Boston Region Vision Zero Action Plan

Appendix G: Policy and Process Research and Findings

March 5, 2026

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1 Introduction and Overview

Vision Zero is a fundamentally different approach to safety on our streets, which aims to eliminate all roadway deaths and serious injuries in the Boston region. Unlike traditional traffic safety approaches that accept a certain number of fatalities and injuries, Vision Zero assumes that *all* roadway fatalities and injuries are preventable. It uses a comprehensive approach to address the underlying factors that cause crashes while also accommodating human error. Vision Zero is a systemic and proactive approach to improve mobility and increase safety for all road users.

For the Boston Region Metropolitan Planning Organization (MPO) Vision Zero Action Plan, this policy task brings together findings of a literature review, data analysis, and engagement outcomes to identify recommended policy and process changes to help improve safety.

This appendix is organized as follows:

- Chapter 1 provides an introduction and an overview.
- Chapter 2 describes the methodology for identifying safety challenges and solutions as determined through literature review, stakeholder engagement, and the prioritization of policy recommendations.
- Chapter 3 describes policy recommendations for six emphasis areas identified through the safety analysis: Intersections, Lane Departures, Speeding, Vulnerable Road Users (VRU), Older Drivers, and Large Vehicles. For each policy recommendation, the subsection describes supporting evidence from data analysis and stakeholder engagement, the current state of policy in Massachusetts and/or nationally, and the associated recommendation along with the relevant implementer.
- Chapter 4 provides a summary table of policy recommendations, including emphasis area, lead and supporting organizations, and Safe System Approach element.
- Chapter 5 provides an alphabetical list of all resources cited as footnotes throughout this memorandum.

Definitions

A **policy** mandates, identifies, or prohibits specific behaviors, functions, or actions for an institution. It describes what must be done, but not necessarily how, why, or by whom. Policies establish a position and direction for institutions; they do not often change and are non-negotiable.

A **process** is an operational procedure providing instructions on how to implement a policy or meet a requirement. It describes how, who, and when. Guidelines are a type of process offering informal guidance or recommendations on how to meet a requirement or goal.

The policies and processes identified in this appendix aim to address the safety challenges that stand in the way of achieving Vision Zero. Behind each policy and process stands research, stakeholder validation, and data-driven justification to support implementation in the Boston Region.

2 Methodology for Identifying Safety Challenges and Solutions

A combination of a literature review, existing conditions analysis, and stakeholder engagement was used to identify and prioritize safety challenges and policies. Crash data identified quantitative trends affecting roadway safety, while qualitative stakeholder engagement helped fill in gaps and provide direction on importance.

Literature Review and Research

Throughout this task, literature and research documents were reviewed and used to inform policy and process recommendations. Resources included existing state, municipal, and regional safety action plans; pedestrian and bicycle plans; infrastructure design guidance; master plans; and more from within the Boston region, Massachusetts, and at the national level. Key challenges, gaps, and shared priorities were identified from these documents and used to support the development of the policies and processes for this plan and ensure alignment with existing work being done around the region.

Existing Conditions

The primary data source used for the existing conditions analysis included the most recent five years of available crash data (2018–22) from the Massachusetts Department of Transportation's (MassDOT) MassDOT Open Data Portal and the MassDOT IMPACT tool, a tool for researching, querying, and downloading crash-related data in the Commonwealth.

From the existing conditions analysis, six emphasis areas emerged as key areas to focus and prioritize policies and processes:

- Intersections
- Lane Departure
- Speeding
- Vulnerable Road Users
- Older Drivers

- Large Vehicles

The Intersections, Lane Departure, and crashes involving Older Drivers emphasis areas represent the top three emphasis areas as a percentage of the Region's fatal and serious injury crashes. Given Vision Zero's focus on the safety of people outside of vehicles, pedestrians and bicyclists were combined into the Vulnerable Road Users emphasis area, making it the second most-prevalent emphasis area by crash percentage. Each of these emphasis areas represent more than 20 percent of fatal and serious injury crashes in the Region.

Crashes involving Large Vehicles were also overrepresented in the Region compared to the rest of the Commonwealth. While this type of crash only contributed to five percent of fatal and serious injuries in the Region, safety related to large vehicles was consistently noted by regional stakeholders as an important focus area.

Speeding has consistently been identified as a contributing factor to fatal and serious injury crashes by stakeholders in the region. While speed-involved crashes only accounted for a small proportion (five percent) of the total fatal and serious injury crashes, the Boston region experienced a substantial 91 percent increase in these crashes from 2018 to 2022. Although a similar increase (85 percent) was observed statewide, addressing speeding-related issues remains a critical priority for the region.

Stakeholder Engagement

Between fall 2024 and spring 2025, the MPO completed a variety of stakeholder and public outreach activities, including three municipal office hours, two surveys, a public forum, several stakeholder roundtables and focus groups, an interactive safety concerns comment map, and interviews with municipal agency stakeholders. These stakeholder and public engagement activities helped inform the safety challenges and policy/process recommendations summarized in this memo.

One municipal "office hours" meeting was held in September 2024, which allowed municipal staff to learn about the Action Plan development, share more about their challenges with implementing safety improvements, and learn how the MPO could support their work. The project team also held a virtual public forum in January 2025. The forum included a brief overview of Vision Zero, the project, and safety findings, followed by breakout group discussions to learn more about the safety issues important to attendees. Two additional municipal "office hours" were held virtually in March 2025 to share the high-injury and high-risk Networks and to collect feedback from municipal staff.

A municipal survey distributed in fall 2024 gathered transportation safety concerns and successes from municipal staff. The purpose was to better understand the challenges hindering progress toward achieving Vision Zero. The survey was sent to contacts across 97 municipalities, of which

36 municipalities completed the survey. A separate public survey was distributed between October 2024 and February 2025 to gather transportation concerns and comments across the region. The survey received a total of 761 responses from respondents who live in 58 municipalities within the Boston region.

Policy-specific focus groups and roundtables were held in April 2025 with stakeholder groups including people with disabilities, Aging Services Access Point (ASAP) providers, and representatives of regional Chambers of Commerce. These events included an overview of the MPO and the Vision Zero program and Safe System Approach. The majority of each session was dedicated to listening to participants' experiences traveling within the region, the safety challenges they experience, and their suggestions for making the region safer for everyone who lives and journeys through it.

An interactive safety concerns map is available for members of the public to identify specific locations of concern within the region. Respondents may select a location on the map and share information about transportation mode, safety concerns, and suggested improvements. Between October 17, 2024, and April 2, 2025, the map received 921 comments identifying 3,952 safety concerns across the Boston region.

Lastly, specifically for this task, the project team held interviews with municipal representatives from Acton, Framingham, Norwood, Beverly, Arlington, Boston, Cambridge, Somerville, and Walpole between November 2024 and February 2025. The project team also collected input from representatives of the Massachusetts Municipal Association in November 2024.

Stakeholder-identified safety concerns and challenges are included in Chapter 3.

Prioritizing Challenges and Policies

Building upon the existing conditions emphasis areas, policy and process recommendations were developed and prioritized to both address identified safety concerns and ensure a meaningful impact in improving safety in the Region. The policies are supported by data and informed by best practices from within the state and around the nation. Stakeholder input also informed safety concerns and preference and feasibility for proposed solutions.

The policy and process recommendations under each emphasis area align with the Safe System Approach.[1] The Safe System Approach focuses on changes that eliminate crashes that result in fatal and serious injuries and is guided by the following principles:

[1] US Department of Transportation. "What is a Safe System Approach?" https://www.transportation.gov/safe-system-approach.

- Death and serious injuries are unacceptable.
- Humans make mistakes.
- Humans are vulnerable.
- Responsibility is shared.
- Safety is proactive.
- Redundancy is crucial.

Implementation of the Safe System Approach is arranged into five elements:

1. **Safer People:** Encouraging safe and responsible behavior by those that use our roads.
2. **Safer Roads:** Roadway designs that mitigate human mistakes.
3. **Safer Vehicles:** Vehicles systems and features that help prevent crashes.
4. **Safer Speeds:** Roadway design, speed-limit setting, education and outreach to promote safer speeds.
5. **Post-Crash Care:** Enhance access to emergency medical care and traffic incident management to improve survival rates.[2]

[2] While there were several policy considerations related to Post-Crash Case, none of them rose to the top of the prioritization list.

3 Safety Challenges and Policy Solutions

Introduction

Policy and process solutions have been identified for safety challenges related to intersections, lane departures, speeding, vulnerable road users (VRU), older adults, and large vehicles. As described in the section above, the policies and processes selected aligned with the existing conditions analysis emphasis areas, stakeholder input, and existing regional priorities.

As the MPO developed policy recommendations based on existing conditions, stakeholder engagement, and a literature review, it became evident that the Boston Region MPO plays a key role in the region's transportation safety. The first subsection below describes how the MPO can support transportation safety through policy and process.

Following the description of the MPO's role, this chapter contains a section for each emphasis area. Each section provides a brief overview of the emphasis area and describes how those types of crashes limit the region's ability to achieve Vision Zero, followed by associated policy recommendations. Each policy is divided into three subsections: supporting evidence, status in Massachusetts and nationally, and the final recommendation. First, supporting evidence provides additional context from data analysis and stakeholder input about the severity of the safety issue and why this policy is recommended. Second, the current status and conditions in Massachusetts and best practices from across the country are highlighted (as available). Finally, the recommendation subsection expands upon lead and supporting agencies, supporting Safe System Approach elements, and additional context if needed.

MPO's Role

The MPO plays a key role in the Boston region, including as a facilitator, coordinator, and convener between stakeholders at the municipal and state levels. The MPO may help spread Vision Zero best practices and lessons learned through municipal agency peer exchanges and resources. The MPO may incorporate Vision Zero principles and emphasis area topics throughout its programs. The MPO may fund research studies and provide technical guidance as a part of its annual Unified Planning Work Program (UPWP).

The policy and process actions the MPO may take to support Vision Zero are highlighted in the emphasis area recommendations below. In addition, there is one recommendation that crosscuts all emphasis areas:

The MPO may examine and revise the selection evaluation criteria for proposed projects for the Transportation Improvement Program.

Lead Organization: Boston Region MPO

The Transportation Improvement Program (TIP) is the Boston Region MPO's capital program for transportation projects within the region's 97 cities and towns that will receive federal funding over the next five years. Proposed transportation projects are evaluated using criteria to help identify and prioritize projects that advance progress across the MPO's six goal areas: Safety; Mobility and Reliability; Access and Connectivity; Resilience; Clean Air and Healthy Communities; and Transportation Equity. The MPO incorporates performance-based planning and programming practices into the development of its TIP.

Currently, the MPO has established six priority areas for investment programs for Regional Target funding (the federal transportation dollars that the MPO has direct discretion over). Table G-1 provides the weblinks for the evaluation criteria scorecards for the six TIP investment programs.

Table G-1 | MPO TIP Investment Programs and Evaluation Criteria Scorecards

TIP Investment Program	Evaluation Criteria Scorecard
Intersection Improvements	Scorecard
Complete Streets	Scorecard
Transit Transformation	Scorecard
Bicycle Network and Pedestrian Connections	Scorecard
Community Connections (consists of multiple subprograms)	Bicycle Lanes Scorecard Bicycle Racks Scorecard BikeShare Expansion and Support Scorecard Microtransit Pilot Scorecard Wayfinding Signage Scorecard
Major Infrastructure	*Criteria to be classified under Complete Streets or Transit Transformation, depending on the nature of the project*

Recommendation

The MPO may review and revise the selection evaluation criteria for its investment programs, as a part of the TIP. The MPO may explore how to directly address safety challenges related to the six emphasis areas: Intersections, Lane Departure, Speeding, VRUs, Older Adults, and Large Vehicles.

The MPO may also incorporate the six principles of the Safe System Approach to comprehensively improve safety for roads, speeds, people, vehicles, and post-crash care.

Municipalities' Role

The region's cities and towns are essential partners in achieving Vision Zero. The majority of policy and process recommendations list municipalities as lead implementing organizations, such as to implement MassDOT guidance on speed management and adopt Complete Streets and "safe vehicle fleet" policies. However, there is one key step that all municipalities can take to commit to Vision Zero, spanning across all emphasis areas:

Commit to Vision Zero by adopting a Vision Zero goal, resolution, or ordinance.

Lead Organization: Municipalities

Several cities and towns in the Boston MPO region have already adopted Vision Zero goals, resolutions, and ordinances to make progress towards eliminating traffic fatalities and serious injuries.

- **Safe Streets Ordinance (Sec. 12-116 Somerville, Massachusetts Code).**[3] In 2024, the City of Somerville developed the Safe Streets Ordinance to eliminate fatalities and injuries on city streets in accordance with the City's Vision Zero goals, and to enhance access, convenience, and comfort for all users of all ages and abilities, providing for equity in use between pedestrians (including people who make use of mobility aids), bicyclists, transit users, and motorists. The method for accomplishing this aim is the design, operation, improvement, and maintenance of the transportation network to create a connected network of facilities accommodating each mode of travel, consistent with and supportive of the local community. The ordinance recognizes that all streets are different and that the needs of various users will need to be balanced in a flexible manner to achieve complete streets.

- **City Council Resolution (Cambridge, Massachusetts Vision Zero Action Plan).**[4] In 2016, Cambridge's City Council went on record through a resolution to formally commit to the goal of eliminating transportation fatalities and serious injuries, as well as continuing to reduce the crash rates for all modes. The resolution stated that key City departments including Community Development, Police, Public Health, Public Works, Parking, and Transportation will

[3] City of Somerville, Massachusetts. Code of Ordinances, Article VII Safe Streets Ordinance Section 12-116. https://online.encodeplus.com/regs/somerville-ma-coo/doc-viewer.aspx?secid=1458#secid-1458.

[4] City of Cambridge, Massachusetts. *Vision Zero*. https://www.cambridgema.gov/streetsandtransportation/policiesordinancesandplans/visionzero.

develop an initial Vision Zero Action Plan and update it bi-annually to continuously pursue actions aimed at achieving Vision Zero.

- **Vision Zero Resolution (Lynn, Massachusetts Vision Zero Action Plan).**[5] In 2024, Lynn's City Council made a resolution that committed the City of Lynn to a goal of zero deaths and serious injuries that are a result of crashes on city streets by 2040. The resolution also committed the City to work in partnership with MassDOT to develop the Lynn Safety Action Plan and commit to regular reporting and evaluation of progress on meeting the Vision Zero goal at least every two years upon completion, and regularly update the plan to adapt to underlying conditions and evolving needs of the city to ensure vision zero is achieved.

