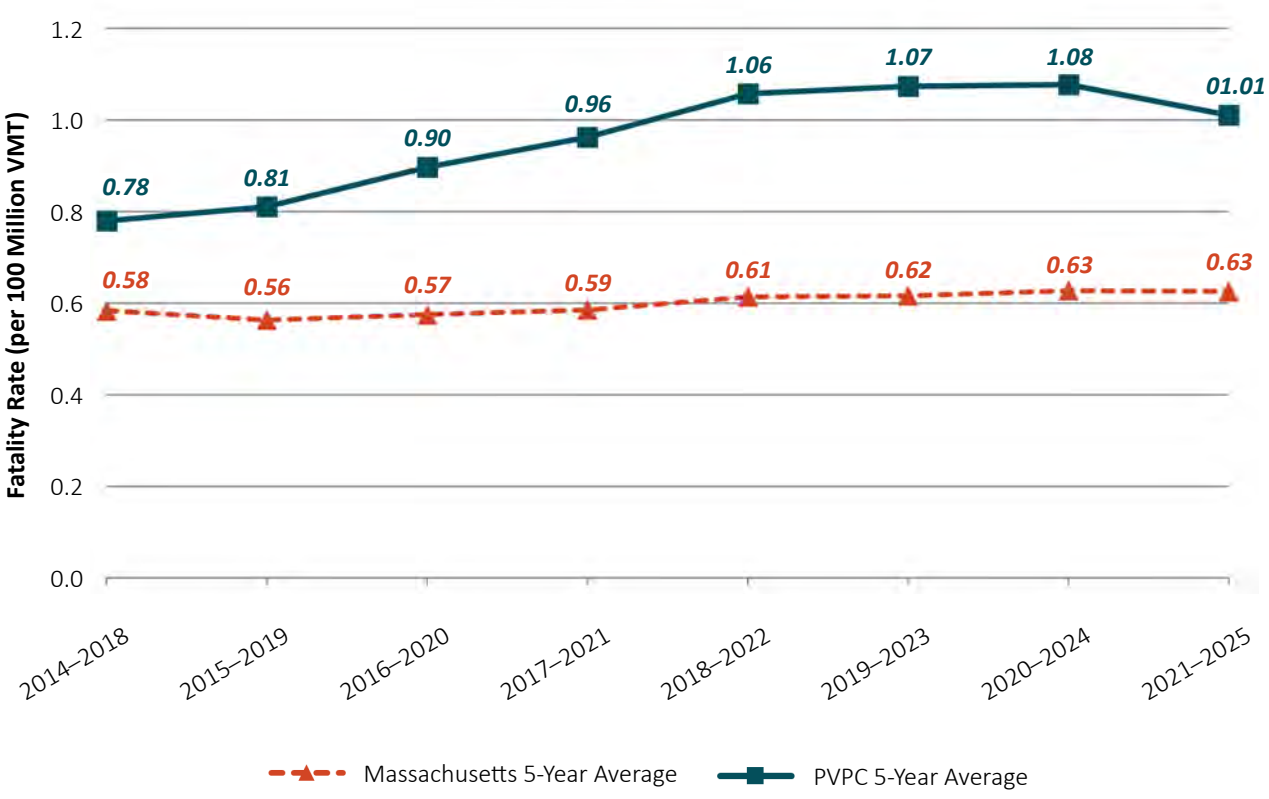
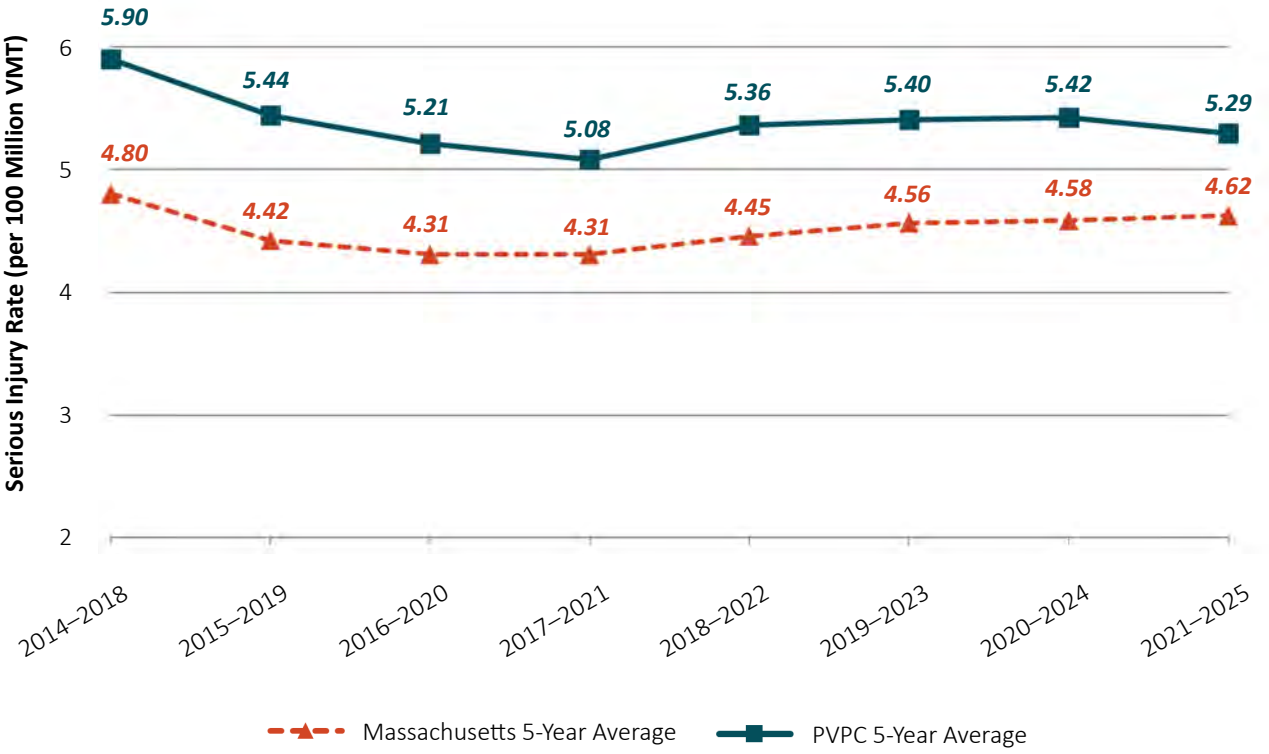


Figure A–2: Long-Term Serious Injury Trend



Data Sources and Processing

This appendix draws primarily on crash data from the MassDOT IMPACT tool[A–1], an online platform used to research, query, and download crash-related information for the Commonwealth of Massachusetts. All crashes occurring between 2019 and 2024 that list "PVPC" as the regional planning agency were extracted and used in this analysis. The crash data for the calendar year of 2021 or later are not yet finalized and can vary or change.

Because crash data attributes and categories changed over the study period, several assumptions were necessary to align the different injury classification systems represented in the Maximum Injury Severity Reported field. For reporting, crashes are organized using the KABCO scale, a standard framework for classifying injury severity. **Table A–1** defines each KABCO category and details how values from the Maximum Injury Severity Reported field were mapped to these levels.

Unless otherwise mentioned, this appendix excludes:

- Fully Access-Controlled Facilities
- Crashes within Chicopee, Holyoke, Springfield, Ware and Westfield

This study focuses on crashes that result in fatalities or injuries. Emphasizing higher severity crashes aligns the analysis with the Safe System Approach, a framework designed to eliminate traffic deaths and serious injuries through data driven, systemic safety strategies. After standardizing the injury severity data, all crashes that occurred on Interstates, expressways, and other fully access-controlled facilities were excluded from the dataset. Additionally, there are five (5) municipalities within the Pioneer Valley Region that are either already developed or in the process of developing their own Safety Action Plan. These municipalities were excluded from the analysis for this report.

Table A–1: Crash Severity Classification Scale[A–2]

KABCO Category	Definition	Corresponding Values in MassDOT Crash Data
Fatal Injury (K)	Any injury that results in death due to the crash.	• Fatal Injury (K)
Suspected Serious Injury (A)	Any injury that prevents the injured person from normally continuing activities that person was capable of before the injury occurred, such as a severe laceration or a broken limb.	• Suspected Serious Injury (A) • Non-fatal Injury-Incapacitating
Suspected Minor Injury (B)	Any visible injury that is not a suspected serious injury, such as a lump on the head or minor lacerations.	• Suspected Minor Injury (B) • Non-fatal Injury—Non-incapacitating
Possible Injury (C)	Any injury reported by an individual involved in the crash that is not visible to the reporting officer, such as dizziness or a complaint of pain.	• Possible Injury (C) • Non-fatal Injury—Possible
No Apparent Injury (O)	There is no evidence of physical injury and the individuals involved in the crash do not complain of any injury.	• No Apparent Injury (O) • No Injury
Not Reported or Unknown	Used when the injury severity is unknown.	• Not Reported/Not Applicable • Unknown/Blank

A–1 MassDOT IMPACT
A–2 KABCO Injury Classification

Regional Crash Summary

Crashes by Severity

From 2020 to 2024, a total of 25,107 roadway crashes occurred within the study area road network. Around 2 percent resulted in fatalities or serious injuries. Crashes that resulted in no apparent injury accounted for 75 percent of total crashes.

Table A–2 summarizes the total number of crashes by severity level, along with the crash unit cost and corresponding cumulative crash costs for the region within the study period. To quantify the economic impact of crashes, cumulative crash costs were calculated for each severity level using the 2024 recommended comprehensive crash unit costs developed by MassDOT for highway safety analysis. These cumulative costs include both direct economic costs (e.g., medical expenses, emergency services, and congestion costs) and quality-adjusted life-year values, which estimate the societal and individual impacts of reduced health and lifespan due to crashes.

During this period, crashes incurred an estimated total cost of $4.3 billion, averaging approximately $0.85 billion per year. Fatal and serious crashes make up for about 46 percent of these crash costs alone.

Table A–2: Crashes by Injury Severity Level

Maximum Injury Severity Level	Number of Crashes	Percent of Total Crashes	Comprehensive Crash Unit Cost[A–3]	Cumulative Crash Cost (millions)	Percent of Cumulative Crash Cost
Fatal injury (K)	101	0.4%	$19,435,000	$1,963	46%
Suspected Serious Injury (A)	420	1.7%	$1,112,900	$467	11%
Suspected Minor Injury (B)	3,127	12.5%	$354,100	$1,107	26%
Possible Injury (C)	1,607	6.4%	$208,000	$334	8%
No Apparent Injury (O)	18,823	75.0%	$20,900	$393	9%
Unknown	1,029	4.1%	-	-	-
Total	**25,107**	**100%**	**-**	**$4,265.28**	**100%**

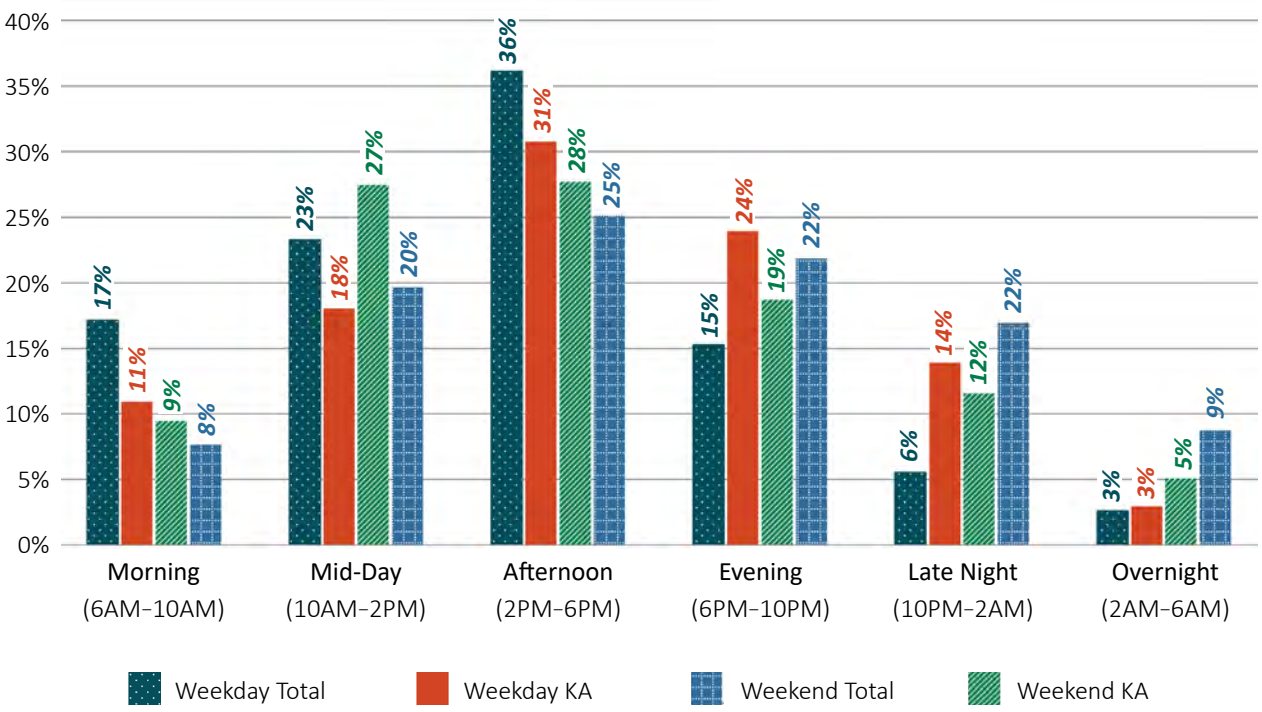
Crashes by Time

Travel behaviors and crash frequency are correlated with time of day and day of the week. The total number of vehicle-miles traveled (VMT) and, therefore, the opportunity for crashes is generally greater on weekdays when people are driving to and from jobs compared to the weekend. To better understand the temporal crash patterns, crash data were evaluated according to the day of week and sorted into six four-hour periods. **Figure A–3** shows the distribution of total crashes as well as fatal and serious injury crashes across these time periods by day of week.

A–3 Crash Costs for Highway Safety Analysis, MassDOT

Weekday mid-day and afternoon periods (10:00 AM to 6:00 PM) experienced high volume of total crashes, with the afternoon period showing highest concentration of crashes. For fatal and serious injury, this pattern shifts a little and the afternoon period shows the highest percentages, closely followed by evening periods (6:00 PM to 10:00 PM). Since the pandemic, work travel patterns and commuting hours have changed but generally, afternoons and evenings are prone to higher traffic volumes. For weekends, midday to evening period (10:00 AM to 10:00 PM) experiences high percentages of crashes. Late night and overnight period during weekend show high percentages of fatal and serious injury crashes compared to weekdays since it is more common to stay out till late hours during the weekend. Even though this data does not explicitly mention it, driving under influence usually plays a role in the high number of injury crashes during late hours on the weekend.

Figure A–3: Crashes by Time of Day and Day of Week



Crashes by Functional Classification

Functional classification is a hierarchy of road types that serve different needs. Arterials are generally main thoroughfares that limit cross-traffic and are often controlled by traffic signals, while collectors generally funnel traffic from local roads on to the arterials. Local roads serve individual houses and neighborhoods and make up the largest percentage of roadways by mileage, but they often have the lowest traffic volumes and lowest average speeds. Within the Pioneer Valley Region, the pattern of crashes differs noticeably between urban and rural areas. In urban communities, crashes of all severities are heavily concentrated on higher-order roadways: principal arterials and minor arterials together account for about three-quarters of all reported crashes and a similar share of KA crashes. In rural parts of the Pioneer Valley Region, however, the most serious safety challenges are found on the collector and local road network. Major collectors alone represent over one-third of all rural crashes and nearly 40 percent of rural KA crashes, while minor collectors and local roads together account for another large share of both total and severe crashes. This contrast suggests that, within the Pioneer

Valley Region, urban safety strategies should prioritize busy arterial corridors, whereas rural safety efforts need to focus more on improving conditions along collectors and local roads that connect smaller towns and rural destinations.

Table A–3 presents a detailed breakdown of total crashes and fatal and serious injury crashes by functional classification for both urban and rural areas within the Pioneer Valley Region. Overall, in urban areas, 2% of all crashes resulted in fatality or serious injury. But in rural areas, 4% of all crashes resulted in either fatality or serious injury. Considering the vast rural nature of PVPC with a concentrated urban core around I-95, it is important to distinguish the types of roads that are at higher risk based on land use.

Within the Pioneer Valley region, the pattern of crashes differs noticeably between urban and rural areas. In urban communities, crashes of all severities are heavily concentrated on higher-order roadways: principal arterials and minor arterials together account for about three-quarters of all reported crashes and a similar share of KA crashes. In rural parts of PVPC, however, the most serious safety challenges are found on the collector and local road network. Major collectors alone represent over one-third of all rural crashes and nearly 40 percent of rural KA crashes, while minor collectors and local roads together account for another large share of both total and severe crashes. This contrast suggests that, within PVPC, urban safety strategies should prioritize busy arterial corridors, whereas rural safety efforts need to focus more on improving conditions along collectors and local roads that connect smaller towns and rural destinations.

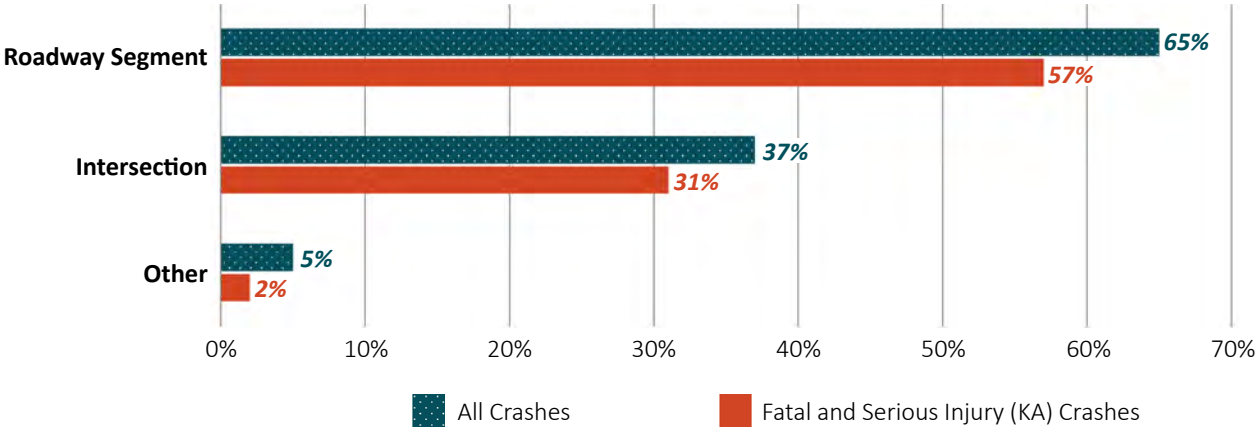
Table A–3: Crashes by Functional Classification

Functional Classification	Urban				Rural			
	All Severity	Percent of Total	Fatal and Serious Injury (KA)	Percent of Total	All Severity	Percent of Total	Fatal and Serious Injury (KA)	Percent of Total
Principal Arterial—Other	9,398	42%	167	39%	166	7%	7	8%
Minor Arterial	7,783	34%	165	38%	395	18%	11	12%
Major Collector	2,208	10%	49	11%	799	36%	35	39%
Minor Collector	0	0%	0	0%	302	14%	18	20%
Local	3,218	14%	48	11%	573	26%	19	21%
Total	**22,607**	**100%**	**429**	**100%**	**2,235**	**100%**	**90**	**100%**

Crashes by Location

Within the Pioneer Valley Region, crash patterns by location type indicate that most crashes and a majority of the most severe outcomes occur along roadway segments rather than at intersections. Approximately two-thirds of all crashes and well over half of fatal and serious-injury (KA) crashes are segment-related, while intersections account for a little over one-third of all crashes and roughly one-third of KA crashes. These findings suggest that, in addition to traditional intersection safety treatments, PVPC's safety strategy should place strong emphasis on corridor-level improvements along key road segments to meaningfully reduce severe crash risk.

Figure A–4: Crashes by Location



Crashes by Collision Type

Since different crash types are often associated with certain roadway conditions and driver behaviors, an analysis of collision types can help provide insights into the underlying contributing factors and the according safety countermeasures.

While the most common crash types were rear-end crashes (28 percent), single-vehicle crashes (24 percent), and angle crashes (20 percent); single-vehicle crashes had the highest share of fatal and serious injury crashes (39 percent). Vulnerable road user 9VRU) crashes comprise only 2% of total crashes but 17% of KA crashes are related to VRU. This statistic further reinforces the fact that pedestrians, bicyclists and other micromobility users are disproportionately prone to higher levels of injury. As shown by the orange numbers with an asterisk in **Table A–4**, proportion of KA crashes for each crash type reveals that the VRU crashes posed the greatest risk for severe outcomes. Head-on crashes were less frequent, but they had the second highest risk for severe outcomes followed by single-vehicle crashes.

Table A–4: Crashes by Collision Type

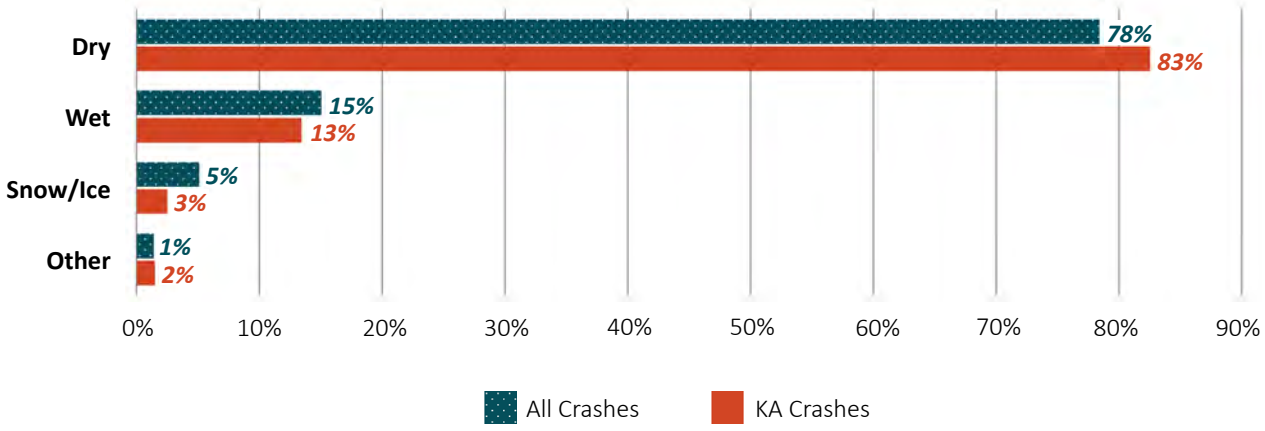
Collision Type	Number of Total Crashes	Percent of Total Crashes	Number of KA Crashes	Percent of KA Crashes	Proportion of KA Crashes
Single Vehicle Crash	6,121	24%	201	39%	3%*
Rear-end	6,920	28%	39	7%	1%
Angle	4,991	20%	88	17%	2%
Sideswipe, Opposite Direction	840	3%	12	2%	1%
Sideswipe, Same Direction	2,434	10%	16	3%	1%
Head-On	925	4%	68	13%	7%*
VRU Crash	547	2%	86	17%	16%*
Animal Related	1,315	5%	6	1%	0%
Other	1,014	4%	5	1%	0%
Total	**25,107**	**100%**	**521**	**100%**	**2%**

Note: as shown by the orange numbers with an asterisk, proportion of KA crashes for each crash type reveals that the VRU crashes posed the greatest risk for severe outcomes

Crashes by Surface Conditions

About 78% of total crashes and 83% of fatal and serious injury (KA) crashes happened in dry surface conditions. Wet conditions account for a smaller but still notable portion of crashes (about 15% of all crashes and 13% of KA crashes), while snow and ice make up only a small fraction of the total and severe crash burden. These patterns suggest that most serious crashes in PVPC are driven by factors other than s surface condition alone.

Figure A–5: Crashes by Surface Conditions



Crashes by Lighting Conditions

Table A–5 summarizes how lighting conditions relate to crash occurrence and severity. Daylight conditions were present for 70% of all crashes, 58% of all fatal and serious injury crashes and 49% of VRU related fatal and serious injury crashes. However, dark conditions, even when roadways are lit still represent a substantial share of incidents. Only 24% of all crashes happened in dark conditions (combining lighted, not lighted and unknown lighting) but it accounted for 37% of fatal and serious injury crashes. For VRU crashes, 48% of fatal and serious injury crashes happened in dark conditions.

VRU injury crashes are disproportionately high in dark conditions because of reduced visibility, uneven or inadequate roadway lighting, and headlight glare make it harder for drivers to detect people walking or biking in time to react, especially at higher nighttime speeds and where drivers do not expect VRUs.

