South Carolina Department of Transportation

Engineering Directive

Directive Number: **ED-74** **Effective: July 25, 2018**

Subject: **Road Safety Assessment Project Prioritization Process**

References: **Section 57-1-370 of South Carolina Code of Laws, 1976, as amended; S.C. Code of Regulations 63-10, as amended**

Primary Department: **Traffic Engineering**

In 2007, the South Carolina General Assembly enacted Act 114. One of the landmark items in Act 114 was the requirement that the South Carolina Department of Transportation (SCDOT) establish a project prioritization process. In 2016, the General Assembly enacted Act 275. Act 275 eliminated some of Act 114's requirements but it retained the requirement for project prioritization. This requirement is codified in Section 57-1-370 of the South Carolina Code of Laws, 1976, as amended. Additional detail on the process is found in S.C. Code of Regulations 63-10, as amended.

This engineering directive details the process for prioritizing and selecting projects for **the Road Safety Assessment (RSA) Program** using objective and quantifiable criteria. A description of the RSA program process is referenced in appendix A of this directive. The process includes an analysis of up to five years of statewide crash data along all non-interstate highways. Crash data is divided into one mile segments over the entire non-interstate highway network.

SCDOT currently maintains approximately 41,500 miles of roadways. The purpose of this program is to achieve a significant reduction in traffic fatalities and serious injuries on our roadways through the implementation of infrastructure-related improvements.

Crash data is received from South Carolina Department of Public Safety (SCDPS) on a quarterly basis. SCDPS is the official custodian of the state's master crash data file.

Locations of crashes are recorded by the investigating officer on the collision report and SCDPS records the crash details. The crash data from SCDPS is imported into SCDOT's Safety Management Software (SMS), which provides the total number of fatalities and serious injury crashes along with associated crash factors within the above defined corridors.

The following **relevant** criteria will be used when identifying the RSA candidate list.

- **Public Safety** – The sole purpose and need of this program is to improve public safety by reducing the number and severity of highway related crashes.

- **Financial Viability** – Financial viability is based on the consideration of project cost in comparison to the six-year Statewide Transportation Improvement Program (STIP) budget. This information is used to determine the number of projects considered in the candidate pool.

- **Total Crashes** – The total number of crashes resulting in a fatality or serious injury within a selected corridor.

The RSA candidate list will be comprised of locations within the SMS database. Additional candidates may also be considered and evaluated based on submittals from either internal or external entities, but will be subject to the same safety project selection detailed below.

Criteria

A RSA candidate list will be developed by sorting the list of the one-mile segment lengths by highest crash total involving a fatal and/or serious injury. Financial viability will be used to determine the extent of the candidate list.

The final list will be prioritized based on the highest crash total of fatal and/or serious injury crashes. Final project list termini may be adjusted to include other segments from the ranked list that appear adjacent to the initial location.

The following Act 114 criteria were considered but deemed **not relevant** as they relate to this program category priority list, as they do not support the **purpose and need** of the RSA program.

- **Volume-to-Capacity Ratio** – Not relevant as part of the prioritization process since this criteria does not meet the program category “safety” purpose and need.

- **Truck Traffic** – Not relevant as part of the prioritization process since this criteria does not meet the program category “safety” purpose and need.

- **Pavement Condition** – Not relevant as part of the prioritization process since this criteria does not meet the program category “safety” purpose and need.

- **Environmental Impact** – Not relevant as part of the prioritization process since this criteria does not meet the program category “safety” purpose and need.

- **Potential for Economic Development** – Not relevant to the prioritization process since this program category consists of the rehabilitation and reconstruction of existing roads.

- **Alternative Transportation Solutions** – Not relevant as part of the prioritization process since this criteria does not meet the program category “safety” purpose and need.

- **Consistency with Local Land Use Plans** – Not relevant to the prioritization process since this program category consists of the rehabilitation and reconstruction of existing roads.

Upon completion of the analysis, the prioritized list of road safety assessment projects will be presented to the SCDOT Commission for approval.

All data used for project prioritization will be kept on file as required by Departmental Directive 51 and SCDOT's record retention schedules.

Submitted by: Rob Perry, P.E.
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Recommended by: Andrew T. Leaphart, P.E.
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Approved by: Leland Colvin, P.E.
Deputy Secretary for Engineering

History: Issued on July 25, 2018

APPENDIX A
FOR ENGINEERING DIRECTIVE 74

SCDOT Road Safety Assessment Program Process

INTRODUCTION

Road Safety Assessments (RSAs) are identified as an effective strategy to identify potential safety improvements for many of the state's Strategic Highway Safety Plan emphasis areas, such as intersection and roadway departure crashes. SCDOT's 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. The identification of safety problems within candidate segments and the development of countermeasures to address observed safety issues are critical components to the overall success of the HSIP program. HSIP funds have been allocated to improve the candidate RSA segments with the most injuries and deaths from crashes. This document describes the RSA process.

RSA DESCRIPTION AND BACKGROUND

A road safety assessment is defined as a formal examination of an existing or a future highway or traffic project in which a team of independent and multidisciplinary examiners report on the segment's safety performance. The overall objective of the RSA is to identify potential roadway safety issues for roadway users and to consider measures to eliminate or mitigate the safety deficiencies. The process can be best applied to roadway segments of one (1) to three (3) miles in length and is used on rural as well as urban roads.

