

General Traffic Safety Facts & Information

According to the [National Highway Traffic Safety Administration \(NHTSA\)](#), more than 43,000 people were killed on U.S. roadways, costing more than \$230 billion in 2005. That same year, crashes killed 442 people on Massachusetts roads.



What are the Odds?

- Being attacked by a bear: 1 in 36 million
- Being attacked by a shark: 1 in 11.5 million
- Dying from bee, hornet or wasp sting: 1 in 5.33 million
- Dying in a tornado: 1 in 5 million
- Being struck by lightning: 1 in 240,000
- Being bitten by venomous snake: 1 in 37,250

• Being Killed in a Car Crash (Lifetime): 1 in 84

(Source: National Safety Council – <http://www.nsc.org>)

Basic Principles of Highway Safety

When considering the safety of a roadway, it is important to think about the roadway, the vehicle, and the roadway users, including drivers, pedestrians, and bicyclists. In terms of these components contributing to crashes, research indicates that the vehicle, the roadway, and the driver contribute to approximately, 10, 33, and 93 percent of crashes, respectively. As a result, it is imperative that the approach to safety solutions be multidisciplinary in nature. Arguably the most common application of this multidisciplinary approach exists in the form of the four Es of highway safety:

- **Engineering** to deploy safety countermeasures (improvements);
- **Education** on roadway safety;
- **Enforcement** of safety laws and regulations; and
- Effective **emergency medical services**.

What's Being Done to Save Lives in the US?

The [Federal Highway Administration \(FHWA\)](#) has designated “improving roadway safety and mobility” as one of its top priorities. FHWA’s safety programs are focused on high risk areas such as roadway departures, intersections, and pedestrian safety. Their efforts include work in the areas of engineering, enforcement, and education.

Learn more about FHWA’s safety efforts on the web at <http://safety.fhwa.dot.gov>



EOT

MASSACHUSETTS
EXECUTIVE OFFICE
OF TRANSPORTATION

MASS HIGHWAY

U.S. Department of Transportation
Federal Highway
Administration

University of Massachusetts
Transportation Center

For more information
contact:
MassHighway
Traffic Engineering
(617) 973-8484

Last Revised:
January 2008

General Traffic Safety Facts & Information

What's Being Done to Save Lives in Massachusetts?

Efforts to improve highway safety are as important at the state level as they are at the national level. [MassHighway](#) has worked with partners throughout the state to develop a [Strategic Highway Safety Plan \(SHSP\)](#). A SHSP is developed with the goal of identifying the state's safety needs and guiding decision-making aimed at reducing fatalities and injuries on public roads.

This statewide document, developed by MassHighway in a cooperative process, includes input from public and private safety stakeholders. The SHSP is a data-driven, comprehensive plan that integrates the four Es - engineering, education, enforcement, and emergency medical services (EMS). The SHSP establishes statewide goals, objectives, and key emphasis areas.

As part of the SHSP process, several emphasis areas and primary focus points were identified, as shown in the table below.

Emphasis Area	Primary Focus
Data Systems	Crash, Roadway Characteristic, Medical Record, Vehicle Registration, Driver History, Citation
Infrastructure	Lane Departures, Intersection Crashes
At-Risk Driver Behavior	Occupant Protection, Speeding, Alcohol, Impaired Driving
Higher-Risk Transportation System Users	Young Drivers, Older Drivers, Pedestrians, Bicyclists
Public Education and Media	Statewide Safety Marketing, Media Messages, Public Awareness
Safety Program Management	Process for Institutionalizing the SHSP

Goals, performance measures, and strategies were identified for each of the emphasis areas. Safety partners at all levels are involved in implementing programs aimed at addressing these areas.

