

Priority, Market-Ready Technologies and Innovations

Road Safety Audits (RSA)

New

Problem: There is a need for an independent, multidisciplinary process for identifying and documenting safety issues on new and existing roadways

The toll from traffic crashes remains an important health and economic issue in the United States. Each year nearly 43,000 people are killed and 3 million people are injured in crashes. The estimated societal cost of these crashes is more than \$230 billion annually. While there are many causes of vehicle crashes, research from the U.S. Department of Transportation indicates that approximately one-third of these fatalities could be avoided if poor road conditions or outdated geometry and road hardware were improved.

Putting It in Perspective

In 2001:

- More than 6.3 million motor vehicle crashes were reported by police in the United States. Almost one-third of these crashes resulted in an injury, with less than 1 percent of total crashes (37,795) resulting in a death.
- A total of 42,116 people lost their lives in motor vehicle crashes. Another 3.0 million people were injured.

Solution: Use RSAs, which are adaptable to local needs and conditions, to evaluate safety issues, identify countermeasures, and implement solutions to safety problems

What are Road Safety Audits?

Road safety audits (RSA) are a formal safety performance examination of an existing or future road or intersection by an independent audit team. These step-by-step procedures can be performed during any or all stages of a project, including

the planning, preliminary design, detailed design, traffic control, construction planning, or preopening stages. RSAs also can be used on any size project, from minor maintenance projects on an existing road to megaprojects and projects that include the construction of entirely new transportation facilities.

Typical recommendations for improving a new or existing road that may result from an RSA include:

- Remove sight distance obstructions.
- Add or change turn lanes.
- Improve the design of acceleration or deceleration lanes.
- Add illumination.
- Place median barriers at the site.
- Take greater consideration of the ability of pedestrians to cross the street.
- Make improvements to superelevation.
- Make drainage improvements.
- Modify the roadway shoulders and lane widths.
- Manage access to driveways or consolidate the number of driveways along the road.
- Realign the approaches to intersections.

There are several steps involved in conducting an RSA, including the following:

1. Identify the project or existing road to be audited.
2. Select a multidisciplinary team.
3. Conduct a preaudit meeting to review project information and drawings.
4. Perform field reviews under various conditions.
5. Conduct an RSA analysis and prepare a report of the findings.

6. Present the RSA findings to the project/owner design team.
7. Prepare a formal response.
8. Incorporate the findings into the project when appropriate.

Do RSAs increase an agency's liability?

RSAs are a proactive approach to improving transportation safety. However, some transportation practitioners have expressed a concern that the use of RSAs could increase an agency's tort liability. Tort liability at the State and local level is a matter that is decided in accordance with State law and jurisprudence. Implementing a plan to reduce the crash potential and improve the safety performance of a roadway is an effective approach to safety and may be used in defense of lawsuits. An RSA report can be used to refute or counter an expert witness's report and to demonstrate a public agency's efforts to improve safety in a particular location. It is important to have a response to the RSA report on file to show how the agency plans to incorporate the suggestions in the report and to indicate why some suggestions will not be implemented. This is particularly true of RSAs performed in the early stages of a project.

Identifying and documenting safety issues on an existing roadway also is the first step in a comprehensive, interactive process designed to improve safety. Federal law affords some evidentiary and discovery protections to assist State and local highway agencies in keeping data and reports compiled or collected pursuant to various Federal safety improvement programs from being used in tort liability actions (23 U.S.C. § 409 ("Section 409")).

Benefits

- Helps produce designs that reduce the number and severity of crashes.
- May reduce costs by identifying safety issues and correcting them before projects are completed.
- Promotes awareness of safe design practices.
- Integrates multimodal safety concerns.
- Considers human factors in all facets of design.

Successful Applications: Road safety audit results

An increasing number of State departments of transportation (DOT) are incorporating RSAs into their existing efforts to enhance safety. To date, at least 10 State DOTs are actively involved in RSA programs. In Pennsylvania, for example, officials

have successfully integrated RSAs into the design phase of highway projects. In addition, the New York State DOT is integrating RSAs into its existing pavement overlay program.

South Carolina DOT (SCDOT) is using RSAs as a standard practice. Terecia Wilson, SCDOT's director of safety, noted that her department uses RSAs as a proactive, low-cost approach to improving safety. The RSAs have helped SCDOT's safety team develop numerous solutions that incorporate measures not originally included in highway projects. The very first audit saved South Carolina thousands of dollars by correcting a design problem. Iowa also is consistently using RSAs to identify ways to implement low-cost safety solutions on new projects based on what they learned through previous RSAs.

Deployment Statement

RSAs have the potential to reduce road departure, intersection, speed-related, and pedestrian and bicycle fatalities and injuries.

Deployment Goal

State and local agencies will use RSAs to identify and implement safety improvements needed to reduce injuries and fatalities on the Nation's roadways.

Deployment Status

Twelve states have conducted RSAs, and seven States are piloting RSAs.

Additional Resources

For additional information, visit <http://www.roadwaysafetyaudits.org>. To learn more about AASHTO-TIG's approved technologies, visit <http://tig.transportation.org>.

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