

Check out  
the video

## Federal-aid Program Overview

### Safety

# Roadway Safety Fundamentals

[www.fhwa.dot.gov/federal-aidessentials](http://www.fhwa.dot.gov/federal-aidessentials)

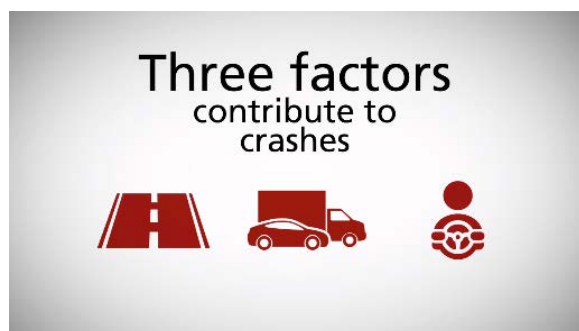
*Good roadway safety improvement programs should include the 4 E's: engineering, education, enforcement, and emergency medical services*



Eighty-nine people die every day on America's roadways. Highway deaths total more than 30,000 a year, and millions more are seriously injured. Fatalities and injuries are not just statistics; they are people: our families, our friends, our neighbors.

Local agencies own 76 percent of roadway mileage in the United States. Reducing roadway crashes by improving safety is largely a local responsibility.

Local agencies need to incorporate safety in the early phases of project development by considering the factors that cause crashes.



Three factors affect the severity and extent of crashes: the roadway, the vehicle, and the driver. The most effective roadway safety improvement programs combine engineering, education, enforcement, and emergency medical services (EMS). This is known as the 4 E's.



Engineering features can enhance safety for drivers, pedestrians, and cyclists. Examples include roadway width and improvements to signs and signals. Sidewalks, bike lanes, guard rails, and rumble strips are other engineering solutions.



Education promotes programs to change unsafe behaviors. Programs include driver education, citizen advocacy, and awareness campaigns. Campaigns often urge people to buckle up, slow down, share the road, and stay alert.



Enforcement is another driver-focused activity. Enforcing laws makes sure people driving in an unsafe manner bear the consequences for their actions.



While the first three E's are focused on prevention, the fourth E focuses on timely response and coordination of EMS. Emergency medical staff needs to reach the crash sites quickly while minimizing its effect on other drivers' safety. Fatalities and the severity of serious injuries can be reduced with timely medical attention.



Roadway safety management is a data-driven process. Roadway project development requires detailed information on crashes and the causes to improve

roadway safety and change unsafe behaviors. Data may come from sources such as law-enforcement crash reports, emergency-room information, and high-crash incidence reports from local and State authorities.



Data drives the development of the State Strategic Highway Safety Plan (SHSP). The plan describes the mission and goals of safety efforts within a State. The plan is an outline of resources, strategies, and actions to achieve safety goals.

Roadway data pinpoints sites with many crashes or those with the potential for crashes. The local community can then apply resources to locations with the highest priority.



Once a community prioritizes its critical roadway safety needs, then it needs to find a source of funds for those projects. One option is to use the Highway Safety Improvement Program, or HSIP, a funding source from the Federal Highway Administration. The purpose of HSIP funds is to help States and local government agencies significantly reduce traffic fatalities and serious injuries on all public roads.



To receive HSIP funds, a State must develop and implement the SHSP, produce a list of projects or strategies to reduce safety problems, and update the SHSP regularly. Local government agencies receive allocations of HSIP funds from the State for their roadway safety projects.



Here is an example using the fictional community of Auburn Plains to show the importance of planning, the use of data for project development, and an innovative approach to funding.

Auburn Boulevard served a mix of residences, family-owned retail shops, and professional offices for doctors and lawyers in the 1970s.



Overdevelopment of poorly coordinated retail sites led to cluttered signing, on-street parking issues, and a narrowed roadway. The crash rates on Auburn Boulevard soared to nearly three times the statewide average. The public avoided the area because of the danger and businesses moved out, resulting in vacancies and unemployment.

Community transportation planners conducted a study on access management and congestion-improvement projects. The study's data pinpointed problems and suggested solutions. The community collaborated with the State and received dedicated safety funds to implement improvements. Engineering improvements included restricted access, a wider roadway, new traffic signals and turn lanes, visible signs, and pedestrian connections between properties.



Enforcement also increased safety when State and city police coordinated frequent patrols to enforce parking restrictions and discourage speeding.

The improvements revitalized the shopping area, giving the public safer and more efficient access to businesses. Residents and business owners returned to Auburn Plains to live, work, and shop.

Not all safety projects are that extensive. Smaller projects and careful planning can improve safety too. For example, a two-inch wider pavement marking improves visibility at a relatively low cost. Other inexpensive

improvements include adjusting on-street parking configurations, changing traffic-signal phases, and educating driver groups such as college commuters or drivers near school zones.



Roadway safety affects everyone.

- Include safety early in your project development.
- Use the four E's to address crash factors.
- Collect and use data to make decisions.
- Allocate resources to address the issues.

You have the power to make your community a safer place. Your actions may even save the life of someone you know.

For more information about roadway safety, contact your local technical-assistance program, your State DOT, or the FHWA division office.

### Additional Resources

- Link to FHWA's Office of Safety Web site with information on FHWA safety programs, focused approach, countermeasures, data and policies  
<http://safety.fhwa.dot.gov/>
- Link to AASHTO's Highway Safety Manual  
<http://www.highwaysafetymanual.org/Pages/default.aspx>
- Link to NHTSA's main Web site with information on safety programs related to education and enforcement  
<http://www.nhtsa.gov/>
- Link to National Work Zone Safety Information Clearinghouse  
<http://www.workzonesafety.org/>
- Information about pedestrian and bicycle safety  
<http://www.pedbikeinfo.org/>
- Information related to rural roadway safety  
<http://www.ruralsafety.umn.edu/clearinghouse/>
- FHWA link to information about the MUTCD  
<http://mutcd.fhwa.dot.gov/>
- Information on how to implement AASHTO's Strategic Highway Safety Plan  
<http://safety.transportation.org/plan.aspx>

The content of this document is not a substitute for information obtained from State departments of transportation, appropriate FHWA Division Offices, and applicable laws. Scenarios have been simplified for emphasis and do not necessarily reflect the actual range of requirements applicable to the scenario or this topic. This document was created under contract number DTFH61-11-D-00026 by the Federal Highway Administration, U.S. Department of Transportation, and is offered to the public to heighten and focus awareness of Federal-aid requirements within the local public agencies community and reinforces the importance of these necessary policies, procedures, and practices.

This Companion Resource is the script content for the video production of the same name.