Recommendation

Municipalities may formally commit to Vision Zero and taking action to decrease roadway fatalities and serious injuries within their jurisdictions. This commitment may take the form of adopting a Vision Zero goal, passing a resolution, or formal adoption of a local ordinance by the Select Board or City Council. At a minimum, a municipality should commit to reaching zero roadway deaths and serious injuries by a specific year. Resolutions or ordinances may incorporate more details, such as reporting on recent crash trends, committing to interim crash reduction goal years, or outlining progress measures to track implementation.

Intersections

Among all the identified emphasis areas, intersection-related crashes were the most common type of fatal and serious injury crashes from 2018 to 2022, contributing to 44 percent of the Region's total.

Intersections were also mentioned as a key safety issue by stakeholders. Drivers, pedestrians, and bicyclists highlighted the importance of intersection visibility, lighting, design, maintenance, and driver behavior as impediments to safety.

There are two policy and process recommendations related to intersections:

1. The state legislature may permit the use of automated red-light enforcement and citations at signalized intersections.

2. Municipalities may prohibit turning right on red at identified high-risk intersections and post "no turn on red" signs.

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[5] City of Lynn, Massachusetts. (2024). *Lynn Safety Action Plan*, "Appendix A: Lynn Vision Zero Resolution." https://lynnincommon.com/22188/widgets/72929/documents/54818.

1. Permit the Use of Automated Red-Light Enforcement and Citations at Signalized Intersections

Lead Organization: Massachusetts General Court

Supporting Organization(s): Boston Region MPO, Municipalities, MassDOT

Supporting Evidence

Among fatal and serious injury crashes at T-intersections and four-way intersections in the Boston region, nearly one-half (44.7 percent) occurred at signalized intersections, followed by 32 percent at uncontrolled intersections.

Status in Massachusetts and Nationally

Automated red-light enforcement technology is currently not allowed by state law. For the current moving violation citation process, identification of the driver via driver's license is required.[6] With automated enforcement, it is not possible to identify the driver, and instead the owner of the vehicle is identified through the vehicle plate number and associated registrant address. From this, a citation is mailed to the vehicle owner. This process is similar to the current parking violation citation process in which the driver is often not present for the ticketing, therefore the ticket is issued to the vehicle registrant as identified by the vehicle plate number.[7] Proposed bills in 2020 and 2023 failed to pass to allow pilot cities to test automated enforcement. The 2023 *Massachusetts Strategic Highway Safety Plan* has an action item to "Develop prospective pilots for automated enforcement for red light running, speed zones, and work zones."

A study conducted by the Insurance Institute for Highway Safety found that red light cameras reduced fatal red light running crashes in large cities by 21 percent, and all types of crashes at intersections by 14 percent.[8] For example, the City of Seattle, Washington, implemented red light cameras permanently after a 12-month pilot in 2006 and has installed 31 cameras at 23 intersections.[9] Since its implementation, collisions and infractions at these intersections has

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6 Issuance of citations: hearing: appeals: summons or warrant: complaint: trial: license: or permit suspension, MGL Part I Title XIV Chapter 90C Section 3 (2023). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90C/Section3.

7 Parking regulations: violations:notive to appear: failure to appear: adjudication by mail, MGL Part I Title XIV Chapter 90 Section 20A (2023). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90/Section20a

8 Insurance Institute for Highway Safety. (2024). *Red light running*. https://www.iihs.org/topics/red-light-running.

9 Seattle Police Department. (n.d.). Automated Photo Enforcement Program—Red Light Cameras. https://www.seattle.gov/police/community-policing/community-programs/red-light-cameras.

reduced greatly; Seattle has seen a 30 percent reduction in red-light violations and a 42 percent reduction in crashes at these intersections since 2013.[10]

Recommendation

Red-light automated enforcement could help reduce intersection crashes by disincentivizing drivers from running red lights. This could be particularly helpful for VRUs crossing or waiting at an intersection. This recommendation supports both Safer Roads and Safer People in the Safe System Approach.

The primary implementer for this action would be the Massachusetts state legislature. Implementing automated red-light enforcement will require legislative action by the Massachusetts General Court to explicitly allow for the automated citation process in all municipalities throughout the region. The Boston Region MPO could play a supporting role in advocating for necessary changes. Once allowed by state law, municipalities may individually approve use of automated enforcement within their jurisdiction.

2. Install "No Turn On Red" Signs at Identified High-Risk Intersections

Lead Organization: Municipalities

Supporting Organization(s): Boston Region MPO

Supporting Evidence

The majority (94 percent) of fatal and serious injury intersection crashes occurred at either a four-way intersection or T-intersection. A higher percentage of VRU crashes occur at intersections compared to non-VRU intersection crashes.

Intersections are a common safety concern among stakeholders in the region. Stakeholders believe intersections are primarily designed to be car-centric, wishing instead for intersections designed with the safe and protected passage of pedestrians and bicyclists in mind.

Status in Massachusetts and Nationally

In Massachusetts, right turns on red are permitted by state law (Massachusetts General Law [MGL] Part I Title XIV Chapter 89 Section 8), after the vehicle comes to a complete stop. A municipality

[10] National Coalition for Safer Roads. (2023). Promoting Red Light Safety with Traffic Cameras: Benefits and Challenges. https://ncsrsafety.org/promoting-red-light-safety-with-traffic-cameras-benefits-and-challenges/

may prohibit right turn on red by posting "No Turn on Red" signage at any intersection of two locally managed roadways.

Both state law and federal guidance require that "No Turn on Red" signage be posted at each and every intersection where turning is prohibited.[11] The Federal Highway Administration (FHWA) *Manual on Uniform Traffic Control Devices* (MUTCD, 2023, 11th edition) establishes national criteria for all traffic control devices (including posted signs) on all public roadways. The MUTCD includes a standard for "No Turn on Red Signs" stating that at any intersection where a right turn on a circular red signal is prohibited, a "No Turn on Red" sign shall be used.[12] As of 2025, no state in the nation has a statewide law prohibiting no right turn on red.

Recommendation

This recommendation supports the Safe System Approach Safer Roads and Safer People elements.

Municipal departments of public works, transportation, or planning may identify the top intersections that would benefit from posted "no turn on red" signage, such as intersections identified as a part of the High-Injury and High-Risk Networks or located within safety zones or school zones. Intersections could be prioritized by average operating speed, roadway classification, volume of VRUs, historical crash trends, or other identified measures. The Boston Region MPO may assist municipalities with identifying and prioritizing intersections at which to prohibit right turn on red and post signage.

Lane Departure

A lane departure crash occurs when a vehicle crosses an edge line, centerline, or leaves the traveled way (also called a roadway departure). Lane departures are a contributing factor for the third highest number of fatal and serious injury crashes both statewide and within the Region (following crashes involving VRUs and crashes occurring at intersections).

Between 2018 and 2022, lane departure crashes accounted for 21 percent of fatal and serious injury crashes in the region, despite comprising only four percent of all crashes in the region. Like the statewide upward trend, fatal and serious injury lane departure crashes in the region gradually increased from 138 in 2018 to 197 in 2022, a 43 percent rise over five years, comparable to the statewide increase of 38 percent.

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[11] Right-of-way intersecting ways: turning on red signals, MGL Part I Title XIV Chapter 89 Section 8 (2023). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter89/Section8.

[12] FHWA. (2023). MUTCD, 11th edition, Section 2B.60 "No Turn on Red Signs (R10-11 Series, R10-17a, and R10-30)." https://mutcd.fhwa.dot.gov/pdfs/11th_Edition/mutcd11thedition.pdf.

In addition, dangerous driver behaviors such as distracted and impaired driving, were found to greatly increase the risk of lane departure crashes. More than one-half (51 percent) of fatal and serious injury crashes involving impaired driving and nearly one-half (46 percent) of speeding-related fatal and serious injury crashes ended in a lane departure. As stated above, lane departure crashes currently make up 21 percent of all fatal and serious injury crashes; impaired driving or speeding doubles the chance of having a fatal or serious injury lane departure crash.

A MassDOT study of crash data in the state found that distracted driving fatal and serious injury crashes tend to be related to lane departure.[13] In Massachusetts between 2018 and 2022, distracted driving accounted for 10 percent of all fatal injuries and nine percent of suspected serious injuries.[14] In the Boston Region, distracted driving accounted for 7.9 percent of total fatal and serious injury crashes, with a 36.5 percent increase from 2018 to 2022.

These distracted and impaired driving trends indicate the importance of context-sensitive roadway design and awareness efforts targeting these high-risk behaviors.

The systemic safety analysis revealed that the majority of lane departure crashes occur on two-lane, two-way undivided highways. These roads are the highest risk sites for lane departure fatalities and serious injuries. Throughout the region, a total of 544 miles of roadway segments were identified as primary risk sites, capturing 16 percent of the region's lane departure fatal and serious injury crashes.

There are two policy and process recommendations related to lane departure:

1. Municipalities may develop policy to deliver systemic safety signage, striping, and related treatments as part of recurring maintenance projects.

2. MassDOT may improve outreach and education about the dangers of distracted driving and the Massachusetts Hands Free Law.

1. Develop Policy to Deliver Systemic Safety Signage, Striping, and Related Treatments as a Part of Recurring Maintenance Projects

Lead Organization: Municipalities

Supporting Organization(s): Boston Region MPO, MassDOT

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[13] Massachusetts Department of Transportation. (2021). MassDOT IMPACT Phase II—Identification of Risk Factors for SHSP Emphasis Areas: Distracted Driving. https://www.mass.gov/doc/distracted-driving-massdot-impact-phase-ii-identification-of-risk-factors-for-shsp-emphasis-areas/download.

[14] Massachusetts Department of Transportation. (2024). Massachusetts HSIP Implementation Plan. https://www.mass.gov/doc/massachusetts-hsip-implementation-plan/download.

Supporting Evidence

In the Boston region, two-way undivided roadways were the most common roadway type, accounting for 67 percent of all fatal and serious injury lane departure crashes.

Status in Massachusetts and Nationally

MassDOT identified lane departures as an emphasis area and developed action items to reduce lane departure crashes in the most recent *Strategic Highway Safety Plan* (SHSP).[15] Examples of action items to address lane departures in the SHSP include

- 2.1.A.ii. Use the risk models for lane departure to develop a systemic project and provide communities with speed feedback signs and road signs to reduce lane departure crashes.
- 2.1.C.xiv. Train and inform municipalities about proper use of signage and lane markings to combat lane departures.
- 4.5.A.v. Collect Roadway Fundamental Data Elements for roadway segments across Massachusetts so that a data driven safety analysis can be performed on lane departures.

The FHWA has multiple Proven Safety Countermeasures for roadway departures, including enhanced delineation at curves, rumble strips, and wider edge lines.[16] Enhanced delineation such as chevron signs at horizonal curves has shown a 25 percent reduction in nighttime crashes and a 16 percent reduction in nonintersection fatal and serious crashes.[17] Center line rumble strips on two-lane rural roads have shown a decrease of head-on fatal and all injury crashes between 44 and 64 percent.[18]

Recommendation

Treatments for lane departures could be applied systemically, meaning safety improvements are included in all routine maintenance projects across the roadway network. This recommendation supports the Safe System Approach element of Safer Roads.

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15 Massachusetts Department of Transportation. (2023). Massachusetts SHSP 2023 Action Plan. https://www.mass.gov/doc/massachusetts-shsp-2023-action-plan/download.

16 FHWA. (n.d.). Proven Safety Countermeasures. https://highways.dot.gov/safety/proven-safety-countermeasures.

17 FHWA. (n.d.). Enhanced Delineation for Horizonal Curves. https://highways.dot.gov/safety/proven-safety-countermeasures/enhanced-delineation-horizontal-curves.

18 FHWA. (n.d.). Longitudinal Rumble Strips and Stripes on Two-Lane Roads. https://highways.dot.gov/safety/proven-safety-countermeasures/longitudinal-rumble-strips-and-stripes-two-lane-roads.

Municipal departments of public works, planning, or transportation may develop an organizational policy to ensure these types of treatments are included in roadway maintenance, rehabilitation, and replacement projects. Municipalities may also assess existing conditions to identify roadway segments with many lane departure crashes, develop prioritization criteria, and engage with maintenance departments. Often, funding is a limitation for implementing safety improvements. Municipalities may not be able to afford to implement additional safety improvements in roadway maintenance projects at current funding levels. MassDOT and the Boston Region MPO may play supporting roles in providing municipalities with the resources and funding necessary to add these safety improvements to maintenance projects. The MPO may also incorporate systemic safety improvements for lane departures into MPO programs.

2. Improve Outreach and Education About the Dangers of Distracted Driving and the Massachusetts Hands Free Law

Lead Organization: MassDOT

Supporting Organization(s): Boston Region MPO, Municipalities, Law Enforcement

Supporting Evidence

Distracted driving is any type of activity that takes away the driver's attention from driving, such as an electronic device, a passenger, eating, grooming, or an external distraction outside the vehicle. Distracted driving includes taking your eyes off the road, your hands off the wheel, or your mind off driving.

In Massachusetts between 2018 and 2022, distracted driving-related crashes accounted for 7.9 percent of total fatal and serious injury crashes, with a 36.5 percent increase from 2018 to 2022. In particular, distracted driving stood out as an emphasis area for the North Shore Task Force and South Shore Coalition subregions.

During engagement, stakeholders often indicated distracted driving as a top safety concern. People walking shared that they do not trust people driving to drive distraction-free, nor do they feel that the distracted driving law is regularly enforced. These unsafe driver behaviors contribute to unsafe roadways for both VRUs and all users.

Status in Massachusetts and Nationally

The Massachusetts Hands-Free Law forbids drivers under age 18 from any electric device use whatsoever; drivers older than age 18 may only use electronic devices in hands-free mode. The

Hands-Free Law went into effect in 2020.[19] Since 2020, distracted driving citations by law enforcement in Massachusetts have steadily increased, from 29,662 citations in 2020 to 53,966 citations in 2023.[20]

The *Massachusetts Strategic Highway Safety Plan* has identified multiple approaches to address distracted driving.[21] There are two actions about distracted driving that list MassDOT as the lead implementing agency under the Strategy 6.1 "Impact social norming/behavioral changes through comprehensive campaigns":

- 6.1.A.ii. Continue annual Safe Streets Smart Trips High School Video Contest and Yard Sign Design Contest, with topics including Understanding Roadway Signage and Pavement Markings, Sharing the Road, Distracted Driving, Speed, etc.
- 6.1.C.ii. Utilize Traffic Safety Team to continue social media content creation and other public service announcements on driver behavior. Distribute safety materials to municipalities and enforcement to share. Collaborate with Boston University AdLab to develop a 35-year-old-and-younger distracted driving campaign.

