

# INTEGRATING THE SAFE SYSTEM APPROACH IN THE HIGHWAY SAFETY IMPROVEMENT PROGRAM

## MASSACHUSETTS

### CASE STUDY

The Massachusetts Department of Transportation (MassDOT) adopted the Safe System Approach (SSA) as the framework guiding their [2023 Strategic Highway Safety Plan](#) (SHSP). The SHSP includes six initiatives to support Massachusetts' mission to make safety a top priority and their goal of zero roadway fatalities and serious injuries:

1. Implement Speed Management to Realize Safer Speeds
2. Address Top-Risk Locations and Populations
3. Take an Active Role to Affect Change in Vehicle Design, Features, and Use
4. Accelerate Research and Adoption of Technology
5. Double Down on What Works
6. Implement New Approaches to Public Education and Awareness



### NOTEWORTHY PRACTICES

**SAFETY IS PROACTIVE.** MassDOT (including the Highway Division and the Registry of Motor Vehicles) hosts biweekly meetings to review recent fatal crashes and share experiences. The State Department of Public Safety, State Department of Public Health, and State Police also periodically participate in these meetings. The group has been able to identify trends in fatal crashes ahead of annual crash data validation and finalization. For example, after identifying seven fatal crashes on one roadway, MassDOT reached out to the local community and helped them obtain a \$15 million [Safe Streets and Roads for All](#) Implementation Grant. MassDOT upholds the SSA principle that Death/Serious Injury is Unacceptable by proactively investigating recent crashes, while also demonstrating the SSA principle that Responsibility is Shared by connecting with and assisting communities.

**RESPONSIBILITY IS SHARED.** MassDOT faces restrictions on their ability to quickly implement low-cost, systemic safety solutions due to an interpretation requiring right-of-way surveys to be completed for every roadway project. To accommodate this, the agency uses materials procurement contracts to bulk-purchase safety equipment, which is then given to local jurisdictions to quickly install and maintain. For example, MassDOT offered all communities speed feedback signs for school zones (figure 1). This efficient partnership illustrates the principle Responsibility is Shared and MassDOT's dedicated collaboration to create safer roads while heeding existing requirements.



Source: MassDOT.

Figure 1: Photo. Speed feedback sign in school zone (Hull, MA).



### UPCOMING/IN-PROGRESS INITIATIVES

**HUMANS MAKE MISTAKES.** MassDOT is taking an active role to affect vehicle design, features, and usage through their [vehicle direct vision study](#). The study measures how much direct vision (what a driver can see directly with their own eyes) is available to drivers in MassDOT and municipal fleet vehicles (figure 2). Blind zones are areas where drivers may not see vulnerable road users, and therefore may make injurious or fatal mistakes. The study will make recommendations for including direct vision standards in fleet purchasing plans as the Commonwealth seeks to electrify their fleet. These standards will help to place Safer Vehicles on Massachusetts' roadways.



Source: MassDOT.

Figure 2: Diagram. Types of vision in a vehicle viewshed.

**SAFETY IS PROACTIVE.** MassDOT is exploring additional ways to evaluate the tangible impacts of safety initiatives and projects beyond federally required performance measures. New performance measures may include quantifying how many roads had target speeds lowered or a count of specific infrastructure countermeasures aligned with the SSA. MassDOT demonstrates a proactive approach to roadway safety by seeking functional and innovative ways to assess roadway safety.

**REDUNDANCY IS CRUCIAL.** In 2024, MassDOT released a [Request for Information](#) exploring innovative safety technologies for three areas: speed safety cameras, telematics, and non-digital tools and ideas. Massachusetts hopes to create a redundant safe system by expanding MassDOT’s tools and strategies beyond traditional approaches. MassDOT shares this responsibility to reach zero deaths and serious injuries by seeking input from diverse partners, including those in private industry, technology and data providers, universities, and policy analysts.

**HUMANS ARE VULNERABLE.** The MassDOT Speed Management team meets regularly to discuss aspects of speed management, including updating the relevant chapter in the MassDOT Highway Division’s [Project Development and Design Guide](#). Team members include the Assistant Administrator for Traffic & Safety; State and District Safety and Traffic Engineers; and personnel representing Highway Design, Traffic Technology, Project Management, and Program Management. The *Project Development and Design Guide* speed management chapter includes topics such as:

- » The relationship between target speed and design speed.
- » Achieving target speed with speed management.
- » Additional considerations for bicyclists and pedestrians.

Revised content builds upon the Safe System Approach principles that Humans are Vulnerable and Humans Make Mistakes, yet Death/Serious Injury is Unacceptable—therefore, vehicle speeds should reflect surrounding land use contexts and roadway users.



## LESSONS LEARNED

**DEATH/SERIOUS INJURY IS UNACCEPTABLE.** The MassDOT Safety program uses a [social media platform](#) to share messages about the importance and impacts of traffic safety, based on the foundational principle that no person should die or be injured on Commonwealth roads (figure 3). MassDOT has learned that succinct and digestible messaging is essential to build a broader traffic safety culture. Messages are short, visually enticing, and easy to understand. MassDOT has found that summary tables, graphs, charts, graphics, and short statements are great tools to communicate safety messages to law enforcement, engineers and planners, and the public. MassDOT’s use of social media for public outreach is successful in part because it is run by staff in the Safety Section who understand and enjoy social media engagement.



Source: MassDOT Safety (2024).

**Figure 3: Screenshot.** MassDOT uses short and visual messaging for social media post topics such as motorcycle safety.

For more information, please visit <https://highways.dot.gov/safety/zero-deaths>.

Publication number: FHWA-SA-24-039