



Iowa Department of Transportation

2009 5 PERCENT MOST SEVERE SAFETY NEEDS REPORT

Background

Section 1401 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) amended Section 148 of Title 23 USC to create a new Highway Safety Improvement Program (HSIP) as a “core” Federal Highway Administration program with separate funding. The purpose of the HSIP is to reduce traffic fatalities and serious injuries on public roads. As part of the new HSIP, states are required to submit an annual report describing not less than 5 percent of their highway locations exhibiting the most severe safety needs. The intent of this provision is to raise public awareness of highway safety needs and challenges in the states.

This report must include an assessment of:

- potential remedies to hazardous locations identified;
- estimated costs associated with remedies; and
- impediments to implementation other than cost.

Discussion

Highway crashes are very complex. Contributing factors can include a roadway’s design, pavement conditions (e.g. rain, snow and ice), a vehicle’s mechanical condition (e.g. tires, brakes, lights), a driver’s behavior (e.g. speeding, inattentiveness and seat belt usage), as well as the driver’s condition (e.g. alcohol use, age-related conditions, physical impairment). In fact, the driver’s behavior and condition factors are the primary cause in an estimated 67 percent of highway crashes and a contributing factor in an estimated 95 percent of all crashes.

As such, highway safety needs go beyond just physical improvements to a specific roadway or intersection, and include changes to driver behavior. These are best addressed with a multi-disciplinary approach using engineering, enforcement, emergency response, and education strategies.

Iowa’s most severe safety needs

Based on an analysis of Iowa’s 2001–2007 fatal and major injury crashes, Iowa’s most severe safety needs are related to crashes involving:

- intersections;
- single vehicles running off the road;
- vehicles crossing the medians on freeways;
- unbelted drivers and passengers;
- impaired drivers; and
- speeding.

The analysis following this discussion identifies the 5 percent of Iowa's most severe safety needs in each of the areas listed above.

Historically, the Iowa DOT's intersection "Safety Candidate List" identified the 200 highest ranked intersections relative to crash history. Iowa's 5 percent most severe intersection safety needs are the highest 5 percent of these intersections (10 intersections). There are more than 100,000 miles of public roads in Iowa. Candidate roadway safety projects are the 5,000 miles of roadway with the greatest crash history. Therefore, Iowa's 5 percent most severe corridor safety needs are 5 percent of this 5,000 miles (250 miles).

Iowa, like many low populated rural states, has relatively low traffic volumes on most of its 113, 836 miles of public roads. As such it requires crash data from a large number of years to confidently identify locations with high concentrations of fatal and major injury crashes. This FY 2009 5 percent most severe safety needs report is based on seven years of crash data (2001-2007). It is the Iowa Department of Transportation's goal to base future reports on ten years of crash data. Our crash data prior to 2001 is not of sufficient quality to use in this annual analysis and report.

Proposed Improvements and Schedules

In establishing engineering, education, enforcement, and emergency response priorities, state agencies consider factors beyond those depicted in this report. For instance, decisions regarding any roadway or intersection improvements are based on detailed engineering studies that consider the strategies most appropriate for site-specific conditions, as well as the cost and anticipated effectiveness of those improvements. Scheduling of these improvements is also contingent upon the availability of highway safety improvement funds.

The following pages detail Iowa's most severe 5 percent safety needs for Federal Fiscal Year 2010. These initial analyses are based on 2001-2007 crash and roadway data bases. A review of each individual crash report will be necessary to ascertain the appropriateness of each intersection or corridor in this report.


Steve Gent, P.E. 9/24/09
Director Date
Office of Traffic and Safety