The *Massachusetts Strategic Highway Safety Plan* also contains additional distracted driving recommendations with other state agencies, local agencies, or private partners as lead agencies, including

- 2.1.B.xi. Increase data collection during crash investigations related to VRUs, causation and distractions.
- 4.1.A.v. Facilitate ongoing conversations with automakers about the design and distractions posed by infotainment systems.
- 5.4.A.ii. Conduct after-school classes focusing on distracted driving prevention.
- 5.7.A.ii. Conduct data-driven targeted enforcement during mobilizations focused on impaired and distracted driving, occupant restraint usage, speed, and VRUs safety.
- 6.1.C.xiii. Conduct Public Education and Awareness Activities and use Variable Message Boards (VMB) to provide messages to Commercial Motor Vehicle (CMV) drivers and those with

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19 Commonwealth of Massachusetts. (2020). Hands-Free Law. https://www.mass.gov/info-details/hands-free-law-0.

20 Travis Andersen, *Boston Globe*. (2024, February 21). News article "Driving violations on rise in Mass. For fourth straight year, officials say." https://www.bostonglobe.com/2024/02/21/metro/driving-violations-went-up-in-mass-last-year-per-massdot/.

21 Massachusetts Department of Transportation. (2023). Massachusetts SHSP 2023 Action Plan. https://www.mass.gov/doc/massachusetts-shsp-2023-action-plan/download.

Commercial Driver's Licenses (CDLs) regarding high crash zones and work zones, as well as educational messages regarding driver distraction, etc.

- 6.1.C.viii. Continue educational programming and outreach to younger drivers, as well as parents of novice drivers, on the dangers of distracted driving, impaired driving, and other safety concerns.

Many other state SHSPs include actions to combat distracted driving. For example, the Northwest Arkansas *Strategic Highway Safety Plan* identifies recommendations including[22]

- Increase jurisdiction-wide public information and education to promote adherence to texting and cell phone laws and distracted driving law.
- Educate commercial vehicle and fleet drivers about the dangers of distracted and drowsy driving.
- Utilize dedicated resources to publicize the Commonwealth's distracted driving law including media campaigns, distribution of education materials, etc.

Recommendation

Spreading awareness about the existing Hands Free Law and about responsible driving behaviors could help save lives—both people inside and outside of vehicles. Keeping the driver's hands on the wheel, eyes on the road, and mind on driving may reduce lane departures caused by distraction. This recommendation supports the Safe System Approach element of Safer People.

The MPO may coordinate with MassDOT, municipalities, law enforcement, and advocacy and community-based organizations to develop and distribute educational materials and implement outreach campaigns about the dangers of distracted driving. Education also helps supplement effective enforcement.

Speeding

Speeding has consistently been identified as a contributing factor in fatal and serious injury crashes by both stakeholders and data analysis. While speed-involved crashes accounted for a small proportion (five percent) of the total fatal and serious injury crashes, the Boston region experienced a substantial increase (91 percent) in these types of crashes from 2018 to 2022. In addition, stakeholders, including municipal staff and the general public have identified speeding as a priority concern.

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[22] Arkansas Department of Transportation (2022). Arkansas Strategic Highway Safety Plan. https://ardot.gov/wp-content/uploads/VRU_SHSP_AppendedFINAL.pdf.

The systemic safety analysis revealed that speeding-related crashes were significantly more prevalent on urban uncontrolled principal arterials and local roads with narrow medians (< five ft wide) and wide traveled ways (> 30 ft wide). Low traffic volumes (< 5,000 annual average daily traffic) were also identified as a risk factor of speeding-related crashes on urban uncontrolled principal and minor arterials, despite being rare on these segments.

There are two main types of speed limits governing Massachusetts' roadways, as defined by MassDOT: statutory speed limits and regulatory speed limits.[23] Regulatory speed limits, also known as "special speed regulations," are based on speed studies conducted by MassDOT or municipalities. The speed limit setting process considers the 85th percentile speed, adjacent land use, expected road users, safety history, and more. Regulatory speed limits are signed with white speed limit signs. Statutory speed limits are established by Massachusetts General Law and apply wherever a municipality has not enforced a regulatory speed limit. Statutory speed limits, which may not have posted signs, are based upon specific road characteristics. Statutory speed limits are established by Mass General Law—Part I, Title XIV, Chapter 90.

Many of the policy and process recommendations noted below focus on reducing vehicle speeds. One of the FHWA's Proven Safety Countermeasures is "Appropriate Speed Limits for all Road Users."[24] Vehicle speeds are particularly important to consider on roadways where both vehicles and VRUs are present. Speeding challenges should be addressed through a combination of self-enforcing roadway design, effective enforcement, speed limit setting, and education.

There are six policy and process recommendations related to speeding

1. Municipalities may implement the MassDOT guidance on speed management and speed limit setting.

2. Municipalities may reduce speed limits to 25 Miles Per Hour (mph) on non-state highways in thickly settled or business districts.

3. Municipalities may establish safety zones and school zones along municipal-owned roadway corridors to lower speed limits to 20 mph.

4. MassDOT may perform research about establishing a requirement for speed-limiter devices for repeat speeding offenders.

5. The state legislature may permit the use of automated speed enforcement and citations.

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[23] Massachusetts Department of Transportation. (n.d.) About the role of speed limits. https://www.mass.gov/info-details/about-the-role-of-speed-limits.

[24] FHWA. "Appropriate Speed Limits for all Road Users." *Proven Safety Countermeasures*. https://highways.dot.gov/safety/proven-safety-countermeasures/appropriate-speed-limits-all-road-users.

6. The MPO may expand guidance for municipalities to perform speed data collection.

1. Implement the MassDOT Guidance on Speed Management and Speed Limit Setting

Lead Organization: Municipalities

Supporting Organization(s): MassDOT

Supporting Evidence

In fatal and serious injury crashes involving speeding, the most common roadway speed limit was 30 mph (30 percent); this is followed by 25 mph and 35 mph, each at 10 percent of all speeding-related fatal and serious injury crashes. Since lower speed limits typically occur on local roads with higher non-motorist activity, speeding in these areas may result in a fatality or serious injury. This suggests the need for a careful review of speed limits on local roads and more self-enforcing roadway design to discourage speeding.

Roadway design was indicated as a factor in people's travel patterns, mode choice, and perception of safety. Roadway designs that allow people to drive at high speeds may discourage awareness of people walking and biking. Older adults indicated the importance of lowering speed limits and implementing speed humps in residential areas to reduce vehicle speeds.

Status in Massachusetts and Nationally

MassDOT offers a plethora of guidance for municipalities about speed management, including targeting speed limit setting, roadway treatments, speed zoning, and more.[25,26] The recommended steps for implementing speed management includes collecting and analyzing data, establishing a target speed, designing for speed control and separation, raising awareness, and setting speed limits through speed zoning.

Recommendation

Municipalities should leverage MassDOT's existing speed management guidance to collect information and analyze data, establish target speeds, design roadways for speed control and

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25 Massachusetts Department of Transportation. (n.d.). *Learn about speed management*. https://www.mass.gov/info-details/learn-about-speed-management.

26 Massachusetts Department of Transportation. (2021). *Procedures for Speed Zoning on State Highways and Municipal Roads*. https://www.mass.gov/doc/procedures-for-speed-zoning-on-state-and-municipal-roadways/download.

separation, set speed limits, and build a community-wide safety culture. This recommendation supports the Safe System Approach element for Safer Speeds.

2. Reduce Speed Limits to 25 mph on Non-state Highways in Thickly Settled or Business Districts

Lead Organization: Municipalities

Supporting Organization(s): MassDOT

Supporting Evidence

Within urbanized areas, commercial areas experienced the highest proportion of fatal and serious injury crashes (30 percent), potentially due to high volumes of vehicles, pedestrians, and delivery trucks in the same area. This trend is particularly pronounced in high-density business/commercial centers, where 38 percent of fatal and serious injury crashes in those areas involved VRUs. Furthermore, 30 percent of all fatal and serious injury crashes involving speeding took place on a roadway with a 30-mph speed limit.

Status in Massachusetts and Nationally

In Massachusetts, thickly settled or business districts are defined as areas where homes are less than 200 feet apart or where businesses are built up for a distance of one-quarter mile. As state law, MGL Part I Title XIV Chapter 90 Section 17 establishes the statutory speed limit inside a thickly settled or business district at 30 mph.[27] However, municipalities may opt into Section 17c, which permits municipalities to lower the speed limit to 25 mph on non-state highways.[28] If adopted, the municipalities must notify MassDOT of the speed limit reduction. MassDOT recommends that a municipality opt in on a city- or town-wide basis, although cities have the option to opt-in on a street-by-street basis.

Within the Boston Region, approximately one-half of all municipalities have opted into to city- or town-wide 25 mph speed limits in thickly settled and business districts.[29] The following 50 municipalities have **not** opted in municipality wide: Ashland, Bellingham, Burlington, Canton, Cohasset, Dover, Essex, Everett, Foxborough, Franklin, Gloucester, Hamilton, Holbrook, Hopkinton, Hudson, Hull, Marlborough, Marshfield, Maynard, Medfield, Middleton, Milford, Millis,

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27 Speed Limits, MGL Part I Title XIV Chapter 90 Section 17. (2016). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90/Section17.

28 Establishment of 25-miles-per-hour speed limit in thickly settled or business district in city or town: violation, MGL Part I Title XIV Chapter 90 Section 17C (2023). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90/Section17C.

29 Massachusetts Department of Transportation. (n.d.) Speed limits in thickly settled or business districts. https://www.mass.gov/info-details/speed-limits-in-thickly-settled-or-business-districts.

Nahant, Natick, Needham, Newton, Norfolk, North Reading, Norwood, Peabody, Quincy, Reading, Rockland, Rockport, Saugus, Southborough, Stow, Topsfield, Wakefield, Walpole, Watertown, Wayland, Wellesley, Wenham, Westwood, Weymouth, Wilmington, Woburn, and Wrentham.

Recommendation

Thickly settled and business districts have many people traveling around walking, rolling, biking, driving, and more. Reducing vehicle speeds provides drivers with more time to react and avoid a crash, while also reducing the amount of crash impact force in a collision. This recommendation supports the Safer Speeds Safe System Approach element.

Municipalities should opt-in to section 17c of Chapter 90 of the MGL to reduce the statutory speed limit to 25 mph on municipal-owned roadways within a thickly settled or business district, ensuring to notify MassDOT of the changes.

3. Establish Safety Zones and School Zones Along Municipal-Owned Roadway Corridors to Lower Speed Limits to 20 mph

Lead Organization: Municipalities

Supporting Organization(s): MassDOT

Supporting Evidence

Between 2018 and 2022, the majority of crashes (71 percent) occurred on roads under municipal jurisdiction. Notably, a crash on a municipality-owned road was more likely to result in a fatality or serious injury. Furthermore, one-half of all fatal and serious injury crashes involving speeding took place on a roadway with a speed limit between 25 mph and 35 mph.

Approximately 79 percent of school-aged children in Massachusetts live within one mile of a school; however, of those children, 54 percent are driven to school.[30] While there are many factors that influence mode choice for getting to school, ensuring the walking and bicycle routes to schools and other key pedestrian destinations is critical. School and safety zones are critical to protecting VRUs, especially children, by slowing down vehicle speeds.

[30] Metropolitan Area Planning Council and Walk Boston. (2012). Kids are Commuters Too! Assessing the Mode Shift Potential of Walk to School Programs. https://www.walkboston.org/sites/default/files/KidsAreCommutersToo_Final_7_16_12.pdf.

Status in Massachusetts and Nationally

According to MGL Part I Title XIV Chapter 90 Section 18B, municipalities may establish safety zones in areas such as parks, playgrounds, senior citizen housing, hospitals, and childcare centers.[31] Roads within a safety zone have an established regulatory speed limit of 20 mph. Municipalities may adopt safety zones on city- and town-owned roadways without approval from MassDOT; written approval is needed from MassDOT for state highways.

Safety zones should be adjacent to land uses visited by VRUs and have areas of potential conflict between vehicles and VRUs, such as crosswalks, driveways, or side streets.[32] A safety zone should be a minimum of one-quarter mile long. Similar to safety zones, school zones are designated corridors near schools that set the speed limit at 20 mph during school hours. The primary goal of these school zones is to ensure children have safe walking, rolling, and biking access to their school.

For example, the City of Cambridge successfully reduced the speed limit from the statutory 25 mph to the regulatory 20 mph on most Cambridge streets by opting into Section 18B; this required posting 20 mph speed limit signs on all reduced speed roadways.[33] Similarly, Somerville expanded safety zones to cover most residential streets.[34] Many Vision Zero Plans throughout Massachusetts include recommendations to opt into statewide laws related to statutory speed limit reductions and safety zones.

As part of their Vision Zero program, the City of Seattle adopted a speed reduction policy and reduced speeds on nonarterials to 20 mph and to 25 mph on arterials. Early results of this reduction have shown a 22 percent decrease in all crashes and an 18 percent decrease in crashes that result in injury.[35]

Recommendation

Safety zones and school zones help to reduce vehicle speeds in areas where there are many VRUs present, especially children and older adults. These zones should also be paired with self-

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31 Establishment of designated safety zones for ways in city or town: violation, MGL Part I Title XIV Chapter 90 Section 18B (2023). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90/Section18b.

32 Massachusetts Department of Transportation. (n.d.) About the role of speed limits. https://www.mass.gov/info-details/about-the-role-of-speed-limits.

33 City of Cambridge. (2025). Speed Limits in Cambridge. https://www.cambridgema.gov/streetsandtransportation/policiesordinancesandplans/visionzero/speedlimitsincambridge.

34 City of Somerville. (n.d.) Vision Zero Somerville. https://www.somervillema.gov/departments/programs/vision-zero-somerville.

35 Seattle Department of Transportation. (2020). Speed Limit Case Studies. Seattle, WA. https://www.seattle.gov/Documents/Departments/SDOT/VisionZero/SpeedLimit_CaseStudies_Report.pdf.

enforcing roadway treatments to slow down vehicles. This recommendation supports the Safe System Approach elements of Safer Speeds, Safer Roads, and Safer People; it also supports the VRU emphasis area.