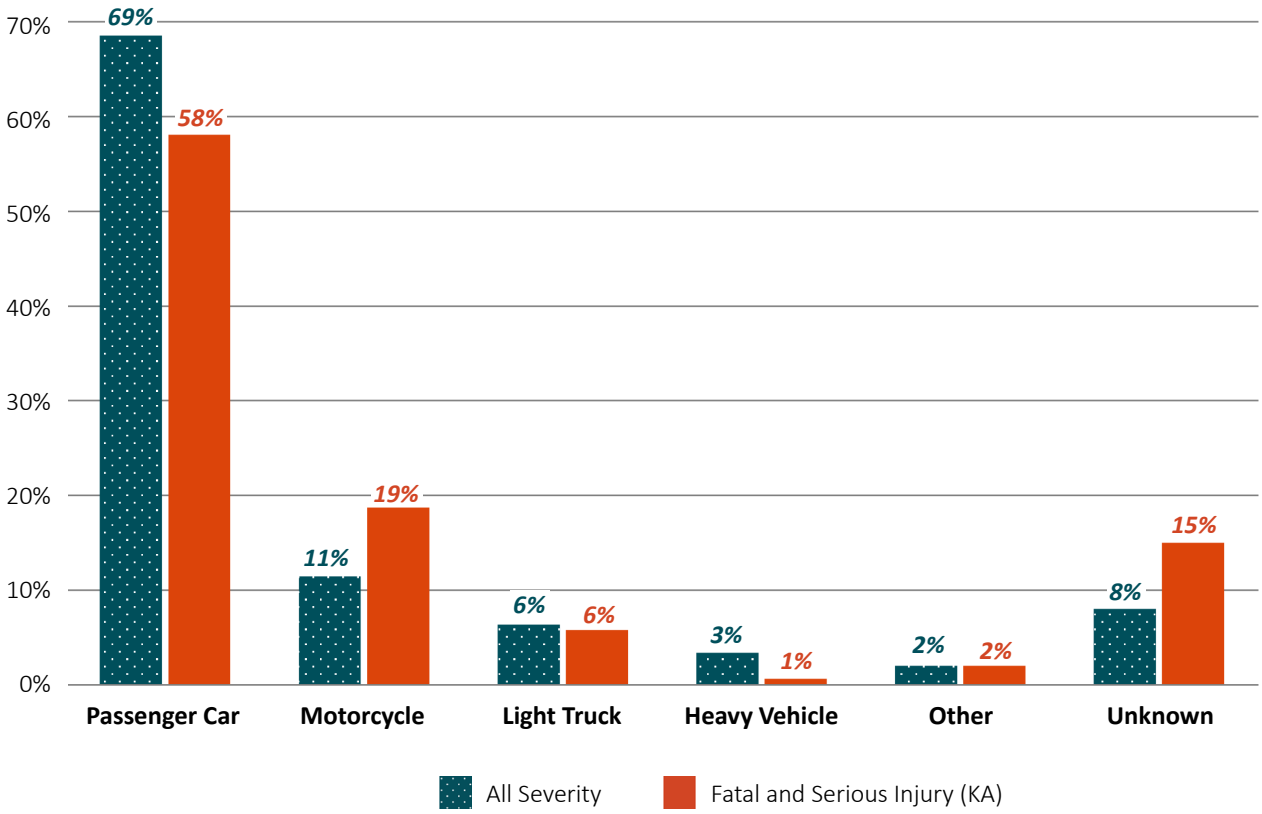
Table A–5: Crashes by Lighting Condition

Lighting Condition	All Crashes				VRU Crashes			
	All Severity	Percent of Total	KA Crashes	Percent of Total	All Severity	Percent of Total	KA Crashes	Percent of Total
Dark—Lighted	4,372	17%	124	24%	84	15%	25	29%
Dark—Not Lighted	1,618	6%	62	12%	37	7%	15	17%
Dark—Unknown Lighting	139	1%	3	1%	6	1%	2	2%
Dawn	355	1%	5	1%	5	1%	0	0%
Daylight	17,644	70%	303	58%	396	72%	42	49%
Dusk	835	3%	21	4%	19	3%	2	2%
Other	144	1%	3	1%	0	0%	0	0%
Total	**25,107**	**100%**	**521**	**100%**	**547**	**100%**	**86**	**100%**

Crashes by Vehicle Type

As expected, Passenger cars were the most frequently involved vehicle type and were involved in 58 percent of fatal and serious injury crashes. Motorcycles accounted for only 11% of total crashes but 19% of fatal and serious injury crashes. Lack of external protection and inherent vehicle instability make motorcycles more vulnerable to injury if involved in crashes.

Figure A–6: Crashes by Vehicle Type



Emphasis Areas

To link PVPC's regional safety analysis to the statewide safety framework, crashes were summarized by emphasis areas. Summarizing crashes by MassDOT HSIP emphasis areas[A–4] is important for PVPC because it directly links regional safety analysis to how safety policy, priorities, and funding are set at the state and federal levels. It helps identify which types of crashes and road users are most at risk in the region, supports data-driven, systemic safety planning rather than isolated spot fixes, and clearly documents the need for safety investments that align with SHSP priorities and Highway Safety Improvement Program (HSIP) eligibility.

A–4 MassDOT Highway Safety Improvement Program

Emphasis areas studied in this plan include the following. More specific information, including the exact queries used to filter these emphasis areas, is available on MassDOT's website[A–5].

- **Intersections:** Crashes that occur within intersections or are related to the operation of intersection approaches
- **Lane Departure:** Crashes that occur when a vehicle intentionally or unintentionally crosses an edge or centerline or otherwise leaves the traveled way
- **Older Drivers:** Crashes that involve at least one driver who is 65 years of age or older
- **Pedestrians:** Crashes that involve a pedestrian on foot or using a mobility device such as a wheelchair
- **Younger Drivers:** Crashes that involve at least one driver who is between 15 and 20 years old
- **Motorcyclists:** Crashes that involve a motorcyclist
- **Distracted Driving:** Crashes occurring when the driver is distracted by an electronic device, a passenger, or a distraction outside the vehicle
- **Bicyclists:** Crashes that involve a bicyclist
- **Impaired Driving:** Crashes involving a driver suspected of being under the influence of alcohol
- **Large Vehicles:** Crashes that involve large trucks, tractor trailers, buses, or other large vehicles
- **Speeding:** Crashes occurring when the driver exceeded the authorized speed limit
- **Occupant Protection:** Crashes involving a driver or passenger who is not wearing a seat belt

Table A–6 lists the fatal and serious injury crashes for each emphasis area for both the Pioneer Valley Region and the Commonwealth of Massachusetts. Emphasis areas that are notably more prevalent in the region compared to the Commonwealth are highlighted in orange text marked with an asterisk.

Table A–6: Emphasis Area Summary

Emphasis Area	Pioneer Valley Region		Massachusetts	
	Number of Fatal and Serious Injury Crashes	Percent of Total Fatal and Serious Injury Crashes	Number of Fatal and Serious Injury Crashes	Percent of Total Fatal and Serious Injury Crashes
Lane Departure	194	32%*	2,855	28%
Impaired Driving	41	7%	675	7%
Occupant Protection	161	27%*	2,129	21%
Speeding	90	15%*	1,097	11%
Intersections	182	30%*	3,043	29%
Pedestrians	62	10%	1,644	16%
Older Drivers	75	12%	1,370	13%
Motorcycle	113	19%*	1,650	16%
Younger Drivers	63	10%	1,009	10%
Large Vehicles	4	1%	150	1%
Distracted Driving	33	5%	590	6%
Bicyclists	22	4%	601	6%

Note: emphasis areas that are notably more prevalent in the region compared to the Commonwealth are highlighted in orange text marked with an asterisk.

A–5 IMPACT Emphasis Area Definitions

To narrow the focus of this analysis, the following seven emphasis areas emerged as key emphasis areas to address in the Pioneer Valley Safer Streets Plan.

- Lane Departure
- Intersections
- Occupant Protection
- Motorcycles
- Speeding
- Pedestrians
- Bicyclists

The Lane Departure, Speeding, Intersections, Occupant Protection and Motorcycle emphasis areas were overrepresented when compared to the rest of the Commonwealth. These areas are also consistently highlighted by regional stakeholders as key areas of concern. Even though the pedestrian and bicyclist emphasis areas did not show higher percentage of fatal and serious injury crashes compared to the state, VRU safety is a major focus area for PVPC. Given their importance, pedestrian and bicyclist emphasis areas were also considered as key areas for further analysis.

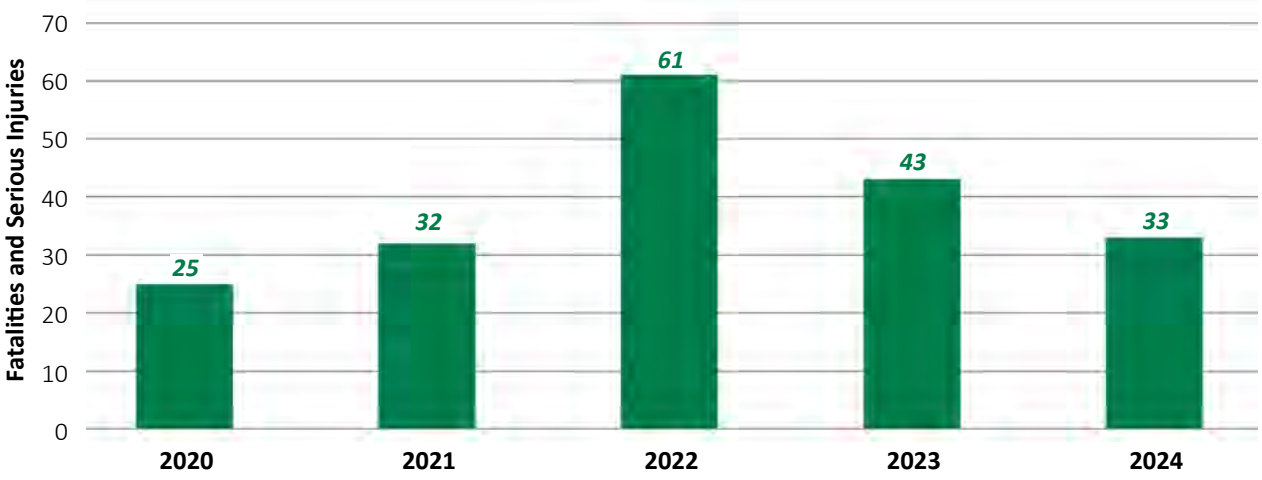
Even though other emphasis areas were not selected as part of the key emphasis area list, they are still important for the region and individual municipalities to focus on when thinking about how to improve roadway safety. Strategies and actions in the plan will still relate to and address these emphasis areas, as several are interconnected.

Lane Departure

Among all the identified emphasis areas, lane departure-related crashes were the most common type from 2020 to 2024, contributing to 32 percent of the region's total. As shown in **Figure A–7**, fatalities and serious injuries in the region resulting from lane departures gradually increased from 25 in 2020 to 61 in 2022, and then gradually decreased in 2023 and 2024. Overall, there was a 32 percent rise over five years, indicating a persistent challenge in preventing vehicles from leaving their intended travel lanes.

Additionally, dangerous driver behaviors were found to greatly increase the risk of lane departure crashes. About 31 percent of these crashes were speeding related for 28% of these crashes, driver was under influence of alcohol or drugs. This indicates that impaired driving or speeding significantly increases the chance of having a fatal or serious injury lane departure crash, emphasizing the importance of context-sensitive roadway design and awareness efforts targeting these high-risk behaviors.

Figure A–7: Lane Departure Fatalities and Serious Injuries

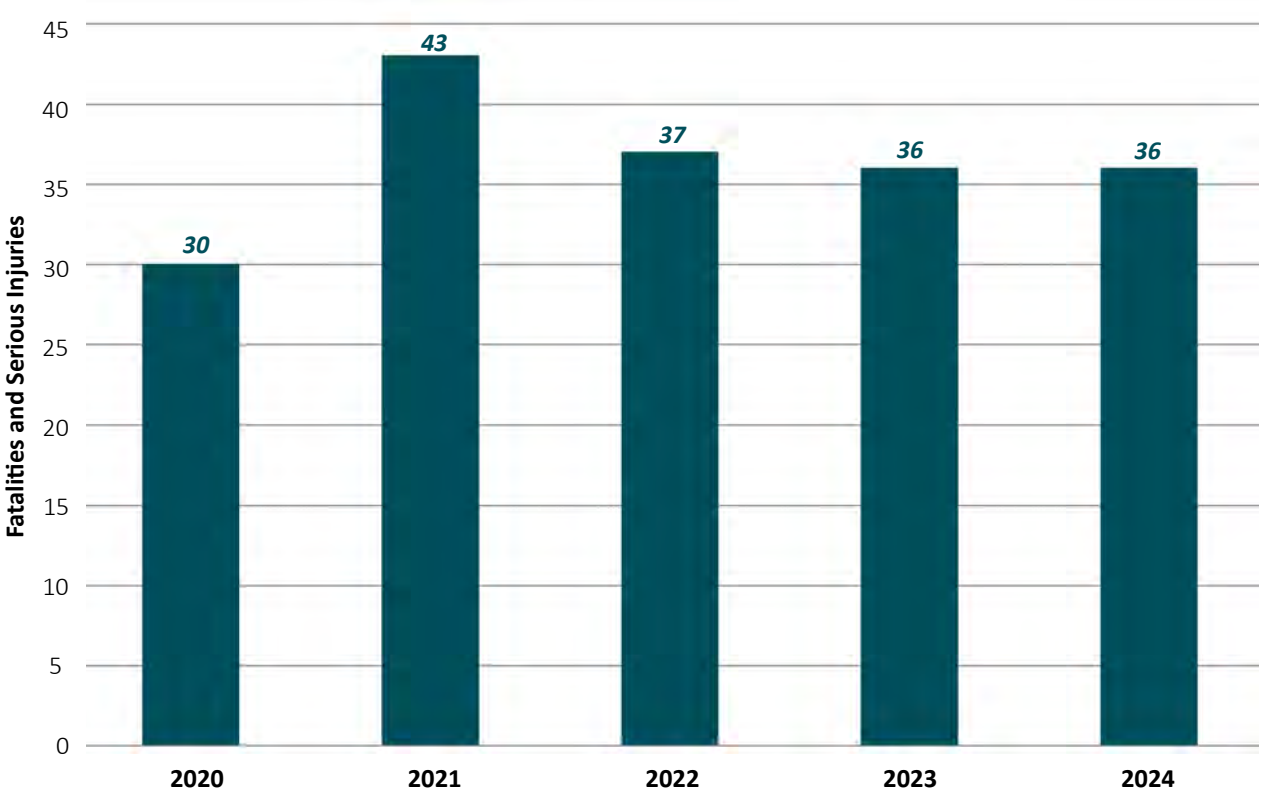


Intersections

Between 2020 and 2024, intersections related crashes accounted for 30 percent of fatalities and serious injuries in the Pioneer Valley Region. As shown in **Figure A–8**, after a spike in 2022, these crashes remained relatively stable. Fatalities and serious injuries due to intersection related crashes had increased by 20 percent in 2024 compared to 2020.

Given the distinct safety challenges posed by each intersection's unique combination of geometry, configuration, and traffic control, intersection-related crashes were further analyzed by intersection type and traffic control type. T-intersections accounted for the majority (56 percent) of fatal and serious injury crashes followed by four-way intersections (33 percent). Among fatal and serious injury crashes at T-intersections and four-way intersections, 23 percent occurred at signalized intersections, 25 percent occurred at stop sign or yield controlled intersections and 39 percent at uncontrolled intersections.

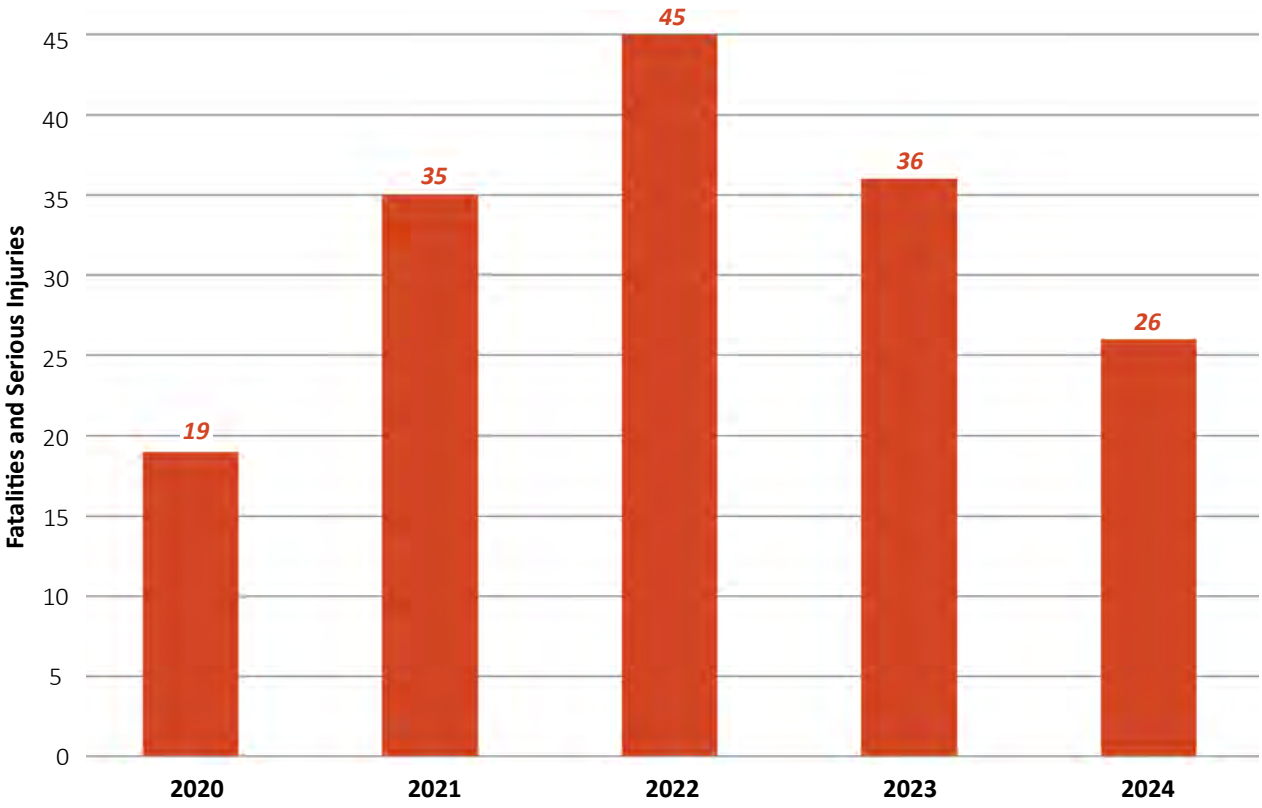
Figure A–8: Intersection Related Fatalities and Serious Injuries



Occupant Protection

Unprotected occupants accounted for 27% of fatalities and serious injuries in the Pioneer Valley Region between 2020 and 2024. **Figure A–9** shows a sharp increase between 2020 and 2022 and then a slight decline in following years. Overall, there was a 37 percent rise over five years, indicating a continuing challenge in risky road user behavior. Speeding and driving under influence also played a role in these types of crashes. About 35 percent of fatalities and serious injuries involving unprotected occupants happened when drivers were speeding. In about 28 percent of these crashes, involved occupants were under influence of alcohol or drugs. This indicates that this is a behavioral issue that is influenced by environment and policy.

Figure A–9: Unprotected Occupant Fatalities and Serious Injuries

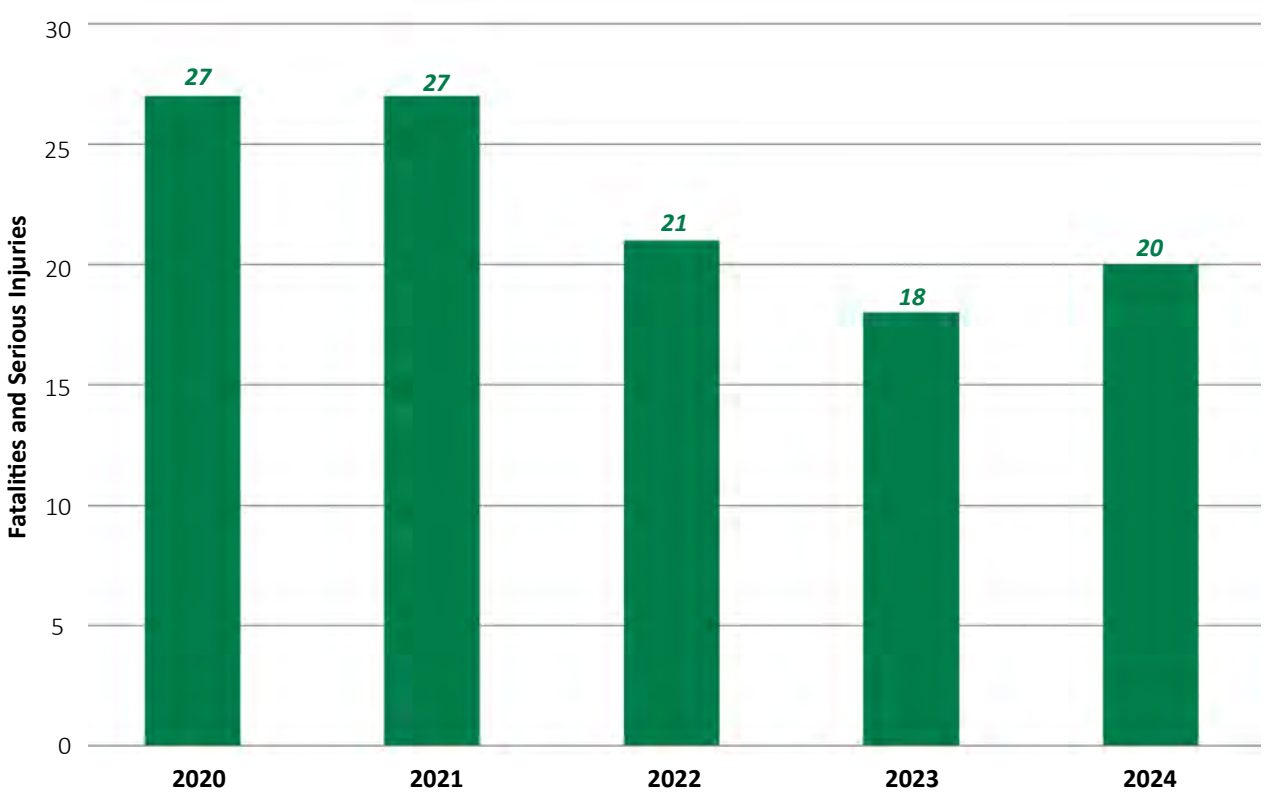


Motorcycle

Between 2020 and 2024, Motorcycle-involved FSI crashes in the Pioneer Valley Region decreased by 26%. However, these crashes are still overrepresented compared to the statewide statistics. Motorcycles often travel at relatively high speeds and accelerate quickly, which can lead to misjudged gaps and reduced time to react. Unlike car occupants, riders have no protective vehicle shell, so in a crash their bodies directly absorb the impact with other vehicles, the road, or roadside objects, and even with helmets and protective gear, injury severity is typically much higher than for protected occupants.

In the Pioneer Valley Region, motorcycle fatalities and serious injuries were seen most frequently on principal arterials (32 percent) or minor arterials (27 percent). Most common crash types were identified as single-vehicle crashes (36 percent) closely followed by angle crashes (34 percent). This pattern points to two key safety problems: drivers not detecting or correctly judging motorcycles at intersections, and riders losing control on higher risk road sections such as bends, often linked to speed, road design, surface conditions, or rider skill.

Figure A–10: Motorcycle Related Fatalities and Serious Injuries

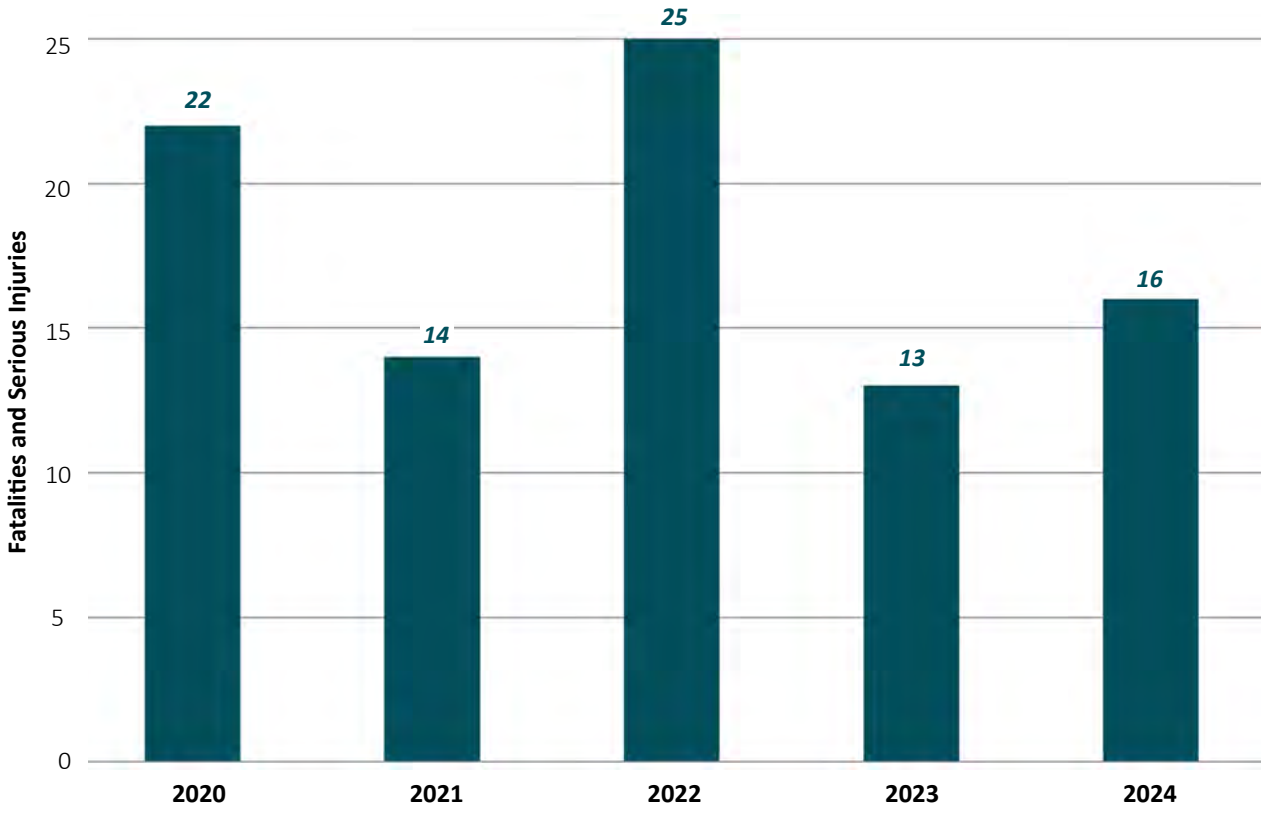


Speeding

The yearly variation in speeding-related fatal and serious injury crashes is shown in **Figure A–11**. Overall, the Pioneer Valley Region experienced a 27 percent decrease in speeding related fatalities and serious injuries from 2020 to 2024. But it is still higher than the statewide percentage and a major concern identified by stakeholders in the region.

