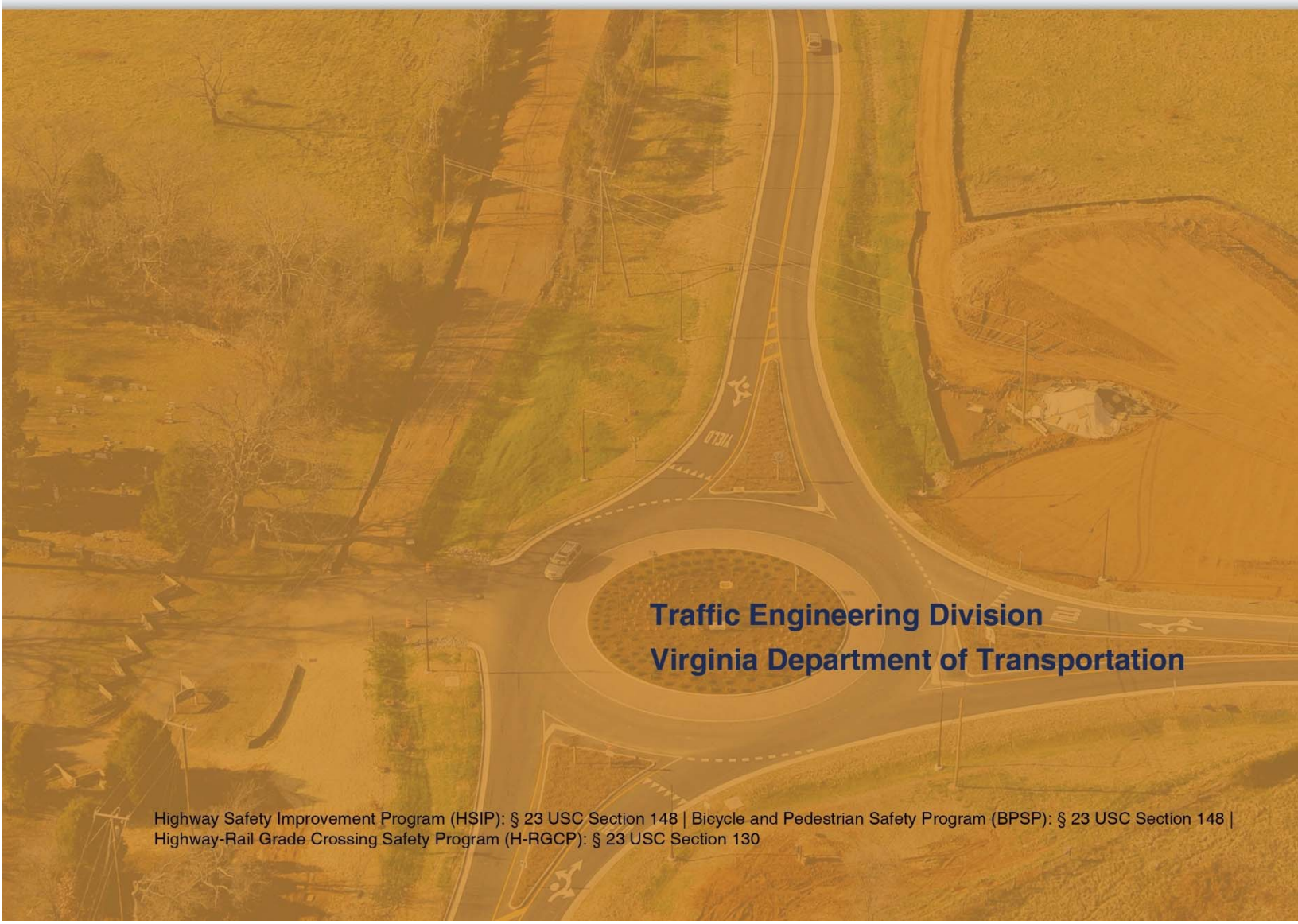


Highway Safety Improvement Program

Road Safety Audit Guidelines



Traffic Engineering Division
Virginia Department of Transportation

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1 | Background

1.1 Introduction

Virginia's 2006-2010 Strategic Highway Safety Plan set the goal of decreasing the more than 900 annual deaths and over 75,000 injuries¹ from crashes on public highways by 100 and 4,000, respectively. Road Safety Audits (RSAs) are identified as critical strategies to address engineering improvements for several of the environmental emphasis areas, such as intersection and roadway departure crashes. The Virginia Department of Transportation's (VDOT) Highway Safety Improvement Program (HSIP) provides a funding mechanism and data driven process to identify the best engineering countermeasures for the prevailing crashes at a location. Per the Fixing America's Surface Transportation (FAST) Act, passed by Congress on December 3, 2015, RSAs are one type of non-infrastructure activity that is eligible for HSIP funds ((23 U.S.C. 148(a)(4)(B)(xxi)).

As such, VDOT will use the RSA process to continue to reduce the number of severe and fatal crashes by proactively identifying existing and potential safety issues and providing recommended improvements. This document describes the RSA process applied to the HSIP and Highway Safety Corridors (HSC)/Strategically Targeted Affordable Roadway Solutions (STARS) programs and defines the role of the VDOT Regional and District staff and local jurisdictions in conducting RSAs.

1.1 How to Use this Guide

It is the intent of this guide to inform readers of how and when to perform RSAs. This guide provides users with information about the formal RSA process, roles and responsibilities of RSA team participants, and information pertaining to when RSAs must be performed. Useful resources, sample agendas, field review prompt lists, and a report template are also provided.

¹ Based on 2001-05 crashes on public highways in Virginia.

2 | How to Conduct an RSA

