GPCAH study links state policies on lighting and marking with farm vehicle crashes

TYPICAL LARGE FARM EQUIPMENT ON A RURAL ROADWAY

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The Problem

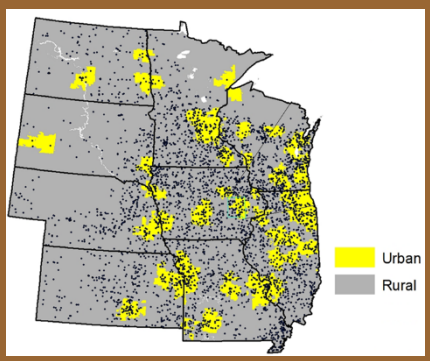
Crashes involving large, slow moving farm vehicles or equipment are an injury risk for all roadway users. The upper Midwest and Great Plains states, which comprise strong agricultural sectors, average over 1,100 reported motor vehicle crashes involving farm equipment each year. Farm vehicle-related crashes result in twice as many fatalities as other motor vehicle crashes, and about one third of these roadway crashes result in an injury to at least one party. The risk of injury or death is much higher for the occupants of the roadway vehicle than for those in the farm vehicle. Understanding critical factors associated with these crashes is important to identify an effective prevention strategy.

Activity

In collaboration with Departments of Transportation of nine states in our region (IA, IL, KS, MN, MO, NE, ND, SD, and WI), GPCAH researchers examined risk factors associated with crashes involving farm vehicles that occurred in 2005-2010. Crash information by state, collision type, roadway type, and driver characteristics were evaluated.

Impact

The Farm Equipment Crash Study was the first scientific evaluation of lighting and marking policies on safety outcomes. It found strong evidence that lighting and marking policies closely aligning with standards developed by the American Society of Agricultural and Biological Engineers (ASABE) were associated with a significant reduction in farm equipment roadway crashes. The *Des Moines Register* and the *Minneapolis Star Tribune*, among others, featured this study. The GPCAH generated public service announcements, videos, posters, and fact sheets to improve vehicle lighting and marking and to improve slow moving vehicle awareness of the general public.



30% OF FARM EQUIPMENT CRASHES OCCUR IN URBAN ZIP CODES

Over 500 farmers received information on improving visibility on roads and on why and how to conform to ASABE standards.

Reflective marking kits were provided to an additional 300 farmers who identified the need to increase visibility of tractors and implements they drive on roadways. The next phase of this project is deploying a system mounted on farm vehicles to record driving patterns of roadway vehicles as they approach the recording farm vehicle from the rear. This data will help tailor driving interventions in rural communities.

"At first I didn't think these reflective materials were necessary on my tractor, because my fields are only a few miles away. However, I have had a few close calls, so now I am careful, even when traveling short distances."

- 62 year old grain farmer, Boone, IA