

CHAPTER 15

Reducing Farm Vehicle Crashes

KEY TOPICS

- educational programs
- roll-over protective structures (ROPS)
- slow-moving vehicle (SMV)

GOALS

- Improve all motor vehicle operators' understanding of slow-moving agricultural vehicle hazards.
- Strengthen slow-moving agricultural vehicle operators' knowledge of public roadway issues.
- Increase visibility of slow-moving agricultural vehicles.
- Establish joint research programs to identify and analyze agricultural collisions and develop additional preventative strategies.

BACKGROUND

Although only a small percentage of vehicular collisions lead to a fatality, the National Safety Council data shows that a collision involving a slow-moving agricultural vehicle is about five times more likely to produce a fatality than other types of collisions.

Additional risk factors for farm vehicle drivers indicate a higher risk for injury severity and fatalities due to several factors. According to the Iowa State University Extension, Agricultural Health and Safety, only half the tractors used on U.S. farms are equipped with roll-over protective structures and seat belts. In addition, many slow-moving vehicle emblems are missing or poorly maintained and lights may not be properly mounted or connected. Injury and survival rates are further complicated by the likelihood of longer emergency response times due to rural or remote locations.

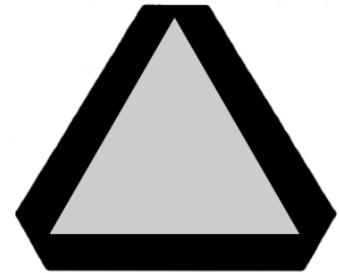
Some of the elements contributing to crashes between farm vehicles and other vehicles include differences in speed, unfamiliarity with vehicle outline, poorly maintained warning signs, and not knowing driver intentions. Fewer motorists are involved in agricultural operations now, and most motorists do not



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understand such agricultural equipment differences as maneuverability, irregular shape, and where turn signals and brake lights might be located. Also, with vision blocked by a large farm vehicle, other motorists often cannot see roadway features such as field entrances that would help them anticipate driver intentions.

Slow-Moving Vehicle Emblem



IOWA

Iowa roads provide a vital connection between the agricultural industry and the consumer markets. Each year, Iowa farmers move nearly two billion bushels of grain and millions of livestock from production to market, much of it on the country and state highway system. Other agricultural operations use public roads to transport slow-moving agricultural equipment from farmstead to field and field to market. These slow-moving agricultural vehicles pose a unique traffic hazard.

Iowa Facts

Between 1988 and 1992, the Iowa Department of Transportation (Iowa DOT) reported 1,477 collisions on public road and right-of-ways that involved farm vehicles—almost 300 per year. These occurred throughout the year; however, October had nearly twice as many collisions as any other month. The three most common collisions reported were left-turn collisions (22% of total), rear-end collisions (20% of total), and passing collisions (4% of total).

Consistent with national figures, Iowa DOT data also indicate that that a collision involving a slow-moving agricultural vehicle is about five times more likely to produce a fatality than other types of collisions.

POTENTIAL STRATEGIES

Legislation, Policy, and Enforcement

- Continue to support signing, lighting, and reflectivity standards for agricultural vehicles.
- Support improved standards for required reflectivity.
- Consider licensing requirements for all agricultural vehicle operators even if the equipment is on a public road for less than two miles.
- Require turn signals on all agricultural wagons and trailers.



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- Consider requirements for the use of escort vehicles under certain speed and location conditions.
- Consider requirements for slow-moving vehicle drivers to monitor the condition of traffic behind them.
- Consider requiring adequate mirror systems on farm vehicles to assist those drivers in seeing traffic conditions.
- Consider zoning ordinances for heavy-truck travel over high-dust, low-visibility gravel roads requiring dust abatement contributions or paving assistance for commercial sites (e.g., grain or quarry trucks repeatedly traveling the same roads).
- Encourage strong enforcement of SMV emblems, lighting from dusk to dawn, and other farm vehicle safety requirements.

Education and Public Awareness

- Collaborate with farm safety groups (e.g., Iowa State University Extension, the Iowa Farm Safety Council, the Iowa Center for Agricultural Safety and Health at the University of Iowa, and the National Education Center for Agricultural Safety).
- Develop new educational materials to help all motor vehicle operators understand the potential hazards associated with sharing the road with slow-moving agricultural vehicles.
- Distribute resources through an organized promotional campaign to increase awareness through driver education and public service announcements.
- Expand the *Iowa Driver's Manual's* current reference to slow-moving agricultural vehicles to reflect the volume of agricultural traffic encountered in Iowa. Compliment this with public service announcements.
- Include farm vehicle operation descriptions in beginning driver courses to better prepare new drivers with what to expect from farm vehicles that operate differently from motor vehicles.
- Support youth-focused rural driver safety education programs (e.g., Farm Safety Just 4 Kids).
- Promote safety belt and other safety features use by all operators (e.g., roll bars and fold-up peripherals).
- Promote public awareness of farm vehicle activity during peak operation seasons.
- Support farm vehicle driver public service announcements, informational materials, brochures, and other awareness and education

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in farm industry publications and events (e.g., Farm Safety Just 4 Kids, the Iowa Power Farming Show, and the Iowa State Fair).