Municipalities should establish safety zones and reduce the speed limit on municipal-owned roads to 20 mph. Municipalities should also identify corridors to establish school zones near schools where students frequently walk, roll, or bicycle to school. The Boston Region MPO and MassDOT may be able to assist with securing funding for new and additional signage. The Boston Region MPO may assist municipalities with identifying and prioritizing corridors in which to establish safety or school zones.

4. Perform Research About Establishing a Requirement for Speed-Limiter Devices for Repeat Speeding Offenders

Lead Organization: Boston Region MPO

Supporting Organization(s): Massachusetts Executive Office of Public Safety and Security, MassDOT

Supporting Evidence

While no data are readily available to illustrate the extent of repeat speeding offenders in the Boston region or the Commonwealth, several stakeholders felt there are limited consequences for speeding. Some stakeholders expressed that they feel that law enforcement does not hold drivers who speed accountable for their actions, making them feel unsafe on the roadways, as drivers, passengers, pedestrians, and bicyclists.

Status in Massachusetts and Nationally

A speed limiter (also called a speed governor) is a device installed in a vehicle that measures and regulates the speed of the vehicle. Speed limiters are currently not used in Massachusetts. According to current state law, multiple speeding offenses will lead to a driver's license being suspended or revoked.[36] After three speeding tickets with 12 months, the Registry of Motor Vehicles (RMV) will suspend or revoke their learner's permit, driver's license, or right to operate a vehicle for 30 days.

The RMV defines habitual offenders as those drivers who have accumulated three major moving violations or any combination of 12 major moving violations (e.g., operating under the influence, reckless driving) or minor moving violations (e.g., speeding, running a red light) within a five-year

[36] Massachusetts Registry of Motor Vehicles. (n.d.). Suspensions from multiple offences. Mass.gov. https://www.mass.gov/info-details/suspensions-from-multiple-offenses.

period. For habitual offenders, the RMV will revoke or suspend their learner's permit, driver's license, or right to operate a vehicle for four years.

The *Massachusetts Strategic Highway Safety Plan* does not include any specific actions about speed limiters.[37] However, several initiatives and strategies generally support further research about speed-limiter devices:

- Initiative 1: "Implement Speed Management to Realize Safer Speeds" has strategy 1.3 to "Amend Massachusetts regulations related to speed."
- Initiative 3: "Take an Active Role to Affect Change in Vehicle Design, Features, and Use" has strategy 3.1 to "Identify opportunities for the state to champion safe vehicle designs and features."
- Initiative 4: "Accelerate Research and Adoption of Technology" has strategy 4.1 "Pursue research to test new approaches and identify new technologies for improving safety." Strategy 4.1 contains action B. "Research and test technologies for improving safety."

Speed limiters are being explored in other states. For example, instead of license suspension after conviction of certain speed-related offences, Virginia bill HB 2096 requires a court-ordered enrollment in the Intelligent Speed Assistance (ISA) Program. Offenders must complete the program and install an ISA system in any motor vehicle owned and registered to the participant and restricts them from driving any motor vehicle not registered to them. Reckless driving due to driving more than 100 mph leads to a court-ordered required enrollment in the ISA program. Drivers that accumulate a certain number of points on their license due to speeding are offered the option to opt into the ISA program instead of having their license suspended.[38]

Recommendation

The Boston Region MPO may research implementation of speed-limiting devices in Massachusetts by funding a research study as a part of its UPWP. Implementation of speed limiters would require legislative action; thus, it will be critical to engage with legislators of the Commonwealth. In addition, the MPO may coordinate with the Massachusetts Executive Office of Public Safety and Security to evaluate data on repeat speeding offenders to understand the full extent of the problem. This recommendation supports both the Safe System Approach elements of Safer Speeds and Safer People.

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[37] Massachusetts Department of Transportation. (2023) *Strategic Highway Safety Plan (SHSP).*https://www.mass.gov/doc/massachusetts-shsp-2023/download.

[38] Virginia General Assembly. (2025). *HB2096 Intelligent Speed Assistance Program; established, penalty.* https://lis.virginia.gov/bill-details/20251/HB2096.

5. Permit the Use of Automated Speed Enforcement and Citations

Lead Organization: Massachusetts General Court

Supporting Organization(s): Boston Region MPO, MassDOT, Municipalities

Supporting Evidence

As indicated before, while speed-involved crashes only accounted for a small proportion (five percent) of the total fatal and serious injury crashes, the Boston Region experienced a substantial 91 percent increase in these crashes from 2018 to 2022, with a similar increase (85 percent) observed statewide. Addressing speeding-related issues remains a critical priority for the Region.

Stakeholders indicated they believe laws are not regularly enforced, leading to driving above the posted speed limit without consequences.

Several stakeholders expressed concerns about the citations and fines associated with automated enforcement, including if a third-party automated enforcement device operator would be motivated by fine profits, rather than overall roadway safety.

Status in Massachusetts and Nationally

Automated speed cameras are installed permanently at fixed locations along roadways to enforce speed limits. The cameras use radar to identify speeding vehicles and capture photographs of the fronts or backs of speeding vehicles; manual or automated systems would then connect photographs of vehicles, especially license plates, to vehicle owners and mail traffic tickets to those vehicle owners.

In Massachusetts, state law does not allow for automated speed cameras specifically because their operation requires automatic mailing of tickets to violators.[39]

The 2023 *Massachusetts Strategic Highway Safety Plan* (SHSP) lists strategy 4.2 to "develop prospective pilots for automated enforcement for red light running, speed zones, and work zones" with interested municipalities and with an intentional focus on equitable implementation. In the absence of automated speed enforcement, other speed management strategies (such as traffic calming or speed limit feedback signs) are essential to achieve safe speeds.

Proposed bills in 2020 and 2023 failed to pass to allow pilot cities to test automated enforcement. The 2023 bill stipulated that automated enforcement systems would only use rear photographs for

[39] Massachusetts Department of Transportation. (2023) *Strategic Highway Safety Plan (SHSP)*.https://www.mass.gov/doc/massachusetts-shsp-2023/download.

fines, would not associate fines with drivers' motor vehicle operating records, would destroy the photographs after violations are resolved, and would limit their use in court proceedings.[40]

Governor Healey signed a bus lane camera enforcement law into effect in 2024. This law allows public transit agencies and school districts to use bus-mounted cameras to identify vehicles that are illegally parked in dedicated bus lanes and at bus stops and identify vehicles that pass around stopped school buses. Stationary cameras are also permitted at bus stops to prevent vehicles from parking in boarding areas.[41] This recent success may open the door for future types of automated enforcement.

Currently, 17 states implement automated speed enforcement.[42] New York State allows for speed monitoring in school speed zones, work zones, and at red lights. In work zones, tickets are issued to vehicles that are traveling more than 10 mph over the speed limit on New York State Department of Transportation-maintained roads. Maryland has also adopted speed limit cameras in work zones with speed limits of 45 mph or higher and in school zones.[43] After five years of implementation, New York saw a 63 percent decrease in speed and a 55 percent decrease in fatalities in school zones where safety cameras were present.[44]

Recommendation

Automated speed enforcement would disincentivize drivers from driving at excessive speeds, while supplementing ongoing municipal and state enforcement activities. This recommendation supports the Safe System Approach element for Safer Speeds.

Implementing automated speed enforcement will require legislative action by the Massachusetts General Court to allow for an automated citation process. Boston Region MPO may collaborate with MassDOT and municipalities interested in piloting automated speed enforcement. Boston Region MPO could develop educational materials and a fact sheet to support the pilot implementations. Once allowed by state law, municipalities may individually approve use of automated enforcement within their jurisdiction.

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40 MilNeil, Christian. (2023). *Legislature's Latest Attempt for Automatic Traffic Enforcement is Missing the Bus*. https://mass.streetsblog.org/2023/10/30/legislatures-latest-attempt-for-automated-traffic-enforcement-is-missing-the-bus.

41 MilNeil, C. (2025, January 10). *Smile, Gov. Healey Signs Two Camera Enforcement Bills for Buses*. https://mass.streetsblog.org/2025/01/10/smile-gov-healey-signs-bus-lane-camera-enforcement-bill.

42 Peterman, D. R. (2020). *Safety Impact of Speed and Red Light Cameras. Library of Congress*. https://www.congress.gov/crs-product/R46552.

43 Peterman, D. R. (2020). *Safety Impact of Speed and Red Light Cameras*. Library of Congress. https://www.congress.gov/crs-product/R46552.

44 New York City. (2019). *Vison Zero Year 5 Report*. https://actionvisionzero.org/wp-content/uploads/2019/09/nyc-vision-zero-year-5-reportmarch19.pdf.

6. Expand Guidance for Municipalities to Perform Speed Data Collection

Lead Organization: Boston Region MPO

Supporting Organization(s): MassDOT, Municipalities

Supporting Evidence

Speeding is a complex issue composed of driver behavior, roadway design, speed limits, and enforcement. Collecting historical speed data is essential to understand current roadway conditions and identify holistic solutions.

Several stakeholders shared challenges with collecting and interpreting speed data to inform speed limit setting studies. In particular, stakeholders requested more guidance about the types of equipment to use and process to consistently collect speed data.

Status in Massachusetts and Nationally

MassDOT offers guidance on speed data collection in part 5.d of *Procedures for Speed Zoning on State Highways and Municipal Roads*.[45] This guidance includes general advice about when, where, how, and how much speed data should be collected.

In 2025, FHWA developed the *Speed Limit Setting Handbook*, which provides information on how to conduct speed studies including the data collection processes, evaluation, and implementation that goes into setting a speed limit.[46]

In Massachusetts, the Executive Office of Public Safety and Security Office of Grants and Research offers a grant program for Municipal Road Safety. This grant program provides funding for local police departments to address community traffic safety issues. Applicable projects include purchasing of equipment that could be used for speed studies.[47]

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45 Massachusetts Department of Transportation. (2021). *Procedures for Speed Zoning on State Highways and Municipal Roads*. *https*://www.mass.gov/doc/procedures-for-speed-zoning-on-state-and-municipal-roadways/download.

46 FHWA. (2025). Speed Limit Setting Handbook. https://highways.dot.gov/sites/fhwa.dot.gov/files/Speed-Limit-Setting-Handbook.pdf.

47 Commonwealth of Massachusetts. (2024). Notice of Availability of Grant Funds (AGF) FFY25 Municipal Road Safety (MRS) Grant Program. https://www.mass.gov/doc/ffy25-municipal-road-safety-grant-program-agf/download.

Recommendation

Collecting and analyzing speed data is a crucial step for a speed study, which is required by MassDOT when changing statutory speed limits to regulatory speed limits. Even when not required, understanding travel speeds can help inform roadway design and safety improvement projects. This recommendation supports the Safe System Approach element of Safer Speeds.

The Boston Region MPO may perform additional research about speed data collection and share compiled information with municipalities. This research study may be funded through the MPO's UPWP. Guidance should leverage best practices and required equipment recommendations from MassDOT's speed data collection guidance, FHWA Speed Limit Setting Handbook, and more. Further engagement may be needed with municipalities to understand what type of information they need to successfully collect and analyze speed data.

Vulnerable Road Users

In the Commonwealth of Massachusetts, VRUs include people walking and biking; roadside workers; people using wheelchairs or personal mobility devices; people using scooters, skateboards, or roller skates; people on horses or in horse-drawn carriages; and people operating farm equipment on the roadway.[48] These types of road users are considered more "vulnerable" because they are more exposed and susceptible to crash impact forces than a person inside of a motor vehicle.

VRUs face unique challenges and experience 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 due to the crash impact forces directly upon their bodies. From 2018 to 2022, while VRU crashes accounted for only five percent of total roadway crashes, they made up 27 percent of fatal and serious injury crashes within the region. If a VRU is involved in a crash, they are eight times more likely to be killed or seriously injured compared to a person in a vehicle.

The systemic safety analysis found that 10 percent of roadways by mileage (314 centerline miles) were identified as primary risk segments for VRUs. Of those primary risk sites, 84 percent are under municipal jurisdiction. When examining intersection-related crashes, seven percent of intersections were classified as primary risk sites, with a higher proportion under MassDOT jurisdiction.

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[48] Massachusetts Department of Transportation. (n.d.) Motorists Give 4 Feet To Pass. Mass.gov. https://www.mass.gov/doc/new-vulnerable-road-users-laws-handout/download.

Stakeholders repeatedly indicated that they feel unsafe when walking, biking, and rolling in the Region. Poor infrastructure, roadway design, and driver behavior were cited as key reasons for their perception of being unsafe.

There are nine policy and process recommendations related to VRUs:

1. The state legislature may build upon 2022 MA Law "An Act to Reduce Traffic Fatalities" and define Vulnerable Road User as a protected class.
2. The MPO may expand education and outreach about VRUs safety and rights on Massachusetts roads.
3. The state legislature may permit the use of automated bicycle and bus lane enforcement and citations via bus-mounted cameras for both parking and moving violations.
4. Municipalities may adopt a separated bike lane policy and leverage MassDOT's *Bike Lane Planning & Design Guide* to evaluate and design separated bike lanes.
5. Municipalities may adopt a Complete Streets policy and leverage MassDOT funding opportunities to prioritize and make improvements for walking and biking infrastructure.
6. Municipalities may establish speed limits on non-motorized, multimodal facilities with posted signs.
7. Municipalities may become an Alliance Partner with the Massachusetts Safe Routes to School program.
8. Municipalities may evaluate and update curb management policies and plans to reflect safety for all types of road users.
9. Municipalities may develop a policy requiring traffic control guidance and design to improve safety for pedestrians and cyclists traveling through municipal-project work zones.

1. Extend Legal Protections for Vulnerable Road Users by Building Upon the 2022 MA Law, an Act to Reduce Traffic Fatalities

Lead Organization: Massachusetts General Court

Supporting Organization(s): Boston Region MPO, MassDOT, Advocacy Organizations

Supporting Evidence

As indicated above, VRUs are considered more "vulnerable" because they are more exposed and susceptible to crash impact forces than a person inside of a motor vehicle. Stakeholders felt there were limited legal protections for VRUs hurt or killed in a crash. They perceived that traffic citations and charges are often dismissed or not filed in court, and wished for additional legal protections to establish a framework for who is at fault and provide stronger punishment and deterrence.

