



Newsletter

"I would like to recognize Becky Crowe for her leadership of this newsletter over the past several years. Your efforts are greatly appreciated in getting information out on RSAs to the safety community."

- Michael Griffith
Director of the Office of Safety Technologies

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Greetings

□ By Becky Crowe, RSA Program Manager, FHWA Office of Safety

As summer gets underway and more people are out walking and biking, now is a good time to remember that RSAs are a great tool that you can use to improve the safety of **all** road users. RSAs are one of the most flexible tools you can have in your safety toolbox. They can be used on all roads, at any stage of a project. Over the years, FHWA has developed an array of resources to help agencies with performing a variety of RSAs. Whether you are focusing on bicyclists or want to use three-dimensional (3D) visualization on a design-stage RSA, you can find guidance or case studies to help you on our web-site: <http://safety.fhwa.dot.gov/rsa/>. In this issue, you will learn about even more resources that are now available or will be coming out later this summer.

I hope you'll find these tools useful as you continue to use RSAs to reduce traffic deaths and serious injuries... for everyone. Thank you for supporting RSAs and all the best for a safe and fun summer.

LAST ISSUE

This issue is the last *RSA Newsletter*, but FHWA's *Safety Compass* newsletter will continue to report on the latest in highway safety topics.

Dedicated to promoting the use of RSAs, recent *RSA Newsletter* topics have included articles on how agencies are using RSAs to improve safety on their road networks, ideas for using RSAs to improve safety for **all** road users, and information on new resources available for performing RSAs. If you are not yet subscribed to the *Safety Compass* or want to check out past issues, visit <http://safety.fhwa.dot.gov/newsletter/safetycompass/>.

FOR MORE INFORMATION ON STATE, LOCAL, FEDERAL, AND TRIBAL RSA PUBLICATIONS

Contact:

Becky Crowe, RSA Program Manager, rebecca.crowe@dot.gov



U.S. Department of Transportation
Federal Highway Administration



Safe Roads for a Safer Future
Investment in roadway safety saves lives



Free Bicycle RSA Training & Technical Assistance

While a Bicycle RSA follows the same principles and eight-step process of a Road Safety Audit, this specialized type of RSA requires additional understanding of bicyclists' safety in the transportation system. To assist agencies with implementing Bicycle RSAs, FHWA is offering FREE training and technical assistance. The training provides an overview of the basic principles of the safety of bicyclists and potential issues affecting them. It also provides information on how to perform an RSA and effectively evaluate the safety of bicyclists during the assessment. Technical assistance can be combined with a training workshop to help an agency perform their first Bicycle RSA.

Contact Becky Crowe at 804-775-3381, or rebecca.crowe@dot.gov, if you are interested in receiving Bicycle RSA training and technical assistance.

To further support agencies institutionalizing their RSA Program, FHWA is also offering FREE assistance to public agencies to help with developing an RSA policy or practice. **Contact Becky Crowe at 804-775-3381, or rebecca.crowe@dot.gov, if you are interested in this FREE assistance.**

New Template Helps Agencies Develop an RSA Policy

Developing a formal RSA policy is an effective way to institutionalize RSAs and ensure their consistent use and application. Sometimes the hardest part of creating an RSA policy is taking that first step to put it in writing. To help make this hurdle more manageable, FHWA has created a template that agencies can follow when developing a formalized policy. The Model RSA Policy provides an outline for detailing the various elements of an RSA policy—for example, when an RSA is performed, how it is performed, and who is responsible for certain RSA functions. The model policy is a flexible document that a road agency can use to meet their needs and is consistent with their specific processes, practices, and budget constraints. The Model RSA Policy is neither a Federal requirement nor a final policy document but can be adopted by State, local, or tribal governments. To download a copy of the RSA Model Policy, visit <http://safety.fhwa.dot.gov/rsa/>.