2.1 What is an RSA

According to the Federal Highway Administration, the formal definition of an RSA is, “the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team.” It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users.

There are several key elements to this definition:

Formal safety performance examination – There is a formal eight-step process for conducting RSAs with a focus on identifying potential safety issues.

Existing or future road or intersection – The RSA can be conducted at various points throughout the life cycle of a project, from initial planning or design stages to existing facilities.

Independent, multidisciplinary team – RSAs should not be performed by one individual person, but should be performed by a team of three to five individuals with expertise relevant to the project. To remain independent and impartial, the RSA should not include individuals involved with the roadway or intersection design.

The primary focus of an RSA is safety while working within the context of mobility, access, surrounding land use, and/or aesthetics. RSAs enhance safety by identifying potential safety issues affecting all road users under all conditions and suggesting measures for consideration by the design team or responsible agency.

An RSA is not simply a standards check. Standards checks are part of the design process to ensure adherence to design standards and guidelines. Although the RSA team may identify safety issues by comparing items of concern to standards, the general intention of the RSA is to identify areas where applied standards may interact with road user behaviors to generate a potential safety issue.

2.2 The RSA Process

There are eight steps in the RSA process. Some of the steps and responsibilities involve a broader group, including the project owner, while other steps are performed by the smaller RSA team. The specific steps and individuals involved are shown in Figure 1.

Responsibilities

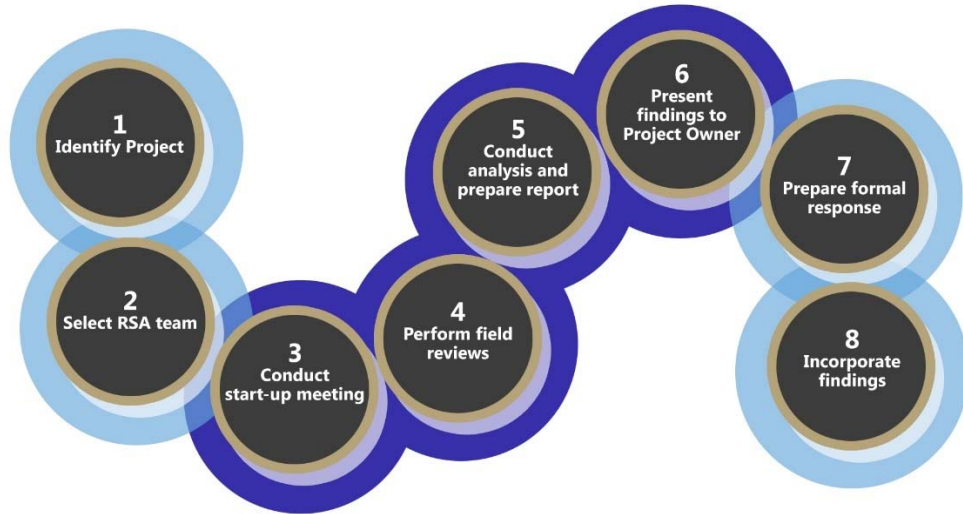


Figure 1. Typical Eight-Step RSA Process (Source: FHWA²).