Status in Massachusetts and Nationally

In 2022, Massachusetts passed "An Act to Reduce Traffic Fatalities," which defines VRUs as people walking and biking; roadside workers; people using wheelchairs or other personal mobility devices; people using scooters, skateboards, or roller skates; people on horses or horse-drawn carriages; and people operating farm equipment on the roadway.[49] The new law requires motor vehicles to pass VRUs at a safe passing distance minimum of four feet, including crossing the centerline if necessary "when it is safe to do so and adhering to the roadway speed limit." The law also led to revisions to the standardized form for crash reporting to collect more information about crashes involving a motor vehicle and a VRU.

While VRUs are now defined by this 2022 Act, the law does not specify any additional fines, fees, or other punishments for vehicle drivers who hurt or kill a VRU. The League of American Bicyclists, for example, provides model law language to increase penalties for certain road behaviors that lead to the death or serious injury of a VRU.[50] Suggested penalties include having driving privileges suspended for six months, paying a $2,000 fine, serving a period of incarceration for 30 days or less, participating in a crash prevention course, or performing community service. A VRU law provides deterrence for dangerous driving behaviors while filling in a legal gap between more and less severe offense charges.

Currently, 12 states have VRU laws that define VRUs and provide specific penalties for actions against them. Financial punishment ranges between $550 and $12,000; other punishments may include assigning vehicular assault against bikes and pedestrians as a Class A misdemeanor, requiring a hearing in the event of serious injury or death, and a one-year suspension of driver's license.

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[49] An Act to Reduce Traffic Fatalities, MGL Chapter 358 (2022). https://malegislature.gov/Laws/SessionLaws/Acts/2022/Chapter358.

[50] The League of American Bicyclists. (n.d.). *Model Vulnerable User Law*. https://bikeleague.org/bike-laws/model-legislation/model-vulnerable-user-law/.

Recommendation

Providing more awareness, physical separation, and legal protections for VRUs can save lives. Improved legal protections for VRUs can serve as deterrence for motor vehicle drivers and disincentivize dangerous driving behaviors that may lead to harm for VRUs. However, expanding current legal protections for VRUs will require legislative action by the Massachusetts General Court. Boston Region MPO may collaborate with municipalities, MassDOT, and advocacy organizations to support this effort. This recommendation supports the Safer People element of the Safe System Approach.

2. Expand Education and Outreach About Vulnerable Road Users Safety and Rights on Massachusetts Roads

Lead Organization: Boston Region MPO

Supporting Organization(s): MassDOT, Municipalities

Supporting Evidence

Bicyclist and pedestrian survey respondents indicated they feel unsafe due to a combination of roadway infrastructure condition factors paired with unsafe road user behaviors**.** For example, drivers passing too close to walkers or bicyclists on the road is rated as the second highest safety concern for driver behavior, while drivers not stopping for people walking across the street were rated third.

There is a general sense of mistrust about driving behaviors, where people do not trust others to make the right or safe decision on Massachusetts roadways. For example, pedestrians don't trust drivers to stop for them at intersections or crosswalks; drivers don't trust other drivers to drive unimpaired or distraction-free; and bicyclists don't trust drivers will give them enough space on the roadway or keep bicycle lanes free of barriers (such as parked cars). These findings indicate that there is a lack of understanding by drivers of the safety risks that pedestrians and bicyclists experience while traveling.

Status in Massachusetts and Nationally

The Massachusetts Executive Office of Public Safety and Security Office of Grants and Research provides several grants and initiatives related to traffic safety. The Office of Grants and Research developed a Traffic Safety Media Toolkit, which provides materials to raise awareness of and prevent dangerous driving behaviors.[51] Topics covered by the toolkit include distracted driving, impaired driving, occupant protection, pedestrian and bicyclist safety, motorcyclist safety,

[51] Commonwealth of Massachusetts. (n.d.). Traffic Safety Media Toolkit. : https://www.mass.gov/traffic-safety.

children and teens, roadside safety, and speeding. Most of the outreach materials provided on the Traffic Safety Media Toolkit web page were developed by National Highway Traffic Safety Administration.

As an example, the National Opinion Research Center at the University of Chicago developed the *Evidence-Based Behavior Change Campaigns to Improve Traffic Safety Toolkit* for transportation safety practitioners.[52] This toolkit not only provides guidance on how to develop and implement a campaign, but also provides proven behavior change research and methods to ensure the campaign reaches the right audiences and is effective.

Recommendation

Using the theories of behavior change, the Boston Region MPO and municipalities may identify the top safety concerns for their jurisdiction, then focus outreach and engagement to address those concerns. This could include education about the "four feet to pass" requirement for VRUs, yielding to all pedestrians in crosswalks, and sharing the road. The Boston Region MPO may evaluate whether new or additional education and outreach material development is necessary in order to reach the appropriate audiences. This recommendation supports the Safe System Approach element of Safer People.

3. Permit the Use of Automated Bicycle and Bus Lane Enforcement and Citations via Bus-Mounted Cameras for Both Parking and Moving Violations

Lead Organization: Massachusetts General Court

Supporting Organization(s): Boston Region MPO, MassDOT, Municipalities

Supporting Evidence

Massachusetts legalized automated bus lane enforcement in 2024. Cars parked illegally in bus lanes pose a safety threat. For bus riders, a blocked bus lane could lead to passengers deboarding into the road and not safely on the sidewalk; it also could cause the bus to merge into the general traffic lane, thus increasing the potential for a crash.

For bicyclists, a blocked bike lane forces them to merge into the travel lane, which may be a sudden and unexpected movement for nearby vehicle drivers.[53] This increases exposure for

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52 NORC at the University of Chicago. (2020). Evidence-Based Behavior Change Campaigns to Improve Traffic Safety. AAA Foundation for Traffic Safety. https://www.norc.org/content/dam/norc-org/pdf2023/Toolkit-Evidence-Based-Behavior-Change-Campaigns-to-Improve-Traffic-Safety.pdf.

53 Boston Region Metropolitan Planning Organization. (2024). Parking in Bike Lanes: Strategies for Safety and Prevention. https://bostonmpo.org/parking-in-bike-lanes.

bicyclists to vehicles, removing the dedicated physical separation intended by a designated bike lane. The most common source of bike lane obstruction is people parking their vehicles for short-term commercial reasons, such as delivery or ride-hailing. Another source are the doors of adjacent parked motor vehicles.

Status in Massachusetts and Nationally

In 2024, An Act Relative to Bus Lane Enforcement was signed into Massachusetts state law.[54] This law allows for fixed- or bus-mounted cameras for bus lane parking violations in all municipalities statewide, managed by transit agencies. It also allows municipal governments to install stationary cameras at bus stops. The law sets a minimum fine of $25 and a maximum of $125 for bus lane violations caught on camera, and a flat $100 fine for bus stop violations.

Currently, bus lane moving violations (i.e., driving while in a bus lane) are not allowed by state law. There is no automated enforcement in Massachusetts for bike lane moving or parking violations (i.e., a vehicle driving or parked while in a designated bike lane).

The Boston Region MPO conducted a study about parking in bike lanes in 2024.[55] The MPO performed a literature review identifying bicycle lane obstructions and impacts, successful interventions, and stakeholder input. The study found that bike lane obstructions may discourage people from choosing to ride a bicycle, who perceive bicycling to be dangerous without a connected, protected infrastructure. One notable challenge for successful enforcement is the typically short duration of vehicles moving or parked in a bike lane—five minutes or fewer. Automated enforcement overcomes this challenge with the ability to capture violations regardless of duration.

Other states utilize automatic bus and bike lane enforcement. In California, AB 361 permits the use of photographs for bicycle lane parking violations via cameras mounted on city or district owned vehicles. Manual review is required for parking violation determination.[56] In New York, SB S3340 allows cameras mounted within close proximity to bike lanes, violators receive a $50 fine.[57] The effect of this law in New York has led to increased bus speeds and decreased bus-related crashes.[58] Chicago allows automatic enforcement of bus and bike lane violations via cameras mounted on city

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54 An Act Relative to Bus Lane Enforcement, MGL Chapter 363 (2024). https://malegislature.gov/Laws/SessionLaws/Acts/2024/Chapter363.

55 Boston Region Metropolitan Planning Organization. (2024). Parking in Bike Lanes: Strategies for Safety and Prevention. https://bostonmpo.org/parking-in-bike-lanes.

56 Vehicles: photographs of bicycle lane parking violations, California Assembly Bill No. 361 Chapter 432 (2023). https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202320240AB361.

57 An act to amend the vehicle and traffic law, in relation to the establishment in the city of New York of a bicycle lane safety program; and providing for the repeal of such provisions upon expiration thereof, New York State Senate Bill S3304 (2023). https://www.nysenate.gov/legislation/bills/2023/S3304.

58 Transportation for Massachusetts. (n.d.) Policy Priorities. https://t4ma.org/policy-priorities.

owned signs, poles, and Chicago Transit Authority buses, and requires human review of each image. A 30-day "warning period" occurs when a new zone is activated. These cameras are also used for their smart rate parking structure that allows for automatic billing of the space through license plate readers.[59]

Recommendation

Vehicles illegally parked in bus or bike lanes can create safety hazards for buses, boarding bus riders, and bicyclists. Automated enforcement would disincentivize drivers from parking or driving in dedicated bus and bike lanes. A more systematic approach to enforcement is important for increased compliance and keeping bus and bicycle lanes clear for their intended users. This recommendation supports the Safe System Approach element of Safer Roads.

While currently bus lane parking automated enforcement is allowed, bus lane moving violations and any type of bike lane enforcement are not legal. Making any change will require legislative action by the Massachusetts General Court. Boston Region MPO may collaborate with municipalities and transit providers to advocate for automated enforcement for both moving and parking violations for bus lanes and bike lanes. Once allowed by state law, municipalities may individually approve use of automated enforcement within their jurisdiction.

4. Adopt a Separated Bike Lane Policy and Leverage Federal and State Guidance to Evaluate and Design Separated Bike Lanes

Lead Organization: Municipalities

Supporting Organization(s): Boston Region MPO, MassDOT

Supporting Evidence

Between 2018 and 2022, 7.9 percent of all fatal and serious injury crashes in the Boston region involved bicyclists, a 92.3 percent change during the same time period. In the Safety Concerns Map, 45 percent of submissions mentioned poor bike lane infrastructure as a roadway design issue. Seventy-nine percent of submissions identified missing or poor bike lane infrastructure and 53 percent identified drivers passing too close to pedestrians and bicyclists on the road as safety challenges. These findings were mirrored in the survey findings, where respondents indicated that the lack of protected and well-signed bike lanes decreased their perception of safety, and drivers

[59] Lutz, B., Lewis, S. (2024, November 4). Chicago to begin automatic ticketing of bus, bike lane blockers. Retrieved April 24, 2025, from WGN9: https://wgntv.com/news/traffic/chicago-safe-streets-bus-bike-lane-blocking-enforcement/.

passing too close to bicyclists on the road were rated the second highest driver behavior road safety concern by survey respondents.

Status in Massachusetts and Nationally

Separated bike lanes use some type of vertical element to provide physical space between the bike lane and motorized traffic lanes, such as flexible delineator posts, curbs, planters, or vehicle parking.[60] Providing separated bike lanes reduces conflicts between bicycles and motor vehicles that are either driving or parked in a bike lane. A 2024 study by the Boston Region MPO found that bike lanes protected by a physical barrier were obstructed by a parked vehicle only one-quarter as frequently as a conventional, unprotected bike lane.[61]

MassDOT has the *Separated Bike Lane Planning & Design Guide,* which offers guidance for considering, evaluating, and designing bike lanes as a part of a Complete Streets approach.[62] The guide defines a separated bike lane as, "an exclusive space for bicyclists along or within a roadway that is physically separated from motor vehicles and pedestrians by vertical and horizontal elements."

The Massachusetts Department of Conservation and Recreation (DCR) manages parkways that serve as critical multimodal connectors throughout the Boston region. In 2020, DCR published the *DCR Parkways Master Plan*, which articulates a vision for interconnected walkways and bikeways across 116 roadway centerline miles in 30 municipalities within the Boston region.[63] The *Master Plan* outlines roadway conditions where separated bike lanes are applicable, including parkways with developed land or frequent destinations on both sides; posted speed limits of 30 mph or greater and annual average daily traffic of 6,000 vehicles or greater; or where shared use paths are desirable and anticipated volumes of pedestrians and bicyclists are high. The plan outlines considerations for separated bike lanes such as type of vertical separation, operational direction, placement, and year-round maintenance needs.

Many Vision Zero Action Plans within Massachusetts call for expanding the network of separated bike lanes. The Cambridge Vision Zero Plan includes related recommendations, such as a)

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60 FHWA (2021). "Proven Safety Countermeasures: Bicycle Lanes." https://highways.dot.gov/safety/proven-safety-countermeasures/bicycle-lanes.

61 Boston Region Metropolitan Planning Organization. (2024). Parking in Bike Lanes: Strategies for Safety and Prevention. https://bostonmpo.org/parking-in-bike-lanes.

62 Massachusetts Department of Transportation. (2015). *Separated Bike Lane Planning & Design Guide*. https://www.mass.gov/lists/separated-bike-lane-planning-design-guide.

63 Massachusetts Department of Conservation and Recreation. (2020). *DCR Parkways Master Plan*. https://www.mass.gov/doc/dcr-parkways-master-plan-2020/download.

retrofitting existing roads with parking and flexible separation; b) incorporating separated bike lanes in street reconstruction, and c) evaluate existing bike lanes for separation opportunities.[64]

FHWA published its 2024 *Separated Bike Lanes on Higher Speed Roadways Toolkit*.[65] This toolkit provides useful guidance on how to implement separated bike lanes in higher speed contexts via planning and design guidance. In addition, the National Association of City Transportation Officials (NACTO) has developed the Urban Bikeway Design Guide, with its most recent edition published in January 2025.[66] This design guide includes information on how to design protected bike lanes for all users, regardless of age or ability, and for different types of streets.

Recommendation

Separating bicyclists in space from both pedestrians and motor vehicles, especially on higher speed or volume roadways, can improve both safety and level of comfort for bicyclists. This can have the added benefit of encouraging more people to bike to destinations. This recommendation supports the Safe System Approach element of Safer Roads.

