South Carolina Department of Transportation

Engineering Directive

Directive Number: ED-71   **Effective: October 1, 2019**

Subject: **Intersection Safety 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 Intersection Safety Program** using objective and quantifiable criteria.

SCDOT currently maintains approximately 41,500 miles of roadways. 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 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 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** – 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.

- **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.

- **Total Fatal Crashes + Total Injury Crashes (F&I)** – Crashes within the SMS database that resulted in a fatality or injury.

- **Total Fatal Crashes + Total Injury Crashes (F&I) Percentile** – Percent of crashes within the SMS database that resulted in a fatality or injury.

The intersection safety 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 analysis detailed below.

Criteria

The candidate list will be developed by including all intersections that have a fatal and injury percentile (F&I %) greater than the statewide average for locations within the SMS database.

The final candidate list is sorted by crash rate 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 intersection safety 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.

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- **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 intersection safety 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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