The first two steps are conducted prior to, and in preparation for, the RSA. Steps three through six occur during the RSA – a sample agenda for these steps is provided in Appendix B. The final two steps are to follow-up on the findings and occur after the RSA.

Step 1: Identify Project

The facility or project owner identifies the location(s) to be reviewed during the RSA. The location(s) can be a previously identified and planned project or identified through data analysis. The owner should develop clear parameters for the RSA (the term “owner” in this document refers to the person or agency that owns or is responsible for the project or facility).

Step 2: Select RSA Team

The facility or project owner is responsible for selecting the RSA team and the RSA team leader. To ensure there is no conflict of interest and a fair and unbiased evaluation will be conducted, the RSA team must be independent of the operation and design of the location(s) being assessed and cannot include members of the party charged with the development of the original plans or the facility owner. The facility or project owner may select a set of qualified individuals from within its own organization, another transportation agency, or contract with an outside group. If a non-independent assessor wishes to evaluate the safety elements of a project, the process

² Federal Highway Administration. FHWA Road Safety Audit Guidelines. FHWA-SA-06-06. Available: http://safety.fhwa.dot.gov/rsa/guidelines/documents/FHWA_SA_06_06.pdf.

may still be valuable but should not be considered a formal RSA. Additional details on the RSA team members are provided in Section 2.4.

Step 3: Conduct Start-Up Meeting

The purpose of the start-up meeting is to ensure the owner/design team and all RSA team members understand the purpose, schedule, and roles and responsibilities of all participants in the RSA. This meeting helps establish lines of communication between the RSA team leader and the owner/design team. At the end of the meeting, all parties should have a clear understanding of the scope of the RSA to be undertaken and each of their roles and responsibilities. Specific topics of discussion should include:

- RSA scope and objectives.
- Relevant data, information, drawings, aerials, photographs, etc.
- Design constraints, standards used, related bicycle plans, and findings of previous studies.
- Local laws/statutes describing rights and duties of all road users.

A listing of the potential data used in an RSA is shown in Appendix A. Preferably, any available data should be provided prior to the start-up meeting for review and analysis by the RSA team. This enables the team to familiarize itself with the location, understand potential safety issues, and ask more focused questions at the start-up meeting.

Step 4: Perform Field Reviews

The RSA team should review the entire site (as well as plans if conducting an RSA of a design), documenting potential safety issues and project constraints (e.g., available right-of-way, impact on adjacent land, etc.). Issues identified during the review of the supplied data should be verified in the field. Key elements to observe include:

- Site characteristics (road geometry, sight distance, clear zones, drainage, surface condition, signing and marking, lighting, barriers, etc.).
- Traffic characteristics (traffic/pedestrian/bicycle volumes, movements, speeds, interactions, etc.).
- Surrounding land uses (including bicycle, pedestrian, and vehicle generators).
- Human factors issues (such as road user expectancy, reactions, and other behaviors).

Appendix C includes a field review checklist for RSA teams to take into the field.

Step 5: Conduct RSA Analysis and Prepare Report

The RSA team should conduct an analysis to identify safety issues based on data from the field visit and preliminary documents and prepare a report of the findings. Safety issues affecting all roadway users should be acknowledged and considered in this process. The safety issues may be prioritized by the RSA team based on the documented (through crash data, exposure analyses, etc.) or perceived risk. Perceived

risk may be based on the expected crash frequency and the expected severity of a crash.

For each identified safety issue, the RSA team generates a list of possible measures to mitigate the crash potential and/or severity of a potential crash. Measures should consider engineering, education, enforcement, and emergency medical services, or any other actions that may be beneficial to user safety on the facility. The RSA team should prepare a report that includes a brief description of the project, a listing of the RSA team members or agencies participating in the RSA, a listing of the data and information used in conducting the RSA, and a summary of findings and proposed safety measures. The report should include pictures and diagrams that may be useful to further illustrate the issues and countermeasures. A report template is provided in Appendix D.