As previously discussed, speeding behavior can be a significant contributing factor to lane departures, given that 64 percent of speeding-related fatal and serious injury crashes were lane departure crashes. Additionally, impaired driving is another prevalent factor in speeding crashes. About 30% of fatalities and serious injuries related to speeding also involved drivers under influence. Further analysis of potential risk factors associated with speeding-related fatal and serious injury crashes suggests that younger drivers between the age of 16 and 25 had a higher chance (33 percent) of getting involved in speeding-related injuries.

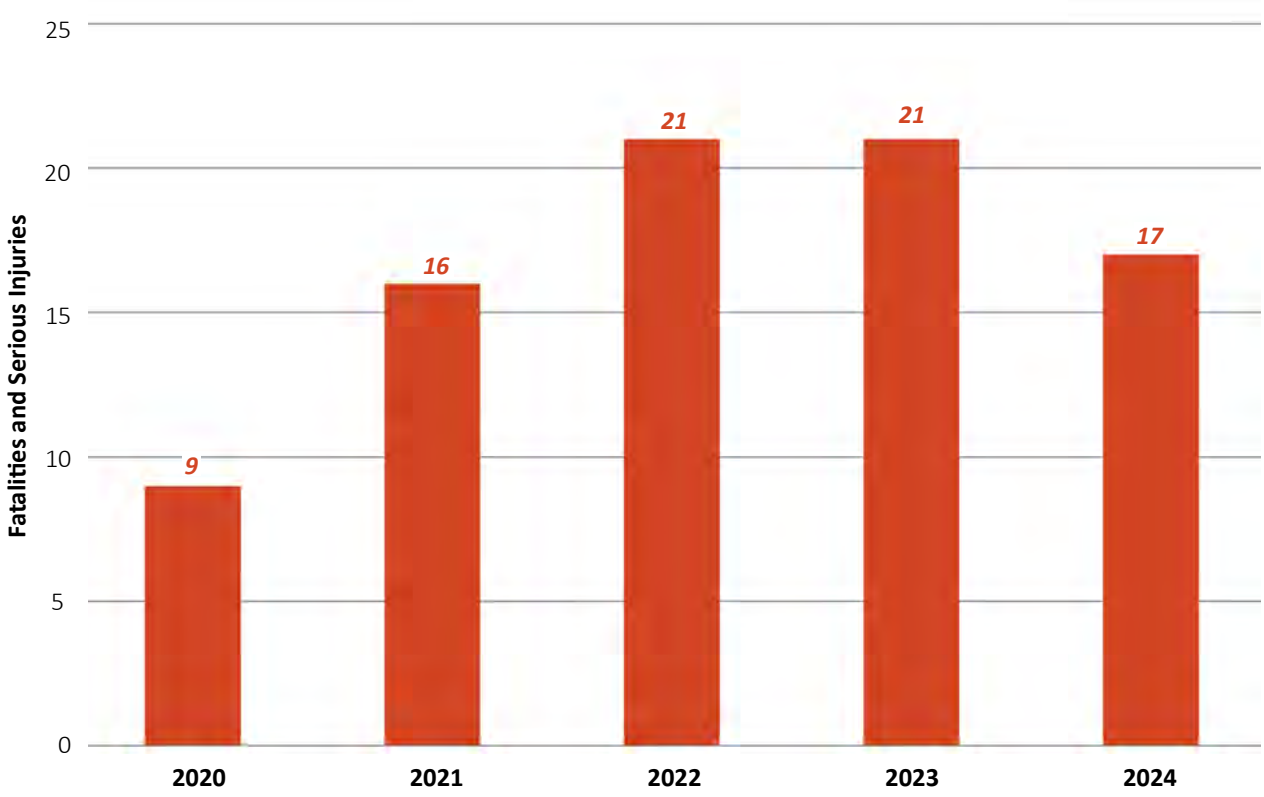
Figure A–11: Speeding Related Fatalities and Serious Injuries



Pedestrians and Bicyclists

Vulnerable road users (VRU) such as pedestrians and bicyclists face unique challenges and a higher risk of injury compared to other road users. While walking and biking can offer significant health and environmental benefits, VRUs are more susceptible to serious injuries and fatalities when involved in collisions with motor vehicles. **Figure A–12** illustrates the annual number of fatal and serious injury crashes involving pedestrians and bicyclists over a five-year period. 26 % of these crashes involved bicyclists and the rest 74% involved pedestrians. Overall, the Pioneer Valley Region experienced a 89 percent increase in VRU related fatalities and serious injuries from 2020 to 2024. A deeper analysis of these crashes reveals that majority (62 percent) of VRU crashes occurred outside of intersections (i.e., mainline) locations. Among those crashes at mainline locations, 38 percent of severe crashes involving VRUs were on minor arterials.

Figure A–12: Pedestrians and Bicyclists Fatalities and Serious Injuries



Appendix

B

High Injury and High-Risk Networks

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Background

The Pioneer Valley Planning Commission (PVPC) serves as the Metropolitan Planning Organization (MPO) for the Pioneer Valley region of western Massachusetts, encompassing 43 diverse communities. PVPC is in the process of developing a Regional Safety Action Plan in compliance with the Safe Streets and Roads for All (SS4A) program.

This appendix documents the analytical framework used to identify priority locations for safety improvements in support of the Regional Safety Action Plan. The analysis combines a reactive, data-driven assessment of historical crash outcomes with a proactive evaluation of network risk conditions, resulting in two complementary screening products: a High Injury Network (HIN) and a High-Risk Network (HRN). Together, these tools provide a comprehensive view of where the crash hotspots are under existing conditions and where serious crashes are likely to occur in the future without intervention.

There are 5 municipalities within the Pioneer Valley Region that are either already developed or in the process of developing their own Safety Action Plan. These municipalities were excluded from the analysis for this appendix.

Data Sources

Both the HIN and HRN rely on two primary datasets: roadway network data and crash data. Crash data was obtained from the MassDOT IMPACT Crash Data Portal[B–1], representing the years from 2020 to 2024. The roadway network base was derived from MassDOT Road Inventory. Consistent with project direction, all fully access-controlled roadways were excluded from the analysis. This chapter uses fatal and injury crashes as the basis of analysis. **Table B–1** defines each level of injury according to the KABCO scale.

Unless otherwise mentioned, this appendix excludes:

- Fully Access-Controlled Facilities
- Property Damage Only Crashes
- Crashes within Chicopee, Holyoke, Springfield, Ware and Westfield

Table B–1: Crash Severity Classification Scale

KABCO Category	Definition
Fatal Injury (K)	Any injury that results in death due to the crash.
Suspected Serious Injury (A)	Any injury that prevents the injured person from normally continuing activities that person was capable of before the injury occurred, such as a severe laceration or a broken limb.
Suspected Minor Injury (B)	Any visible injury that is not a suspected serious injury, such as a lump on the head or minor lacerations.
Possible Injury (C)	Any injury reported by an individual involved in the crash that is not visible to the reporting officer, such as dizziness or a complaint of pain.
No Apparent Injury (O)	There is no evidence of physical injury and the individuals involved in the crash do not complain of any injury.

Source: FHWA KABCO Injury Classification Scale and Definitions

B–1 IMPACT Data Portal—MassDOT

High Injury Network (HIN)

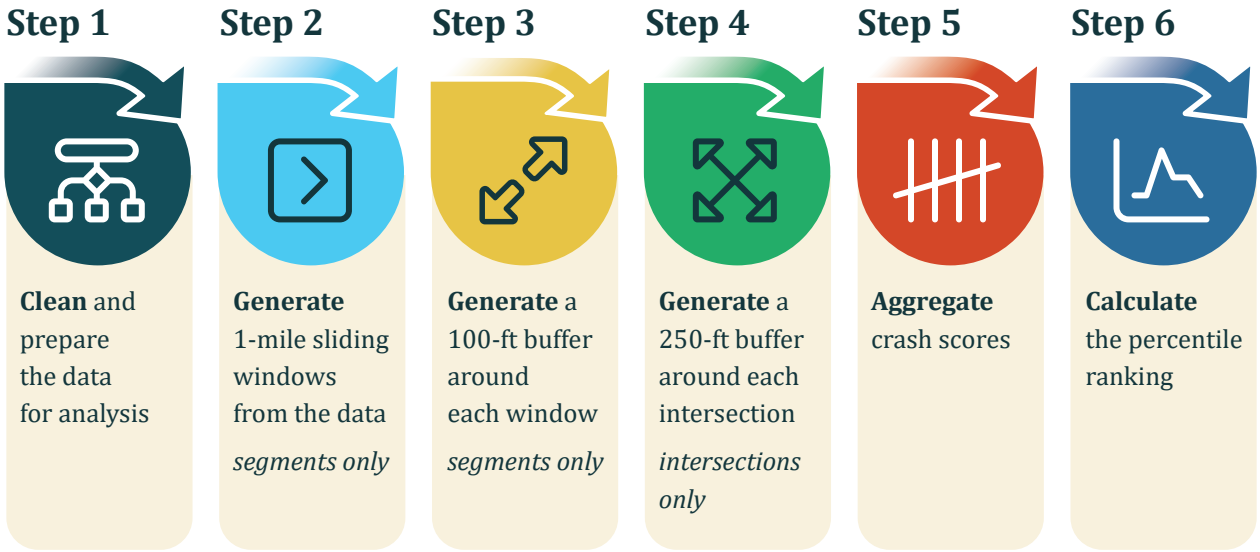
A central component of a safety action plan is the development of a High-Injury Network (HIN), a relatively small share of roadways and intersections in the region where a disproportionately high number of fatal and injury crashes occur. PVPC developed HIN for both roadway segments and intersections. This chapter summarizes the methodology used to develop the HIN, the data sources used in the analysis, and the key findings from the resulting network.

An HIN is a primary tool of a reactive safety approach, because it is built from locations where serious and fatal crashes have already occurred and uses that trend to drive action. Agencies can use HIN to respond directly to documented problems, prioritizing countermeasures—such as speed reduction, crossing improvements, and intersection redesign on specific corridors. However, because it depends on past crash data, a HIN-based reactive approach may miss emerging risk locations that have not yet generated a severe crash record, which is why it is most effective when paired with complementary, proactive risk analysis.

Methodology

The purpose of the HIN is to identify roadway corridors and intersections with the highest safety risk based on both crash frequency and crash severity. The HIN for segments and intersections was developed using the following six-step, systematic, and replicable process shown in **Figure A–1**. This approach provides a consistent framework that is data-driven, transparent, and straightforward to reproduce.

Figure B–1: HIN Development Process



Step 1: Preprocess the Data

The first stage of the HIN analysis involves preparing the roadway network layer, intersection layer, and crash dataset.

Road and Intersection Layer Preprocessing

The roadway and intersection layers were reviewed to identify and address connectivity issues and other inconsistencies. The following facility types were excluded from the analysis layers:

- Interstates
- Ramps
- Pedestrian facilities
- Bicycle facilities
- Tunnels
- Access-controlled roadway segments

The resulting network is intended to represent local and regional surface streets with partial or no access control.

Crash Layer Preprocessing

Crash data from the MassDOT IMPACT Crash Data Portal from 2020 to 2024 served as the primary source for the analysis. Crashes identified as occurring on interstates and ramps were removed so they would not be incorrectly associated with adjacent surface streets. The crash dataset retained all relevant attributes, including crash severity. The five PVPC towns not included in the safety action plan were also excluded.

Step 2: Create a 1-mile Sliding Window (Segments Only)

In the second step, a 1-mile sliding window is applied to each roadway and advanced in 0.1-mile increments. This method supports a localized review of crash patterns and allows for detailed evaluation of conditions along the roadway network. Advancing the window in regular increments ensures that the full roadway network is assessed. For roadways shorter than one mile, the full roadway segment is evaluated as a single unit. Roadway segments of less than 400 feet were excluded from the analysis as they were considered too short to account for in this methodology.

Step 3: Create a 100-foot Buffer (Segments Only)

The third step is to generate a 100-foot buffer around each 1-mile analysis window. This buffer is used to capture crashes that can reasonably be associated with the corresponding roadway segment. Multiple buffer distances were tested during method development, and a 100-foot buffer was determined to best capture crashes attributable to the roadway segment while minimizing overlap with adjacent facilities.

Step 4: Create a 250-foot Buffer (Intersections Only)

The fourth step is to generate a 250-foot buffer around each intersection. This buffer is used to capture crashes that can reasonably be associated with the corresponding intersection.

Step 5: Aggregate Crash Scores

The fifth step involves summarizing crash scores within each buffered window for segments and intersections. This process compiles all crashes falling within the buffer and converts them into an Equivalent Property Damage Only (EPDO) score. If a crash is at an intersection and intersects multiple roadway buffers, it is counted in all the buffers it intersects with.

Using EPDO crash score allows the analysis to reflect both the number of crashes and their severity within a single metric. This provides a more complete measure of corridor safety performance than crash frequency alone. The crash scoring framework used for the HIN is shown in **Table B–2**.

Table B–2: EPDO Crash Score Calculation Weight

KABCO Severity Category	Crash Score
KAB (Fatal or Suspected Serious Injury or Suspected Minor Injury)	32
C (Possible Injury)	10
O (No Apparent Injury)	1

Step 6: Calculate Percentile Rankings

The final step is to calculate a percentile ranking for each sliding-window segment and intersection based on its aggregated buffer score. These rankings identify which roadway segments and intersections have the greatest relative safety risk based on historic crash experience.

Analysis Findings

Segments

For this analysis, the top 5% HIN segments constitute the top 5.5% of the length of the roadways in PVPC and cover 46.3 % of all KAB Crashes. Additional high crash segments are provided in the top 10% HIN which constitute the top 10.7% of the length of the roadways in PVPC and covering a total of 64.3% of the KAB Crashes.

Tabel B–3: HIN Coverage—Segments

HIN Coverage Percentage	Total Length (Miles)	Percentage by Length	Percentage Coverage of KAB Crashes
5%	218	5.5%	46.3%
10%	424	10.7%	64.3%
Total Length of Roadways Analyzed	**3965**	**100%**	**100%**

Intersections

For this analysis, the top 5% of intersections include 110 sites throughout the PVPC which account for 33.7 % of all KAB Crashes in the region. The top 10% of intersections include 249 sites throughout the PVPC which account for 53.7 % of all KAB Crashes in the region.

Table B–4: HIN Coverage—Intersections

HIN Coverage Percentage	Total Number	Percentage Coverage of KAB Crashes
5%	110	33.7%
10%	249	53.7%
Total Number of Intersections Analyzed	**2440**	**100%**

HIN Within Equity Area

Equity is essential to understanding traffic safety in the Pioneer Valley Region. Safe, reliable, and affordable transportation underpins economic opportunity, social resilience, and quality of life. For this action plan, two datasets were evaluated to determine the underserved/disadvantaged areas within PVPC. Traditionally, these areas are disproportionately impacted by lack of transportation access, high number of crashes and inadequate transit or infrastructures for pedestrians and cyclists. One of the data sources used to determine the underserved areas is the USDOT Underserved Communities Tool[B–2] that identifies the census tracts in the study area that meet the federal definition of an Underserved Community, primarily in areas with long-standing economic disadvantages. The tool defines an Underserved Community consistent with the definition of an Area of Persistent Poverty, where 20% of a county, census tract, or territory has continually lived in poverty.

The other data source is MassDOT's REJ+ (Relative Environmental Justice +)[B–3] that identifies disadvantaged census block groups by identifying areas with high concentrations of residents heavily impacted by transportation network change. It uses 23 variables across six dimensions, Environmental, Economy, Social, Health, Resilience, and Transportation, to identify these communities, mapping them at the block group level.

Table B–5 shows the percentages of HIN segments and intersections that fall within either USDOT underserved communities or MassDOT's REJ+ census blocks. More than 50% of the segments and more than 60% of the intersections within the HIN fall within these areas.

Table B–5: HIN within Underserved Communities

HIN Coverage Percentage	Total Length/Number	Total Length/Number within Equity Area	Percentage Coverage
Segments			
5%	218 miles	130 miles	59.6%
10%	424 miles	226 miles	53.3%
Intersections			
5%	110	75	68.2%
10%	249	171	68.7%

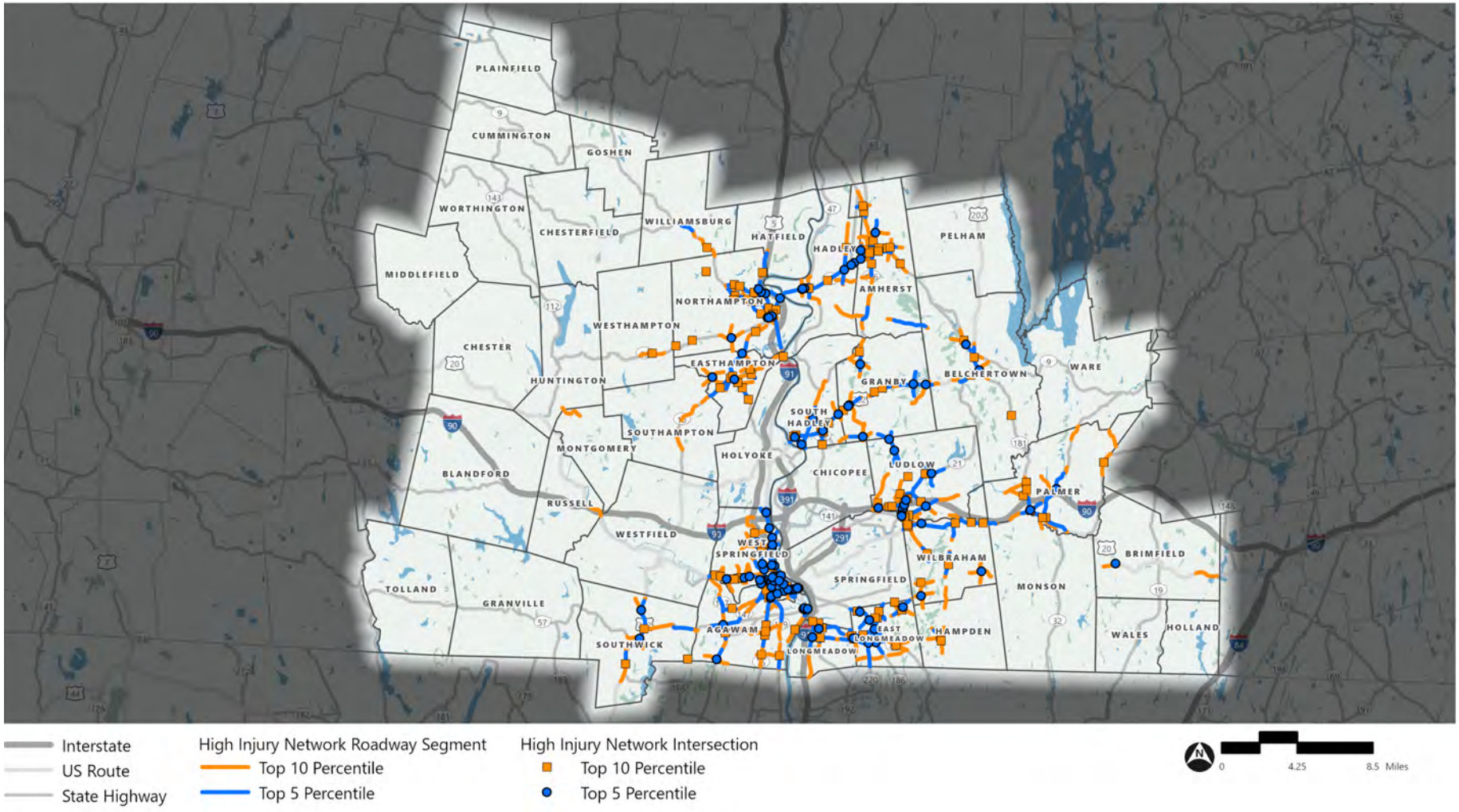
B–2 SS4A Underserved Communities Tool

B–3 MassDOT REJ+

Regional HIN

The high injury networks provide a powerful visual tool for highlighting segments and intersections which can be considered crash hotspots. This can help guide and prioritize safety investments from a crash history perspective. **Figure B–2** shows the HIN within the Pioneer Valley Region. For this action plan, PVPC decided to set the threshold at the top ten percent of the roads to constitute the HIN. From the map, it is evident that the HIN is more concentrated, near urban areas and major traffic generators and more dispersed in suburban/rural land use types.

Figure B–2: PVPC High Injury Network (HIN)



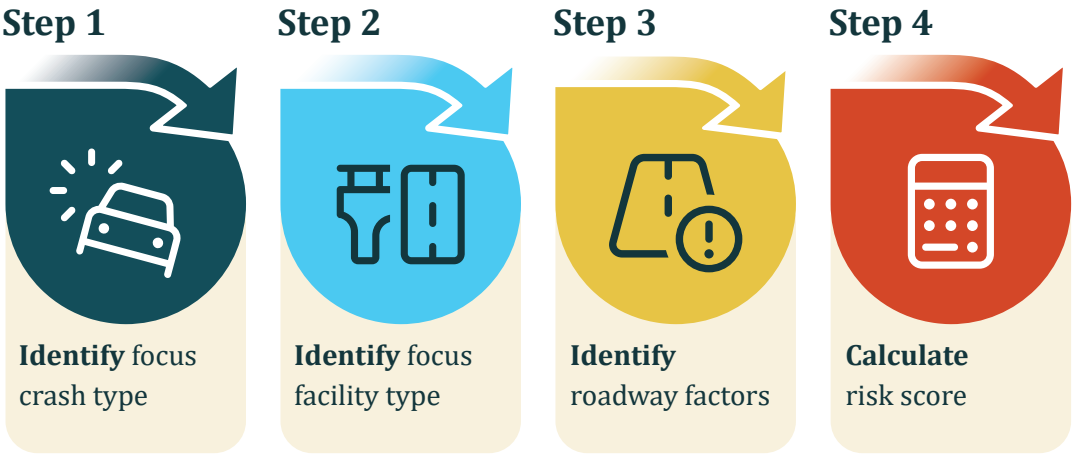
High Risk Network (HRN)

As a complement to the crash-based (reactive) network screening used to develop the High-Injury Network (HIN), this systemic analysis applies a proactive method to identify roadway risk factors linked to fatal and serious injury crashes and to assess the network based on site-specific risk levels. The systemic approach to safety is the process by which agencies identify, prioritize, and treat sites with potential for safety improvement based on the likelihood of a fatal or severe crash occurring, as opposed to the "site-specific" approach, which is based on crash history.

Methodology

The systemic approach begins with identifying focus crash types—those crash types which account for the most fatalities and serious injuries, those which account for an outsized proportion of fatalities and serious injuries when compared to all crashes, or crashes which have otherwise been deemed a focus of the agency. The next step is identifying focus facility type. These are the facilities (e.g., minor collectors, signalized intersections) on which a high proportion, or outsized proportion, of focus crash types have occurred. The third step is identifying the characteristics (e.g., traffic volumes, lane width, traffic control, etc.) associated with an increased likelihood of focus crashes on those focus facilities. Using these methods, an agency can identify the sites on their network with the highest risk of a severe crash. Figure 3 shows this methodology, which is consistent with the systemic analysis process, as described in the Federal Highway Administration's (FHWA) Systemic Safety User Guide[B–4].

Figure B–3: HRN Development Process



PVPC analyzed crash statistics for several crash types using IMPACT dashboard[B–5]. Based on that, following crash types were selected to identify their HRNs:

- Lane departure crashes
- Intersection crashes
- Motorcycle crashes
- Speeding and aggressive driving crashes
- Pedestrian crashes
- Bicycle crashes

B–4 FHWA Systemic Safety Analysis Quick Start Guide
B–5 IMPACT Operations Dashboard-SHSP Emphasis Areas

Lane Departure HRN

Between 2019 and 2023, lane departure crashes accounted for an average of 54 percent of annual traffic fatalities in the region. Further, between 2020 and 2024 these crashes accounted for 30 percent of the region's serious injuries. To determine focus facility type, a crash tree was used with lane departure KAB crashes, which found that Principal-Other and Minor Arterial roadways with no access control should be the focus facility type. Figure 4 shows the crash tree for lane departure crashes. After selecting the focus facility type, risk factors associated with severe lane departure crashes on those segments were identified. To do so, PVPC used the "Overrepresentation" approach, comparing the proportion of target crashes with a select feature to the proportion of focus facility mileage with that feature. Where the proportion of crashes was notably higher, that feature was selected as a risk factor.