RSAs Use 3D Models to Visualize Safer Roads

For the past decade, transportation agencies have been very proactive in using Road Safety Audits (RSA), which are formal safety performance examinations of either existing or future roadways. For roads that are not yet built, the driving question has been "How can we make it easier to identify potential safety improvements for transportation facilities before they are even constructed?" One way to do this is by using three-dimensional (3D) design visualization. To help Federal, State, local, and tribal agencies understand the benefits of using interactive 3-D visualization to assist RSA teams in assessing the safety effects of potential roadway designs, FHWA has just released Road Safety Audit Case Studies: Using Three-Dimensional Design Visualization in the Road Safety Audit Process.



3D image used during an RSA. Source: VHB

RSAs Use 3D Models to Visualize Safer Roads continued on page 3

RSA's Use 3D Models to Visualize Safer Roads continued from page 2

While compromises and trade-offs are a normal part of the planning and design decision-making process, RSAs ensure that safety does not “fall through the cracks.” RSAs are also an ideal tool to ensure effective stewardship of funding; it’s more cost-effective to incorporate safety in the beginning than to reconstruct after a project is built. However, performing an RSA during the pre-construction phase can present some challenges. Typically, an RSA team will review plans and specifications in a two-dimensional (2D) format. For team members that have not been trained in interpreting these diagrams or who do not use construction plans on a regular basis, it may be difficult to fully understand the overall design depicted in a set of plans and envision safety concerns. In addition, design drawings do not always convey risk factors that might exist once the facility is built. For example, a drawing might not reveal that a structure located in the right of way constricts sight distance. This is where a 3D model of the project can offer significant benefits. The RSA team can easily rotate 360 degrees during the review and virtually walk or drive through the design. This allows the team to visualize the project design realistically and identify elements that may pose a safety concern to future road users.

To demonstrate the effectiveness and benefits of using 3D visualization

with RSAs, the FHWA Office of Safety worked with four jurisdictions to pilot the process (Table 1).

For each project, a 3D model of the proposed concepts and designs was developed using digital terrain models, design surface models, associated 2D or 3D computer-aided design (CAD) files, and other information necessary to create a detailed rendering of the proposed roadway and surrounding environment. The model also included signs, pavement markings, traffic signals, lane configurations, major landscaping, roadside appurtenances, and other items within the right-of-way to render a realistic visualization of the roadway and its environment.

The RSA team members used the 3D model to visualize the project and identify elements that may pose a safety concern to future road users. A variety of recommendations stemmed from the pre-construction RSAs using 3D visualization, including adding additional left-turn lanes; restricting left turns from side streets; tightening channelized right-turn movements; and identifying alternative route options, cross-section options, intersection/interchange treatments, and pedestrian/bicycle routing and facility options.

Using 3-D visualization with pre-construction RSAs can offer many benefits, such as:

- Illustrating how proposed features—such as signs, structures, and traffic signals—affect the roadway environment.
- Allowing users to view the proposed conditions from a countless number of vantage points and possibly exposing issues not otherwise obvious from a review of standard 2D plans.
- Providing visual support for the RSA team’s findings and recommendations to the project owners and other stakeholders.

To learn more about using 3D visualization with pre-construction RSAs and to read case studies from the four pilot locations, download a copy of *Road Safety Audit Case Studies: Using Three-Dimensional Visualization in the Road Safety Audit Process* at http://safety.fhwa.dot.gov/rsa/case_studies/fhwasa14003/. Each case study includes photographs, project background, key RSA findings and suggestions, and the benefits of the 3-D visualization. This newest publication will help agencies integrate this innovative technology into their RSA process.

For more information about using 3D visualization in pre-construction RSAs, please contact:

Becky Crowe
804-775-3381
rebecca.crowe@dot.gov

Location	Project Phase (During the RSA)	Facility Type	Project Focus
Middletown, RI	Preliminary Concept (0 – 1%)	Two-lane limited access connector road	New roadway and alternative intersection designs.
Belgrade, MT	Conceptual (1 – 25%)	Expressway interchanges	New Interstate highway access.
Prince William County, VA	Advanced (90%)	Two-lane road widened to four lanes	Roadway widening and curve flattening and realignment.
Perris, CA	Preliminary (40 – 80%)	Expressway interchanges; multilane arterial	New complex interchange design.