Step 6: Present RSA Findings to Owner

The RSA findings and potential opportunities for improvement are presented to the owner/ design team. The purpose of this meeting is to establish a basis for writing the RSA report and to ensure that the report will adequately address issues that are within the scope of the RSA process. This is another opportunity for discussion and clarification. The project owner/ design team may ask questions to seek clarification on the RSA findings or suggest additional/ alternative mitigation measures. At the conclusion of this step, the RSA report can be finalized by the RSA team.

Step 7: Prepare Formal Response

Once the owner and/or design team have reviewed the RSA report, they should prepare a written response to its findings. The response should outline what actions the owner and/or design team will take with respect to each safety concern listed in the RSA report. A sample response document has been provided in Appendix E. The RSA findings may be presented in a public meeting or the report could be made available to the public to build support for the findings and the overall RSA process.

Step 8: Incorporate Findings

After the response to the RSA report is prepared, the project owner and/or design team should work to implement the agreed-upon safety measures or create an implementation plan. Implementation of the suggested measures is at the discretion of these parties based on their project schedules and available funds.

2.3 Determining the Focus of an RSA

There are two ways to determine the focus of an RSA. The first method is based on the project life-cycle. RSAs can be conducted at any stage in a project's life:

- **A pre-construction RSA** (planning and design stages) examines a road before it is built, at the planning/feasibility stage or the design (preliminary or detailed design) stage. An RSA at this stage identifies potential safety issues before crashes occur. The earlier a pre-construction RSA is conducted, the greater the

potential for designers to efficiently and effectively remedy possible safety concerns.

- **Construction RSAs** (work zone, changes in design during construction, and pre-opening) examine temporary traffic management plans associated with construction, or other roadwork and changes in design during construction. RSAs can also be conducted when construction is completed but before the roadway is opened to traffic.
- **A post-construction or operational RSA** (i.e., of an existing road) examines a road that is operating and is usually conducted to address a demonstrated crash risk.

The second method to determine the focus of the RSA is by focusing on certain user groups. Agencies may wish to conduct RSAs oriented to address safety issues related to specific user groups, such as bicyclists, pedestrians, and transit, among others. While all RSAs should consider the safety of all roadway users, these RSAs can be beneficial in addressing targeted, user-specific concerns. For example, a bicycle-oriented RSA may be undertaken to improve identified cyclist safety issues that may have resulted from changes in land use and mode choice over time or inadequate consideration of cycling in previous planning and design processes. A transit-focused RSA may be needed for proposed changes to the transit network to ensure user safety is adequately addressed.

2.4 Who should participate in an RSA

RSAs should not be performed by one individual person, but should be performed by a team of typically three to five individuals with expertise relevant to the project. Small teams typically provide the greatest ability for team members to significantly contribute insights during the audit but may be limited in experience with the various areas of expertise. While three members may be adequate for some projects, that size may be insufficient for larger, more complex projects. The best practice is to have the smallest team that brings all the necessary knowledge and experience to the process.

The facility or project owner should select an RSA team that possesses a combined set of skills that address the most critical aspects of the project. An audit team should have an individual knowledgeable of the project location and individuals with expertise in design, traffic, maintenance, construction, and safety. Other team members can include local officials, enforcement personnel, first-responders, human factors) specifically tailored to the project.

For RSAs involving particular user groups, specialists in those fields should be involved. For example, during a transit RSA, potential RSA participants could include representatives from the transit agency involved in stop maintenance or stop planning and transit drivers, as they may be able to provide the RSA team with a unique perspective.

Within the team, there should be a leader who is thoroughly knowledgeable in the RSA process, capable of directing the other team members, and able to communicate

effectively with the design team and the project owner. One of the main roles of the RSA leader is to provide the proper information to the RSA team (scoping or planning the study, plans, aerial photos, environmental documents, etc.) and to arrange for objective and careful consideration of the RSA team input. Requests for information from the RSA team must be expedited, and procedures must be established regarding how the input of the RSA team will be incorporated back into the project.