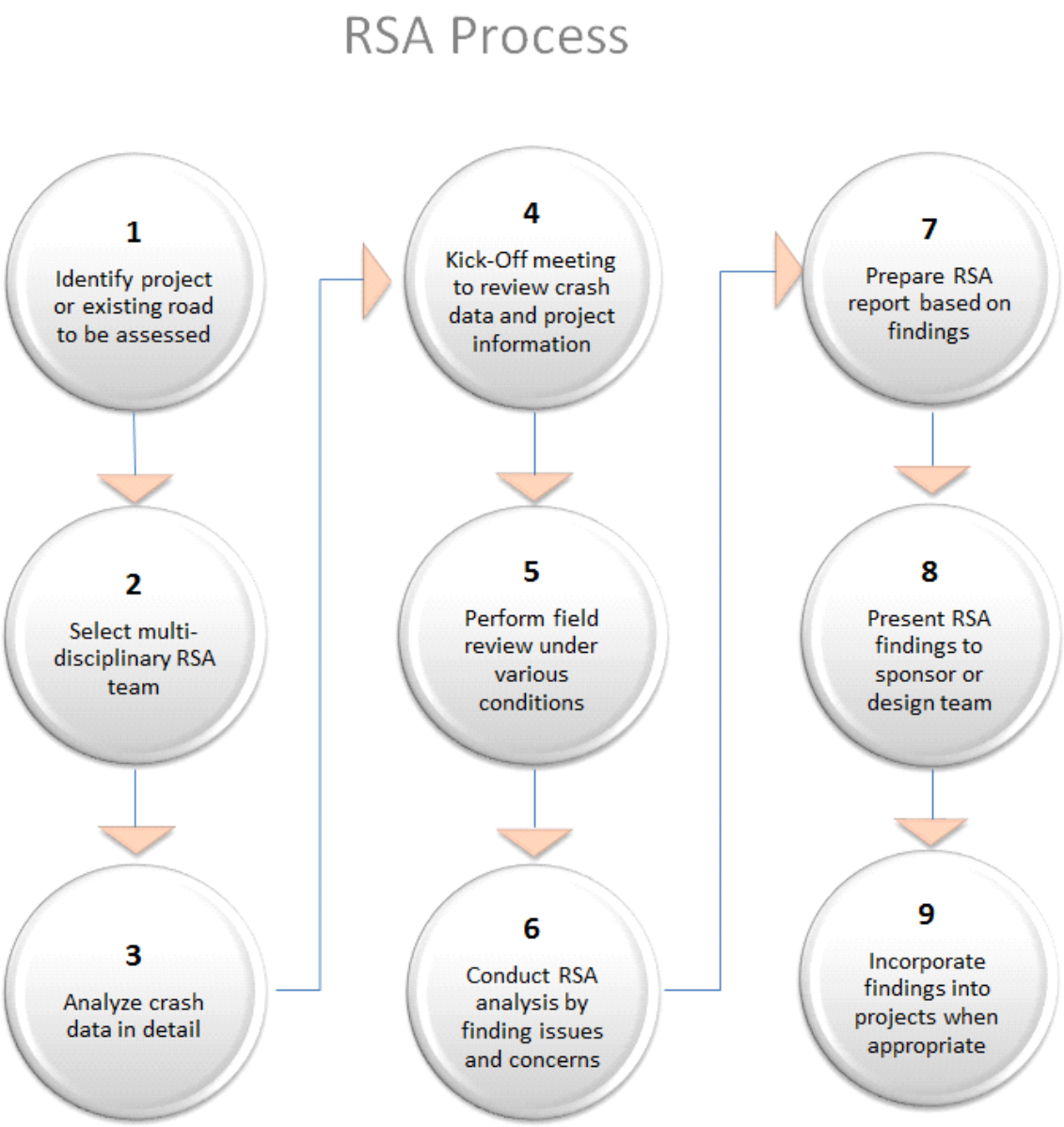
SCDOT's focus will be conducting RSAs on existing roadways, typically one (1) to three (3) miles in length with locations selected as described in Engineering Directive 74. The reviews will consider the roadway and traffic control elements in the context of the multiple human, vehicle, and roadway causes for the crashes that have occurred and the events leading up to, during, and after the collision.

RSA PROCESS

The RSA process occurs after potential segments have been screened to determine the priority locations by the SCDOT Highway Safety Office. Safety office staff will be expected to play a major role in the assessment of safety and operations of the corridor. Highway Safety Office staff will also be responsible for conducting the crash data analysis and reviewing the RSA to allocate funding to the proposed safety improvement projects that are eligible.

Figure 1 identifies the nine major steps of the process used by SCDOT to conduct the RSA.

Figure 1


RSA Process
1
Identify project or existing road to be assessed
2
Select multi-disciplinary RSA team
3
Analyze crash data in detail
4
Kick-Off meeting to review crash data and project information
5
Perform field review under various conditions
6
Conduct RSA analysis by finding issues and concerns
7
Prepare RSA report based on findings
8
Present RSA findings to sponsor or design team
9
Incorporate findings into projects when appropriate