Figure B–4: Crash Tree for Lane Departure Crashes

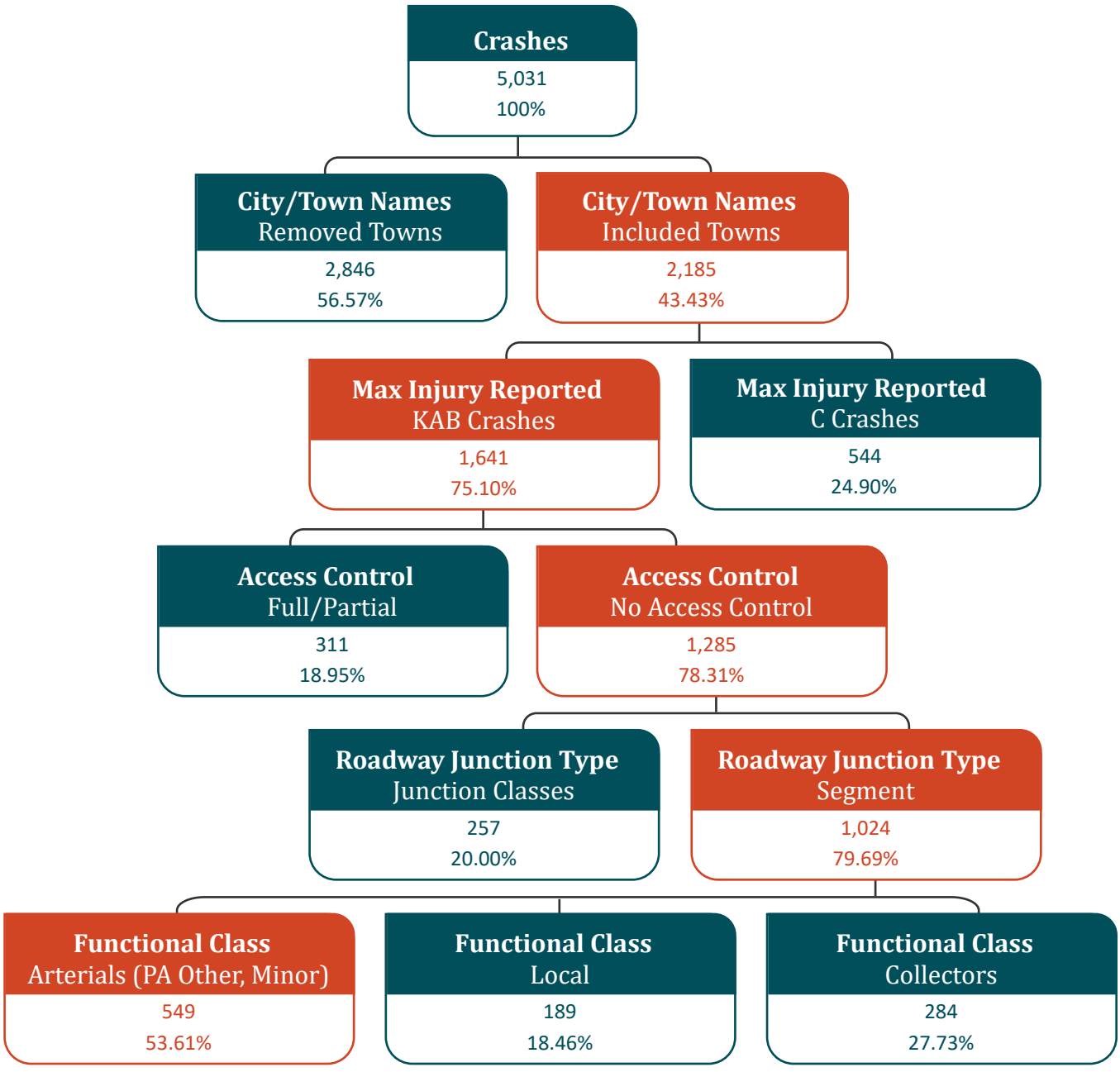


Table B–6 provides an excerpt of this approach, showing the overrepresentation for posted speed limit. Here, roads with a posted speed limit of 35 MPH or 40 MPH accounted for 56 percent of KAB lane departure crashes, as opposed to just 51 percent of focus facility type roadway mileage. As such, 35 or 40 MPH speed limit was selected as a risk factor. **Table B–7** summarizes all risk factors selected for the lane departure HRN.

Table B–6: Average Outside Shoulder Width Risk Factor Analysis for Lane Departure

Posted Speed Limit	KAB Crashes	Mileage	% of KAB Crashes	% of Mileage
Not Reported	14	8.5	2.8%	1.6%
15–30 MPH	128	138.3	25.5%	26.6%
35–40 MPH	279	264.2	55.7%	50.9%
45–55 MPH	80	108.2	16.0%	20.8%

Table B–7: Summary of Lane Departure Risk Factors

Data Element	Risk Factor	KAB Crashes	Mileage	% of KAB Crashes	% of Mileage
Functional Class	Principal Arterial—Other	199	158.5	39.7%	30.5%
Jurisdiction	MassDOT	173	159.1	34.5%	30.6%
Total Lanes	4	20	12.0	4.0%	2.3%
Average Lane Width	12’ and Wider	368	347.9	73.5%	67.0%
Curb Type	Present on Both Sides	136	116.7	27.1%	22.4%
Posted Speed Limit	35 MPH-40 MPH	279	264.2	55.7%	50.9%

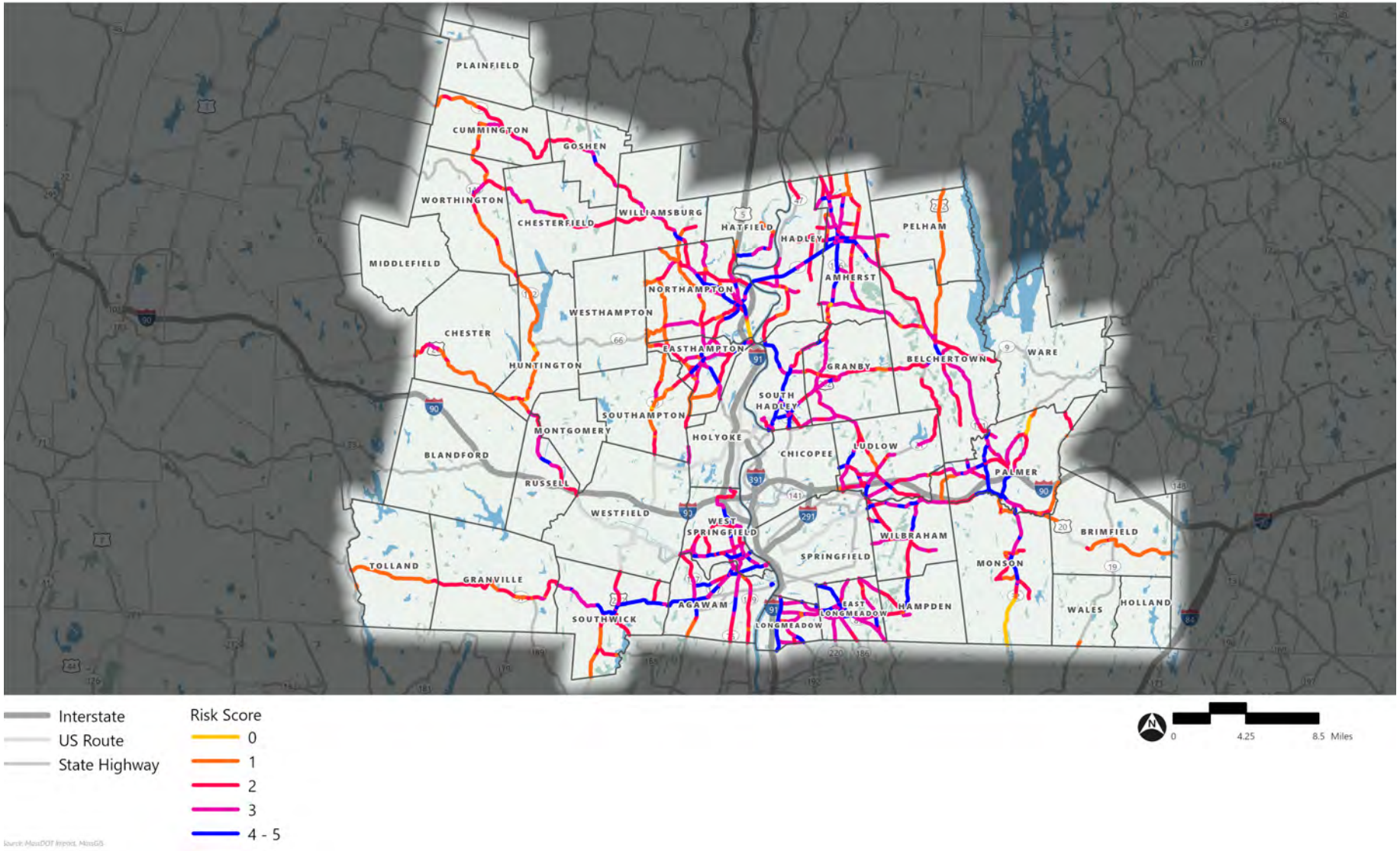
These risk factors were then used to create the HRN. One point was assigned for each risk factor present on a focus facility segment, for a maximum total risk score of 7. **Table B–8** summarizes the distribution of KAB crashes and focus facility mileage by risk score. The highest scoring segments (those with a risk score of 5 or higher) capture 12 percent of KAB lane departure crashes on just 9 percent of mileage.

Table B–8: Summary of Lane Departure Risk Scoring

Risk Score	KAB Crashes	Mileage	% of KAB Crashes	% of Mileage
4, 5, 6	112	971.4	22.4%	16.2%
3	164	1871.5	32.7%	31.1%
2	156	2015.9	31.1%	33.5%
1	65	1056.1	13.0%	17.6%
0	4	95.7	0.8%	1.6%

Figure B–5 shows the coverage of the lane departure crash HRN throughout the region.

Figure B–5: HRN for Lane Departure Crashes



Pedestrian HRN

Between 2019 and 2023, pedestrian crashes accounted for 20 percent of the region's fatalities, while accounting for 10 percent of the region's serious injuries between 2020 and 2024. All pedestrian crashes were considered for analysis instead of focusing only on KAB crashes. This was done to ensure enough sample size for the analysis. Per the crash tree in **Figure B-6**, Principal Arterial-Other and Minor Arterial roads were selected as the focus facility type.

Figure B–6: Crash Tree for Pedestrian Crashes

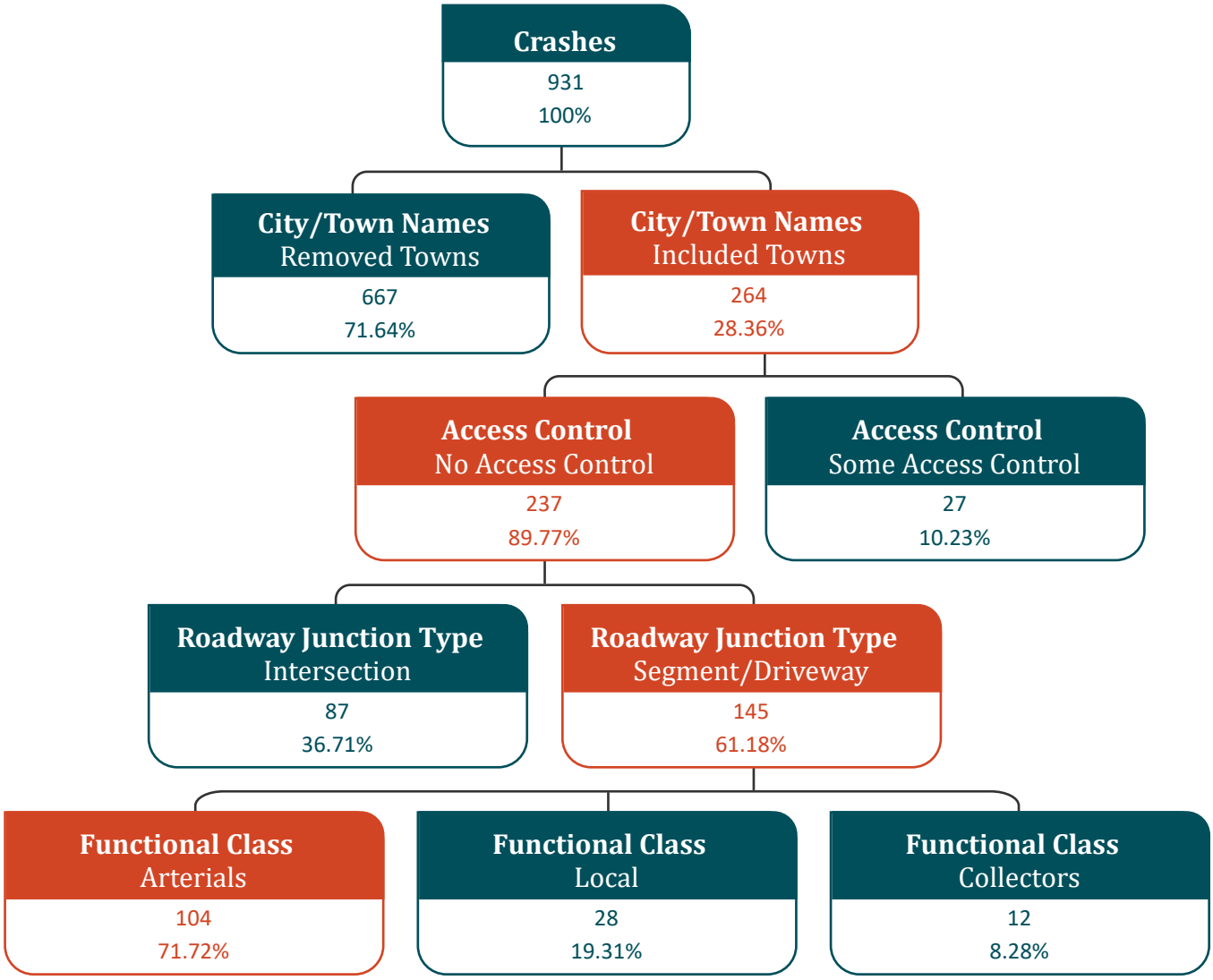


Table B-9 summarizes the risk factors selected for the Pedestrian HRN. **Table B-10** summarizes the resulting risk scores from those risk factors.

Table B–9: Summary of Pedestrian Risk Factors

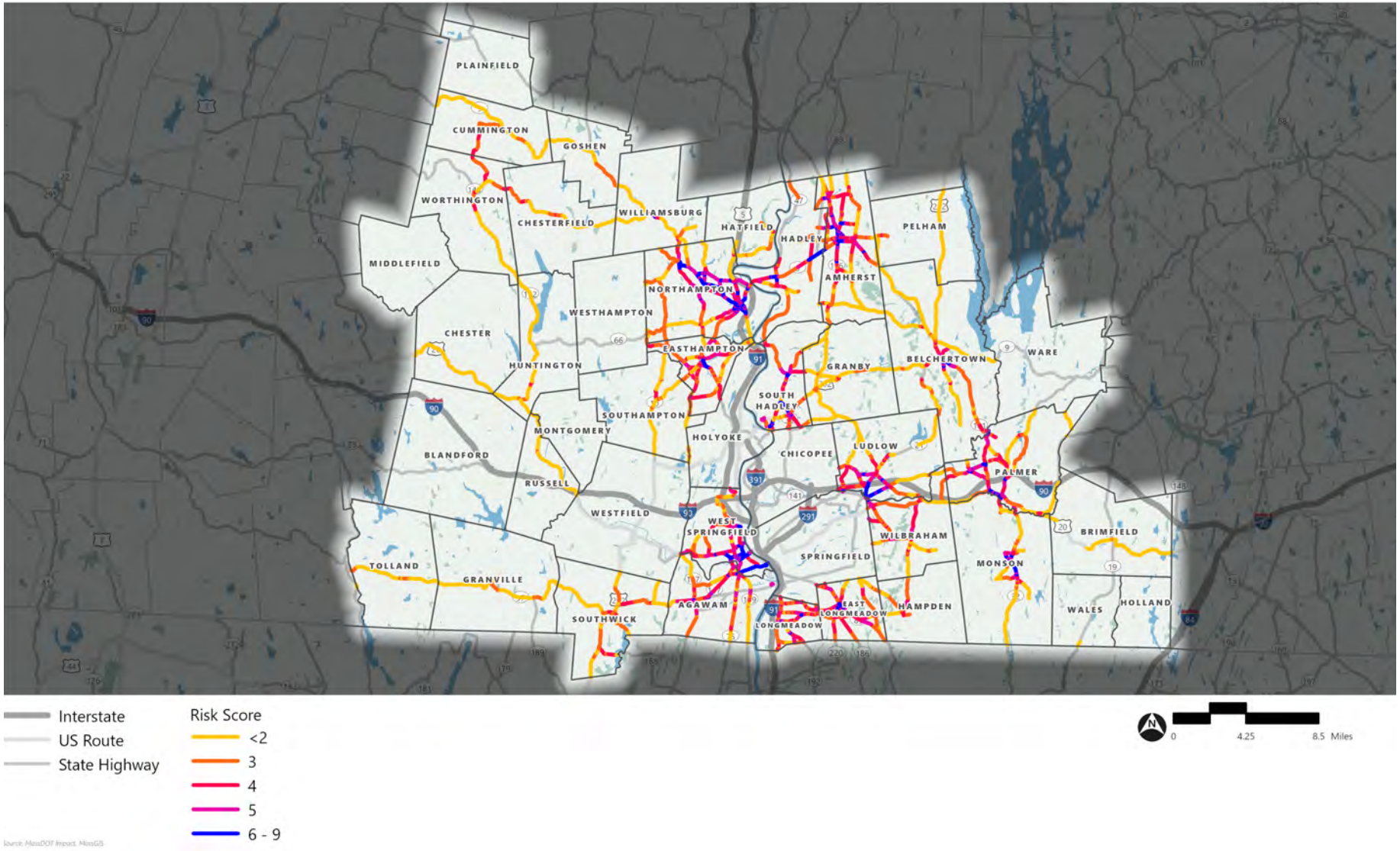
Data Element	Risk Factor	KA Crashes	Mileage	% of KA Crashes	% of Mileage
Functional Class	Principal Arterial—Other	49	158.4	48.5%	30.5%
Jurisdiction	City or Town Accepted Road	84	358.2	83.2%	69.9%
Total Lanes	4	8	11.9	7.9%	2.3%
Street Operation	One-Way	13	12.4	12.9%	2.4%
Posted Speed Limit	25 MPH or 30 MPH	61	134.4	60.4%	25.9%
Curb	Both Sides	69	116.5	68.3%	22.4%
Shoulder Presence	No Shoulder	66	213.8	65.3%	41.1%
Walking Potential Score Category	Medium or High	95	247.7	94.1%	47.6%
Distance to Nearest School	Within 1,000’	13	41.1	12.9%	7.9%
REJ Status	Segment within a REJ Census Tract	56	273.1	55.4%	52.5%
Crosswalk Presence	Crosswalk Present on Segment	46	61.3	45.5%	11.8%

Table B–10: Summary of Pedestrian Risk Scoring

Risk Score	Pedestrian Crashes	Mileage	% of Pedestrian Crashes	% of Mileage
8,9,10	31	14.3	10.7%	1.9%
7	62	37.2	21.4%	4.9%
6	69	67.1	23.8%	8.9%
5	66	94.0	22.8%	12.5%
4	34	122.1	11.7%	16.2%
3	18	153.6	6.2%	20.4%
2	9	160.0	3.1%	21.3%
1	1	82.3	0.3%	10.9%
0	0	22.2	0%	3.0%

Figure B-7 shows the coverage of the pedestrian crash HRN throughout the region.

Figure B–7: HRN for Pedestrian Crashes



Bicycle HRN

Between 2019 and 2023, bicycle crashes accounted for 3 percent of the region's fatalities, while accounting for 4 percent of the region's serious injuries between 2020 and 2024. Risk factors for the bicycle HRN were identified using all crashes irrespective of level of injury. Per the crash tree in **Figure B–8**, the PVPC selected Principal Arterial-Other and Minor Arterial roads as the focus facility type.

Figure B–8: Crash Tree for Bicycle Crashes

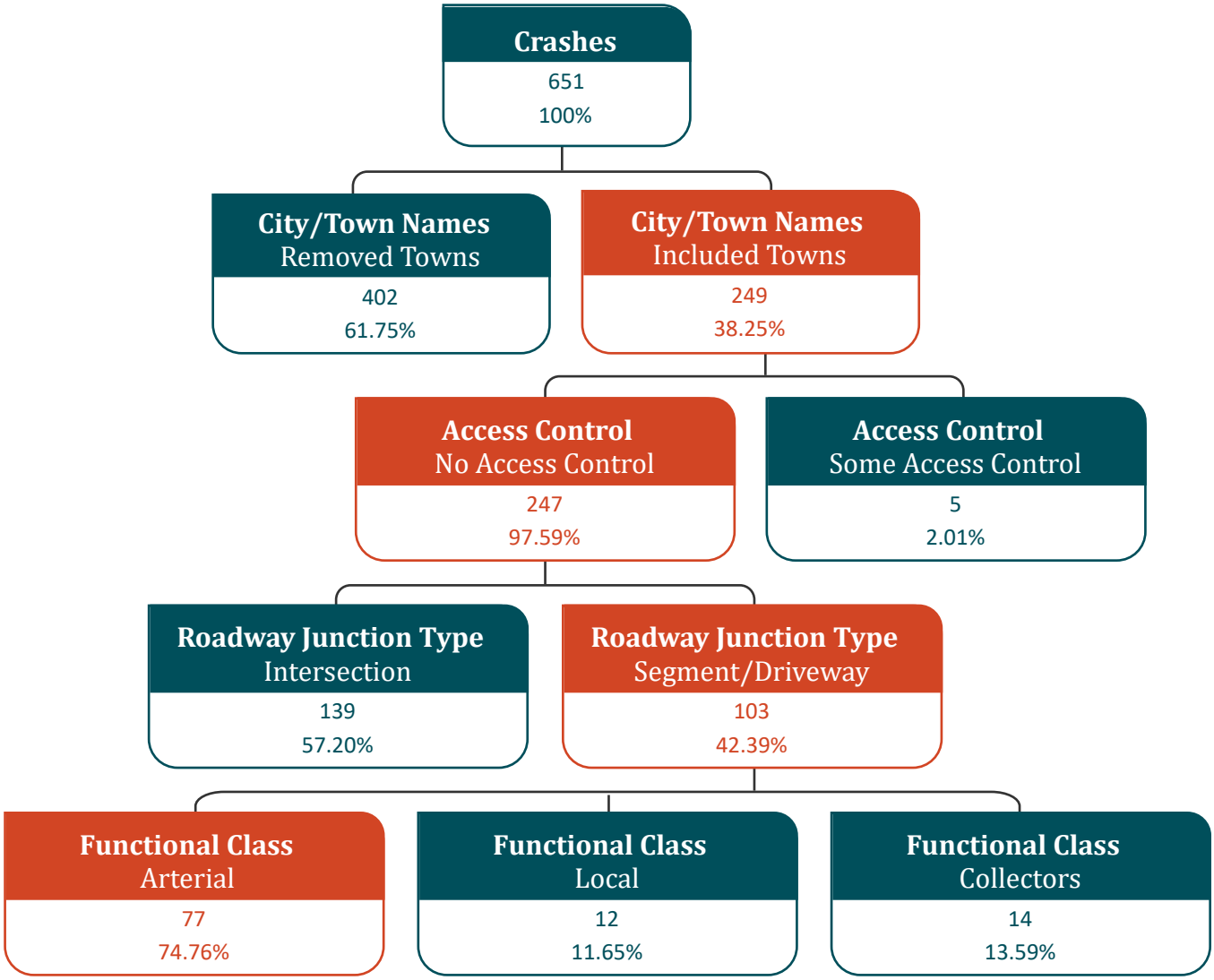


Table B-11 summarizes the risk factors selected for the Bicycle HRN. **Table B-12** summarizes the resulting risk scores from those risk factors.

