South Carolina Department of Transportation

Engineering Directive

Directive Number: **ED-75** **Effective: November 16, 2021**

Subject: **Vulnerable Road User 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 Vulnerable Road User Safety Program** using objective and quantifiable criteria. The process includes an analysis of up to five years of statewide crash data along all non-interstate highways. Crash data for all non-interstate highways is sorted by route and county to produce the vulnerable road user safety corridor candidate list.

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 vulnerable road user 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.

- **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 Pedestrian and Bicycle Crashes** – Crashes that involve a pedestrian and/or a bicycle.

- **Crash Density** – The total number of bicycle/pedestrian crashes divided by the corridor length.

The vulnerable road user 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 detailed below.

Criteria

A vulnerable road user safety candidate list was developed through analysis within SCDOT's Pedestrian and Bicycle Safety Action Plan (PBSAP). A geographical information systems (GIS) analysis was conducted using the latest five years of statewide total pedestrian and bicycle crash data. The GIS analysis consisted of a cluster analysis to determine the density of crashes along roadway segments ranging in length for 0.25 to 1.0 miles with at least five (5) reported crashes. Project lengths were further adjusted based on existing crash patterns and logical termini.

Financial viability will be used to determine the extent of the candidate list. These candidates will be further analyzed by safety engineers for consideration. Candidates will be selected for projects based upon the availability of engineering solutions to reasonably reduce crashes occurring within the corridor. Candidates may be eliminated from selection for various reasons such as overlap with an active project from another funding source, previously reviewed and eliminated as a candidate within the past year, or no reasonable engineering solution available.

The final list will be prioritized utilizing weighted crash severity to identify locations, and then ranked based upon total pedestrian and bicycle crashes and crash density.

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 Vulnerable Road User 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.

- **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 vulnerable road user 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.

Submitted by: Rob Perry, P.E.
Director of Traffic Engineering

Recommended by: Andrew T. Leaphart, P.E.
Chief Engineer for Operations

Approved by: Leland Colvin, P.E.
Deputy Secretary for Engineering

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