



Road Safety Audit #21



Introduction

A Road Safety Audit (RSA) is a proactive safety planning process that is proven to enhance roadway safety (<https://highways.dot.gov/safety/proven-safety-countermeasures/road-safety-audit>). RSAs are safety reviews prepared by a multidisciplinary team following a formal eight-step process developed by the Federal Highway Administration (FHWA). They are commonly prepared for existing roadway corridors, but also can apply to intersections or other locations, as well as planned or designed projects. RSAs consider the safety of all road users, account for the safe system approach and local safety goals, and are documented in a formal report. Per the FHWA, RSAs can reduce crashes by up to 60%.

While an RSA is a formal process, the actual steps are straightforward and can be easily completed in a few weeks.

There are eight steps to complete an RSA:

Step 1: Identifying the Project

Identifying the project involves choosing a segment of roadway/ intersection to be studied and then collecting information about that area.

The project owner will be the municipality, who the audit is being completed for, and who is responsible for the successful completion of the process.

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Responsibilities



RSA Team



Design Team/Project Owner



FHWA eight-step RSA process.

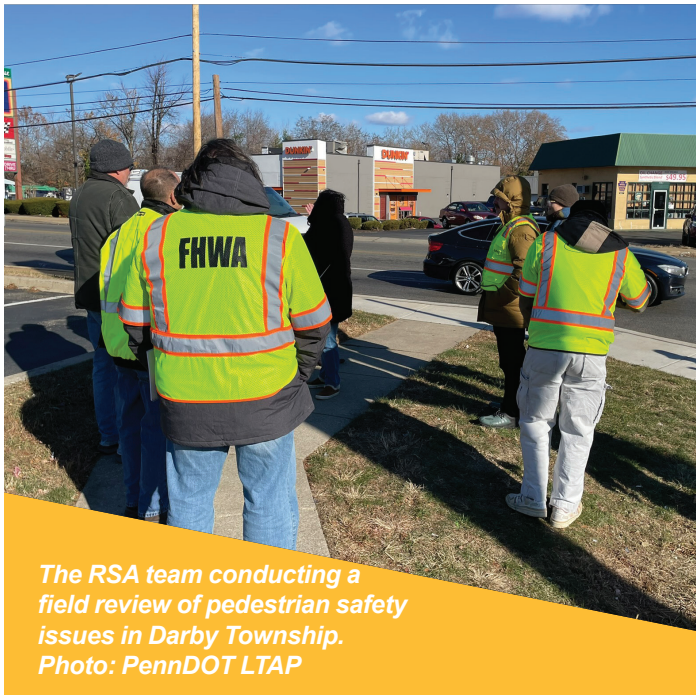
Graphic: FHWA



Curves are often a safety focus area for rural roadways.

Photo: PennDOT LTAP





*The RSA team conducting a field review of pedestrian safety issues in Darby Township.
Photo: PennDOT LTAP*

The choice of which segment to study may be made by elected officials, a municipal manager, or a roadmaster. The selection can be based on:

- Crash experience
- Public concerns
- Local knowledge
- Changing traffic and/or land use patterns
- Input from planning partners (MPO/RPO)
- Traffic issues or citations

An RSA may be general, considering every potential element of a roadway segment, or focused, considering only pedestrian or bicycle issues.

Step 2: Team Selection

Ideally, an RSA team is a group of individuals with diverse expertise to limit bias. A good RSA team may have a traffic engineer on the team, but a group of traffic engineers would not be a good RSA team. Working with neighboring municipalities also can offer a more independent viewpoint.

People with some knowledge of traffic operations, roadway geometry, and safety make good team members. They know what to look for and may recognize hidden problems. However, other skills may be useful, such as people with expertise in human factors, enforcement, maintenance, utilities, or other specialties.

