

Highway Safety Segment Report

LRS Route: ML10B From RM 108.130 to RM 117.130

The Wyoming Safety Index - Explanations

Purpose of the Safety Index

- Support WYDOT in the effort to reduce the frequency and severity of crashes
- Help focus attention on the areas of the highway system that need the most attention with respect to safety
 - Put special emphasis on the more severe crashes (involving fatality or severe injury), which are more disruptive to society
- Allow meaningful comparisons
 - From year to year for the state
 - From year to year for specific areas (districts, and potentially counties or cities)
 - Comparing a stretch of roadway with the statewide average for the same kind of roadway

The Safety Index Scoring

- **Safety Index Score:** The Safety Index score for that segment of roadway
 - The score is given in Critical Crashes (equivalent) / Mile / Year
 - The score is an indication of the number and/or severity of the crashes that have occurred on that segment.
- **Safety Index Compare:** The ratio of the segment's score over the statewide average for the same Facility Type.
 - A ratio lower than 1 means that the segment has fewer and/or less severe crashes than the statewide average
 - A ratio greater than 1 means the segment has more and/or more severe
- **Safety Index Rating:** There are four rating levels that indicate how a segment's score compares to the statewide distribution for the same Facility Type.
 - 1 - The segment has much fewer crashes and/or less severe crashes than average
 - 2 - The segment has somewhat fewer crashes and/or less severe crashes than average
 - 3 - The segment has somewhat more crashes and/or more severe crashes than average
 - 4 - The segment has much more crashes and/or more severe crashes than average

Main Features of the Safety Index

- Defines similar roadway sections
 - Uses three main factors to define a section type
 - Flat / Rolling, or Mountainous Terrain
 - Urban or Rural
 - Interstate, 2-lane or more than two lanes
 - These three factors follow national guidelines (e.g. from the recently published Highway Safety Manual)
- Uses 5 years of history
 - Looking for those locations which consistently have the most (and most severe) crashes
- Uses three severity categories:
 - Critical - involving a fatality or incapacitating injury
 - Serious - involving an injury that is not incapacitating
 - Damage - not involving an injury

The following terms are associated with the Safety Index information:

- **LRS Route:** A particular roadway is identified by an LRS Route ID (a unique identifier for the roadway).
- **From Milepost and To Milepost:** A particular segment of roadway is defined by the beginning and ending mileposts (or reference markers) along the roadway.
- **Highway Names:** The highway designators that are used in the segment of roadway
- **Length:** The length of the segment in miles
- **District:** The district in which the segment resides
- **Facility Type:** Is a description of the roadway type

Points to Remember

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- Crashes are weighted by the most severe injury that occurred in the crash
 - If more than one person was injured, only the most severe injury is counted
 - National trend is to move away from crash rates (using MVMT), which can be misleading
- Crashes are not readily predictable; causes vary, and are not always associated with specific causes
 - There is a large random component to their occurrence
 - A single crash - however horrific it may be - does not necessarily indicate a problem area.

Technical Details

- The Safety Index Score for a stretch of road is calculated as follows:
 - A segment of roadway is defined by the route, from milepost, and to-milepost
 - The five year crash history is obtained for that segment of roadway
 - The each crash is given a weight according to its most severe injury
 - Those weighted counts are totaled
 - The total is then divided by the length (in miles) of the segment
 - Then divided by the 5 years
 - Then divided by the weight of a Critical crash
 - The resulting score is an equivalent critical crashes per mile per year for that segment
- The Safety Index Rating compares a segment's Safety Index Score with all sections of the same Facility Type
 - All sections of a given Facility Type are divided into quartiles from their lowest to highest Safety Index Score
 - Determine into which quartile the Safety Index Score for a given segment falls.