Table B–11: Summary of Bicycle Risk Factors

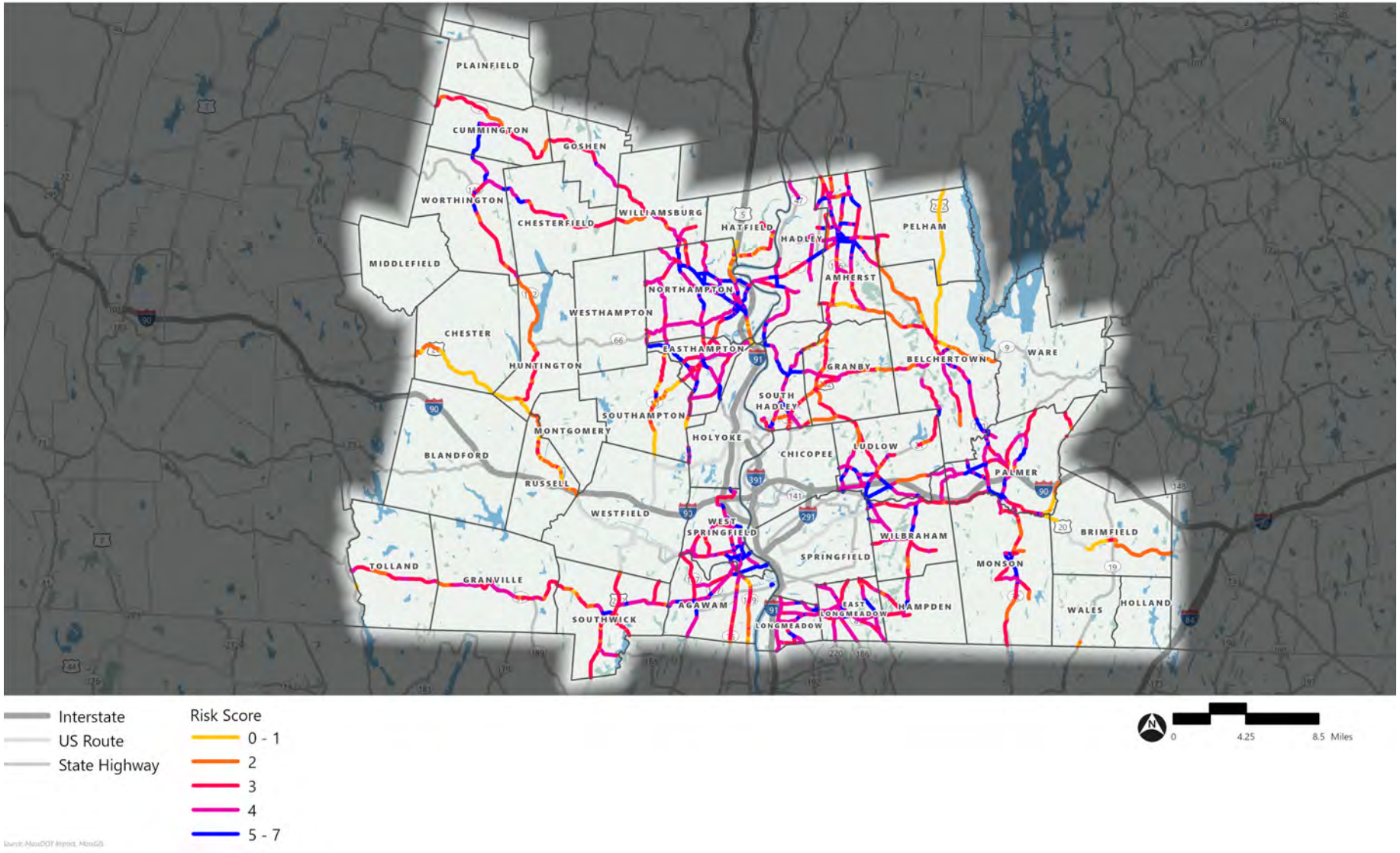
Data Element	Risk Factor	KA Crashes	Mileage	% of KA Crashes	% of Mileage
Functional Class	Principal Arterial—Other	42	158.4	57.5%	30.5%
Jurisdiction	City or Town Accepted Road	57	358.1	78.1%	68.9%
Total Lanes	4	5	11.9	6.8%	2.3%
Posted Speed Limit	25 MPH to 35 MPH	62	280.7	84.9%	54.0%
Curb	Both Sides	47	116.5	64.4%	22.4%
Shoulder Presence	No Shoulder	41	213.8	56.2%	41.1%
Bike Level of Traffic Stress	2 or Higher	67	451.9	91.8%	87.0%
Distance to Nearest School	Within 500’	6	11.6	8.2%	2.2%
REJ Status	Segment within a REJ Census Tract	45	273.1	61.6%	52.5%

Table B–12: Summary of Bicycle Risk Scoring

Risk Score	Pedestrian Crashes	Mileage	% of Pedestrian Crashes	% of Mileage
5, 6, 7	16	17.3	21.9%	3.3%
4	15	48.5	20.5%	9.3%
3	16	145.0	21.9%	27.9%
2	20	187.8	27.4%	36.1%
1	6	97.7	8.2%	18.8%
0	0	23.5	0%	4.5%

Figure B-9 shows the coverage of the bicycle crash HRN throughout the region.

Figure B–9: HRN for Bicycle Crashes



Motorcycle HRN

Between 2019 and 2023, motorcycle crashes accounted for 16 percent of the region's fatalities and 16 percent of the region's serious injuries between 2020 and 2024. For this HRN, same methodology was followed as lane departure crashes, focusing on KAB crashes to identify risk factors. Per the crash tree in **Figure B–10**, the PVPC selected Principal Arterial-Other and Minor Arterial roads as the focus facility type.

Figure B–10: Crash Tree for Motorcycle Crashes

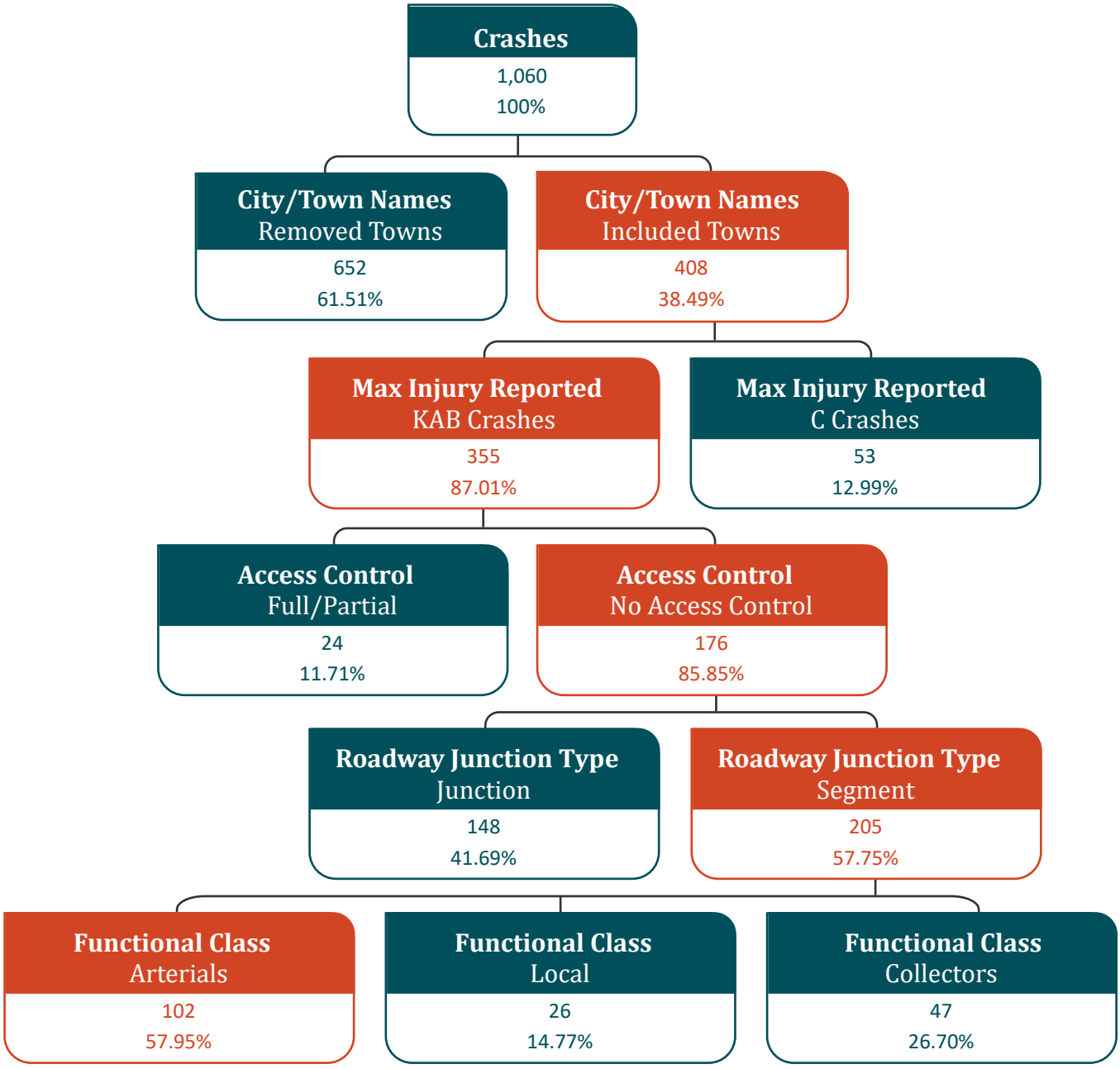


Table B–13 summarizes the risk factors selected for the Motorcycle HRN.**Table B–14** summarizes the resulting risk scores from those risk factors.

Table B–13: Summary of Motorcycle Risk Factors

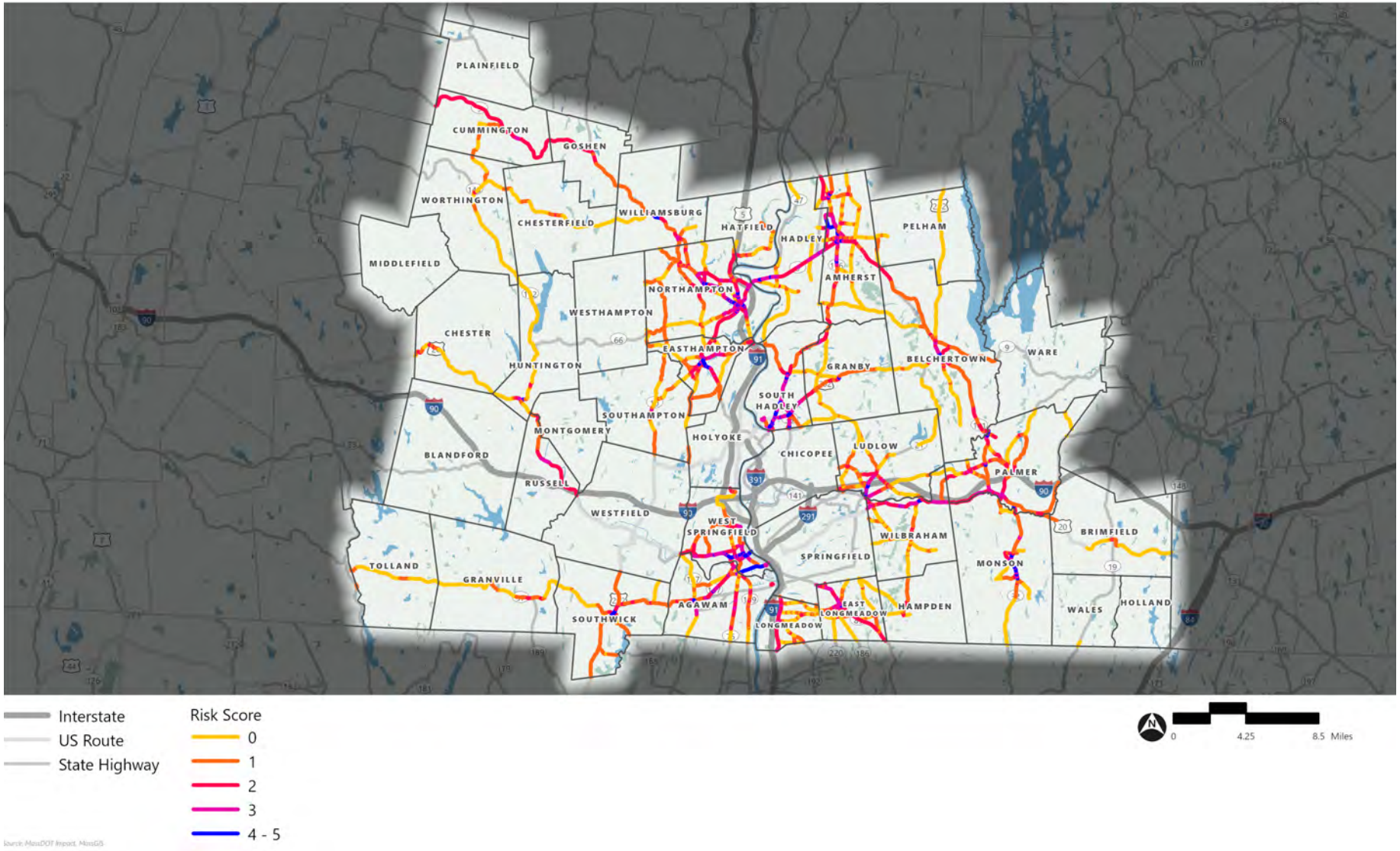
Data Element	Risk Factor	KA Crashes	Mileage	% of KA Crashes	% of Mileage
Functional Class	Principal Arterial—Other	47	158.5	47.5%	30.5%
Total Lanes	4	11	12.0	11.1%	2.3%
Posted Speed Limit	25 MPH to 30 MPH	39	134.4	39.4%	25.9%
Curb	Both Sides	39	116.5	39.4%	22.4%
Shoulder Presence	Shoulder 5’ or Wider	17	61.4	17.2%	11.8%
Crosswalk	Crosswalk Present	19	31.3	19.2%	11.8%

Table B–14: Summary of Motorcycle Risk Scoring

Risk Score	Pedestrian Crashes	Mileage	% of Pedestrian Crashes	% of Mileage
4, 5	24	28.1	10.5%	3.7%
3	50	92.1	21.9%	12.2%
2	72	174.5	31.6%	23.2%
1	47	217.1	20.6%	28.9%
0	35	240.2	15.4%	31.9%

Figure B–11 shows the coverage of the motorcycle crash HRN within the Pioneer Valley Region.

Figure B–11: HRN for Motorcycle Crashes



Speeding HRN

Between 2019 and 2023, speeding crashes accounted for 35 percent of the region's fatalities and 12 percent of the region's serious injuries between 2020 and 2024. To identify risk factors for the speeding HRN, KAB crashes were used and same methodology as described above were repeated. Per the crash tree in **Figure B-12**, the PVPC selected arterial and collector roads as the focus facility type.

Figure B-12: Crash Tree for Speeding-Related Crashes

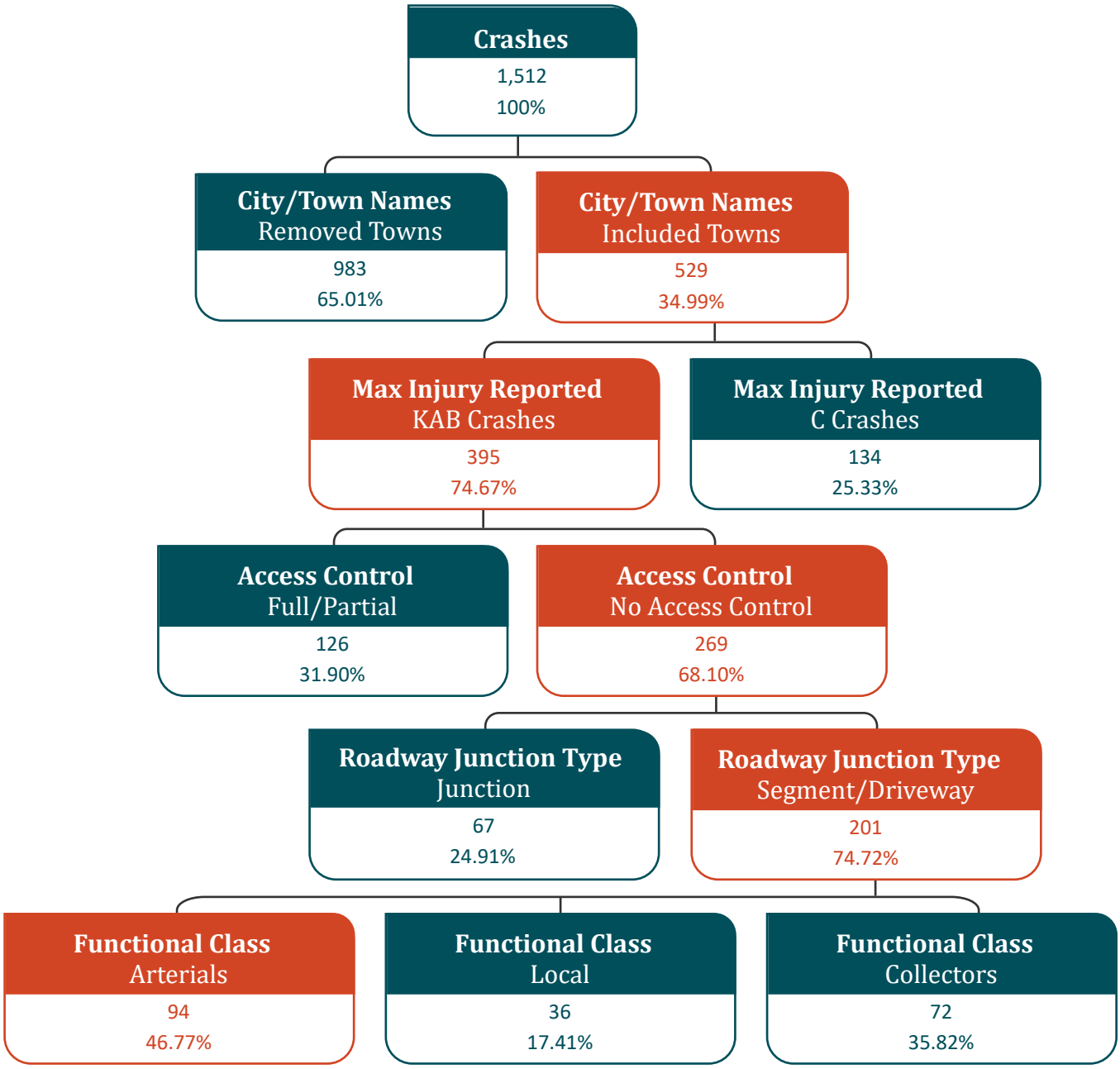


Table B–15 summarizes the risk factors selected for the Speeding HRN. **Table B–16** summarizes the resulting risk scores from those risk factors.

Table B–15: Summary of Speeding Risk Factors

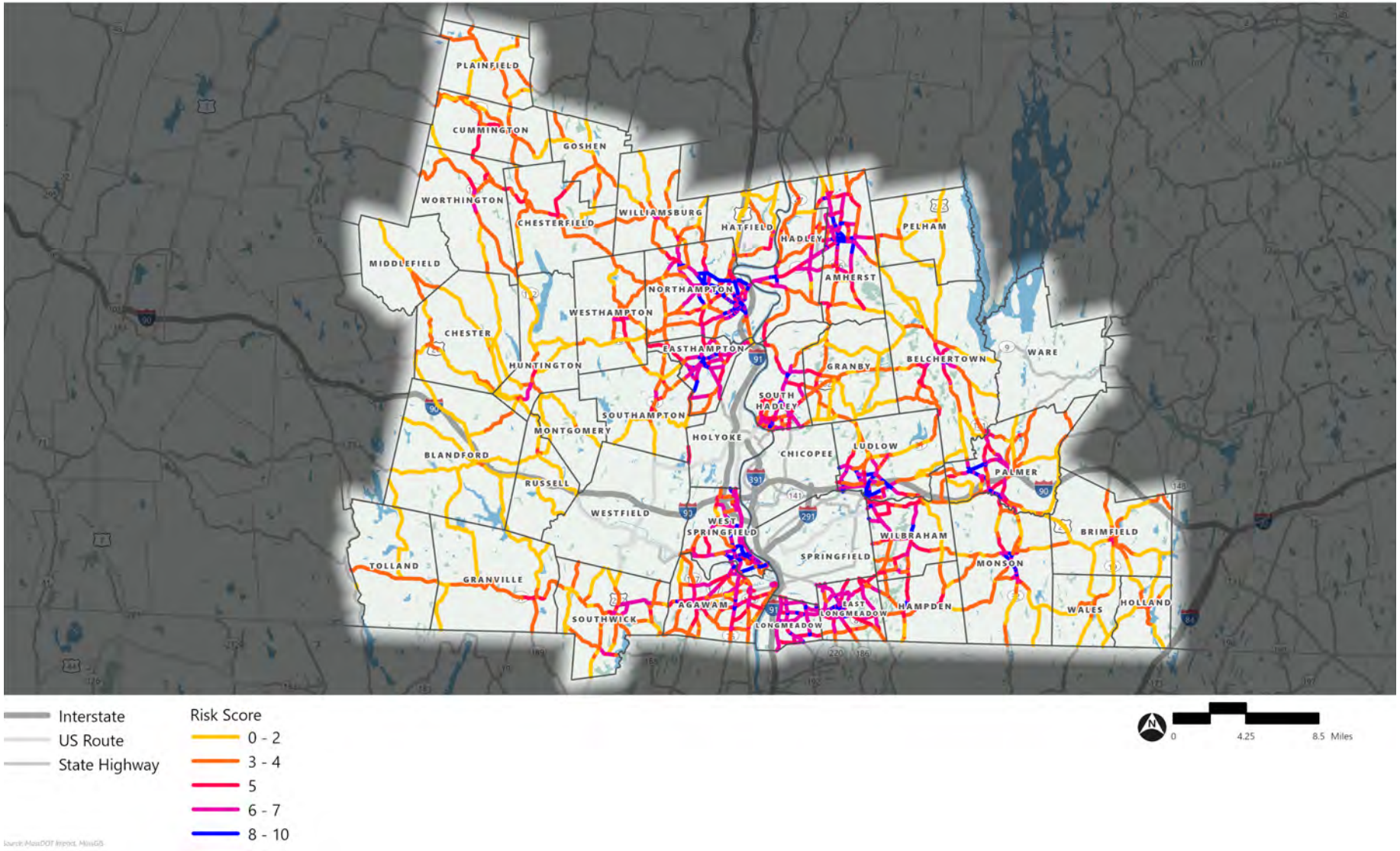
Data Element	Risk Factor	KA Crashes	Mileage	% of KA Crashes	% of Mileage
Functional Class	Principal Arterial—Other or Minor Arterial	185	557.6	65.4%	52.2%
Jurisdiction	MassDOT	81	220.8	28.6%	20.7%
Total Lanes	4	15	31.2	5.3%	2.9%
Posted Speed Limit	25 MPH to 35 MPH	166	497.9	58.7%	46.6%
Curb	Present on at least one side	99	234.2	35.0%	21.9%
Shoulder Presence	No Shoulder	115	375.0	40.6%	35.1%
Crosswalk	Crosswalk Present	34	92.1	12.0%	8.6%
Walking Potential	Medium or High	156	386.8	55.1%	36.2%
REJ	Segment is in an REJ Census Tract	159	522.8	56.2%	48.9%
Distance to Nearest School	Within 1 Mile	151	461.8	53.4%	43.2%

Table B–16: Summary of Speeding Risk Scoring

Risk Score	Pedestrian Crashes	Mileage	% of Pedestrian Crashes	% of Mileage
7, 8, 9, 10	60	120.8	21.2%	11.3%
6	44	102.7	15.6%	9.6%
5	37	125.9	13.1%	11.8%
4	44	168.4	15.6%	15.8%
3	37	208.8	13.1%	19.5%
2	41	197.3	14.5%	18.5%
0, 1	20	145.3	7.1%	13.6%

Figure B–13 shows how the speeding HRN is distributed throughout the region.

Figure B–13: HRN for Speeding-Related Crashes



Intersection HRN

Between 2019 and 2023, intersection-related crashes accounted for 20 percent of the annual average fatalities in the region. Further, between 2020 and 2024, intersection-related crashes accounted for 38 percent of annual suspected serious injuries. PVPC chose not to select a focus facility type for this analysis, rather to include all eligible intersections for the analysis (after removing ramp terminals).

Overrepresentation analysis was done to identify intersection risk factors. Given the quantity of crashes, only KA crashes were used for this analysis. **Table B–17** is an example of an overrepresentation analysis, where Signalized traffic control was selected as a risk factor since 19 percent of KA crashes occurred at signalized intersections, which only accounted for 7 percent of intersections in the region.

Table B–17: Identifying Traffic Control Risk Factor for PVPC Intersections

Traffic Control	KA Crashes	Intersections	% of KA Crashes	% of Intersections
All-Way Stop	5	30	2%	1%
Blank/Other	11	30	4%	1%
Signalized	51	168	19%	7%
Two-Way Stop	142	1,238	52%	51%
Uncontrolled	61	961	23%	39%
Yield Control	1	13	<1%	1%

Table B–18 summarizes the risk factors selected for intersections. Note that several risk factors are derived from census tract data, taken from Massachusetts Regional Environmental Justice (REJ+) flags. **Table B–19** summarizes risk scoring for intersections.