Table 1. Pre-construction Stage RSAs Conducted Using 3D visualization.

Improving Motorcycle Safety with RSAs

Our highway system has evolved in a number of ways, and so too have the users that rely on it. Roadways today carry a mix of passenger vehicles, trucks, pedestrians, bicyclists, and more — including motorcycles. Motorcycling is a popular mode of transportation, but it also carries distinctive crash risks. How can an agency identify elements of a road that may present a safety concern for motorcyclists? And just as importantly, how can an agency identify opportunities to eliminate or mitigate those safety concerns? The answers rest with a Motorcycle Road Safety Audit (RSA).



Motorcyclist on the Blue Ridge Parkway. Source: VHB

To assist agencies with performing RSAs focused on motorcycle safety, FHWA's Office of Safety has commissioned a project to develop a Motorcycle RSA case studies document.

As part of the effort, RSAs are being performed this spring at sites with a high number of motorcycle crashes.

The RSAs will be summarized in the case study document and include information about the RSA location (including the crash history), the safety concerns identified during the RSA, and the RSA team recommendations for improving safety. The case study document will also quantify the costs, benefits, and lessons learned for each RSA.

The *Motorcycle RSA Case Studies* will be available later this summer. Contact Becky Crowe (rebecca.crowe@dot.gov) if you would like to receive a copy.

CONGRATULATIONS to the Rutgers' Center for Advanced Infrastructure and Transportation!

The Rutgers' Center for Advanced Infrastructure and Transportation (CAIT) was presented with a National Roadway Safety Award in the Program Planning, Development, and Evaluation Category to recognize

their RSA Program. The goal of the RSA Program is to reduce traffic fatalities and serious injuries with multidisciplinary site evaluations and short- and long-term recommended countermeasures that can

significantly improve safety. RSA sites are identified in partnership with road owners and based on crash data. Working with MPOs and counties, CAIT conducts focused network screenings to identify regional high-crash locations. Using crash data along with local input from the road owners ensures that the sites selected for RSAs are regional safety priorities. Multidisciplinary teams identify safety issues and recommend solutions that include engineering-specific improvements as well as enforcement and educational activities. Recommended countermeasures are typically low-cost and help municipalities improve safety with quick, short-term fixes. To learn more about the CAIT RSA Program, go to <http://cait.rutgers.edu/tsrc/audits>.



Andy Kaplan (center) accepting award for Rutgers' CAIT. Source: FHWA

South Central Regional Transportation Plan Includes RSAs

When the South Central Safe Community Partnership (SCSCP) and the South Central Planning and Development Commission (SCPDC) jointly established their Regional Transportation Safety Plan, coalition partners and planners identified Infrastructure and Operations as emphasis areas. A review of crash data showed local intersections and curves as overrepresented with higher than average crashes compared to similar locations in the State. There was a clear need for safety improvements in these areas and RSAs were proposed as one strategy to achieve the benchmark improvements in Infrastructure and Operations.

The Louisiana Technical Assistance Program (LTAP) and Louisiana DOTD hosted an RSA workshop in March 2012

for the South Central Region's stakeholders. They encouraged the team to introduce RSAs into their Regional Transportation Safety Plan as a tool to address road safety issues. SCPDC subsequently incorporated RSAs as a strategy into the plan, which allows RSA recommendations to be eligible for funding through the Local Roads Safety Program and other available transportation programs.

