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 safety intersection projects using objective and quantifiable criteria.

SCDOT currently maintains approximately 41,500 miles of roadways and 100,000 intersections. Safety projects are administered through a federally approved and funded Highway Safety Improvement Program (HSIP). 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. Volume data is generated from SCDOT Road Data Services.

Locations of crashes are recorded by the investigating officer on the collision report and SCDPS identifies the crash details. The crash data from SCDPS is imported into SCDOT’s Roadway Information Management System (RIMS) software, which calculates crash rates, crash frequency, and provides the total number of fatalities and serious injuries at the specified location. RIMS requires a minimum of five crashes over a five-year period for entry into the system.

The following relevant criteria will be used when identifying the intersection safety 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.

- **Average Daily Traffic (ADT)** – ADT is the average traffic volume per day. The ADT is used to calculate crash rate.
Financial Viability – The 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. It is also used to determine if a project is eligible for the program based on a benefit cost ratio greater than 1.0.

Crash Frequency – The total number of crashes linked to an intersection over a period of time.

Crash Rate – Crash rate is calculated using the number of crashes linked to the intersection divided by the exposure, which is calculated based on the total entering volume for the intersection expressed as crashes per million entering vehicles.

Severity Index = Total Fatal Crashes × 2 + Total Severe Injury Crashes

The intersection safety candidate list will be comprised of locations within the RIMS database. The RIMS candidate list will consist of the top 200 locations from the Criteria 1 list and the top 100 locations from the Criteria 2 list to create the final candidate list. 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 analysis detailed below.

Criteria 1

The top 200 locations with a minimum crash frequency of 20 and a minimum crash rate of 2.5 crashes/million entering vehicles (MEV).

Criteria 2

The top 100 locations with the highest severity index.

The final candidate list is sorted by crash frequency and further analyzed by safety engineers for consideration. The safety project analysis includes an engineering study that includes validation of the crash data, assessment of field conditions, and an evaluation of the effectiveness of all potential countermeasures to ensure maximum safety benefit is obtained for the amount of funds invested.

Candidates deemed not financially viable are eliminated from the prioritized list. Partial funding from other sources such as councils of governments (COG), county transportation committees (CTC), and/or county/city governments may be considered in the cost benefit calculation. The candidate list is further screened to ensure no other improvements are planned for the area.

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 safety intersection 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 safety intersection 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.

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