3 | When is an RSA Required?

Agencies should always consider conducting field assessments when identifying and addressing safety concerns. The field assessment can be informal and include walking or driving through the site to view general operations and conditions. However, in certain circumstances, a more thorough study is needed. RSAs are required under the following conditions:

1. Each VDOT District must perform at least four (4) RSAs per fiscal year.
2. For local agencies applying for HSIP funds, RSAs are not required as part of the application, but VDOT reserves the right to request an RSA at a later point in the project life cycle.

If your agency is interested in conducting an RSA and would like training or assistance, please contact your local VDOT local liaison.

3.1 Submission Requirements

For each RSA performed, the following are submission requirements:

- **Appendix C: RSA Field Review Checklist** – This must be used during the field review to prompt team members about potential safety issues. Users should check off items during the field review and the completed checklist should be submitted with other required materials.
- **Appendix D: RSA Report Template** – This template should be completed and the final RSA report should be submitted to VDOT.
- **Appendix E: Sample RSA Response Chart** – This chart should be filled out to reflect the RSA findings.

The three submission requirements can be downloaded from VDOT traffic engineering HSIP [website](#). All submissions must include the lead agency contact information and must be submitted both as an electronic version emailed to HSIPProgram@viriniadot.org and a hardcopy mailed to the following address:

Mailing address:
Attn: BPS Improvement Proposal
Mr. Raymond Khoury, P.E.
State Traffic Engineer
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219

4 | RSA Resources

In addition to the information and sample documents provided in this guide, there are many State and Federal resources available for conducting RSAs. The following is a sample of some of the resources that may be helpful when planning and conducting an RSA.

Virginia Resources

VDOT FR300 Crash Reports

Virginia Supplement to the 2009 Manual on Uniform Traffic Control Devices:

http://www.virginiadot.org/business/virginia_mutcd_supplement.asp

Virginia Roads: <http://virginiaroads.org/>

Outside VDOT Traffic Engineering Website: <https://outsidevdot.cov.virginia.gov>

VDOT Traffic Operations and Safety Analysis Manual (TOSAM):

<http://www.virginiadot.org/business/resources/TOSAM.pdf>

Federal Resources:

FHWA Road Safety Audit Program: <https://safety.fhwa.dot.gov/rsa/>

FHWA Road Safety Audit Guidelines:

https://safety.fhwa.dot.gov/rsa/guidelines/documents/FHWA_SA_06_06.pdf

FHWA Pedestrian Road Safety Audit Guidelines and Prompt Lists:

<http://www.pedbikeinfo.org/cms/downloads/PedRSA.reduced.pdf>

FHWA Bicycle Road Safety Audit Guidelines and Prompt Lists:

https://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa12018/fhwasa12018.pdf

FHWA Motorcycle Road Safety Audit Case Studies:

<https://safety.fhwa.dot.gov/rsa/resources/docs/fhwasa16026.pdf>

FHWA Improving Access to Transit Using Road Safety Audits: Four Case Studies:

<https://safety.fhwa.dot.gov/rsa/resources/docs/fhwasa16120.pdf>

Crash Modification Factor Clearinghouse: <http://www.cmfclearinghouse.org/>

Appendix A: Potential Data for Conducting RSAs

Traffic Volume Data (minimum 1 year)

Average vehicular daily traffic (ADT)

Truck and other heavy vehicle usage (usually expressed as percentage of traffic)

Intersection turning movement counts

Non-motorized volumes (adult/child, direction of travel, etc.)

Crash Data (minimum preceding 3 years)

Individual police crash reports

Reference/summary crash statistics

Crash maps

Collision diagrams (usually developed by the RSA team)

Other Pertinent Information

Aerial photographs of study area

Location of pedestrian and cyclist generators (such as schools, transit stops, recreational facilities)

Previous safety study reports (if applicable)

Inventory of existing cycling and pedestrian facilities (e.g., sidewalks, curb ramps, trails, greenways, etc.)

