

SAFETY SCORES FOR PRIORITIZATION 3.0

The calculation of safety scores varies depending on whether the project is located along a roadway segment or at an intersection:

Segments → (Crash Density x 33%) + (Severity Index x 33%) + (Critical Crash Rate x 33%)

Intersections → (Crash Frequency x 50%) + (Severity Index x 50%)

Safety scores for segment projects will be calculated automatically in the SPOT On!ine tool, based on a GIS safety score data layer provided by the Mobility and Safety Division. This layer contains the Crash Density, Severity Index, and Critical Crash Rate scores for all segments on state-maintained roadways (each safety component is scored using a 0-100 point scale). Scores are based on a 2010-2012 crash data.

Intersection safety scores will be calculated manually by the Mobility and Safety Division.

Definitions for each safety component are as follows:

- **Crash Density:** Number of reported crashes per mile.
- **Severity Index:** Locations with a high severity index have higher than average injury rates and/or more severe injuries. This index uses the reported “Crash Severity” data described below. NCDOT has established “Equivalent Property Damage Only” (EPDO) coefficients which are used to compare crash severity types among each other. One “B-injury” crash or “C-injury” crash is equivalent to 8.4 “PDO” crashes. One “K-injury” crash or “A-injury” crash is equivalent to 76.8 “PDO” crashes. The severity index of a location is equal to the total EPDO divided by the number of crashes.

Crash Severity: Crash severity is reported based on the “KABCO” scale. The crash injury status is the most severe injury to a person involved in the crash.

K-Fatal – A death results from injuries within 12 months after the crash.

A-Disabling – Prevents the person from performing normal activities for at least one day.

B- Evident – Obvious injury.

C- Possible – No visible injury may have momentary loss of consciousness.

O- Property Damage Only (PDO).

- **Critical Crash Rate:** A statistically derived number, which is often used a screening tool to identify locations where crash rates are higher than should be expected for a given facility type and where further engineering investigations may be considered. Crash Rate is defined for a section of highway as the number of crashes per 100 million vehicle miles travelled.
- **Crash Frequency:** The number of reported crashes during a given timeframe.