Table B–18: Summary of Intersection Risk Factors

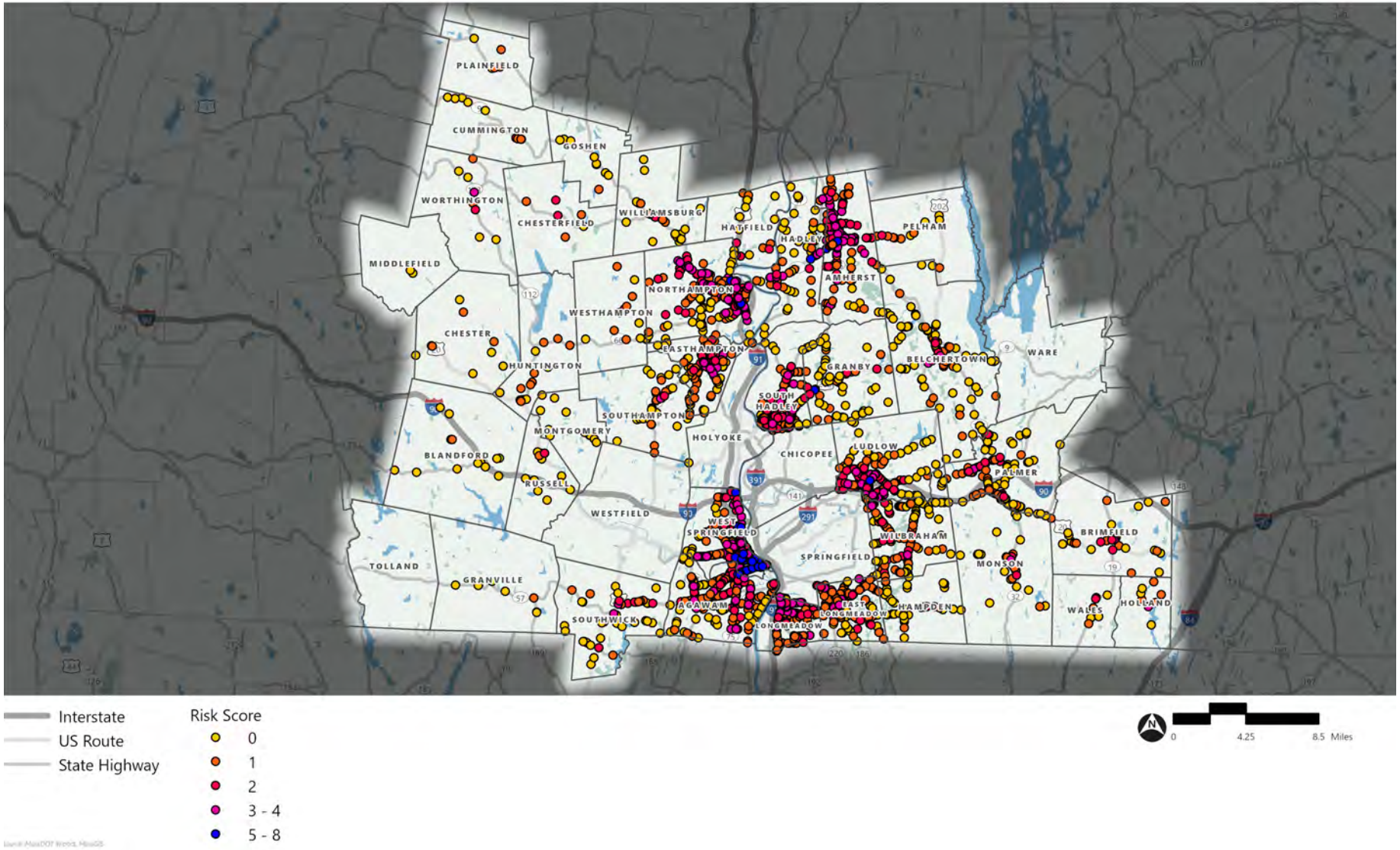
Data Element	Risk Factor	KA Crashes	Mileage	% of KA Crashes	% of Mileage
Number of Legs	Four Legs	82	470	30.3%	19.3%
Traffic Control	Signalized	47	168	18.8%	6.9%
Land Use	Commercial Land Use	43	135	15.9%	5.5%
School Proximity	Within 0.75 miles of school	175	1447	64.6%	59.3%
Number of Crosswalks	At least two within 250’ of the intersections	113	734	41.7%	30.1%
English Proficiency	Falls within a census tract for low English-speaking population	43	228	12.1%	8.0%
Median Income	Falls within a census tract for low median income	38	159	10.7%	5.5%
Disabled Population	Falls within a census tract for elevated percent of population with a disability	29	183	8.2%	6.4%

Table B–19: Summary of Intersection Risk Scoring

Risk Score	Pedestrian Crashes	Mileage	% of Pedestrian Crashes	% of Mileage
6, 7, 8	16	38	5.9%	1.6%
5	15	48	5.5%	2.0%
4	34	103	12.5%	4.2%
3	26	269	9.6%	11.0%
2	54	515	19.9%	21.1%
1	69	790	25.5%	32.4%
0	57	677	21.0%	27.7%

Figure B–14 shows how the intersection HRN is distributed throughout the Pioneer Valley Region.

Figure B–14: HRN for Intersection Crashes



Appendix

C

Transportation Needs and Access

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Purpose

The Pioneer Valley Planning Commission (PVPC) conducted a transportation needs and access assessment to identify areas with the highest relative transportation need across Hampden and Hampshire Counties. Relative transportation need measures how a community's social and mobility characteristics compare to regional averages to identify where transportation disadvantages are greatest. Indicators evaluated at the local, state, and federal levels vary, but generally include minority population, percent of residents living below the poverty level, limited English proficiency (LEP), seniors, youth, and households with no vehicle access.

This analysis supports prioritization of outreach and resource allocation to communities facing compounded transportation burdens.

Springfield, Holyoke, Chicopee, Westfield, and Ware are currently conducting independent safety studies. These five cities and towns were included in the needs and access analysis and overall scoring; however, they were filtered out of this subset of priority census tracts.

Methodology

The methodology included an internal review and analysis based on a multi-pronged evaluation framework: local analysis using U.S. Census Bureau American Community Survey (ACS) 5-Year Estimates (2017–2021), US DOT Underserved Communities' tool (2022), and MassDOT's Regional Environmental Justice (REJ+) layers (2025).

Local Analysis Methodology

For the local analysis, transportation needs and access indicators were evaluated at the census tract level and aggregated to produce an overall needs and access score. Indicators included minority population, households below the poverty level, limited English proficiency (LEP), people with disabilities, seniors, youth, and zero-vehicle households. Each indicator was equally weighted, with scores ranging from 0 to 4 based on an evenly distributed deviation from the regional average to the indicator's maximum percentage. A score of zero would indicate a census tract had a value lower than the study area average for that indicator. The maximum possible overall transportation needs and access score was calculated by aggregating the scores for each indicator, where the highest score would be 28. **The analysis determined the census tracts with the greatest transportation needs and access burdens as areas in Amherst, West Springfield, Ludlow, Longmeadow, East Longmeadow, Northampton, and Belchertown.** The tables below show the overall census tracts with the greatest transportation needs by town and approximate location. Two tables were presented, with one table filtering out the five cities and towns with their own SS4A initiatives from the top census tracts to guide engagement efforts.

Federal Analysis Methodology

Application of the USDOT Underserved Communities Tool identified a limited number of census tracts in the study area that meet the federal definition of an Underserved Community, primarily in areas with long-standing economic disadvantage. The tool defines an Underserved Community consistent with the definition of an Area of Persistent Poverty, where 20% of a county, census tract, or territory has continually lived in poverty.

State Analysis Methodology

MassDOT's REJ+ (Relative Environmental Justice +) determines if a census block group (often analyzed at the tract level) is disadvantaged by identifying areas with high concentrations of residents heavily impacted by transportation network change. It uses 23 variables across six dimensions, Environmental, Economy, Social, Health, Resilience, and Transportation, to identify these communities, mapping them at the block group level.

Federal/State Comparison to Local Analysis

Use of the USDOT Underserved Communities Tool revealed that only a small number of census tracts within the study area meet the federal definition of an Underserved Community. These results do not fully overlap with the local needs analysis due to methodological differences, as the federal tool relies largely on sustained poverty rates for national consistency, while the local analysis incorporates a broader range of socioeconomic and transportation-related factors. As a result, some areas with significant transportation needs and access burdens were identified through the local analysis but do not meet the federal criteria for persistent poverty, reinforcing the value of using multiple analytical approaches to capture local conditions.

Similarly, comparison of the local analysis tool with MassDOT's REJ+ analysis shows areas of alignment but also key differences. REJ+ applies a broader and more multidimensional framework than the federal tool, incorporating environmental, economic, social, health, resilience, and transportation variables at the block group level. While this approach captures cumulative burden and vulnerability more comprehensively than poverty alone, it reflects thresholds standardized at the statewide level and not with a study-area specific scoring that the local analysis provides.

Regional Indicator Averages

The table below summarizes study area average values used as the baseline for scoring needs and access indicators. These study area indicator averages were derived from the aggregated ACS datasets used in the local analysis. A score of 0 means that the indicator value was equal to or less than the study area indicator average.

Table C-1: Regional Indicator Averages

Indicator	Pioneer Valley Regional Average
Minority Population	33.1%
Below Poverty Level	14.1%
Limited English Proficiency	5.4%
People with a Disability	15.8%
Seniors (65+)	18.4%
Youth (<18)	17.6%
Zero Vehicle Ownership	10.3%

Top Priority Census Tracts for Community Outreach

To support comprehensive outreach planning, the highest-ranking census tracts in the study area were selected based on overall transportation needs and access scores. These areas are recommended as priority locations for targeted, inclusive community outreach and engagement efforts to ensure robust participation in regional planning initiatives. The table below show the census tracts with the highest overall score in the Pioneer Valley Region not including Springfield, Holyoke, Chicopee, Ware, and Westfield (as these municipalities have their own SS4A studies). For comparison, the highest-ranking census tracts existed in Springfield, where the need and access score was as high as 20. We recognize Amherst's relatively high scores are influenced in part by its large student population, which affects several indicators used in the internal analysis.

Table C-2: Top Census Tracts for Community Outreach

Rank	Census Tract	Primary Municipality	Need and Access Score	People with Disabilities Score	Youth Score	Senior Score	Minority Score	Households Below Poverty	Zero Vehicle Score	LEP Score
1	Census Tract 8124.03	**West Springfield**—west of Piper Road and north of Amostown Road	8	2	1	2	1	0	1	1
2	Census Tract 8203.00	**Amherst**—North Amherst	7	1	0	2	2	2	0	0
3	Census Tract 8207.00	**Amherst**—East Amherst to Pelham Town line, Route 9 and Main Street	7	1	0	2	2	1	1	0
4	Census Tract 8208.02	**Amherst**—Hampshire College	7	0	0	3	4	0	0	0
5	Census Tract 8123	**West Springfield**—Merrick neighborhood Park Avenue south to Westfield River	6	2	0	0	2	1	1	0
6	Census Tract 8104.03	**Ludlow**—South of I-90, Center Street and East Street, South of Ludlow Town Center	6	1	0	1	1	0	1	2
7	Census Tract 8133.04	**Longmeadow**—South of Bliss Road, West of Laurel Street, East of Frank South Road	6	0	1	4	1	0	0	0
8	Census Tract 8202.07	**Belchertown**—North of Main Street, West of Amherst and Granby Town line, South of Route 9	5	1	1	1	1	0	1	0
9	Census Tract 8219.03	**Northampton**—North of Easthampton Road, South of Smith College	5	1	0	1	1	1	1	0
10	Census Tract 8133.01	**Longmeadow**—North of CT State line, East of Connecticut River West of Laurel Street	5	0	2	2	1	0	0	0
11	Census Tract 8134.03	**East Longmeadow**—South of Maple and Elm Street, North of Pleasant Street	5	1	1	2	0	0	1	0
12	Census Tract 8205	**Amherst**—North and West of Amherst College	5	0	0	0	1	2	2	0

Application to Community Outreach

PVPC will use this transportation need and access assessment as a targeting and implementation tool to ensure Safe Streets for All (SS4A) engagement activities prioritize communities with the greatest identified need. Census tracts with the highest needs will guide the placement of pop-up events, targeted stakeholder interviews, and focused promotion of virtual engagement tools, ensuring that outreach resources are concentrated where socioeconomic, mobility, and safety burdens are most acute.

This analysis directly operationalizes the SS4A Public Engagement Plan by aligning data-driven priorities with the plan's core principles of accessibility, inclusiveness, transparency, and responsiveness. Outreach strategies will be tailored to conditions identified through the need and access indicators, including multilingual and plain-language materials, ADA-accessible meeting locations, varied engagement formats, and partnerships with trusted community-based organizations serving environmental justice and historically underrepresented populations.

References

- U.S. Census Bureau. *American Community Survey (ACS) 5-Year Estimates,* 2017–2021.
- U.S. Department of Transportation. *Underserved Communities Tool*, 2022.
- Massachusetts Department of Transportation. *Regional Environmental Justice Plus (REJ+) Dataset*, 2025.

D

Appendix

Municipal Projects

**Note: This appendix does not include the five cities and towns that have received SS4A funding to complete their own plan.*

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Agawam

Table D–1: Agawam Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Maple St**	Springfield St	Walnut St	?	✓	✓	✓	✓	✓	?	✓	✓
-	**Moore St**	Maple St	Town Line	?	✓	✓	?	✓	✓	?	?	✓
-	**Poplar St**	Springfield St	Mill St	✓	✓	✓	✓	✓	✓	✓	?	✓
MA-75	**Suffield St**	Valentine St	Center St	✓	✓	✓	✓	✓	✓	✓	?	✓
MA-57	**Southwick St**	Westfield St	Agawam Junior High School	?	✓	✓	✓	✓	✓	?	?	✓
MA-147	**Springfield St**	Walnut St	Columbus St	?	✓	✓	?	✓	?	?	?	?
MA-75	**Suffield St**	Mill St	Valentine St	?	✓	✓	?	✓	?	?	?	✓
MA-57	**Southwick St**	S West St	Westfield St	?	✓	✓	✓	✓	✓	?	?	✓
MA-75	**Suffield St**	Centerwood Dr	755 Suffield St	✓	✓	✓	✓	✓	?	?	?	✓
MA-147	**Springfield St**	Portland St	Line St	?	?	✓	?	✓	?	?	✓	?
MA-147	**Springfield St**	Brookline Ave	Poplar St	?	✓	✓	✓	✓	✓	?	?	✓

Table D–2: Agawam Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Maple St & Walnut St	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
N Grand St & Barry Corner St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	✓	?	✓
Main St & South St	Unsignalized	✓	✓	✓	?	✓	✓	✓	✓	?	?	?	?	?	?
River Rd & Glendale Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	✓
US-5 & River Rd	Roundabout	✓	✓	✓	✓	?	?	?	?	✓	?	?	✓	✓	?
US-5 & River Rd	Roundabout	✓	✓	✓	✓	?	?	?	?	✓	?	?	✓	✓	?
US-5 & River Rd	Roundabout	✓	✓	✓	✓	?	?	?	?	✓	?	?	✓	✓	?
US-5 & River Rd	Roundabout	✓	✓	✓	✓	?	?	?	?	?	?	?	✓	✓	?
Suffield St & Centerwood Dr	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	✓	?	✓
Springfield St & S Westfield St	Signalized	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Amherst

Table D–3: Amherst Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-9	**Belchertown Rd**	S East St	Stanley St	✓	✓	✓	?	✓	✓	?	?	✓	✓
-	**Main St**	S Pleasant St	Triangle St	?	✓	✓	✓	✓	?	✓	?	?	✓
MA-9	**College St**	S Whitney St	S East St	✓	✓	✓	✓	✓	?	?	?	✓	✓
-	**Triangle St**	Main St	E Pleasant St	?	✓	✓	✓	✓	?	✓	?	?	✓
-	**Main St**	Triangle St	Amherst Crossing	?	✓	✓	✓	✓	?	✓	?	?	✓
-	**N Pleasant St**	Sellen St	Hallock St	?	✓	✓	✓	✓	?	✓	?	?	✓
MA-9	**College St**	Dickinson St	S Whitney St	✓	✓	✓	✓	✓	?	?	?	✓	✓
MA-116	**S Pleasant St**	Snell St	Walnut St	?	✓	✓	✓	✓	?	✓	✓	?	✓
-	**S East St**	College St	Main St	✓	✓	✓	?	✓	?	✓	?	?	✓
-	**Strong St**	Red Gate Ln	E Pleasant St	✓	✓	✓	?	✓	✓	✓	?	?	✓

Table D–4: Amherst Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
S East St & College St	Signalized	?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?	✓	?
N Pleasant St & Puffton Village Dr	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
Amity St & Blue Hills Rd	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
Northampton Rd & Lincoln Ave	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?

Key: ✓ *Yes* ? *Possible*

Belchertown

Table D–5: Belchertown Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
US-202	**State St**	Turkey Hill Rd	Elementary School	✓	✓	✓	?	✓	?	?	?	✓	✓
US-202	**State St**	Elementary School	Maple St	✓	✓	?	?	✓	?	?	?	?	✓
US-202	**State St**	Maple St	S Main St	✓	✓	?	✓	✓	✓	?	?	✓	✓
US-202	**N Main St**	Woodhaven Dr	Jackson St	✓	✓	✓	✓	✓	?	✓	?	?	✓
US-202	**N Main St**	Tucker Ln	Woodhaven Dr	✓	✓	✓	?	✓	?	✓	?	?	✓
US-202	**N Main St**	Llyod Ave	Tucker Ln	✓	?	✓	?	✓	?	✓	?	?	✓
US-202	**N Main St**	Federal St	Llyod Ave	✓	✓	?	?	✓	?	✓	?	?	✓
-	**Jabish St**	Jensen St	Ware Rd	✓	✓	✓	?	✓	✓	✓	✓	?	✓
-	**Jabish St**	S Main St	Jensen St	✓	✓	✓	✓	✓	✓	✓	?	✓	✓
MA-181	**Mill Valley Rd**	Jensen St	N Washington St	?	✓	?	?	✓	✓	✓	?	?	✓

Table D–6: Belchertown Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
S Main St & N Washington St	Unsignalized	✓	✓	✓	✓	?	?	?	?	✓	?	?	✓	✓	?
Franklin St & Kennedy Rd	Unsignalized	✓	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Federal St & George Hannum St	Signalized	✓	?	✓	?	✓	?	✓	✓	✓	✓	?	?	✓	?
Federal St & George Bay Rd	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	✓	?
Federal St & Allen Rd	Unsignalized	✓	✓	✓	?	?	✓	?	?	?	?	?	✓	?	?
N Main St & Sargent St	Signalized	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?
N Main St & Lloyd Ave	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
S Main St & Maple St	Signalized	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?	✓	✓	?
State St & Whitlock Way	Unsignalized	✓	✓	✓	✓	?	?	?	?	?	?	✓	✓	✓	✓

Key: ✓ *Yes* ? *Possible*

Blandford

Table D–7: Blandford Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Huntington Road**	Town Line	Haight Rd	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-	**Russell Stage Road**	Main St	Kaolin Road	✓	✓	✓	?	✓	?	?	?	?	✓
-	**Beech Hill Road**	Town Line	Otis Stage Road	✓	?	?	✓	✓	✓	?	✓	?	✓
-	**Curtis Hall Road**	Town Line	Town Line	?	?	?	✓	✓	✓	?	✓	?	✓
-	**North Street**	Main St	Huntington Road	✓	✓	?	✓	✓	✓	?	✓	?	✓
-	**Huntington Road**	Haight Rd	Chester Road	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-	**North Blandford Road**	Town Line	Otis Stage Road	✓	?	?	✓	✓	✓	?	✓	?	✓
MA-23	**Otis Stage Road**	Town Line	Main St	✓	?	?	✓	✓	✓	?	✓	?	✓
MA-23	**Main St**	Kaolin Road	North St	✓	✓	?	✓	✓	✓	?	✓	?	✓

Table D–8: Blandford Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Sperry Road & Russell Stage Road	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
Russel Stage Road & Kaolin Road	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
North Blandford Road & George Miller Road	Unsignalized	?	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Chester Road & Old Chester Road	Unsignalized	?	?	✓	✓	?	?	?	?	✓	?	?	?	✓	?
Sanderson Brook Road & Chester Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Blandford Turnpike & Birch Hill Road	Unsignalized	✓	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Beech Hill Road & Otis Stage Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	✓	?
Otis Stage Road & Sheppard Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Otis Stage Road & Gibbs Road	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	?	✓	?
Blandford Turnpike & North Street	Unsignalized	✓	?	?	✓	?	?	?	?	✓	?	?	✓	✓	?
Gore Road & Josh Cross Road/North Blandford Road	Unsignalized	✓	?	✓	✓	?	?	?	?	✓	?	?	✓	?	?
Kaolin Road & Blandford Turnpike	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?

Key: ✓ *Yes* ? *Possible*

Brimfield

Table D–9: Brimfield Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
US-20	**Main St**	Warren Rd	Brookfield Rd	?	✓	✓	?	✓	?	✓	?	?	✓
-	**Monson Rd**	Town Line	Palmer Rd	✓	?	?	✓	✓	?	?	✓	?	✓
US-20	**Sturbridge Rd**	Town Line	East Old Sturbridge Rd	✓	?	?	?	✓	✓	✓	?	?	?
US-20	**Sturbridge Rd**	New Holland Rd	Brookfield Rd	?	?	?	✓	✓	?	✓	✓	?	✓
-	**Brookfield Rd**	Main St	Dix Hill Rd	?	✓	?	?	✓	?	?	?	?	✓
-	**New Holland Rd**	Sturbridge Rd	98 Holland Rd	✓	?	?	✓	✓	?	?	?	?	?
MA-19	**Wales Rd**	Main St	34 Wales Rd	✓	✓	✓	✓	✓	?	✓	?	✓	?
-	**Apple Rd**	Town Line	Town Line	✓	?	?	✓	✓	?	?	?	?	✓
-	**Brookfield Rd**	Town Line	East Hill Rd	✓	?	?	?	✓	?	?	?	?	✓

Table D–10: Brimfield Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Monson Rd & Old Palmer Rd	Unsignalized	?	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Main St/Sturbridge Rd & North Main St	Signalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
East Hill Rd & Brookfield Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	✓	?
Little Alum Rd & Apple Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Palmer Rd & Monson Rd	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Holland Rd & Five Bridge Rd/Agard Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
North Main St & Brookfield Rd	Unsignalized	?	✓	?	?	?	?	?	?	?	?	?	✓	?	✓
Palmer Rd & Prospect Hill Rd	Unsignalized	?	?	?	?	?	?	?	?	✓	?	?	✓	?	?
Warren Rd & North Main St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	✓	✓

Key: ✓ *Yes* ? *Possible*

Table D–10: Brimfield Intersections (continued)

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Mill Lane Rd & Main St/Palmer Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	✓	?
Dunham Town Palmer Rd/Old Palmer Rd & Palmer Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Sturbridge Rd & Brookfield Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	✓	?
Sturbridge Rd & West Old Sturbridge Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Saint Claire Rd/Dearth Hill Rd & Palmer Rd	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Tower Hill Rd/Dunham Town Brimfield Rd & Warren Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Wales Rd & Haynes Hill Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Sturbridge Rd & Little Alum Rd	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Cross St & Main St	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Chester

Table D–11: Chester Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
US-20	**Huntington Road**	Baystate Drive	Huntington Town Line	✓	?	?	?	✓	?	?	?	?	✓
US-20	**West Main Street**	Becket Town Line	Hampden Street	✓	?	?	?	✓	?	?	?	?	✓
US-20	**West Main Street**	Hampden Street	Baystate Drive	?	✓	?	?	✓	✓	?	✓	?	✓
-	**Middlefield Road**	Middlefield Town Line	West Main Street	✓	?	?	✓	?	✓	?	✓	?	?
-	**Old State Highway**	Huntington Road	Huntington Town Line	✓	?	?	✓	✓	?	?	✓	?	?
-	**Skyline Trail**	Bromley Road	Middlefield Town Line	✓	?	?	?	✓	?	?	?	?	?
-	**Bromley Road**	Skyline Trail	Huntington Town Line	✓	?	?	✓	✓	?	?	✓	?	✓
-	**Skyline Trail**	Bromley Road	East River Rd	?	?	?	✓	✓	?	?	✓	?	?

Table D–12: Chester Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Skyline Trail & East River Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Holcomb Road & Skyline Trail	Uncontrolled	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Bromley Road & East River Road	Uncontrolled	?	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Bromley Road & Higgins Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Huntington Road & Old State Highway	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Skyline Trail & Western View Road/Lyon Hill Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
West Main Road & School Street	Uncontrolled	?	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
West Main Road/ Huntington Road & Main Street	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	✓	?
West Main Street & Blandford Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Chesterfield

Table D–13: Chesterfield Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-143	**Main Road**	Buck Road	709 Main Rd	?	?	?	✓	✓	?	✓	✓	?	?
MA-143	**Main Road**	709 Main Rd	Cummington Road	?	?	✓	✓	✓	?	✓	✓	?	?
MA-143	**Main Road**	Cummington Road	Smith Road	?	?	✓	✓	✓	?	✓	✓	?	?
MA-143	**Main Road**	Smith Road	North Road	?	?	✓	✓	✓	?	✓	✓	?	?
MA-143	**Main Road**	North Road	Stage Road	?	?	✓	✓	✓	?	✓	✓	?	?
MA-143	**Main Road**	Stage Road	Sugar Hill Road	?	?	✓	✓	✓	?	✓	✓	?	?
-	**East Street**	South Street	Westhampton Town Line	?	?	?	?	✓	?	?	?	?	?
-	**Damon Pond Road**	North Road	Goshen Town Line	?	?	?	?	✓	?	?	?	?	?
-	**Ireland Street**	Old Post Rd	River Road	?	?	?	?	✓	?	?	?	?	?
-	**North Road**	Smith Road	Main Road	?	?	?	?	✓	?	?	?	?	?