Locations of schools

Existing/future roadway, signing and marking, and signalization plans

Transit route information, including ridership (if available)

Vehicle speed data (speed limits and measured speeds)

School bus/walking route (safe routes to school) information

Agency and citizen correspondence pertinent to study area

Future development plans (including bicycle/greenway/trail/pedestrian master plans)

Complete streets policies

Roadway design standards

Appendix B: Sample RSA Agenda

The duration of an RSA can vary depending on the scope of the project. This sample one-day agenda reflects Steps 3-6 of the RSA process. Based on this agenda, initial findings would have to be presented to the roadway owner at a later date.

One-Day RSA Agenda

9:00 am – 11:00 am	RSA Kick-off Meeting* <ul style="list-style-type: none"> • <i>Introduction of stakeholders and RSA team</i> • <i>Introduction to the RSA process</i> • <i>Overview of project characteristics</i>
11:00 am – 12:00 pm	Site Review**
12:00 pm – 12:45 pm	Break for lunch
1:00 pm – 3:00 pm	Site Review**
3:00 pm – 5:00 pm	RSA Team Discussion** <ul style="list-style-type: none"> • <i>Discuss field observations</i> • <i>Discuss safety concern and potential countermeasures</i> • <i>Initial prioritization of safety issues</i>

Key:

*General meeting – all need to attend, especially “roadway owners” (i.e., persons responsible for development of plans and/or facility owner)

**RSA team activity – all who are interested in participating in the site visits and developing suggestions (excluding facility owner)

Appendix C: RSA Field Review Checklist

The following checklists are intended for use in the field. These checklists are not all-inclusive but rather, are intended to help to prompt RSA participants about potential safety issues. These checklists can be downloaded as a standalone file from the VDOT traffic engineering HSIP [website](#).

Road Alignment and Cross Section	Auxiliary Lanes	Intersections	Interchanges
<ul style="list-style-type: none"> <input type="checkbox"/> Visibility, sight distance <input type="checkbox"/> Design speed <input type="checkbox"/> Speed limit/speed zoning <input type="checkbox"/> Passing zones <input type="checkbox"/> 'Readability' (perception) of the alignment by drivers <input type="checkbox"/> Curves, superelevation <input type="checkbox"/> Lane, shoulder, and roadway widths <input type="checkbox"/> Shoulders (presence, width, type) <input type="checkbox"/> Cross slopes <input type="checkbox"/> Side slopes <input type="checkbox"/> Drainage <input type="checkbox"/> Median presence/type 	<ul style="list-style-type: none"> <input type="checkbox"/> Presence/absence <input type="checkbox"/> Tapers <input type="checkbox"/> Signs and markings <input type="checkbox"/> Traffic (through/turning) 	<ul style="list-style-type: none"> <input type="checkbox"/> Location and type <input type="checkbox"/> Visibility, sight distance <input type="checkbox"/> Signing and marking <input type="checkbox"/> Layout and 'readability' (perception) by drivers <input type="checkbox"/> Pedestrians/bicyclist accommodations <input type="checkbox"/> Lighting (intersection, crosswalks) <input type="checkbox"/> Corning/turning radii <input type="checkbox"/> Channelized lanes (vehicle speeds, signage, pedestrian crossings) 	<ul style="list-style-type: none"> <input type="checkbox"/> Visibility, sight distance <input type="checkbox"/> Lanes, shoulders <input type="checkbox"/> Signing, marking, delineation <input type="checkbox"/> Pedestrians/bicyclists crossings <input type="checkbox"/> Lighting <input type="checkbox"/> Acceleration/deceleration lane lengths <input type="checkbox"/> Merging conflicts <input type="checkbox"/> Intersection control