Municipalities may develop and adopt a separated bike lane policy to evaluate and install separated bike lanes where appropriate, including retrofitting existing roads with parking and flexible separation. This policy may establish criteria and precedent for incorporating separated bike lanes into all maintenance, rehabilitation, and reconstruction projects on municipally owned roadways.

Municipalities may review their current roadway and bike infrastructure, speed limits, and traffic volumes to identify potential locations for separated bike lanes. Locations may be sourced from the High-injury and High-risk Networks, while also promoting connectivity between key destinations and jurisdictions. Municipalities may leverage MassDOT, FHWA, and NACTO guides for design and planning guidance. The MPO may support municipalities by creating resources and guidebooks that synthesize federal, state, and local best practices.

5. Adopt a Complete Streets Policy and Leverage MassDOT Funding Opportunities to Prioritize and Make Improvements for Walking and Biking Infrastructure

Lead Organization: Municipalities

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64 City of Cambridge. (2017). Vision Zero Cambridge Action Plan. https://www.cambridgema.gov/-/media/Files/Traffic/visionzerodocuments/VisionZero_ActionPlan.pdf.

65 FHWA. (2024). Separated Bike Lanes on Higher Speed Roadways: A Toolkit and Guide. https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bike_lanes/FHWA_Separated_Bike_Lanes.pdf.

66 NACTO. (2025). Urban Bikeway Design Guide: Protectd Bike Lanes. https://nacto.org/latest/urban-bikeway-design-guide-protected-bike-lanes/.

Supporting Organization(s): Boston Region MPO, MassDOT

Supporting Evidence

Among the single-vehicle fatal and serious injury crashes, the most common first harmful events were collisions with pedestrians (35 percent). The high proportion of pedestrian involvement in single-vehicle fatal or serious injury crashes indicates potential concerns of drivers leaving the roadway due to impairment, distraction, or excessive speeds, and encroaching onto sidewalks:

Many stakeholders indicated that they feel unsafe walking in the region, caused by poor infrastructure conditions including lighting, cracked sidewalks and pavement, poor or missing sidewalks and crosswalks, and limited visibility at crossing locations. These challenges were especially acute for those that use wheelchairs, people pushing strollers, and older adults.

These findings point to the need to design roadways explicitly intended for and protecting VRUs, as well as increased public awareness of safer driving behavior, particularly in areas with high VRU activity.

Status in Massachusetts and Nationally

MassDOT offers several funding grant programs aimed at addressing critical gaps in transportation networks and increasing safety and accessibility for all travel modes. First is the Complete Streets funding program, which requires municipalities to develop and pass a Complete Streets policy to be eligible.[67] For tier 1 grant recipients, municipalities develop and pass a Complete Streets policy. For tier 2 recipients, municipalities develop a Complete Streets prioritization plan, for which MassDOT provides up to $38,000 for technical assistance. For tier 3 recipients, MassDOT will provide up to $500,000 over a four-fiscal-year period to implement projects identified in the municipal prioritization plan. Municipalities must have completed steps in previous tiers to be eligible for later tiers. As of 2024, the Boston region municipalities who have not participated in the Complete Streets funding program include Boston, Hingham, Waltham, Weston, Wayland, Medfield, Norfolk, Wrentham, Medway, Hopkinton, Boxborough, Saugus, Wilmington, Danvers, Wenham, Hamilton, Essex, and Manchester.[68]

The second grant program offered by MassDOT is the Shared Streets and Spaces Program.[69] This program offers funding for municipalities and public transit authorities to implement quick-build

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67 Massachusetts Department of Transportation. (n.d.) Complete Streets Funding Program. https://www.mass.gov/complete-streets-funding-program.

68 Massachusetts Department of Transportation. (2024). Grant Central Complete Streets Program. "Funding Program Participation Map." https://madothway.my.site.com/GrantCentral/s/complete-streets-public-overview.

69 Massachusetts Department of Transportation. (2024). Grant Central Shared Streets and Spaces Program. https://madothway.my.site.com/GrantCentral/s/shared-streets-public-overview.

solutions to public spaces such as plazas, sidewalks, curbs, streets, bus stops, and parking areas on municipally owned property. Past funded projects included dedicated bus lanes, road diets, and bikeshare stations. These types of projects support safe travel to schools, safe routes for seniors, improved access to transit for pedestrians and bicyclists, and increased connectivity near transit-oriented development. Within the Region, municipalities who participated in the first program round in 2023 included Essex, Middleton, Medford, Newton, Watertown, Bedford, Concord, Medfield, Randolph, and Scituate.

MassDOT does not currently offer Complete Streets design guidance. New Jersey Department of Transportation offers the *New Jersey Complete Streets Toolbox*, which provides design guidance for implementing Complete Streets in a multitude of settings, providing context-specific suggestions that ensure successful implementation.[70] It includes a section on intersection design and best practices to ensure they are safe and accessible by all users.

Recommendation

Complete Streets promotes roadway use by all types of users, making sure they feel comfortable and can access their everyday destinations safely. Complete Streets designs also emphasize to drivers that the roadway is a shared space that everyone has a right to use. Complete Streets supports the Safe System Approach elements of Safer Roads, Safer Speeds, and Safer People.

Municipal departments of public works, planning, or transportation may develop and adopt a Complete Streets policy and prioritization plan, in order to guide the evaluation, prioritization, and implementation of Complete Streets-aligned projects. This could include identifying gaps or insufficient infrastructure that needs to be replaced as a part of the pedestrian and bicycle networks. The Complete Streets policy and prioritization plan should provide a framework to prioritize infrastructure installation or replacement. Municipalities may apply for and leverage the MassDOT Complete Streets funding grant program to develop policies and prioritization plans.

MassDOT and the MPO may collaborate to create Complete Streets design guidance for municipalities. The MPO may also review the project evaluation criteria for the Complete Streets investment program as a part of the MPO's Transportation Improvement Program.

6. Establish Speed Limits on Non-motorized, Multimodal Facilities with Posted Signs

Lead Organization: Municipalities

[70] New Jersey Department of Transportation. (2017). Complete Streets Design Guide. https://nj.gov/transportation/eng/completestreets/pdf/NJCS_DesignGuide.pdf.

Supporting Organization(s): Boston Region MPO, MassDOT

Supporting Evidence

Stakeholders expressed concerns about electric bicycles (e-bike) and electric scooters (e-scooters) speed on multiuse paths and other types of non-motorized, multimodal facilities (i.e., not on sidewalks). Stakeholders felt that e-bikes and e-scooters traveling at excessive speeds presented safety risks to pedestrians and bicyclists using these facilities.

Status in Massachusetts and Nationally

State law allows for Class 1 and 2 e-bike use on roads, bike lanes, bike paths, and paved trails up to speeds of 20 mph; e-bikes are not allowed on sidewalks or natural surface trails. Municipalities may prohibit e-bike use on bike paths and paved trails or allow use on natural surface trails, with posted signage.

Currently, there is no statewide enforceable speed limit for multiuse pathways, generally. However, An Act Relative to Massachusetts's Transportation Resources and Climate, signed into law in 2022, allows municipalities to regulate the use of e-bikes on trails, including posting speed limits.[71] Municipalities may adopt ordinances or regulations following public notice and a public hearing, per MGL Part I Title XIV Chapter 85 Section 11B3/4(d).

The MassDOT *Design Guide for Shared Use Paths and Greenways* indicates that the design speed of shared-use paths should depend on the grade and context (e.g., path through a park).[72] The guide indicates that differences in speed caused by different types of users can cause potential conflicts. To address this, MassDOT recommends design changes, education, and user courtesy.

In 2024, MassDOT and the DCR piloted speed feedback boards on the Southwest Corridor Park shared-use path.[73] The signs display a smiley face for shared path users moving at appropriate speeds, while showing the message "SLOW DOWN" at high speeds. This pilot also included reminders painted on the ground that mopeds are not allowed on shared-use paths.

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71 Electric bicycles: rights, privileges, duties: regulations, MGL Part I Title XIV Chapter 85 Section 11B3/4 (2023). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter85/Section11B%203~4

72 Massachusetts Department of Transportation. (2006). MassDOT Design Guide. In MassDOT Design Guide. https://www.mass.gov/doc/massdot-design-guide-chapter-11-shared-use-paths-and-greenways/download.

73 Massachusetts Department of Conservation and Recreation. (2024, July 19). "DCR, MassDOT Announce Pilot Program for New Safety Measures on Path in Southwest Corridor Park." Press Release. https://www.mass.gov/news/dcr-massdot-announce-pilot-program-for-new-safety-measures-on-path-in-southwest-corridor-park.

Recommendation

Municipalities may evaluate e-bike and e-scooter speeding concerns on non-motorized, multimodal facilities and determine whether to set legally enforceable speed limits. Public notice and a public hearing are required prior to adopting an ordinance or regulation. Additional outreach and education will be necessary to inform the public about this change and ensure compliance. The Boston Region MPO can support municipalities in evaluating these facilities and speeds and support drafting ordinances and/or regulations. This recommendation supports the Safe System Approach elements of Safer Roads and Safer People.

7. Become an Alliance Partner with the Massachusetts Safe Routes to School Program

Lead Organization: Municipalities

Supporting Organization(s): Boston Region MPO, MassDOT

Supporting Evidence

Based on the 2023–24 MassDOT Safe Routes to School (SRTS) Annual Report, 70 percent of survey respondents indicated that they biked, walked, or rolled more because of the program.[74] Additionally, 80 percent of respondents indicated the program has led to improved safety outcomes. Of the different kinds of assistance provided by the program, at least 80 percent of respondents were satisfied or very satisfied with the education and curriculum, professional development services, skills training, safety training, and policy/procedure development support. These results indicate a high level of satisfaction and efficacy of the program, which municipalities could leverage.

Status in Massachusetts and Nationally

The Massachusetts SRTS program, administered by MassDOT, works to increase roadway safety around schools, focusing on the "6 Es"—engineering, encouragement, education, enforcement, evaluation, and equity.[75] As of 2024, MassDOT partners with 64 percent of eligible schools in the state.[76] Partnering with this program signifies commitment to the program and provides benefits

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74 Massachusetts Department of Transportation. (2024). *Massachusetts Safe Routes to School Annual Report*. https://www.mass.gov/doc/srts-2023-2024-annual-report/download.

75 Massachusetts Department of Transportation. (n.d.). Safe Routes to School. https://www.mass.gov/safe-routes-to-school.

76 Massachusetts Department of Transportation. (2024). *Massachusetts Safe Routes to School Annual Report*. https://www.mass.gov/doc/srts-2023-2024-annual-report/download.

such as technical assistance, marketing, evaluation, and educational and promotional materials.[77] MassDOT also developed a SRTS Program Guide that provides information on the program and is designed to help schools implement their own programs effectively.[78]

Several Vision Zero Plans within Massachusetts identified an action to become a partner with the Safe Routes to School Program, such as Lexington. Schools can sign up to be School Partners, meaning each school directly coordinates with MassDOT and the SRTS program. In addition, local and statewide community, government, and non-profit organizations can become SRTS Alliance Partners, collaborating with the SRTS team "to encourage walking and bicycling, serving as a resource for elementary, middle, and high School Partners."[79]

Several other initiatives also support the safe travel of children to, from, and near schools. As described in the speed management section, municipalities can establish 20 mph safety zones and school zones near critical destinations. In addition, in 2024, Governor Healey signed school zone camera enforcement into law. This law allows public transit agencies and school districts to use bus-mounted cameras to identify vehicles that illegally pass stopped school buses.[80]

Safe Routes to School programs can be funded through the MassDOT Transportation Alternatives Program and supported by the Boston Region MPO Technical Assistance and Bicycle and Pedestrian Programs.[81,82]

Recommendation

Ensuring the safe travel of children and youth is essential, while also promoting healthy choices like walking and biking. This recommendation supports the Safe System Approach elements of Safer People.

Municipalities may sign up as Alliance Partners for the SRTS program, as well as encourage schools within their jurisdiction to sign up as School Partners. Municipalities may also review the SRTS Program Guide to identify potential safety improvements that match their community's needs. The Boston Region MPO may encourage and collaborate with municipalities to participate in the SRTS

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77 Massachusetts Department of Transportation. (n.d.). Become a SRTS Partner https://gis.massdot.state.ma.us/forms/srts_partner/.

78 Massachusetts Department of Transportation. (2024). *Massachusetts Safe Routes to School Program Guide*. https://www.mass.gov/doc/srts-toolkit-0/download.

79 Massachusetts Department of Transportation. (n.d.). Become a SRTS Partner. https://gis.massdot.state.ma.us/forms/srts_partner/.

80 MilNeil, C. (2025, January 10). Smile, Gov. Healey Signs Two Camera Enforcement Bills for Buses. https://mass.streetsblog.org/2025/01/10/smile-gov-healey-signs-bus-lane-camera-enforcement-bill.

81 Safe Routes Partnership. (2025). *Do You Want Activity-Friendly Routes to Everyday Destinations?* https://saferoutespartnership.org/sites/default/files/Massachusetts_2025_TAP%20Sheet.pdf.

82 Boston Region Municipal Planning Organization. (2025). Unified Planning Work Program.https://www.ctps.org/data/pdf/plans/UPWP/FFY-2025-UPWP-20250206.pdf.

program, as well as provide technical assistance and funding support as a part of the Transportation Improvement Program.

8. Evaluate and Update Curb Management Policies and Plans to Reflect the Needs and Safety for All Types of Road Users

Lead Organization: Municipalities

Supporting Organization(s): Boston Region MPO, MassDOT

Supporting Evidence

Curb use is another consideration for transportation safety. Stakeholders have indicated the importance of parking for access to destinations; at the same time, they have expressed desires for more pedestrian and bike infrastructure, often which requires the removal of parking for installation. There are many competing needs for curb space, including pedestrians crossing the streets; bicyclists in bike lanes and travel lanes; rideshare and taxi drivers; delivery app drivers; commercial delivery drivers; and visitors, residents, and patrons parking near retail shops and restaurants. This also can conflict with limited curb space availability, especially in older, historical neighborhoods throughout the Region.

Status in Massachusetts and Nationally

Boston Region MPO published the *Managing Curb Space in the Boston Region: A Guidebook* in 2021.[83] This guidebook provides robust strategies for managing curb space including conducting parking studies, collaborating with businesses and municipalities, beginning with quick build solutions, and conducting pilots. A 2024 study on parking in bike lanes also notes several curb space policies, such as increasing the cost of curbside parking, restricting commercial delivery hours to off-peak periods, and designating pick-up/drop-off zones for food delivery and ride-share drivers.[84]

In Massachusetts, the Cambridge, Boston, Somerville, and Merrimack Valley Vision Zero Plans all have recommended actions to evaluate best practices for balancing truck needs with vulnerable VRU needs at curbs. The Cambridge Vision Zero Plan also has an action to educate tour bus operators and rideshare app drivers about road and parking rules.