Following the training, an RSA team was assembled to launch the region-wide initiative. Crash data from 2007-2011 was used to identify the top ten high-crash locations in each parish served by the SCPDC. These top ten locations were further analyzed and narrowed to three locations from each parish where RSAs were performed. The RSA teams performing



Multidisciplinary RSA Team. Source: SCPDC

the assessments in the parishes are multidisciplinary groups that have included LADOTD traffic engineers, LTAP staff, SCPDC/MPO staff, local planners, public works managers, State and local law enforcement officers, and politicians.



Multidisciplinary RSA Team. Source: SCPDC

Following the completion of an RSA, low-cost safety projects are recommended for possible funding through LADOTD's Local Road Safety Program administered by the LTAP. In some cases, the Parish or City may choose to fully or partially fund the recommendation for faster results. Most of the projects resulting from the RSAs were implemented in 2013 and are now being evaluated to measure the benefits of the improvements.

To view the SCPDC Regional Transportation Safety Plan, go to http://www.scpdc.org/wp-content/uploads/SCRTSP-Updated-Feb-2013_with-Aug-2013Status.pdf

RSA Highlights

➤ RSAs as Safety Management Strategy

RSAs are listed as one of the Safety Management strategies in the Toward Zero Deaths National Strategy. Toward Zero Deaths: A National Strategy on Highway Safety is available for download at www.TowardZeroDeaths.org.

➤ Arizona RSAs

The Arizona DOT is updating RSA information on their website and will add a self-paced webinar introduction to RSAs.

➤ New Mexico DOT RSA Manual.

The New Mexico DOT is developing an RSA Manual.

➤ Lakes Region Planning Commission

The Lakes Region Planning Commission in New Hampshire is taking the lead on a highway corridor RSA, teaming with the North Country Council. The RSA will span five communities.

➤ RSA Software

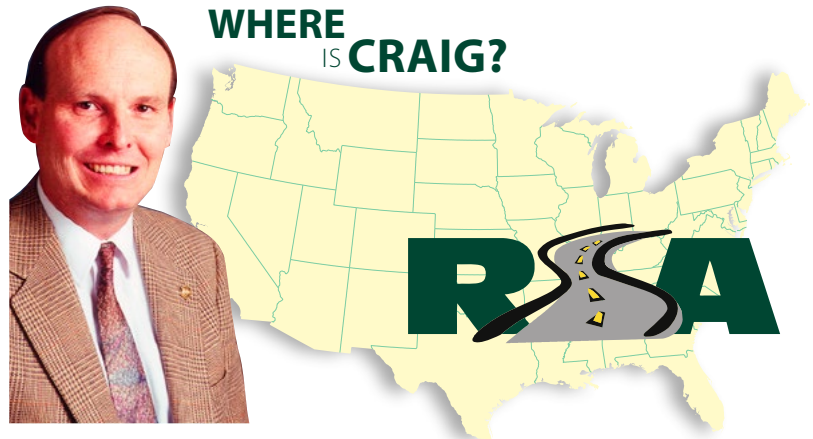
The RSA Software is being updated so that it is compatible with Windows 2007 and higher. The update will be available later this summer on the RSA website at <http://safety.fhwa.dot.gov/rsa/>.

➤ New Resource from ATSSA

The American Traffic Safety Services Association (ATSSA) has published *Emerging Safety Countermeasures for Wrong-Way Driving*, which includes a Wrong-Way Driving RSA Prompt List.

May was National Bike Month, which led Craig to Athens, Georgia to conduct an RSA training workshop hosted by Georgia Bikes. During his time, he not only taught the basics of performing an RSA, but also helped participants gain a better understanding of the safety of bicyclists in the transportation system.

When asked how RSAs benefit bicyclists, Craig stated, "RSAs should consider all road users, improving the safety of everyone. When performing an RSA, it's important that the team keep this and all user groups in mind and assess the road from their perspective. Something might not be hazardous to a motor vehicle, but it can be deadly to a bicyclist or a pedestrian."