From a municipal perspective, people that could be useful on an RSA team include but are not limited to:

- Supervisors/commissioners/councils
- Municipal managers
- Municipal engineers/planners
- Roadmasters/public works employees
- First responders
- Concerned citizens
- Local businesses
- School officials/bus drivers
- MPO/RPO staff
- PennDOT district/county staff
- Advocacy groups
- PennDOT LTAP/Connects

Step 3: Start-up Meeting

The most effective and efficient way to acquaint the audit team with the project is to have a pre-audit meeting. The purpose of the pre-audit meeting is to:

- Hand over all relevant information to the audit team.
- Review the scope and objectives of the RSA.
- Delegate responsibilities.
- Agree upon a schedule for the completion of the RSA.
- Establish the lines of communication between the audit team leader, project owner, and design team.
- Communicate matters of importance to the audit team.

Information to be shared is the information collected during the roadway identification process and may include anything that helps team members understand the characteristics of the subject roadway. This includes information about road function, classification, environment, traffic, and environmental characteristics of the road and adjacent road network, plus crash data detailing the location, type, and severity of each crash for at least a five-year period.

Step 4: Field Review

The field review is a key task that the RSA team should undertake in all audits. The safety of the RSA team and of all road users during field reviews is a key consideration and should be planned for. Proper

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personal protective equipment (PPE) and traffic controls should be always used, and the potential for adverse impacts on road traffic and audit team safety must be managed at all times during a field review.

One approach to field reviews is that each RSA team member reviews the entire site independently, noting anything of importance. The team then reviews the site together, discussing the various issues each team member has identified independently. This approach encourages all RSA team members to participate and not to defer to an individual team member who may be perceived as more experienced. Another approach is for the team to move through the site as a group, with each team member noting issues as they encounter them.

Issues identified in the review of project data should be verified in the field. Photographs and possibly video footage should always be taken of anything that may need to be reviewed or revisited while writing the RSA report or while presenting the RSA findings to the project owner.

When observing the roadway:

- Take pictures frequently.
- Use the FHWA prompt checklists.
- Identify both good and bad examples.
- Take notes.

Step 5: Analysis and Report

Schedule a work session as soon as possible after the audit so that the field visits are fresh in the minds of the team. The team should discuss each of the safety issues identified from the field visit. After assessing the risk associated with each safety issue, use the collected information to develop a mitigation strategy. Keep in mind that the proposed improvements must be constructive and realistic, and they must be appropriate for all road users. When considering roadway improvements, consider the four Es: engineering, enforcement, education, and emergency response.

Also, think short term, medium term, and long term when developing strategies and particular roadway improvements. Consider the list of FHWA's proven safety countermeasures: <https://highways.dot.gov/safety/proven-safety-countermeasures>



Identifying the project involves choosing a planned or existing segment of roadway to be studied and collecting information about that location. The most common projects are reviewing an existing roadway segment, an intersection, or pedestrian safety issues. Photo: PennDOT LTAP

Step 6: Presentation of Results

After the RSA team's analysis is complete, prepare a report. The report does not need to be long and does not need much text. Photos, lists, and other graphics can be used. A thorough RSA report includes several components:

- Summarize the project, or section of roadway, that was studied.
- List and describe the documents the RSA team used during its analysis and discussion.
- Summarize the scope of the study. What is the RSA team trying to accomplish?
- List and describe RSA team meetings and site visits.
- List and describe the safety issues discovered by the team, as well as suggestions for improving those conditions.

Step 7: Formal Response

Once the project owner and the design team have reviewed the audit report, they should jointly prepare a written response to the findings. The response should outline what actions the project owner or design team will take related to each safety concern listed in the audit report.

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*Intersections are another safety focus area for RSAs.
Photo: PennDOT LTAP*

Step 8: Inclusion of Findings

If the RSA was conducted to explore potential improvements for existing conditions, the recommendations from the study may be added to operating budgets or maintenance programs.

Coordinate with PennDOT and its planning partners (MPO/RPO/county) for funding, including grants and planning.

Interested in conducting an RSA? Reach out to PennDOT Connects to start.

**Note: PennDOT Connects services are free to all PA municipalities.*

Resources:

- RSA - https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-08/FHWA_SA_06_06.pdf
- Pedestrian/bicycle audit - <https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-08/fhwasa20042.pdf>