As an example of curb management elsewhere, in 2016 Seattle updated the definition of its curb lane to be a “flex zone.” From this, the City of Seattle used a ranked curb use allocation process

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83 Boston Region MPO. (2021). Managing Curb Space in the Boston Region: A Guidebook. https://www.ctps.org/data/pdf/studies/other/Managing-Curb-Space-in-the-Boston-Region-Guidebook.pdf.

84 Boston Region Metropolitan Planning Organization. (2024). Parking in Bike Lanes: Strategies for Safety and Prevention. https://bostonmpo.org/parking-in-bike-lanes.

based on street type.[85] For example, curb space on commercial streets, after accommodating the key infrastructure identified in the city modal plans, prioritizes freight and passenger loading over metered parking.

As another example, Chicago makes use of peak hour dedicated bus lanes to support transit use and reduce congestion.[86] This flexible curb use allows for time-dependent priority use, which supports multiple types of users throughout the day.

Recommendation

Addressing curb demand can create a smoother and safer experience for everyone at the curb, including people walking, rolling, biking, or driving. This recommendation supports the Safe System Approach elements of Safer Roads and Safer People.

Municipalities may review the MPO's *Managing Curb Space in the Boston Region: A Guidebook* and identify and implement strategies that address their specific curb management challenges. Municipalities may also review current curb uses in heavily trafficked areas within their jurisdiction to ensure that the right-of-way is accessible to all users while prioritizing safety. The Boston Region MPO can help spread awareness of the *Guidebook* to municipalities and offer technical assistance.

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85 Seattle Department of Transportation. (n.d.). *Flex Zone/Curb Use Priorities in Seattle*. Seattle Department of Transportation: https://www.seattle.gov/transportation/projects-and-programs/programs/parking-program/parking-regulations/flex-zonecurb-use-priorities-in-seattle.

86 Chicago Transit Authority. (n.d.). Bus Priority Zones. https://www.transitchicago.com/newsprojects/bpz/.

9. Develop a Policy Requiring Traffic Control Guidance and Design to Improve Safety for Pedestrians and Cyclists Traveling Through Municipal-Project Work Zones

Lead Organization: Municipalities

Supporting Organization(s): Boston Region MPO, MassDOT

Supporting Evidence

Work zones pose a unique challenge for people walking, rolling, and biking. While there may normally be safe and sufficient pedestrian and bicyclist infrastructure in a given location, these pathways may be disrupted by construction and other maintenance activities. Work zones may force pedestrians and bicyclists to traverse detours that may not be safe or merge with vehicular traffic. It is essential to provide safe and accessible alternate routes. As such, safe passage for VRUs through work zones is critical to ensure all pedestrians and bicyclists are able to continue their trip in the safest manner possible.

Status in Massachusetts and Nationally

Massachusetts General Law Part 1 Title XIV Chapter 90E Section 2A speaks to providing safe passage for VRUs through work zones on MassDOT projects: "The commissioner shall make all reasonable provisions for the accommodation of bicycle and pedestrian traffic in the planning, design, and construction, reconstruction or maintenance of any project undertaken by the department."[87] The MassDOT *Project Development and Design Guide* Chapter 17 describes work zone management, including considerations for pedestrian and bicyclist safety.[88]

However, this MassDOT guidance applies only to MassDOT projects. Projects being completed by municipalities or by municipality-hired contractors are not required (at the state level) to provide consistent safe passage for all VRUs through work zones. While road and utility work may require accommodation or signed detours for obstructed pedestrian facilities, a 2024 Boston Region MPO

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87 Accommodation of bicycle and pedestrian traffic in construction projects, MGL Part I Title XIV Chapter 90E Section 2A. (2023).https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90E/Section2A.

88 Massachusetts Department of Transportation. (2006). MassDOT Project Development and Design Guide. PDDG Chapter 17—Work Zone Management. https://www.mass.gov/info-details/pddg-chapter-17-work-zone-management.

study identified that no such requirement exists for bicycle facilities; a bicycle detour typically implies the bicyclist will merge into the general travel lane, without providing signage.[89]

It is on some municipalities' radar to provide safe passage for all VRUs through work zones. The Somerville and Merrimack Valley Vision Zero Plans have actions to "ensure work zones maintain safe paths for vulnerable road users."

As an example, Georgia DOT's Pedestrian and Streetscape Guide has an entire chapter on Pedestrian Safety in Work Zones.[90] The document provides guidance on alternative routes in construction work zones, including design and maintenance requirements for temporary traffic control and detour plans. Hawaii DOT also has a Safety in Work Zones and Maintenance toolbox that includes similar information to that provided in the Georgia DOT's document.[91]

Recommendation

Work zones may be complex situations for VRUs to navigate. Municipalities may develop and adopt a policy requiring all municipal roadway projects (whether completed by a municipal agency or a contractor) to plan for and provide dedicated, safe passage for VRUs through construction work zones. The Boston Region MPO may support this action by researching and developing a model policy and guidance for municipalities to adopt, funded through the UPWP. Efforts should leverage and customize the MassDOT guidance to meet municipal needs. This recommendation supports the Safe System Approach elements of Safer Roads and Safer People.

Older Drivers

As people age, physical and cognitive changes that are part of the normal aging process may affect their ability to drive safely, reduce their mobility, and make them more vulnerable to fatal and serious injuries. While the definition of who is an older adult differs by state, generally it refers to someone who is 65 years or older.[92] It is essential to provide safe, accessible mobility options for older adults in the Boston region. The number of adults older than age 64 is increasing: from 2010 to 2019, the number of people aged 65 or older grew by more than 34 percent nationally.[93]

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89 Boston Region Metropolitan Planning Organization. (2024). Parking in Bike Lanes: Strategies for Safety and Prevention. https://bostonmpo.org/parking-in-bike-lanes.

90 State of Georgia Department of Transportation. (2021). *Pedestrian and Streetscape Guide*. https://www.dot.ga.gov/DriveSmart/Travel/BikePed/PSG.pdf.

91 Hawaii Department of Transportation. (2013). *Safety in Workzones and Maintenance*. https://hidot.hawaii.gov/highways/files/2013/07/Pedest-Tbox-Toolbox_11-Safety-in-Work-Zones-and-Maintenance.pdf.

92 National Highway Traffic Safety Administration. (n.d.). Older Drivers. https://www.nhtsa.gov/road-safety/older-drivers.

93 US Census Bureau. (2020, June 25). "65 and Older Population Grows Rapidly as Baby Boomers Age." Press Release. https://www.census.gov/newsroom/press-releases/2020/65-older-population-grows.html.

Many features of current roadway systems, licensing practices, and vehicles may have been adopted or implemented after an older driver initially learned how to drive. Some roadway designs and practices also may not be designed to specifically accommodate aging people who wish to keep driving. Stakeholders also expressed concerns with licensing and continuing education for older drivers. Older adults may need to stop driving and instead use different modes to get around, such as walking, rolling, biking, transit, or being driven by another person. These alternative mobility options should accommodate the abilities and needs of older adults, such as providing sufficient time to cross at an intersection.[94] The *FHWA Handbook for Designing Roadways for the Aging Population* offers roadway design solutions for ensuring people can successfully navigate the roadway system as they age.[95]

Within the region between 2018 and 2022, 21 percent of fatal and serious injury crashes involved drivers aged 65 and older, slightly higher than the statewide share of 20 percent, which underscores the safety concerns for this particular demographic. The rate of increase in older driver-related fatal and serious injury crashes over the five-year period slightly outpaced the statewide rate, indicating a growing need for targeted safety interventions.

The systemic analysis revealed that municipalities north of the inner core of the region, such as Revere, Saugus, Lynn, and Peabody, are most at-risk for older driver crashes. Overall, these four municipalities and Somerville are the top five primary risk municipalities for older driver crashes, representing 10 percent of the Region's population and six percent of its roadway mileage. Secondary risk municipalities for older driver crashes included Salem, Stoneham, Weymouth, Waltham, Brookline, Wilmington, Watertown, Milton, Norwood, and Randolph.

There is one policy and process recommendation related to older adults:

1. The MassDOT Registry of Motor Vehicles may update drivers education and licensing requirements to include opportunities for continued education for older drivers.

1. Update Drivers Education and Licensing Requirements to Include Opportunities for Continued Education for Older Drivers

Lead Organization: MassDOT Registry of Motor Vehicles

Supporting Organization(s): Boston Region MPO

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94 FHWA Pedestrian and Bicycle Information Center. "Safety and Mobility for Older Adults." https://www.pedbikeinfo.org/topics/olderadults.cfm.

95 FHWA. (2014). *Handbook for Designing Roadways for the Aging Population*. https://highways.dot.gov/safety/other/older-road-user/handbook-designing-roadways-aging-population.

Supporting Evidence

The older driver emphasis area represents one of the largest shares of all fatal and serious injury crashes in the Boston region between 2018 and 2022. Key risk factors associated with older drivers include age-related declines in physical and cognitive function, underlying medical conditions, individual driving habits, and lack of understanding for newer roadway design and vehicle features.

Status in Massachusetts and Nationally

Massachusetts RMV provides information and resources about driving for older adults, as do AAA and AARP.[96] While all student teenage drivers are required to complete an education program to receive a driver's license, Massachusetts does not require any continuing education to renew a license. The Massachusetts RMV does require drivers ages 75 and older to renew their licenses in person. Massachusetts is a self-reporting state, meaning that drivers are able to self-determine whether or not they should drive based on their mental and physical state.

To support safe driving, the RMV offers the "Shifting Gears" workshop. This workshop provides information on signs of unsafe driving, Massachusetts licensing policies, driving retirement, and alternative transportation options. The RMV also offers safe driving workshops across the state. Furthermore, the RMV offers "The Driving Decision" workshop, which focuses on advice for families and caregivers that are concerned about a person's driving ability.[97]

In addition, the Massachusetts Institute of Technology AgeLab and the Hartford Center for Mature Market Excellence developed information and resources to support families in starting conversations about driving safety.[98] Resources include information about vehicle technology and guides for families on how to discuss driving safety with older drivers.

The Massachusetts *Strategic Highway Safety Plan* has several actions related to improving driver education through public awareness campaigns, trainings, and resources.[99] Lead agencies include the RMV, MBTA, MassDOT Highway Division, and Massachusetts Councils on Aging. The RMV is listed as the lead agency for these two SHSP strategies:

- 6.2.B. Develop and distribute educational material for nondriving residents.

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96 Massachusetts Registry of Motor Vehicles. (n.d.). *Massachusetts RMV information for older drivers*. https://www.mass.gov/info-details/massachusetts-rmv-information-for-older-drivers.

97 Massachusetts Registry of Motor Vehicles. (2024, December 2). MassDOT and the RMV Recognize Older Driver Safety Awareness Week. https://www.mass.gov/news/massdot-and-the-rmv-recognize-older-driver-safety-awareness-week.

98 The Hartford. (n.d.) Safe Driving for a Lifetime Articles. Driving Safety. https://www.thehartford.com/resources/mature-market-excellence/driving-safety.

99 Massachusetts Department of Transportation. (2023). *Massachusetts SHSP 2023 Action Plan*. https://www.mass.gov/doc/massachusetts-shsp-2023-action-plan/download.

- 6.4.B. Develop driver education for new drivers over 18 years of age and those from other states/countries.

A nationally recognized educational program for older drivers is CarFit, developed by AARP and the American Occupational Therapy Association.[100] At in-person CarFit events, trained technicians help older adults learn about their vehicle's safety features. During these events, technicians also help adjust vehicle seat positions, head rests, mirrors, and more to fit the driver. A CarFit event takes approximately 20 minutes to complete. As an example, the Center for Safe Alaskans hosts CarFit events in the greater Anchorage area in Alaska.[101] While CarFit events are primarily targeted at older drivers, any driver is welcome to attend. The Center for Safe Alaskans also runs concurrent child passenger safety events, so that older drivers can also ensure car seats and booster seats for children are installed properly (such as for their grandchildren).

Nationally, 37 states and Washington, DC, have licensing provisions for mature drivers including accelerated renewal, restriction of online or mailed renewals, vision tests, or reduced or waived renewal fees. For example, in Washington, DC, drivers over the age of 70 must renew in person and provide a medical certification.[102]

Recommendation

Although driver education is only required for new teenage drivers, it is important to make sure drivers of all ages keep informed about new and novel roadway design, laws, and vehicle features. Expanding driver education and awareness is one way to ensure older drivers understand the current rules of the road and environment. This recommendation supports the Safe System Approach element of Safer People.

The Boston Region MPO may collaborate with the MassDOT RMV to update and develop training, outreach, and education materials targeted at older drivers. This work may be funded as a part of the MPO's Unified Planning Work Program. It is important to engage with stakeholders currently working on similar programs to leverage their work. The Boston Region MPO may serve in a coordination role to disperse information to municipal agencies, non-profit organizations, and other entities who have regular contact with older drivers.

Large Vehicles

Large vehicles include buses, single-unit trucks, and tractor-trailers, as defined by the MassDOT Highway Safety Improvement Program. From 2018 to 2022, large vehicles were involved in

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100 CarFit. (n.d.). Welcome to CarFit!. https://car-fit.org/.
101 Safe Alaskans. (n.d.). *CarFit*. https://safealaskans.org/services/carfit/.
102 Governors Highway Safety Association. (n.d.). Mature & Elderly Drivers. https://www.ghsa.org/state-laws-issues/mature-elderly-drivers.

5.4 percent of fatal and serious injury crashes, slightly higher than the statewide percentage of 5.3 percent. Of the 215 large vehicle-related fatal and serious injury crashes recorded during this period, 17 percent involved buses, 41 percent involved single-unit trucks, and 31 percent involved at least one tractor-trailer. Of the 263 people killed or seriously injured in crashes involving large vehicles, 56 percent were vehicle drivers, 23 percent were passengers, and 21 percent were VRUs.

The systemic safety analysis found that roads under MassDOT jurisdiction have the highest proportion of mileage considered as high risk for large vehicle-involved crashes.