Signs and Lighting	Marking and Delineation	Barriers and Clear Zones	Traffic Signals
<ul style="list-style-type: none"> <input type="checkbox"/> Lighting (presence, type, location, spacing) <input type="checkbox"/> Sign placement/clutter <input type="checkbox"/> Sign retroreflectivity/legibility <input type="checkbox"/> Sign supports <input type="checkbox"/> Wayfinding 	<ul style="list-style-type: none"> <input type="checkbox"/> Type (material, content, spacing) <input type="checkbox"/> Presence and quality of centerlines, edgelines, lane lines <input type="checkbox"/> Guideposts and reflectors <input type="checkbox"/> Curve warning and delineation 	<ul style="list-style-type: none"> <input type="checkbox"/> Presence of clear zones <input type="checkbox"/> Barriers (quality of existing, if they are needed) <input type="checkbox"/> End treatments/ Crash cushions <input type="checkbox"/> Pedestrian railing/channelization <input type="checkbox"/> Visibility of barriers and fences 	<ul style="list-style-type: none"> <input type="checkbox"/> Operations/phasing <input type="checkbox"/> Visibility <input type="checkbox"/> Placement of signal heads <input type="checkbox"/> Special issues (wind/weather) <input type="checkbox"/> Size and type <input type="checkbox"/> Pedestrian and Bicycle <input type="checkbox"/> ADA accommodations

Pedestrians and Bicyclists	Older Drivers/Pedestrians	Bridges and Culverts	Pavement
<ul style="list-style-type: none"> <input type="checkbox"/> Facilities (separated, buffered) <input type="checkbox"/> Crossings (presence, placement, spacing) <input type="checkbox"/> Ped/bike generators <input type="checkbox"/> Transit facilities <input type="checkbox"/> Pavement quality (cracking, smooth connections at joints/gutter pan) <input type="checkbox"/> Debris on road or separate facility <input type="checkbox"/> Parking placement relative to facilities/crossings <input type="checkbox"/> Drainage grate placement/design 	<ul style="list-style-type: none"> <input type="checkbox"/> Turning operations (receiving lane widths, radii) <input type="checkbox"/> Channelization, opposing left turn lanes <input type="checkbox"/> Sight triangles <input type="checkbox"/> Signing, marking and delineation <input type="checkbox"/> Traffic signals <input type="checkbox"/> Pedestrian crossings (length, walking speed) <input type="checkbox"/> ADA compliant facilities 	<ul style="list-style-type: none"> <input type="checkbox"/> Barriers <input type="checkbox"/> Pedestrian and recreational facilities, delineation <input type="checkbox"/> Weather considerations (freezing) 	<ul style="list-style-type: none"> <input type="checkbox"/> Pavement defects <input type="checkbox"/> Skid resistance <input type="checkbox"/> Ponding/icing/snow accumulation <input type="checkbox"/> Loose stones/material <input type="checkbox"/> Manholes

Parking	Provision for Heavy Vehicles	Other Safety Issues	Land Use and Access
<ul style="list-style-type: none"> <input type="checkbox"/> Type (parallel, head-in, back-in) <input type="checkbox"/> Proximity to intersection/crosswalk <input type="checkbox"/> Demand/turnover <input type="checkbox"/> Delineation 	<ul style="list-style-type: none"> <input type="checkbox"/> Pavement/shoulder quality <input type="checkbox"/> Intersection design <input type="checkbox"/> Lane width 	<ul style="list-style-type: none"> <input type="checkbox"/> Landscaping (placement/type) <input type="checkbox"/> Temporary features (pavement markings, barriers, signs) <input type="checkbox"/> Headlight glare <input type="checkbox"/> Roadside activities 	<ul style="list-style-type: none"> <input type="checkbox"/> Driveway entrances/placement <input type="checkbox"/> Driveways spacing and consolidation <input type="checkbox"/> Mid-Block median opening(s) <input type="checkbox"/> Land use/roadway compatibility (e.g. high speed roads through residential areas)

Appendix D: RSA Report Template

The following report template is intended to help practitioners document RSA findings. A word version of this template is available for download from the VDOT traffic engineering HSIP [website](#).

[Insert Location Name]
Road Safety Audit Report

[INSERT RSA DATES]

Prepared by

[Insert name and organization]

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Issue 1: [Insert the top priority concern] 3

Issue 2: [Insert second priority issue] 4

Issue 3: [Insert third priority issue] 5

Issue 4: [Insert fourth priority issue] 6

Issue 5: [Insert fifth priority issue] 7

Issue 6: [Insert sixth priority issue] 8

Issue 7: [Insert seventh priority issue] 9

Issue 8: [Insert eighth priority issue] 10

Issue 9: [Insert ninth priority issue] 11

Issue 10: [Insert tenth priority issue] 12

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APPENDIX A 15

INTRODUCTION

Background

[Provide information on why the RSA is being held here, how it ties into the RSA program, the objective of the RSA, a little bit of background information on the area]

RSA SITE LOCATIONS

[Provide a description and an overview map of the locations covered in the RSA.]