Design and Technology

- Continue to monitor and promote new lighting and marking standards developed by national organizations (e.g., more reflectivity and improved placement location).
- Distribute new higher reflectivity materials and information to increase the visibility of slow-moving agricultural vehicles through volunteer groups and organizations.
- Support or promote use of roll bars and other farm vehicle safety features and technology to increase crash survivability.
- Provide wider stable shoulders on roadways with high-volume agricultural traffic (e.g., routes near elevators).
- Assist local and county entities in identifying for local area concerns and selecting solutions.
- Investigate the occurrence of agricultural vehicle crashes on two-lane rural commuter routes. Identify highest risk segments. Propose limited “ag travel” during peak hours or better inform commuters along these routes.
- Investigate geometry, time of day, and other crash report specifics for contributing factors to mitigate crashes and/or severity.

Other Initiatives

- Develop new networks and teams to examine previously collected information for analysis.
- Use these multidisciplinary and multi-organizational teams to develop new preventative interventions for ensuring the safety of agricultural vehicles on public roadways.

SUCCESSSES AND STRATEGIES IMPLEMENTED

- Iowa law requires the following:
 - o SMV emblems on all vehicles traveling under 35 miles per hour
 - o Lights on self-propelled farm vehicles traveling roadways between dusk and dawn
 - o Operators of farm equipment to be licensed if they drive a farm vehicle outside a two-mile radius



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- Iowa Farm Safety Just 4 Kids chapters have conducted young driver awareness events for increasing passenger safety device use in a number of rural schools with funding assistance from the Iowa Governor's Traffic Safety Bureau.
- Iowa State University Extension, Agricultural Health and Safety, provides monthly public service announcements about agricultural safety to radio stations statewide.

NOTE

The potential strategies in this chapter do not represent specific recommendations of the Iowa SMS Coordination Committee or any agency, group, or individual represented in Iowa SMS. The strategies represent a range of alternatives for legislators, department or agency directors, local governments, and citizen groups to consider when they elect to address a specific highway safety concern.

This toolbox is a living document that will continue to provide information, direction, and ideas for highway safety decision makers. Any strategies selected for implementation by Iowa SMS or any other entity will require further development through identifying potential partners, entities impacted, potential funding, steps for implementation, evaluation, and other pertinent tasks.

RESOURCES

Information in this chapter is drawn from many individuals and sources. Known sources are listed here. **Contributors:** Charles Schwab (primary), Scott Falb, and Mary Stahlhut.

Farm Safety 4 Just Kids

The mission of Farm Safety 4 Just Kids is to promote a safe farm environment to prevent health hazards, injuries, and fatalities to children and youth.
www.fs4jk.org/

Iowa Farm Safety Council

This not-for-profit organization is a special blend of farm operators, industry leaders, insurance providers, safety educators, medical providers, and others coming together to make Iowa a safer place to work and recreate.
www.ae.iastate.edu/ifsc.htm

Iowa Department of Transportation Office of Driver Services

www.dot.state.ia.us/mvd/ods
Iowa Driver's Manual
www.dot.state.ia.us/mvd/ods/dlmanual.htm

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Iowa Safety Management System

www.IowaSMS.org

Iowa Strategic Highway Safety Plan (Aug. 1999):

www.iowasms.org/pdfs/ishsp.pdf

Iowa Strategic Highway Safety Plan Goals and Strategies: Statewide Survey of Adults (Oct. 2000):

www.iowasms.org/pdfs/publicopinionsurveyexecsumm.pdf

Iowa State University Extension, Agricultural Health and Safety

www.ae.iastate.edu/safety.htm

1999 Iowa Farm Injury and Fatality Data by County:

www.extension.iastate.edu/Publications/AE3108.pdf

Iowa Injuries for 2000:

www.ae.iastate.edu/safety/2000iowainjuries.pdf

Farm Equipment Safety on Iowa Roads

Use Tractors with ROPS to Save Lives:

www.exnet.iastate.edu/Publications/PM1265D.pdf

Use SMV Emblems for Your Safety:

www.exnet.iastate.edu/Publications/PM1265J.pdf

Reduce Farm Accident Risks on the Farm:

www.extension.iastate.edu/Publications/PM1563E.pdf

National Education Center for Agricultural Safety

nsc.org/necas.htm

This toolbox is a living document. Last updated November 2001.