There are two policy and process recommendations related to large vehicles:

1. The state legislature may change seat belt usage enforcement to a primary offence for all front and rear passengers.

2. Municipalities may adopt a municipal safe vehicle fleets policy.

1. Change Seat Belt Usage Enforcement to a Primary Offense for All Front and Rear Passengers

Lead Organization: Massachusetts General Court

Supporting Organization(s): MassDOT

Supporting Evidence

Of the 603 vehicle occupants involved in a fatal and serious injury crash involving a large vehicle, 92 occupants (17 percent) were not wearing a seat belt restraint. Of those 92 occupants, 66 people (72 percent) were killed or seriously injured in the crash. This statistic demonstrates how the lack of seat belt use significantly increases a person's risk of severe injury or fatality, particularly in a large vehicle-involved crash. The majority (58 percent) of unrestrained vehicle occupants killed or seriously injured in a crash were passengers.

Seat belts are proven to save lives.[103] Seat belts help keep vehicle occupants inside of the vehicle during a crash and reduce injury severity. Seat belts are an essential component of vehicle safety features, all of which should be used in tandem to save lives.

Status in Massachusetts and Nationally

In Massachusetts, all vehicle occupants are required to wear a safety belt (ages 13 and older) or sit in a child passenger restraint (for children ages 12 and younger), as outlined in MGL Part I Title XIV

[103] National Highway Traffic Safety Administration. (n.d.) Seat Belts. https://www.nhtsa.gov/vehicle-safety/seat-belts.

Chapter 90 Section 13A.[104] However, seatbelt usage is currently a secondary offense in Massachusetts, which means that drivers cannot be stopped by law enforcement solely for not wearing their seatbelt. As a secondary offense, vehicle occupants may be fined $25 for not wearing a seat belt if they were stopped for a separate traffic violation. In contrast, a primary enforcement seat belt law means that a driver can be pulled over and fined solely for a vehicle occupant not wearing a seat belt.

As of 2023, 35 states have primary seat belt laws for front seat occupants, and of those, 19 states have primary seat belt laws for both front and rear seat occupants.[105] The Centers for Disease Control and Prevention state that seat belt use is consistently higher in states with primary seat belt laws.[106] It is a best practice to have a seatbelt law that covers both front and rear seat passengers.

Recommendation

Changing seat belt enforcement to a primary offense can help support enforcement efforts and encourage people to consistently and correctly wear seat belts while riding inside any vehicle. This recommendation supports the Safe System Approach elements of Safer Vehicles and Safer People.

Implementing primary-law enforcement of seatbelt use for all passengers will require legislative action by the Massachusetts General Court.

2. Adopt a Municipal Safe Vehicle Fleets Policy

Lead Organization: Municipalities

Supporting Organization(s): Boston Region MPO, MassDOT

Supporting Evidence

In the nation, approximately 25 percent of truck-involved VRU fatalities were caused by an inability to see a pedestrian or bicyclist in the roadway. In Massachusetts, 21 percent of people who were killed or seriously injured in crashes involving large vehicles were VRUs.

MassDOT and the US DOT Volpe Center collaborated to complete a direct vision study for light-, medium-, and heavy-duty fleet vehicles.[107] The study defined direct vision as “the ability of a driver

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104 Seat belt use required: exemption: penalty, MGL Part I Title XIV Chapter 90 Section 13A (2009). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90/Section13A.

105 Governors Highway Safety Association. (n.d.). Seat Belt Use. https://www.ghsa.org/state-laws-issues/seat-belt-use.

106 Centers for Disease Control (n.d.) MV PICCS Intervention: Primary Enforcement of Seat Belt Laws. https://www.cdc.gov/transportation-safety/calculator/seat-belt.html.

107 Massachusetts Department of Transportation. (n.d.) Direct Vision study. https://www.mass.gov/info-details/direct-vision-study.

to see firsthand outside their vehicle without the aid of an indirect vision device, such as mirrors or camera displays. Direct vision enables eye contact between a driver and a vulnerable road user (VRU) near the vehicle[.]" In contrast, indirect vision devices are supplemental methods to increase visibility using tools such as mirrors and cameras. Blind zones are areas completely obstructed by an object.

The study found that as vehicles get larger (from light-duty trucks to heavy-duty trucks), the ability of the driver to see objects around the vehicle decreases.[108] For example, they found that 50 percent of heavy-duty trucks cannot see a child standing in front of the vehicle at a crosswalk, 90 percent of trucks could not see a child in the adjacent bike lane, and 80 percent could not see an adult in the bike lane. These blind spots can be improved through "indirect vision" tools such as cameras. However, according to research, drivers that have direct vision of a pedestrian react 50 percent faster than if they have indirect vision only.

Status in Massachusetts and Nationally

The 2022 Act to Reduce Traffic Fatalities amended MGL Part I Title XIV Chapter 90 Section 7 to require truck safety devices be equipped on new large vehicles.[109,110] Currently, the law applies to all motor vehicles, trailers, semi-trailers, and semi-trailer units classified as Class 3 or above by FHWA with a gross weight of 10,001 pounds and either leased or purchased by the Commonwealth or operated under a contract executed by the Commonwealth. These vehicles are required to be equipped with truck safety devices including lateral protection devices, convex mirrors, crossover mirrors, and backup cameras. Ambulances, firefighting apparatuses, low-speed vehicles, agricultural trailers, or others as determined by the registrar are exempt.

The City of Cambridge has a similar ordinance, in which large vehicles (Class 3 or above, not including low-speed vehicles, fire apparatuses, and emergency medical vehicles) used by city vendors under a city contract must be equipped with convex mirrors, cross-over mirror, decals, side under-ride guards affixed to the sides of the vehicle.[111]

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108 Massachusetts Department of Transportation. (2024). What You Can't See: A Summary of The Commonwealth of Massachusetts Direct Vision Report. https://www.mass.gov/doc/direct-vision-report-redux/download.

109 Brakes, braking systems, mufflers, horns, lights, audible warning systems, and other equipment; compliance with safety standards; stickers and emblems, MGL Part I Title XIV Chapter 90 Section 7 (2024). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIV/Chapter90/Section7.

110 Massachusetts Department of Transportation. (n.d.) Truck Safety Devices. https://www.mass.gov/info-details/truck-safety-devices.

111 Volpe. (2021). Chapter 2.112 City Contracts, Section 2.112.080 Truck Safety Ordinance. https://www.volpe.dot.gov/sites/volpe.dot.gov/files/2021-08/City-of-Cambridge-Contracts-Section-2.112.080-Truck-Safety-Ordinance.pdf.

The MassDOT direct vision study offers recommendations for municipal fleet owners to increase direct and indirect vision devices for fleet vehicles.[112] One recommendation is to downsize vehicles wherever possible when purchasing new vehicles. For fleet vehicles already owned, install countermeasures on low vision vehicles, such as lateral protection devices (side guards), convex mirrors, crossover mirrors, backup cameras, and audible warnings. The study also recommends further research into roadway design and increasing visibility and separation for VRUs.

The direct vision study recommends incorporating direct vision in procurement, such as including language about "safe vehicle design" in contracts. The study also recommends that fleet owners establish a policy outlining when direct vision vehicles should be prioritized and what mitigation countermeasures should be applied to a low vision vehicle.

Outside of Massachusetts, the Northwest Arkansas *Strategic Highway Safety Plan* identifies a recommendation to educate drivers of commercial vehicles about distracted and drowsy driving—highlighting the importance of education and messaging for all drivers:

- Educate commercial vehicle and fleet drivers about the dangers of distracted and drowsy driving.[113]

Recommendation

Increasing direct visibility of VRUs and other vehicles on the roadway is essential to reduce fatalities and serious injuries involving large vehicles. This recommendation supports the Safe System Approach elements of Safer Vehicles and Safer People.

Municipalities may develop and adopt a "safe fleet" policy that outlines municipal fleet owners' commitment to safer vehicles with higher direct division. The policy would outline prioritization and guidance for replacing aging fleet vehicles or purchasing additional fleet vehicles fitted with safety features. The policy also offers a commitment to retrofit the existing vehicle fleet with direct vision safety features. Municipalities may also require contractors to use high vision or retrofitted fleet vehicles.

The Boston Region MPO may assist municipalities with developing and adopting a safe fleet vehicle policy. MassDOT may provide guidance on policy language and vehicle purchasing or retrofitting recommendations.

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[112] Massachusetts Department of Transportation. (n.d.) Direct Vision study. https://www.mass.gov/info-details/direct-vision-study.

[113] Arkansas Department of Transportation (2022). Arkansas Strategic Highway Safety Plan. https://ardot.gov/wp-content/uploads/VRU_SHSP_AppendedFINAL.pdf.

4 Summary of Policy Recommendations

The table below summarizes policy recommendations to address identified safety challenges. Each policy recommendation includes its corresponding emphasis area, leading and supporting organizations, which Safe System Approach elements the policy supports, and a timeframe. Timeframes are estimated as short (one to two years), medium (two to five years), or long (more than five years) term. Impacts are estimated as high or medium impact for potential safety improvements. Low-cost recommendations are designated in the last column. Estimating costs of other policy recommendations will be done as part of plan implementation.

Table G-2 | Policy Recommendations

Policy Recommendation	Emphasis Area	Lead Organization	Supporting Organizations	Safe System Element	Timeframe	Impact	Low Cost
Revise the selection evaluation criteria for proposed projects for the Transportation Improvement Program.	Cross-Cutting	BRMPO	MassDOT, Municipalities	Safer Roads, Safer People, Safer Speeds	Short	High	Yes
Commit to Vision Zero by adopting a Vision Zero goal, resolution, or ordinance.	Cross-Cutting	Municipalities	BRMPO	Safer Roads, Safer People, Safer Speeds	Short	Medium	Yes
Permit the use of automated red-light enforcement and citations at signalized intersections. *(Requires legislative change.)*	Intersections	Massachusetts General Court	BRMPO, Municipalities	Safer Roads, Safer People	Medium	High	No
Install “no turn on red” signs at identified high-risk intersections.	Intersections	Municipalities	BRMPO	Safer Roads, Safer People	Medium	High	Yes

Policy Recommendation	Emphasis Area	Lead Organization	Supporting Organizations	Safe System Element	Timeframe	Impact	Low Cost
Develop policy to deliver systemic safety signage, striping, and related treatments as part of recurring maintenance projects.	Lane Departure	Municipalities	BRMPO, MassDOT	Safer Speeds	Short	High	Yes
Improve outreach and education about the dangers of distracted driving and the Massachusetts Hands Free Law.	Lane Departure	MassDOT	BRMPO, Municipalities, Law Enforcement	Safer People	Short	Medium	Yes
Implement the MassDOT guidance on speed management and speed limit setting.	Speeding	Municipalities	MassDOT	Safer Speeds	Medium	High	Yes
Reduce speed limits to 25 mph on non-state highways in thickly settled or business districts.	Speeding	Municipalities	MassDOT	Safer Speeds	Short	High	Yes
Establish safety zones and school zones along municipal-owned roadway corridors to lower speed limits to 20 mph.	Speeding	Municipalities	MassDOT	Safer Speeds, Safer People	Medium	High	No
Perform research about establishing a requirement for speed-limiter devices for repeat speeding offenders.	Speeding	BRMPO	MA Executive Office of Public Safety and Security, MassDOT	Safer Speeds, Safer Vehicles	Short	Medium	Yes
Permit the use of automated speed enforcement and citations. *(Requires legislative change.)*	Speeding	Massachusetts General Court	BRMPO, MassDOT, Municipalities	Safer Speeds	Medium	High	No

Policy Recommendation	Emphasis Area	Lead Organization	Supporting Organizations	Safe System Element	Timeframe	Impact	Low Cost
Expand guidance for municipalities to perform speed data collection.	Speeding	BRMPO	Municipalities	Safer Speeds	Short	Medium	Yes
Extend legal protections for Vulnerable Road Users by building upon the 2022 MA Law, An Act to Reduce Traffic Fatalities. *(Requires legislative change.)*	Vulnerable Road User	Massachusetts General Court	BRMPO, MassDOT, Advocacy Organizations	Safer People	Medium	High	No
Expand education and outreach about vulnerable road users safety and rights on Massachusetts roads.	Vulnerable Road User	BRMPO	MassDOT, Municipalities	Safer People	Short	Medium	Yes
Permit the use of automated bicycle and bus lane enforcement and citations via bus-mounted cameras for both parking and moving violations. *(Requires legislative change.)*	Vulnerable Road User	Massachusetts General Court	BRMPO, MassDOT, Municipalities	Safer Roads	Medium	High	No
Adopt a separated bike lane policy and leverage federal and state guidance to evaluate and design separated bike lanes	Vulnerable Road User	Municipalities	BRMPO, MassDOT	Safer Roads	Short	High	No
Adopt a Complete Streets policy and leverage MassDOT funding opportunities to prioritize and make improvements for walking and biking infrastructure.	Vulnerable Road User	Municipalities	BRMPO, MassDOT	Safer Roads, Safer Speeds, Safer People	Medium	High	No
Establish speed limits on non-motorized, multimodal facilities with posted signs.	Vulnerable Road User	Municipalities	BRMPO, MassDOT	Safer Roads, Safer People	Medium	Medium	Yes

Policy Recommendation	Emphasis Area	Lead Organization	Supporting Organizations	Safe System Element	Timeframe	Impact	Low Cost
Become an Alliance Partner with the Massachusetts Safe Routes to School program.	Vulnerable Road User	Municipalities	MassDOT, BRMPO	Safer Roads, Safer People	Short	Medium	Yes
Evaluate and update curb management policies and plans to reflect the needs and safety for all types of road users.	Vulnerable Road User	Municipalities	BRMPO, MassDOT	Safer Roads	Short	High	No
Develop a policy requiring traffic control guidance and design to improve safety for pedestrians and cyclists traveling through municipal-project work zones.	Vulnerable Road User	Municipalities	BRMPO, MassDOT	Safer Roads, Safer People	Medium	High	Yes
Update drivers education and licensing requirements to include opportunities for continued education for older drivers.	Older Adults	MassDOT Registry of Motor Vehicles	BRMPO	Safer People	Long	High	No
Change seat belt usage enforcement to a primary offense for all front and rear passengers. *(Requires legislative change.)*	Large Vehicles	Massachusetts General Court	MassDOT	Safer Vehicles, Safer People	Medium	High	No
Adopt a municipal safe vehicle fleets policy.	Large Vehicles	Municipalities	MassDOT, BRMPO	Safer Vehicles, Safer People	Short	Medium	Yes

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