Table D–14: Chesterfield Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Main Road & North Road/South Street	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	✓	✓	✓
Smith Road/Damon Pond Road & Willcutt Road/North Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	✓	?	?
South Street & East Street/Munson Road	Unsignalized	?	?	?	?	?	?	?	?	?	?	?	?	?	✓
Main Road & Sugar Hill Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Main Road & Ireland Street/ Cummington Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Old Chesterfield Road & Sugar Hill Road	Unsignalized	?	?	?	?	?	?	?	?	?	?	?	?	?	✓

Key: ✓ *Yes* ? *Possible*

Cummington

Table D–15: Cummington Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-112	Bryant Rd	W Cummington Rd	Berkshire Trail	?	?	?	?	✓	?	✓	✓	?	✓
-	W Cummington Rd	Berkshire Trail	Bryant Rd	?	?	?	✓	✓	?	?	✓	?	?
MA-9	Berkshire Trail	Bryant Rd	Main St	?	?	?	✓	✓	?	✓	✓	✓	✓
MA-9	Berkshire Trail	Old Rt 9	Howes hill Rd	?	?	?	✓	✓	?	✓	✓	✓	✓
MA-9	Berkshire Trail	Main St	Old Rt 9	?	?	?	✓	✓	?	✓	✓	✓	✓
-	Plainfield Rd/ Main St	Stage Rd	Berkshire Trail	✓	✓	✓	?	✓	?	?	?	?	✓
MA-112	W Cummington Rd	Bryant Rd	Cummington Town Line	?	?	?	?	✓	?	✓	✓	?	✓
-	W Main St	Cummington Town Line	Berkshire Trail	?	?	?	?	✓	?	?	?	?	✓
MA-9	Berkshire Trail	Cummington Town Line	Westfield River Rest Stop	?	?	?	✓	✓	?	✓	✓	✓	✓
MA-9	Berkshire Trail	Packard St	Bryant Rd	?	?	?	✓	✓	?	✓	✓	✓	✓

Table D–16: Cummington Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Packard Road & Berkshire Trail	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Bug Hill Road & Berkshire Trail	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Walker Road & Berkshire Trail	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Beechwood Road & Berkshire Trail	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Westfield River Rest Stop & Berkshire Trail	Uncontrolled	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main Street & Berkshire Trail	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Old Route 9 & Berkshire Trail	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Thayer Corner Road & Berkshire Trail	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Lilac Ave & Berkshire Trail	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

East Longmeadow

Table D–17: East Longmeadow Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-83	Somers Road	Quarry Hill Road	William Street	✓	✓	✓	✓	✓	?	✓	?	✓	✓
MA-220	Shaker Road	Maple Street	Chestnut Street	✓	✓	✓	✓	✓	✓	✓	?	✓	✓
MA-83	North Main Street	Elm Street	Westwood Avenue	✓	✓	✓	?	?	✓	✓	?	?	✓
MA-83	North Main Street	Audubon Street	Westwood Avenue	✓	✓	✓	?	✓	✓	?	?	✓	✓
MA-186	Prospect Street	Maple Street	Prospect Hills Drive	✓	✓	✓	✓	✓	?	✓	?	?	✓
-	Chestnut Street	Somers Road	Prospect Street	✓	✓	✓	✓	✓	?	✓	?	?	✓
-	Maple Street	Longmeadow Town Line	Shaker Road	✓	✓	✓	✓	✓	✓	?	?	?	✓

Table D–18: East Longmeadow Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Dwight Road/Benton Drive & Chestnut Street	Signalized	✓	?	✓	?	✓	?	?	?	?	✓	?	✓	✓	?
Mapleshade Avenue & Elm Street	Signalized	✓	✓	✓	?	✓	✓	✓	✓	?	?	✓	✓	✓	?
Porter Road & Markham Road	Unsignalized	✓	✓	✓	✓	?	?	?	?	?	?	?	?	✓	?
Chestnut Street & Prospect Street	Unsignalized	✓	✓	✓	✓	?	?	?	?	✓	?	?	✓	✓	✓
Harkness Avenue & North Main Street	Signalized	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?
Allen Street & Parker Street	Signalized	✓	✓	✓	?	?	?	?	?	✓	?	?	✓	✓	?
North Main Street & Westwood Avenue/ Mapleshade Avenue	Signalized	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?
North Main Street/ Somers Road & Shaker Road/Elm Street & Maple Street/Pleasant Street & Prospect Street	Unsignalized	✓	✓	✓	✓	?	?	?	?	✓	?	?	✓	✓	?
Somers Road & South Bend Lane/Hampden Road	Unsignalized	✓	?	✓	✓	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Easthampton

Table D–19: Easthampton Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Glendale Street**	South Street	West Street	✓	?	?	?	✓	?	?	?	?	✓
-	**Pleasant Street**	Searle Ave	Ferry Street	?	✓	✓	✓	✓	?	?	?	✓	✓
-	**South Street**	Main Street	Glendale Street	✓	?	✓	✓	✓	?	?	?	?	✓
MA-141	**Holyoke Street**	East Street	Stone Path Lane	?	?	✓	?	✓	?	✓	?	?	✓
-	**Ferry Street**	East Street	Pleasant Street	?	✓	✓	✓	✓	?	?	?	?	✓
MA-10	**Northampton Street**	Highland Avenue	West Street	?	✓	✓	?	✓	?	?	✓	?	✓
MA-10	**Main Street**	Payson Lane	Clark Avenue	?	✓	✓	?	✓	?	?	?	✓	✓
MA-10	**Main Street**	Donais Street	Glendale Street	?	✓	✓	?	✓	?	?	?	✓	✓
-	**Park Street**	Main Street	Tufts Ave	?	✓	✓	?	✓	?	✓	?	?	✓
MA-10	**Main Street**	Glendale St	Payson Lane	?	✓	✓	?	✓	?	?	?	✓	✓

Table D–20: Easthampton Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Park Street & Center Street	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	?	?
Ferry Street & Parsons Street	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	?	?	✓
East Street & North Street	Unsignalized	?	✓	✓	✓	✓	?	✓	?	✓	✓	?	?	?	?
Northampton Street & Oniell Street	Signalized	✓	?	✓	?	✓	✓	✓	?	?	✓	?	?	?	?
Main Street & South Street	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Pomeroy Meadow Road, West Street, Loudville Road & Glendale Street	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Parsons Street & Everett Street/Duda Drive	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	✓	✓
Holyoke Street & Fairfield Avenue	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Cottage Street & Pine Street	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Goshen

Table D–21: Goshen Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-112	Cape Street	USCM League Highway	Ashfield Town Line	?	?	?	?	✓	?	?	?	?	?
-	West Street	Main Street	Chesterfield Town Line	?	?	?	?	✓	?	?	?	?	?
MA-9	Berkshire Trail	Main Street	Williamsburg Town Line	?	?	✓	✓	✓	?	✓	✓	?	✓
MA-9	USMC League Highway	Spruce Corner Road	Cape Street	?	?	✓	?	✓	?	✓	✓	?	?
MA-9	Main Street	Cape Street	East Street	?	?	✓	✓	✓	?	✓	?	?	?
MA-9	Main Street	East Street	Berkshire Trail	?	✓	✓	✓	✓	?	✓	✓	?	?
-	S Main St/S Chesterfield Rd	West St	Goshen Town Line	?	?	?	✓	✓	?	?	✓	?	✓
-	Spruce Corner Rd	USMC League Hwy	Goshen Town Line	?	?	?	✓	✓	?	?	✓	?	✓

Table D–22: Goshen Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
South Main Street/Main Street & West Street	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Stone Road & Spruce Corner Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main Street & Berkshire Trail	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Pond Hill Road/Hyde Hill Road & South Chesterfield Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Main Street & East Street	Unsignalized	?	✓	?	✓	?	?	?	?	?	?	?	?	?	?
Berkshire Trail & South Main Street	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Marine Corps League Highway/Berkshire Trail & Old Goshen Road	Uncontrolled	✓	?	?	?	?	?	?	?	✓	?	?	?	?	?
USMC League Highway & Sears Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
USMC League Highway & Loomis Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Granby

Table D–23: Granby Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Amherst St**	W State St	Smith Ave	✓	?	?	✓	✓	✓	?	✓	?	✓
US-202	**W State St**	Pleasant St	Phins Hil Manor	✓	?	✓	✓	✓	✓	?	✓	?	✓
US-202	**W State St**	Phins Hil Manor	Crescent St	✓	?	✓	✓	✓	✓	?	?	?	✓
US-202	**State St**	Ferry Hill Rd	Center St	✓	?	✓	✓	✓	✓	✓	✓	?	✓
US-202	**State St**	Center St	North St	?	?	✓	?	✓	?	✓	?	?	✓
US-202	**E State St**	North St	Lyman St	?	?	?	?	✓	?	?	✓	?	✓
US-202	**E State St**	Deerbrook Drive	School St	?	?	?	?	✓	?	?	✓	?	✓
-	**East St**	Morgan St	New Ludlow Rd	?	?	✓	✓	✓	?	✓	✓	?	✓
-	**Pleasant St**	East St	W State St	✓	?	?	✓	✓	✓	?	✓	?	✓

Table D–24: Granby Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Aldrich St & Amherst St	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	✓
New Ludlow Rd & South St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Amherst Rd & Amherst St	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
W State St & Amherst St	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	?	?
Amherst Rd & Burnett Rd	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	✓	?	✓
State St & Porter St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	✓	?	?
E State St & Lyman St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
W State St & High St	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
E State St & Chicopee St	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	✓

Key: ✓ *Yes* ? *Possible*

Granville

Table D–25: Granville Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Old Westfield Rd**	Main Rd	Winchell Rd	✓	?	?	✓	✓	✓	?	✓	?	✓
MA-189	**Granby Rd**	Town Line	Main Rd	?	?	?	✓	✓	✓	?	✓	?	✓
MA-57	**Main Rd**	Wendy's Rd	Barnard Rd	✓	?	?	✓	✓	✓	?	✓	?	✓
MA-57	**Main Rd**	Lovers Ln	Wendy's Rd	✓	?	?	✓	✓	?	✓	✓	?	✓
MA-57	**Main Rd**	Barnard Rd	Granby Rd	✓	?	✓	✓	✓	?	✓	✓	✓	✓
MA-57	**Main Rd**	Granby Rd	Sodom St	✓	?	?	✓	✓	?	✓	✓	?	✓
MA-57	**Main Rd**	Sodom St	Town Line	✓	?	?	✓	✓	?	✓	✓	?	✓
MA-57	**Main Rd**	Town Line	Lovers Ln	✓	?	?	✓	✓	?	✓	✓	?	✓
-	**W Hartland Rd**	Town Line	Main Rd	?	?	?	✓	✓	✓	?	✓	?	✓
-	**North Ln**	Main Rd	Town Line	?	?	?	✓	✓	✓	?	✓	?	✓

Table D–26: Granville Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
North Lane and Main Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Granby Rd & Silver St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	✓	?	?
Granby Rd & Silver St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	✓	?	?
Main Rd & Lovers Ln	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main Rd & Reagan Rd	Unsignalized	✓	?	✓	✓	?	?	?	?	✓	?	?	?	?	✓
Main Rd & Wendy's Rd	Uncontrolled	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Main Rd & Granby Rd	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	✓	?	✓

Key: ✓ *Yes* ? *Possible*

Hadley

Table D–27: Hadley Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-47	**Middle Street/River Road**	Russell Street	Hadley Elementary School	✓	?	?	?	✓	?	?	✓	✓	✓
-	**South Maple Street**	Russell Street	Mill Valley Road	?	✓	✓	?	✓	?	?	?	✓	✓
-	**North Hadley Road**	Mullins Way	Amherst Town Line	?	?	?	✓	✓	?	?	✓	?	✓
-	**Commonwealth Avenue**	Holdsworth Way	Amherst Town Line	?	?	?	?	✓	?	?	?	✓	?
-	**North Maple Street**	Rocky Hill Road	Mount Warner Road	?	?	?	?	✓	?	?	✓	?	✓
-	**North Maple Street**	Rocky Hill Road	Russell Street	?	?	?	?	✓	?	?	✓	?	✓
MA-47	**Bay Road**	Middle Street	East Street	✓	?	?	✓	✓	?	?	✓	?	?
MA-47	**Lawrence Plain Rd**	Bay Road	Neely Ln	✓	?	?	?	✓	?	?	✓	?	?
MA-47	**Bay Road**	East Street	Bay Rd	✓	?	?	?	✓	?	?	✓	?	?

Table D–28: Hadley Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Bay Road & Aquavitae Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Bay Road & West Street	Uncontrolled	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Bay Road & South Maple Street	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
North Maple Street & Plainville Road	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
South Maple Street & Mill Valley Road	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
South Maple Street & Moody Bridge Road	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Rocky Hill Road & East Street	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
North Maple Street & Rocky Hill Road	Signalized	?	?	✓	?	✓	✓	?	?	✓	✓	✓	?	?	?
Roosevelt Street & Stockbridge Street	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	✓	?	?

Key: ✓ *Yes* ? *Possible*

Table D–28: Hadley Intersections (continued)

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
North Maple Street & Venture Way	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	✓	?	?
Russell Street & Mill Valley Road	Unsignalized	?	✓	?	✓	?	?	?	?	✓	?	?	?	✓	?
Middle Street & Kosior Drive	Uncontrolled	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Middle Street & North Lane	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Middle Street & Maple Avenue	Uncontrolled	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	?
Bay Road & East Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Middle Street & River Drive	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Russell Street & Cross Path Road	Unsignalized	✓	✓	?	?	?	?	?	?	✓	?	?	?	?	?
Russell Street & Pine Hill Road	Uncontrolled	?	✓	?	?	?	?	?	?	✓	?	?	?	?	?
North Hadley Rd & Mullins Way	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	✓	?	?
Middle Street & Bay Road	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	?	✓
Middle Street & Railroad St	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Hampden

Table D–29: Hampden Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Stony Hill Rd**	Edwards St	Town Line	?	?	?	?	✓	?	?	?	✓	?
-	**Wilbraham Rd**	Echo Valley Dr	Town Line	✓	?	?	✓	✓	?	✓	✓	✓	?
-	**Wilbraham Rd**	Raymond Dr	Echo Valley Dr	✓	?	?	✓	✓	?	✓	✓	✓	?
-	**Main St**	Somers Rd	Country Club Rd	?	?	✓	?	✓	?	✓	?	?	✓
-	**Somers Rd/Allen St**	Main St	Pinewood Rd	?	✓	✓	?	✓	?	✓	✓	✓	?
-	**Somers Rd**	Martin Farms Rd	Main St	✓	✓	?	?	✓	?	✓	?	?	✓
-	**Somers Rd**	Pinewood Rd	Town Line	?	?	✓	?	✓	?	✓	?	✓	?
-	**E Longmeadow Rd**	Carmody Rd	Town Line	✓	?	?	?	✓	?	✓	✓	?	?
-	**E Longmeadow Rd**	Somers Rd	Carmody Rd	✓	✓	✓	?	✓	?	✓	✓	?	✓

Table D–30: Hampden Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	? Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Main St, Glendale Rd & Scantic Rd	Unsignalized	?	?	?	✓	?	?	?	?	✓	?	?	?	?	✓
Main St & Hampden Memorial Park	Unsignalized	?	✓	✓	✓	?	?	?	?	✓	?	?	?	?	?
Main St & Hampden Colonial Village	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	✓	?
Scantic Rd & Cross Rd	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Stony Hills Rd & Woodland Dr	Uncontrolled	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Stony Hills Rd & Andrew Cir	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Allen St & Hunting Rd	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Somers Rd & Martin Farms Rd	Uncontrolled	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main St & Chapin Rd	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	✓	?	?
Somers Rd & Main St	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
Somers Rd, Allen St & E Longmeadow Rd	Unsignalized	?	✓	✓	?	?	?	?	✓	✓	?	?	✓	✓	?

Key: ✓ *Yes* ? *Possible*

Hatfield

Table D–31: Hatfield Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Elm Street**	Interstate 91	Dwight Street	?	?	✓	?	✓	?	?	✓	?	✓
-	**Elm Street**	Dwight Street	Scotland Road	?	?	✓	?	✓	?	?	✓	?	✓
-	**Elm Street**	Scotland Road	Prospect Street	?	?	✓	?	✓	?	?	✓	?	✓
-	**Main Street**	Maple Street	North Street	?	?	✓	?	✓	?	✓	?	?	✓
-	**Main Street**	North Street	King Street	?	?	✓	?	✓	?	✓	?	?	✓
-	**King Street**	Prospect Street	Main Street	✓	?	?	✓	✓	?	?	?	?	✓
-	**N Hatfield Rd**	King St	MA-10	✓	?	?	?	✓	?	?	✓	?	✓

Table D–32: Hatfield Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Elm Street/ Maple Street & Prospect Street	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	✓
Main Street & Billings Way	Uncontrolled	✓	✓	✓	✓	?	?	?	?	?	?	?	?	✓	?
Elm Street & Elm Court	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Maple Street/Bridge Lane & Main Street/ Valley Street	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Elm Street & Interstate 91 Ramps	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Pantry Road/ Chestnut Plain Road & Mountain Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
West Street & Mountain Drive/ Depot Road	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
West Street & Linseed Road/Church Avenue	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Holland

Table D–33: Holland Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Sand Hill Rd**	Sturbridge Rd	Mashapaug Rd	✓	?	✓	✓	✓	?	?	?	?	✓
-	**East Brimfield Rd**	Town Line	Sturbridge Rd	✓	?	?	✓	✓	?	?	?	?	?
-	**Mashapaug Rd**	Pond bridge Rd	Old Country Rd	?	?	?	✓	✓	?	?	?	?	✓
-	**Sturbridge Rd**	Mashapaug Rd	Alexander Rd	✓	✓	✓	✓	✓	?	?	✓	?	✓

Table D–34: Holland Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Mashapaug Rd & Causeway Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Brimfield Rd & Hisgen Rd	Unsignalized	?	?	✓	✓	?	?	?	?	?	?	?	?	?	?
Wales Rd & Brimfield Rd	Unsignalized	✓	?	✓	?	?	✓	?	?	✓	?	?	?	?	?
Brimfield Rd & Pond Bridge Rd	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Sturbridge Rd & Sand Hill Rd/East Brimfield Rd	Unsignalized	?	✓	✓	?	?	?	?	✓	✓	?	?	?	✓	✓
Sturbridge Rd & Leno Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
East Brimfield Rd & Long Hill Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Sturbridge Rd & Alexander Rd	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Huntington

Table D–35: Huntington Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-112	**East Main Street**	Bromley Road	Russell Road	?	✓	✓	?	✓	?	✓	?	?	✓
US-20	**Russell Road**	14 Laurel Rd	East Main Street	?	✓	✓	?	✓	?	✓	?	?	✓
MA-112	**Worthington Road**	Montgomery Road	Bromley Road	?	✓	✓	?	✓	?	✓	?	?	✓
MA-112	**Worthington Road**	Rocky Brook Drive	Montgomery Road	?	?	?	?	✓	?	✓	?	?	✓
MA-112	**Worthington Road**	Pond Brook Road	Rocky Brook Drive	?	?	?	?	✓	?	✓	?	?	✓
-	**Montgomery Road**	13 Montgomery Road	Worthington Road	?	?	?	?	✓	?	?	?	?	✓
-	**Montgomery Road**	Montgomery Town Line	13 Montgomery Road	?	?	?	?	✓	?	?	?	?	✓
-	**Bromley Rd**	Worthington Road	Basket St	?	?	?	✓	✓	✓	?	✓	?	✓

Table D–36: Huntington Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Bromley Road/Basket Street	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Montgomery Road & Worthington Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Worthington Road & County Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
East Main Street & Basket Street & Maple Street	Uncontrolled	?	?	?	?	?	?	?	?	?	?	?	✓	?	✓
Worthington Road & County Road & Bromley Road	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Searle Road & Pond Brook Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Blandford Hill Road/Main Street & Russell Road	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	✓	?	?
Pond Brook Road & County Road & Tucker Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Russell Road & East Main Street	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	✓	?	?
Lyman Road/Bean Hill Road & Pond Brook Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	✓

Key: ✓ *Yes* ? *Possible*

Longmeadow

Table D–37: Longmeadow Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Converse Street**	Redfern Drive	Dwight Road	✓	✓	?	?	✓	?	?	✓	?	✓
-	**Converse Street**	Laurel Street	Redfern Drive	✓	?	?	✓	✓	?	✓	?	?	✓
	Dwight Road	Chestnut Street	Springfield Town Line	✓	?	✓	✓	✓	?	✓	?	?	✓
US-5	**Longmeadow Street**	Maple Road	Williams Street	✓	✓	?	✓	✓	?	✓	✓	?	✓
US-5	**Longmeadow Street**	Connecticut State Line	Maple Road	✓	✓	?	✓	✓	?	✓	✓	?	✓
US-5	**Longmeadow Street**	Williams Street	Bliss Road	✓	✓	?	✓	✓	?	✓	✓	?	✓
US-5	**Longmeadow Street**	Forest Glen Road	Bliss Road	?	?	?	?	✓	?	✓	?	?	✓
-	**Williams Street**	Bliss Road	Redfern Drive	✓	✓	?	✓	?	?	?	?	?	✓
-	**Bliss Road**	Longmeadow Street	Laurel Street	✓	✓	?	✓	✓	?	✓	?	?	✓

Table D–38: Longmeadow Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Converse Street & Dickinson St	Signalized	✓	?	?	?	?	?	?	?	✓	✓	?	?	?	?
Converse Street & Rugby Road	Unsignalized	?	✓	?	?	?	?	?	?	?	?	?	?	?	?
Williams Street & Redfern Dr	Signalized	?	✓	✓	?	?	✓	?	?	✓	?	✓	✓	?	?
Converse Street & Park Drive/Park Drive South	Unsignalized	?	?	?	?	?	?	?	?	?	?	?	?	✓	?
Converse Street & Porter Lake Drive/Lake Drive	Unsignalized	?	?	?	?	?	?	?	?	?	?	?	?	✓	?
Converse Street & Normandy Road/ Burbank Road	Unsignalized	✓	✓	?	?	?	?	?	?	?	?	?	?	?	✓
Converse Street & Poppies Way/Blueberry Hill Road	Unsignalized	?	✓	?	✓	?	?	?	?	?	?	?	?	?	?
Bliss Road & Burbank Road/Blokland Drive	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Bliss Road & Oakwood Dr	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	?	?	✓

Key: ✓ *Yes* ? *Possible*

Table D–38: Longmeadow Intersections (continued)

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Wolf Swamp Road & Frank Smith Road	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	✓	?	?
Laurel Street & Westmoreland Avenue	Uncontrolled	✓	✓	?	?	?	?	?	✓	?	?	?	?	?	?
Williams Street & Laurel Street	Signalized	?	✓	?	?	?	?	?	?	✓	✓	✓	✓	?	?
Forest Glen Road & Park Drive	Uncontrolled	✓	✓	?	?	?	?	?	?	✓	?	?	?	?	✓
Longmeadow Street & Emerson Road/Bliss Road	Signalized	?	✓	✓	?	?	?	?	?	✓	✓	✓	?	?	?
Longmeadow Street & Forest Glen Road	Signalized	✓	✓	✓	✓	?	✓	?	?	✓	✓	✓	✓	?	?

Key: ✓ *Yes* ? *Possible*

Ludlow

Table D–39: Ludlow Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**East Street**	State St	Ludlow Ave	?	?	✓	✓	✓	✓	✓	?	?	✓
-	**Chapin Street**	Parkview Street	Crest Street	✓	✓	✓	✓	✓	?	✓	✓	?	✓
-	**Chapin Street**	Fuller Street	Center Street	?	✓	✓	✓	✓	?	?	✓	?	✓
MA-21	**Center Street**	Rood Street	Harding Avenue	?	✓	✓	?	✓	?	?	✓	?	✓
-	**West Street**	Emma Way	Nash Hill Road	?	✓	?	✓	✓	?	?	✓	?	✓
MA-21	**Ludlow Ave**	Ludlow Town Line	East Street	?	?	✓	✓	✓	?	?	?	?	✓
-	**East Street**	Amherst St	State Street	?	✓	✓	?	✓	?	✓	✓	?	✓
-	**East Street**	Amherst St	Laroche St	?	✓	✓	✓	✓	?	?	✓	?	✓
-	**Holyoke Street**	Cady Street	Evergreen Circle	?	?	✓	✓	✓	?	✓	✓	?	✓
-	**West St**	Emma Way	Town Line	?	✓	✓	✓	✓	?	?	✓	?	✓

Table D–40: Ludlow Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
West Street & Fuller Street	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Rood Street & Church Street	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Brook Street & West Street	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Chapin Street & Center Street	Signalized	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	?	✓	✓	?
Center Street & Church Street	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Chapin Street & Sportsmen Road	Signalized	✓	✓	✓	?	✓	✓	✓	✓	✓	✓	?	?	?	?
Center Street & Miller Street	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	✓	?	✓
West Avenue & Ronald Street	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
West Avenue & Dover Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓

Key: ✓ *Yes* ? *Possible*

Middlefield

Table D–41: Middlefield Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Skyline Trail**	140 Main Road	Chester Town Line	?	?	?	?	✓	✓	?	?	?	✓
-	**Chester Road**	Chester Town Line	Skyline Trail	?	?	?	✓	✓	?	?	✓	?	✓

Table D–42: Middlefield Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Skyline Trail & Chester Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Skyline Trail & Bryan Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Monson

Table D–43: Monson Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-32	**Main St**	High St	Chestnut St	?	✓	✓	✓	✓	?	✓	✓	?	✓
MA-32	**Main St**	King Ave	Main St	?	✓	✓	✓	✓	?	✓	✓	?	✓
-	**State Ave**	Town Line	Hospital Rd	✓	?	✓	✓	✓	?	✓	?	?	✓
-	**Margaret St/High St**	Thompson St	Main St	?	✓	?	✓	✓	?	✓	?	?	✓
-	**Thompson St**	Margaret St	Main St	?	✓	✓	?	✓	?	✓	?	?	✓
MA-32	**Main St**	King Ave	Maple St	?	?	✓	✓	✓	?	✓	✓	?	✓
MA-32	**Palmer Lower Rd**	Country Club Dr	Bethany Rd	?	✓	✓	?	✓	?	✓	✓	?	✓
-	**Chestnut St/ Bethany Rd**	Main St	Tobey Rd	✓	?	?	?	✓	?	✓	?	?	✓
-	**Wales Rd**	Main St	Munn Rd	?	?	✓	✓	✓	?	✓	✓	?	✓

Table D–44: Monson Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
High St & Ely Rd	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	?	?	✓
High St & Fountain St	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	?
High St & Margaret St	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	?	?	✓
Main St & High St	Unsignalized	?	✓	✓	✓	?	?	?	✓	✓	?	?	✓	?	?
Bridge St & Lower Hampden Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	✓	✓
Palmer Rd & Chestnut St	Unsignalized	?	?	✓	?	?	✓	?	?	✓	?	?	?	✓	?
Main St & Cushman St	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	?
Main St & Belmont Ave	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
Main St & State St	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	?
Main St & Lincoln St	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	?
High St & Spring St	Unsignalized	✓	✓	✓	✓	?	✓	?	?	✓	?	?	?	✓	✓
Main St & Washington St/ Huntington Ave	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	✓

Key: ✓ *Yes* ? *Possible*

Montgomery

Table D–45: Montgomery Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Carrington Road**	Russell Town Line	Main Road	?	?	?	✓	✓	✓	?	✓	?	?
-	**Main Road**	Carrington Road	Avery Road	?	?	?	✓	✓	?	?	?	?	✓
-	**Main Road**	Westfield Town Line	Avery Road	?	✓	?	?	✓	?	✓	✓	?	✓
-	**Main Road**	Carrington Road	Huntington Town Line	?	?	?	✓	✓	?	?	?	?	?