Learn more about Massachusetts' Strategic Highway Safety Plan at <http://www.mhd.state.ma.us/default.asp?pgid=content/traffic/shsp&sid=level2>



For more information contact:
MassHighway
Traffic Engineering
(617) 973-8484

Last Revised:
January 2008

General Traffic Safety Facts & Information

Safety Improvements at the Local Level

Safety improvements at the local level can pose significant challenges for local governments responsible for roadway networks ranging from several blocks to many miles. Similar to challenges faced by federal and state efforts, limitations, including financial and personnel constraints, can make it difficult for local agencies to develop and implement safety initiatives. Nevertheless, information is available to help local governments identify options and develop action plans for implementing safety countermeasures, some of which is highlighted in this series of fact sheets.

There are several steps in the process for implementing safety improvements at the local level.

1. **Identify your roadway safety problems:** Where are the most crashes happening? Where are the most serious crashes happening?
2. **Identify possible countermeasures:** Which countermeasures will mitigate the identified problem?
3. **Identify resources for implementation:** How will you pay for these improvements and do you have the personnel necessary for implementation?
4. **Implement your countermeasure:** How does your countermeasure implementation fit with your general project schedule? Have you allocated the human resources necessary to implement?
5. **Examine countermeasure effectiveness:** Does the issue addressed by the countermeasure seem to be resolved? Are fewer crashes happening on the road segment where the countermeasure was implemented?

Considering the Benefits and Costs

Deciding what countermeasures to consider will often depend on how much you have to spend and what the anticipated benefits are. One important aspect of the decision should be the expected benefit-to-cost ratio. Ideally, any selected improvements have benefits that outweigh the associated costs.



MASSACHUSETTS
EXECUTIVE OFFICE
OF TRANSPORTATION



For more information
contact:
MassHighway
Traffic Engineering
(617) 973-8484

Last Revised:
January 2008

Resources

For safety practitioners, a number of resources are readily available that provide valuable insight regarding safety. Below is a list of selected resources referenced throughout this series of fact sheets. In many instances the information is available online.

Massachusetts Traffic Safety Toolbox Series

This series of fact sheets provides information on safety improvements that can be implemented at the local level. Information on problem areas, possible countermeasures, and implementation considerations is included in each fact sheet which can be found at www.mass.gov/mhd/safetytoolbox/

Countermeasures That Work

This publication developed by the U.S. Department of Transportation and the National Highway Traffic Safety Administration includes a list of easy solutions to keep our roadways safe, which can be found at <http://www.nhtsa.dot.gov/people/injury/airbags/Countermeasures/>

Federal Highway Administration Office of Safety

The Office of Safety works to reduce both the number and severity of crashes along U.S. roadways. The Office of Safety supports the development, testing and implementation of technologies and procedures to improve the physical safety of the Nation's roadway infrastructure, and can be found at <http://safety.fhwa.dot.gov/>

Institute of Transportation Engineers (ITE)

ITE is an international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs of society. Among ITE activities is the development of public awareness programs and to serve as a conduit for the exchange of professional information. ITE can be found at <http://www.ite.org/>

The Manual on Uniform Traffic Control Devices (MUTCD)

Published by the FHWA, the MUTCD defines the standards used by transportation professionals nationwide to install and maintain traffic control devices on all streets and highways. The most recent version (2003) can be found at <http://mutcd.fhwa.dot.gov/>

Massachusetts Project Development & Design Guide

This guide, developed by MassHighway, provides guidelines for project development that may be helpful when determining various geometric design features, and can be found at <http://www.mhd.state.ma.us/default.asp?pgid=content/designGuide&sid=about>

Procedures for Speed Zoning on State and Municipal Roads

These procedures provide specifications for speed zoning in Massachusetts and can be found at <http://www.mhd.state.ma.us/downloads/manuals/speedZoning.pdf>

A Policy on Geometric Design of Highways and Streets

The American Association of State Highway & Transportation Officials (AASHTO) Policy, also known as the AASHTO "Green Book", is based upon established design practices, and is intended to provide guidance in roadway design. This document is available for purchase through AASHTO at <https://bookstore.transportation.org/>



For more information contact:
MassHighway
Traffic Engineering
(617) 973-8484

Last Revised:
January 2008