Evaluation of Mitigation for Safety Concerns on Low Volume, Unpaved Rural Roads in Iowa

The State of Iowa boasts a transportation system of over 114,000 miles of roadway, most of which are within the jurisdiction of local agencies and the majority of which are unpaved with a granular aggregate surface. Recent statistics have shown that approximately half of all vehicle crashes, including those resulting in deaths or serious injuries occur on these rural local roadways. In contrast however, almost all safety emphasis and safety improvements have been invested in the system of paved roadways in Iowa, those under the jurisdiction of the Iowa Department of Transportation as well as cities and counties.

In addition to an extensive roadway system, the State of Iowa also has developed and maintained a comprehensive crash database, recording all reportable crashes on all public roads in the state over many years of history. While many other states compile and maintain crash records for the higher volume roadways, none can compare with Iowa on lower volume roads, especially those unpaved. Using these data, the Institute for Transportation at Iowa State University completed research project titled “Safety Analysis of Low Volume Rural Roads in Iowa” in 2010. One of the findings from that analysis was that a significantly higher frequency and rate of crashes were recorded on unpaved rural roads with traffic volumes higher than 100 vehicles per day.

Using that knowledge and with invaluable cooperation of the local agencies involved, the subject research examined a small sample of this limited mileage roadway type to study crash characteristics and, using an multi-disciplinary approach, develop mitigation to address frequent crash causes and types. While the crash data yielded important information, a proactive approach was also employed to select and employ crash mitigation options, including low cost engineering improvements, enhanced law enforcement efforts, and, where applicable, visits with local school officials and driver education instructors in an effort to raise safety awareness among younger, inexperienced drivers. Public information efforts may also prove a valuable asset in raising awareness with all drivers of crash history on specific roadways and efforts to address those safety concerns. While results of these efforts cannot be fully analyzed for several years, due to the low volume of traffic involved, knowledge of these initiatives can be a valuable asset for low agencies for improving safety on low volume unpaved roads within those jurisdictions.