

A PARTNERSHIP APPROACH MOVES MINNESOTA TOWARD ZERO DEATHS

MINNESOTA DEPARTMENT OF TRANSPORTATION (MnDOT) AND THE DEPARTMENT OF PUBLIC SAFETY (DPS)

Objective

Minnesota is moving “toward zero deaths” on the State’s roads and highways through a shared vision between the MnDOT and DPS. In addition to these two agencies, the Minnesota State Patrol, Federal Highway Administration, and the Center for Transportation Studies at the University of Minnesota also participate in this initiative (<http://www.tzd.state.mn.us>). The goals are to raise awareness of traffic safety issues and to develop tools that can be used to reduce the number of deaths and injuries resulting from traffic crashes in the State. This partnership approach also uses data to identify both behavioral and engineering solutions and allows each department to combine their individual skills and resources, thereby strengthening and expanding the overall safety program.

Approach

The approach for this program is to combine engineering countermeasures with behavioral solutions. The following information describes how Minnesota is specifically accomplishing this goal. Each year the DPS Office of Traffic Safety (OTS) produces the Minnesota Motor Vehicle Crash Facts report, which summarizes information on crashes including who, what, where, and why. The MnDOT/DPS collaboration uses these data to determine the best behavioral and engineering solutions for targeting resources at the most serious problems and allowing a thorough evaluation of the impact.

One example where this approach has been very successful is the Highway Enforcement of Aggressive Traffic (HEAT) program. When the State Legislature raised the speed limit for all roads, safety officials at DPS and MnDOT looked at the crash data and found roads where a 55 to 60 mph speed limit was appropriate but also where a lack of enforcement was leading to excessive speeds and higher crash rates.

These roads were targeted for more intensive enforcement which led to a decrease in the average speed of all vehicles, and a dramatic decrease in drivers exceeding 70 mph. When the HEAT program was implemented in September 2005, fatalities were running seven to 10 percent ahead of the previous year. By the end of 2005, the rate had dropped to one to two percent below the previous year.

Increased enforcement is not the only example of using data to select a specific countermeasure. Public information efforts also have been important. Radio spots, tailored to reach 18- to 34-year-old males, were developed because this age group showed high rates of alcohol-related fatalities.

Regionalization is another initiative that has emerged from an evaluation of crash data. Annual fatalities in the State have decreased from a high of around 650 to 560, but have remained fairly stagnant at that level for some time. While the aggregate number is high, most counties in the State may have only one or two fatalities each year making it difficult for officials to see opportunities for improvement. To counter this impression, the State combined counties into regional organizations where the overall number of fatalities is higher. In southeast Minnesota, for instance, 11 counties were combined into a regional group where officials could review the data and see a pattern among the 50 to 60 fatalities occurring each year. In the year and a half that this southeast region group has been meeting, they have used the data to focus their efforts on three areas: young drivers, safety belt use, and crashes that occur between 3:00 and 7:00 p.m.

“When you take a long view, things are improving. Cars are safer, roads are better, and 84 percent of the population now buckles their safety belts when they drive. Nevertheless, it’s hard to be complacent about 560-some deaths on our highways.”

*Kathryn Swanson, Director,
Minnesota Department
of Public Safety*

To address these problems, the southeast region has placed chevrons along certain roadways to reduce run off the road crashes, and an educational campaign, with the theme, “Dying to Get Home,” has been developed to address the high number of afternoon crashes. The primary performance measures have been the number of fatalities and injuries, but the southeast group also monitors safety belt use and, to some extent, examines the number of enforcement citations issued.

Resources

The primary impact of improved collaboration has been a broader view of safety that has enabled behavioral and engineering resources to be used more effectively. In addition, joint efforts have led to the development of tools that can be easily used by local officials to identify problems. One innovative tool is the “Crash Rate Calculator.” Using the number of fatal crashes, the level of severity for injury crashes, the number of property damage crashes, and the average number of vehicles, the tool calculates a crash rate, severity rate, crash density, and a crash cost for both intersections and road segments. This information is invaluable to officials who must determine where to focus resources.

A simple version that provides only crash rate information is shown in Figure 1 for intersections. These tools, along with the Minnesota Motor Vehicle Crash Facts report, are used by local agencies and DOT offices to identify hazardous intersections and roadway segments.

Figure 1. Crash Rate Calculator

Intersection Crash Rate	
Input # of Crashes at Intersection	
Input Average Daily Traffic for Intersection	
Input Analysis Period (in years)	

* Average number of vehicles entering intersection can be calculated by adding ADTs for all of the intersection legs, and dividing by 2. This assumes that directional split of the roadway for the average day is 50/50.

Intersection Crash Rate = per million entering vehicles

To access this calculator, visit http://www.dot.state.mn.us/trafficeng/safety/crash_simple.htm.

Outcomes

The most significant outcome has been improved cooperation and understanding between the engineering and behavioral sides of safety. In addition to this more comprehensive approach to safety, the agencies involved in the effort work together on projects, host conferences, provide grant opportunities, and offer resources such as media materials including draft press releases and public service announcements on a variety of topics for use at the local level.

According to the Minnesota Motor Vehicle Crash Facts 2005, traffic deaths decreased by 1.4 percent in 2005, which represents a 14 percent decrease since 2003. These figures bring Minnesota’s crash rate to one fatality (0.99) per 100 million vehicle miles travel, a figure below the national average of 1.46. In 2005, eight counties recorded no traffic fatalities and 10 counties had only one fatality. As of summer 2006 fatalities are running nearly seven percent lower than for the same period in 2005.

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Best practices are being identified and documented by the
 Transportation Safety Planning Working Group
 (TSPWG). For more information go to tsp.trb.org or
www.fbwa.dot.gov/planning/SCP.