Geometric and Traffic Conditions

[Provide a description of geometric and traffic conditions for each of the roadways.]

Crash History

[Provide an overview of the crash data. This section helps to provide the context for the RSA, provides reasoning for choosing the RSA locations, and gives an indication of what some of the contributing crash factors might be.]

RSA TEAM

Attendees

[List attendees and organization]

Potential Partners not in Attendance

[List potential partners not in attendance such as, maintenance, law enforcement (state, local, etc.), representatives from state/county, local organizations]

ASSESSMENT FINDINGS

Positive Features

[Recognition of some of the positive features found during the RSA (safety edge, reflective treatments, etc.)]

RSA Team Prioritization of Issues

[At end of the RSA, the team should hold a preliminary findings meeting. During the meeting the team should identify/summarize the issues encountered in the field and then prioritize those. This section is the prioritized list of issues.]

Detailed Issues and Countermeasure Summary

The following section summarizes specific issues observed and discussed by the RSA team and discusses potential countermeasures to address these issues. Included in this summary is a discussion of crash modification factors related to the countermeasures.

Issue 1: [Insert the top priority concern]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • [Bulleted list of concerns and an explanation of why it is a concern.] • 	<p>Short Range –</p> <ul style="list-style-type: none"> • [Bulleted list of short range, intermediate range, and long range countermeasures to address the concerns listed to the left.] • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • • 	<p>[Include photos of safety concerns along with a description of the concern and the location the photo was taken.]</p>
<ul style="list-style-type: none"> • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	

Issue 2: [Insert second priority issue]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>

Issue 3: [Insert third priority issue]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>

Issue 4: [Insert fourth priority issue]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>

Issue 5: [Insert fifth priority issue]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>

Issue 6: [Insert sixth priority issue]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>

Issue 7: [Insert seventh priority issue]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>

Issue 8: [Insert eighth priority issue]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>

Issue 9: [Insert ninth priority issue]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>

Issue 10: [Insert tenth priority issue]

Specific Safety Concern	Suggested Improvements	Example of Issue
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>
<ul style="list-style-type: none"> • • • • 	<p>Short Range –</p> <ul style="list-style-type: none"> • • • <p>Intermediate Range –</p> <ul style="list-style-type: none"> • • • <p>Long Range –</p> <ul style="list-style-type: none"> • • • 	<p>[Insert Photos]</p>

Crash Modification Factors

[Use this section to describe and list appropriate crash modification factors)

Table 1. Crash Modification Factor (CMF) Summary.

Countermeasure	CMF (% Change in Crash Incidence)	Other Information
[Insert those countermeasures identified in the previous tables that have CMFs. See examples]	[Enter CMF from website (single number or range) and the percent change in crash incidence. See examples below]	[List what crash and area types the CMF's apply to. See examples below]

CONCLUSIONS

[Reiterate information about the RSA – where it was held, a summary of the crash data, how many and what issues were identified, some of the countermeasures identified and their CMF's, next steps.]

APPENDIX A

[May want to include additional or supplementary information in the appendix.]

Appendix E: Sample RSA Response Chart

As part of the formal response to this RSA, the following chart should be filled out to include all of the recommendations, action to be taken, cost estimate, and the responsible party. Examples have been provided below. This chart can be downloaded as a standalone file from the VDOT traffic engineering HSIP [website](#).

	Recommendation	Action	Cost Estimate	Responsible Party
Short-Term Improvements	<i>Trim vegetation</i>	<i>Reach out to property owner</i>	<i>\$500</i>	<i>Local agency</i>
Intermediate Improvements	<i>Pavement repair</i>	<i>To be conducted during next paving cycle</i>	<i>\$500,000</i>	<i>District office maintenance</i>
Long-Term Improvements	<i>Intersection redesign</i>	<i>Work with local agency to finalize design concept</i>	<i>\$1,000,000</i>	<i>District office</i>