Table D–46: Montgomery Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Main Road & Carrington Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
New State Road & Main Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main Road & Avery Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main Road & Southampton Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main Road & Old Main Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Old Main Road & Main Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main Road & Pine Ridge Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main Road & Fuller Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Carrington Road & Thomas Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Carrington Road & Chamberlain Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Carrington Road & Lower Russell Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Northampton

Table D–47: Northampton Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Finn St**	Prospect St	US-5	?	?	✓	?	✓	?	?	?	?	✓
US-5	**Mass Route 10**	Finn ST	North St	?	?	✓	?	✓	?	?	?	✓	✓
-	**Elm St**	N Elm St	Franklin St	?	?	✓	?	?	?	?	?	?	✓
-	**Bridge Rd**	Mark Warner Dr	Mountain St	?	?	✓	?	✓	?	?	✓	?	✓
-	**Bridge Rd**	Mountain St	575 Bridge Rd	?	?	✓	?	✓	?	?	✓	?	✓
-	**Bridge Rd**	Jackson Street	Norwottuck Rail Trail	?	?	✓	?	✓	?	?	✓	?	✓
MA-9	**Bridge St**	Bridge St & Damon Rd Roundabout	Northampton Town Line	?	?	?	?	✓	?	?	?	?	?
-	**Locust St**	S Main St	Hatfield St	?	?	✓	✓	✓	?	✓	?	?	✓
MA-9	**Bridge St**	Hawley St	Fairgrounds Rd	?	?	✓	?	✓	?	✓	✓	?	✓
MA-10	**South Street**	Earle St	Columbus Ave	?	?	✓	?	✓	?	✓	?	?	✓
US-5	**Mass Route 10**	I-91 Ramp	Carlon Drive	?	✓	✓	?	✓	?	✓	?	✓	✓
MA-9	**N Elm St**	Elm St	Prospect Ave	✓	?	✓	?	✓	?	?	✓	?	✓

Table D–48: Northampton Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Bridge Rd & Chestnut St	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Bridge Rd & Hatfield St	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Bridge Rd & Prospect Ave	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Westhampton Rd & Glendale Rd	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Westhampton Rd & N Loudville Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Maple St & Pine St	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	✓	?
Locust St & Hatfield St	Unsignalized	✓	?	✓	?	?	?	?	✓	?	?	?	?	?	?
South St & Earle St	Signalized	✓	?	?	✓	✓	✓	?	✓	?	✓	?	?	?	?
Elm St & Paradise Rd	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Table D–48: Northampton Intersections (continued)

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Main St & Keyes St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Bridge St & Parsons St	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	✓	?
Main St & Hawley St	Signalized	?	?	✓	?	✓	✓	✓	✓	?	✓	?	?	?	?
Main St & Crafts Ave	Unsignalized	?	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Main St & Masonic St	Unsignalized	✓	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Main St & Center St	Unsignalized	?	?	✓	✓	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Palmer

Table D–49: Palmer Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Sykes St**	Main Street	Fire Department	?	?	?	?	?	?	?	?	?	?
-	**Bridge Street**	Main Street	Palmer Town Line	?	?	?	✓	✓	?	✓	?	?	✓
-	**Bridge Street/ Palmer Rd**	Main Street	Sykes St	?	✓	✓	✓	✓	?	✓	?	?	✓
-	**Park Street**	Thorndike Street	Pearl Street	?	✓	✓	✓	✓	?	✓	✓	?	✓
US-20	**N Main Street**	Wilbraham Street	Bridge Street	?	✓	✓	✓	✓	?	✓	?	?	✓
MA-32	**Thorndike St**	Lawrence St	Mt Dumplin Rd	?	✓	✓	✓	✓	?	✓	✓	?	✓
-	**Main St**	Sykes St	Anderson St	?	✓	✓	✓	✓	?	✓	?	?	✓

Table D–50: Palmer Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Main Street & Bridge Street	Signalized	?	✓	✓	?	✓	✓	✓	✓	✓	✓	✓	✓	?	?
Main Street & Pleasant Street	Unsignalized	?	✓	✓	?	?	?	?	✓	?	?	?	?	✓	?
Main Street & Lariviere Ave	Uncontrolled	?	✓	✓	?	?	?	?	✓	✓	?	?	?	✓	?
Palmer Road & Ford Street	Uncontrolled	✓	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Main Street & Belanger St	Uncontrolled	?	✓	✓	✓	?	?	?	✓	✓	?	?	?	✓	?
Boston Road & Old Warren Rd	Unsignalized	✓	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Sykes St & Bourne St	Unsignalized	?	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Ware St & Breckenridge St	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Main Street & Wilbraham St	Signalized	?	✓	?	?	?	✓	?	?	✓	?	?	✓	?	?
Main Street & Sykes Street	Signalized	?	?	✓	?	✓	✓	✓	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Pelham

Table D–51: Pelham Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
US- 202	Daniel Shays Highway	Amherst Road	Shutesbury Town Line	?	?	?	?	✓	?	✓	✓	?	✓
-	Amherst Road	Enfield Road	Daniel Shays Highway	?	?	?	?	✓	?	✓	?	?	✓
-	Amherst Road	Jones Road	Enfield Road	?	?	?	?	✓	?	?	?	?	✓
-	Amherst Road	Jones Road	Amherst Town Line	?	✓	✓	?	✓	?	✓	✓	?	?
-	Harkness Road	Amherst Road	Stony Hill Road	?	?	✓	✓	✓	?	✓	✓	?	✓

Table D–52: Pelham Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Harkness Road & Amherst Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Amherst Road & Meetinghouse Road/ Enfield Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Amherst Road & Country Lane	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Amherst Road & Arnold Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Amherst Road & Jone Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Amherst Road & Cook Road/Bray Court	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Amherst Road & North Valley Road/South Valley Road	Unsignalized	?	✓	?	?	?	?	?	?	✓	?	?	?	?	✓
Packardville Road & Daniel Shays Highway	Unsignalized	✓	?	?	?	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Plainfield

Table D–53: Plainfield Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-116	West Main Street	Plainfield Town Line	Hallockville Rd	✓	?	?	✓	✓	?	?	✓	?	✓
-	Gloyd St	S Central St	Plainfield Town Line	?	?	?	?	✓	?	?	✓	?	✓
MA-8A/116	Hallockville Rd/W Main St	Plainfield Town Line	Ashfield Town Line	?	?	?	✓	✓	?	?	✓	?	?
-	S Central St	E Main St	Gloyd St	?	?	?	✓	?	✓	?	✓	?	✓
-	N Union St/North St	N Central St	Plainfield Town Line	?	?	?	?	✓	✓	?	?	?	✓
-	Prospect St	Plainfield Town Line	West Main Street	?	?	?	✓	✓	?	?	✓	?	✓

Table D–54: Plainfield Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Warner Hill Road & North Union Street	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Hill Street & West Main Street	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Hawley Street & West Main Street	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
N Central Street, S Central Street & Main Street	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	✓	?	?
Union Street & Main Street	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Russell

Table D–55: Russell Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Main Street**	Huntington Road	Pomeroy Terrace	?	✓	?	?	✓	?	?	?	?	?
US-20	**Westfield Road**	Blandford Stage Road	Main Street	?	✓	?	?	✓	?	?	?	?	✓
US-20	**Westfield Road**	Old Westfield Road	520 Westfield Road	?	?	?	✓	✓	?	✓	✓	?	?
US-20	**Westfield Road**	Laurel Road	Westfield Town Line	?	?	?	✓	✓	?	✓	✓	?	✓
US-20	**Westfield Road**	520 Westfield Road	Laurel Road	?	?	?	✓	✓	?	✓	✓	?	?
US-20	**Westfield Road**	Blandford Stage Road	Old Westfield Road	?	?	?	✓	✓	?	✓	✓	?	?
US-20	**Huntington Road**	Shattuck Road	West Main Road	?	✓	?	✓	✓	?	✓	?	?	✓

Table D–56: Russell Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
General Knox Road & Birch Hill Road	Uncontrolled	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
General Knox Road & Woodland Way	Uncontrolled	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Main Street & Old Westfield Road	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Blandford Road & General Knox Road	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Blandford Road & Dickinson Avenue	Uncontrolled	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Westfield Road & Old Westfield Road	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	?
Westfield Road & Woronoco Road	Uncontrolled	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Woronoco Road & Westfield Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Huntington Road & Pine Hill Road	Uncontrolled	?	✓	?	?	?	?	?	?	?	?	?	?	?	?
Westfield Road & Blandford Stage Road	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	✓	?
Main Street & Lincoln Avenue	Uncontrolled	?	✓	?	?	?	?	?	?	?	?	?	?	✓	?
Westfield Road & Blandford Road	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

South Hadley

Table D–57: South Hadley Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-116	**Woodbridge St**	Silver St	Amherst Rd	?	?	✓	?	✓	?	✓	✓	?	✓
MA-116	**College St**	Morgan St	Church St	?	✓	✓	?	✓	?	✓	?	?	✓
MA-116	**College St**	Mosier St	Morgan St	?	✓	✓	?	✓	?	?	?	?	✓
US-202	**Granby Rd**	Hillcrest Ave	Old Lyman Rd	?	✓	✓	?	✓	?	?	?	?	✓
US-202	**Granby Rd**	Old Lyman Rd	Dartmouth St	?	✓	✓	?	✓	?	?	?	?	✓
MA-33	**Willimanssett St**	Taylor Dr	Granby Rd	?	✓	✓	?	✓	?	✓	✓	?	✓
MA-33	**Memorial Dr/ Willimanssett St**	South Hadley Town Line	Taylor Dr	?	?	✓	?	✓	?	✓	✓	?	✓

Table D–58: South Hadley Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
N Main St & US-202	Roundabout	?	?	✓	?	?	?	?	?	?	?	?	✓	?	?
N Main St & US-202	Roundabout	?	?	✓	?	?	?	?	?	?	?	?	✓	?	?
Willimanssett St and Old Lyman Rd	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	✓	?
N Main St & US-202	Roundabout	?	✓	✓	?	?	?	?	?	?	?	?	✓	?	?
Lyman St & Pittroff Ave	Unsignalized	?	?	✓	✓	?	?	?	?	?	?	?	?	?	?
Granby Rd & Sunset Ave	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
W State St & East St	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Southampton

Table D–59: Southampton Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Pomeroy Meadow Road**	Wolcott Road	College Highway	✓	?	✓	?	✓	?	?	?	?	✓
MA-10	**College Highway**	Glendale Road	High Street	✓	?	✓	?	✓	?	?	?	?	✓
MA-10	**College Highway**	Fomer Road	Southampton Country Club	✓	?	?	?	?	?	?	?	?	✓
MA-10	**College Highway**	Center Street	Fomer Road	✓	?	✓	?	?	?	?	?	?	✓
MA-10	**College Highway**	High Street	Center Street	✓	?	✓	?	?	?	?	?	?	✓
-	**County Road**	Pheasant Drive	Dupuis Road	?	?	?	?	✓	?	✓	?	?	✓

Table D–60: Southampton Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Line Street & Campbell Drive	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
College Highway & Lynn Drive/Country Gardens	Unsignalized	?	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Southwick

Table D–61: Southwick Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-168	**Congamond Road**	Sheep Pasture Road	College Highway	✓	✓	✓	✓	✓	?	✓	✓	?	✓
MA-57	**Feeding Hills Road**	north Longyard Road	M+M Trail	✓	?	?	✓	✓	?	✓	✓	?	✓
MA-57	**Granville Road**	Hillside Road	Granville Road	✓	?	?	✓	✓	?	?	✓	?	✓
MA-57	**Depot Street**	Sheep Pasture Road	College Highway	✓	✓	✓	✓	✓	?	?	?	✓	✓
US202	**College Highway**	Robin Road	Bugbee Road	✓	?	?	✓	✓	?	?	✓	?	✓
MA-57	**Feeding Hills Road**	Shirley Terrace	College Highway	?	✓	✓	✓	✓	?	?	?	?	✓
MA-57	**Feeding Hills Road**	Great Brooks Ln	Foster Road	✓	?	?	✓	✓	✓	✓	✓	?	✓
-	**Sheep Pasture Road**	Point Grove Road	Depot Street	✓	?	?	✓	✓	?	✓	✓	?	✓
US202	**College Highway**	Sunnyside Road	Feeding Hills Road	?	✓	✓	?	✓	?	?	✓	?	✓

Table D–62: Southwick Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Rising Corner Road & South Longyard Road	Unsignalized	✓	?	✓	✓	?	?	?	?	✓	?	?	✓	?	✓
College Highway & Sunnyside Road	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
College Highway & Jered Lane	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓

Key: ✓ *Yes* ? *Possible*

Tolland

Table D–63: Tolland Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Schoolhouse Road**	Town Line	New Boston Road	✓	?	?	?	✓	?	✓	✓	?	✓
MA-57	**New Boston Road**	Town Line	East Otis Road	?	?	?	?	✓	?	✓	✓	?	✓
MA-57	**New Boston Road**	Clubhouse Road	East Otis Road	?	?	?	✓	✓	?	?	✓	?	✓
MA-57	**New Boston Road**	Town Line	Clubhouse Road	?	?	?	✓	✓	?	?	✓	?	✓

Key: ✓ *Yes* ? *Possible*

Wales

Table D–64: Wales Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-19	Stafford Rd	Town Line	Birch Ln	?	?	?	✓	✓	✓	?	✓	?	✓
MA-19	Main St/Stafford Rd	Reed Hill Rd	Monson Rd	?	?	?	✓	✓	?	?	✓	✓	✓
MA-19	Main St	Church St	Holland Rd	?	?	✓	✓	✓	?	?	✓	?	✓
-	Monson Rd	Main St	68 Monson Rd	✓	?	?	✓	✓	?	?	✓	?	✓
MA-19	Main St	Monson Rd	Church St	?	✓	?	✓	✓	?	?	✓	?	✓

Table D–65: Wales Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Union Rd & Lake Shore Dr	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Haynes Hill Rd & Main St	Unsignalized	✓	✓	✓	?	?	?	?	?	✓	?	?	✓	✓	✓
Haynes Hill Rd & Hollow Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Stafford Rd/Union Rd & Main St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Haynes Hill Rd & Main St Ext	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	✓	✓	✓
Main St & Hegan St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Stafford Rd & Shore Dr	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Stafford Rd & Lake George Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

West Springfield

Table D–66: West Springfield Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Piper Rd**	Morgan Rd	St Andrews Way	?	✓	✓	✓	✓	?	✓	✓	?	✓
MA-20	**Westfield St**	Tanglewood St	Talcott Ave	?	✓	✓	?	✓	?	✓	?	?	✓
MA-20	**Westfield St**	Northwood Ave	Tanglewood St	?	✓	✓	?	✓	?	✓	✓	?	✓
-	**Elm St**	E Elm St	Elm St Roundabout	?	✓	✓	?	✓	?	?	?	?	✓
-	**Morgan Rd**	Piper Cross Rd	Riverdale St	?	?	✓	✓	✓	✓	?	✓	?	✓
-	**Kings Highway**	Amostown Rd	Elm St	?	✓	✓	✓	✓	?	?	?	?	✓
MA-20	**Westfield St**	Charles Ave	Lower Beverly Hills	?	✓	✓	✓	✓	?	✓	?	?	✓
MA-20	**Westfield St**	Talcott Ave	Nelson St	?	✓	✓	?	✓	?	?	?	?	?
-	**South Blvd**	River St	Westfield St	?	✓	✓	?	✓	✓	?	?	?	?
-	**Union St**	Park Ave	Day St	?	✓	✓	✓	✓	?	✓	?	?	✓

Table D–67: West Springfield Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Front St & Second St	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	✓
Westfield St & Rogers Ave	Signalized	?	✓	✓	✓	✓	?	✓	✓	✓	✓	✓	?	?	?
Westfield St & Lancaster Ave	Signalized	?	✓	✓	?	✓	?	✓	✓	✓	✓	?	?	?	?
Westfield St & Chestnut St	Signalized	✓	✓	✓	?	✓	✓	✓	✓	✓	✓	?	?	?	?
Westfield St & Hathorne Ave	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	✓	✓	?
Westfield St & Vanhorn St	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Westhampton

Table D–68: Westhampton Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Stage Road**	North Road	Easthampton Road	✓	?	✓	?	✓	?	?	?	?	✓
-	**Loudville Road**	Loudville Road	Main Road	✓	?	?	?	?	✓	?	✓	?	✓
MA-66	**Main Road**	Mine Road	South Road	✓	?	?	?	?	?	?	?	?	✓
-	**Southampton Road**	North Road	Main Road	✓	?	✓	?	✓	?	?	?	?	✓
-	**Southampton Road**	Main Road	Laurel Hill Road	✓	?	?	?	✓	?	?	?	?	✓
-	**Easthampton Road**	Stage Road	Turkey Hill Road	✓	?	?	?	?	?	?	?	?	✓
	Chesterfield Rd	Town Line	Town Line	✓	?	?	?	✓	?	?	✓	?	✓
	North Road	Southampton Road	Main Rd	✓	?	✓	?	✓	?	?	?	?	✓

Table D–69: Westhampton Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
North Road & Southampton Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	✓
North Road & Kings Highway/ Easthampton Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
North Road & Southampton Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
South Road & Cemetery Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Hooker Road & North Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Shaw Road & Chesterfield Road/Northwest Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	✓
Southampton Road & Main Road	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Wilbraham

Table D–70: Wilbraham Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
US-20	**Boston Road**	Forest St	Lake Dr	?	✓	✓	?	✓	?	?	?	✓	✓
US-20	**Boston Road**	Town Line	Old Boston Rd	?	✓	✓	?	✓	?	✓	?	✓	✓
-	**Main St**	Pease St	Boston Rd	✓	?	✓	?	✓	✓	?	✓	?	✓
US-20	**Boston Road**	Cottage Ave	Lake Dr	?	?	?	?	✓	?	?	✓	✓	✓
-	**Main St**	Old Orchard Rd	Springfield St	?	✓	✓	✓	✓	?	?	✓	?	✓
-	**Stony Hill Rd**	Old Boston Rd	171 Stony Hill Rd	?	?	✓	?	✓	?	?	✓	?	✓
-	**Stony Hill Rd**	Town Line	Bridge St	?	✓	✓	?	✓	?	?	✓	?	✓
-	**Stony Hill Rd**	Wilbraham Middle School	Springfield St	✓	✓	?	?	✓	✓	✓	✓	?	✓
-	**Stony Hill Rd**	171 Stony Hill Rd	Wilbraham Middle School	?	?	✓	?	✓	?	?	✓	?	✓
US-20	**Boston Road**	Old Boston Rd	Forest St	?	?	✓	?	✓	?	✓	✓	✓	✓

Table D–71: Wilbraham Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Main St & Monson Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	✓
Glendale Rd & Monson Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	✓	✓	✓
Stony Hill Rd & Hitchcock Rd	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	✓	✓
Stony Hill Rd & Soule Rd	Unsignalized	?	✓	✓	?	?	?	?	?	✓	?	?	✓	✓	?
Boston Rd & Main St	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	✓	?	✓
Boston Rd & Three Rivers Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	✓	?	?
Boston Rd & Old Boston Rd	Signalized	?	?	✓	✓	✓	✓	?	?	✓	✓	✓	?	?	?
Boston Rd & Maynard Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	✓	?	✓
Old Boston Rd & Bridge St	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Williamsburg

Table D–72: Williamsburg Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
-	**Mountain St**	Laurel Rd	Dewey Circle	✓	?	?	✓	✓	?	?	?	?	✓
-	**High Street**	Main St	Laurel Rd	?	✓	✓	✓	✓	?	?	?	?	✓
-	**Bridge Street**	S Main St	Main St	?	✓	✓	✓	✓	?	?	?	?	✓
MA-9	**Main St**	Pine St	Northampton Town Line	?	✓	✓	?	✓	?	✓	✓	?	✓
MA-9	**Main St**	Hatfield St	Pine St	?	✓	✓	?	✓	?	✓	✓	?	✓
MA-9	**Main St**	River Rd	Depot Rd	✓	?	✓	?	✓	?	✓	✓	?	✓
MA-9	**Main St**	Depot Rd	Driveway to Village Greenhouse	✓	?	?	?	✓	?	✓	✓	?	✓
MA-9	**Main St**	Driveway to Village Greenhouse	Hatfield St	✓	?	?	?	✓	?	✓	✓	?	✓
MA-9	**Goshen Rd**	Old Goshen Rd/ Nichols Rd	Buttonshop Rd	✓	?	?	✓	✓	✓	✓	✓	?	✓

Table D–73: Williamsburg Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Main St, North St and Williams St	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	?	?	?
E Main St, N Main St and North St	Unsignalized	✓	✓	✓	✓	?	?	?	?	✓	?	?	?	✓	?
High Street, Bridge Street and Main Street	Unsignalized	✓	✓	✓	?	?	?	?	?	?	?	?	?	?	?
South St and Main St	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Depot Rd and Main St	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Williams St and Buttonshop Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
River Road and Main St	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Hillenbrand Road and Main St	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Williams St and Chesterfield Rd	Unsignalized	?	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Goshen Rd, Old Goshen Rd and Nichols Rd	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?

Key: ✓ *Yes* ? *Possible*

Worthington

Table D–74: Worthington Roadway Segments

Roadway	Street Name	From	To	Lighting	High Visibility Crosswalks	Pedestrian Facilities	Roadside Delineation	Speed Management	Improve Sightlines	Roadway Reconfiguration	Roadway Departure Mitigation	Access Management	General Maintenance Improvements
MA-112/ MA-143	Williamsburg Rd	Old North Rd	Elderberry Ln	✓	?	?	?	✓	?	✓	?	?	✓
MA-112	Cummington Rd	Town Line	Dingle Rd	?	?	?	✓	✓	?	✓	✓	?	✓
MA-112	Dingle Rd	Clark Hill Rd	Capen St	?	?	?	✓	✓	?	✓	✓	?	✓
MA-112	Clark Rd	Capen St	Williamsburg Rd	?	?	?	✓	✓	?	✓	✓	?	✓
MA-112	Huntington Rd	Buffington Hill Rd	Harvey Rd/Sam Hill Rd	✓	✓	?	✓	✓	?	?	?	?	✓
MA-112	Dingle Rd	Cummington Rd	Clark Hill Rd	?	?	?	✓	✓	?	✓	✓	?	✓
MA-112	Williamsburg Rd	Elderberry Ln	Town Line	✓	?	?	?	✓	?	✓	?	?	✓

Table D–75: Worthington Intersections

Name	Type	Intersection Lighting	High Visibility Crosswalks	General Maintenance Improvements	Median Island	Vehicle Signal Timing Modifications	Signal Head Visibility	Pedestrian Signal Timing Modifications	Pedestrian Signal Equipment	Curb Modifications	No Turn on Red	Convert Signal to Mast Arm	Convert to Roundabout	Pedestrian Crossing	All Way Stop Control
Kinne Brook Rd & Guard Rd	Unsignalized	?	?	✓	✓	?	?	?	?	✓	?	?	?	?	?
Huntington Rd & Witt Hill Rd	Unsignalized	?	✓	✓	?	?	?	?	?	?	?	?	?	?	?
Huntington Rd & Starkweather Hill Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	✓	?
Old North Rd & Cold St	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Old North Rd & Cold St	Unsignalized	✓	?	✓	?	?	?	?	?	✓	?	?	?	?	?
Huntington Rd & Harvey Rd/Sam Hill Rd	Unsignalized	✓	?	✓	?	?	?	?	?	?	?	?	?	?	?
Huntington Rd/Old North Rd & Williamsburg Rd/ Buffington Hill Rd	Roundabout	?	✓	?	?	?	?	?	?	?	?	?	✓	?	✓
Cummington Rd & Dingle Rd	Unsignalized	?	?	?	?	?	?	?	?	✓	?	?	✓	?	?

Key: ✓ *Yes* ? *Possible*



Pioneer Valley
SAFE STREETS