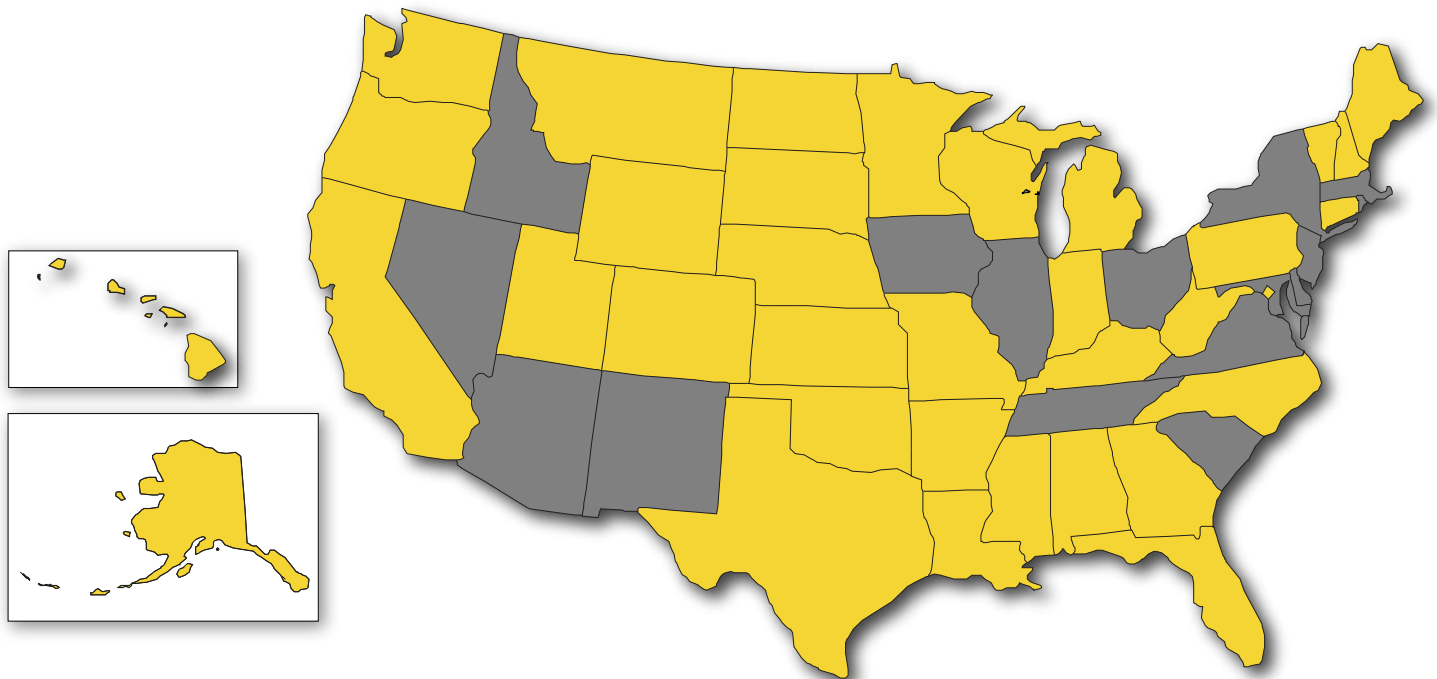


To learn more about performing a Bicycle RSA, download a copy of the Bicycle Road Safety Audit Guidelines and Prompt Lists at http://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa12018/#chap1.0.

National Map of RSA Activity

Below is a map showing the status of RSAs across the US. Do you have other information on RSAs to report for your state? Please let us know!

KEY: = piloting or performing RSAs = RSA program



The FHWA Office of Safety's mission is to reduce highway fatalities by making our roads safer through a data-driven, systematic approach and addressing all "4Es" of safety: engineering, education, enforcement, and emergency medical services. Increasing awareness of the need for roadway safety infrastructure improvements is very important. We are striving to provide decision-makers with important information, tools and resources that will improve the safety performance of roadways. Safety should be considered first, every time and at every stage of a project. Make safety your first consideration in every investment decision.