

CHAPTER 11

Making School Bus Travel Safer

KEY TOPICS

- commercial driver license (CDL)
- education for drivers, riders, and motorists
- school bus passing laws

GOALS

- Collaborate across all modes of bus travel relating to common highway safety issues—including bus passenger, driver, vehicle, and operations safety.
- Improve interaction between buses and other vehicles on roadways to reduce risk of crashes.
- Improve motorist awareness of bus vehicle maneuvers, bus operations, bus driver visibility, and other safety factors unique to buses (similar to large truck awareness).
- Improve motorist awareness and compliance with Iowa laws governing passing school buses.
- Implement countermeasures that will reduce or eliminate the potential for student death or injury while waiting for or boarding buses.
- Create education and resource systems to sustain and improve bus *driver* proficiency.
- Create education and resource systems to sustain and improve *rider* awareness and appropriate passenger behaviors.
- Enhance school bus safety by adopting a vehicle replacement schedule that will ensure the scheduled phasing out of older model vehicles that may not be equipped with the latest in safety design features or technologies that enhance school bus safety.

BACKGROUND

There are several categories of “bus travel.” These include school buses, metro/rural public transit, and commercial intercity carriers. Each type of bus service includes a unique set of factors related to the type and number of passengers served and the related boarding, waiting, and alighting risk factors. This chapter addresses making travel safer for school buses. Public transit travel is discussed in Chapter 12. Issues related to commercial bus carriers are still different and are not addressed within the scope of this document.

11. Making School Bus Travel Safer

Transportation by school bus is one of the safest forms of transportation in the world. However, these vehicles, being highly visible and charged with the responsibility of safely transporting our school children, are subject to the highest levels of scrutiny by the public, particularly when a bus is involved in a crash.

With less than 10 child school bus fatalities nationally, school bus travel is a minimal safety risk, compared with the more than 600 school-aged children who are killed each year in passenger cars or other private vehicles during school hours. School bus officials believe that *most of these deaths could be prevented* if children rode to and from school in today's ultra-safe school buses.



School buses share many of the same highway safety concerns as other types of buses; however, we will focus here on those areas of highway safety that are unique to the operation of a school bus.

Most school buses (not all) are considered commercial motor vehicles and must be operated by drivers who are subject to state and federal commercial motor vehicle licensing and training requirements. In addition, a school bus—due to its size, purpose of operation, and handling characteristics—poses unique licensing, operational, and safety challenges for its driver.

Drivers

Drivers of publicly and privately owned and operated school bus fleets are required to hold a commercial driver's license with a class designation appropriate for the type of vehicle they will be operating. School bus drivers must be highly trained and competent to operate the vehicle and deal with passenger needs and distractions while managing a wide range of traffic, roadway, and weather conditions. The drivers of these vehicles are subject to all of the driver safety concerns listed in the Drivers part of this document, including the aging driver, the aggressive driver, and the impaired driver.

Passengers

School bus passengers may include children of all ages and grade levels, from infants and toddlers that attend school or locally sponsored day care

facilities, to students of all grade levels having many differing levels of interest and behavior patterns. Particularly challenging is the transportation of children with disabilities, each of which may require specialized care and attention during transport.

Vehicles

School buses come in various sizes, capacities, and operational purposes; however, all school buses designed for 10 or more passengers will be painted the distinctive school bus yellow and be equipped with special warning, lighting, and student safety systems. School buses are unique in that they are one of only a few select vehicles on our roadway today that are given the statutory ability to regulate motor vehicle traffic while involved in the on-highway boarding and delivery of students to and from their homes, schools, and scheduled pick-up locations.

Operations

Operational differences can vary widely among school buses, which can be owned publicly or privately by schools or state or county agencies providing student programs and services. Their operations can vary from rural on-highway school bus loading and unloading to curbside residential bus stops within urban and suburban areas. Bus routes can also be affected daily by shifts in student population, residential, and commercial building, changes in student attendance center designations, weather and roadway conditions, and traffic flow that impact both the timing and safety of the school bus route.

NATIONWIDE

The school bus is one of the safest forms of transportation in the United States and fatal crashes involving occupants of these vehicles are rare events. Each year, roughly 440,000 public school buses travel 4.3 billion miles, transporting 23.5 million children to and from schools and school-related activities. Nationwide, there are fewer than 10 school bus passenger fatalities each year. These tragedies typically involve unavoidable, severe circumstances. Since 1987, only 0.3% of all fatal traffic crashes have involved a school bus (1,298 out of 420,000 crashes). In the past 10 years, there have been an average of only nine school bus occupant fatalities per year and an average of 23 school bus-related pedestrian fatalities each year.

11. Making School Bus Travel Safer

Real-world school bus crash investigations conducted by the National Transportation Safety Board (NTSB) indicate that the seated position of a student, within a school bus, in relationship to the point of impact in a crash situation will have a more significant impact on the survivability of the student passenger than the type of seating or securement system that may or may not have been in place.

National Facts

The National Highway Traffic Safety Administration (NHTSA) reported the following data (*Traffic Safety Facts—School Buses*):

- 1,445 people have died in school-bus-related traffic crashes from 1989 to 1999, an average of 131 fatalities per year.
- 65% of these were occupants of other vehicles.
- 25% were nonoccupants (pedestrians, bicyclists, etc.).
- 10% were school bus occupants (2% passengers and 8% drivers).
- More than half of all school-age pedestrians killed in school bus-related crashes between 1989 and 1999 were between the ages of five and seven.
- 42% of the school-age fatalities occurred between 3:00 p.m. and 4:00 p.m.
- 53% of the fatal school bus crashes involved another vehicle.

IOWA

The Iowa Department of Education is charged by statute (Iowa Code Chapter 285.8) with the power and duty to “exercise general supervision over the school transportation system in the state.” These duties include but are not limited to establishing physical qualifications for all school bus drivers in the state and issuing school bus operator’s permits to qualifying drivers; providing annual in-service for school transportation personnel, including supervisors, maintenance personnel, drivers, and school bus passengers; inspecting Iowa’s 7,000+ vehicles used as schools buses twice during each year with the assistance of the Iowa State Patrol; and providing administrative program support to local public and nonpublic school transportation programs.

Iowa Facts

On-Board Fatalities

Since the Iowa Department of Education began collecting and documenting school bus crash data in 1955, there have been two crashes (Neola, Iowa, August 6, 1976; Sheldon, Iowa, April 7, 1997) in which an on-board school bus passenger was killed.

The Neola crash involved fatalities to two students riding in a pre-April 1, 1977, model school bus that went off a roadway, rolled down an embankment, and landed on its top on the edge of a creek embankment. The April 1, 1977, date is important to remember as it is the landmark date on which NHTSA implemented a number of manufacturing safety standards relating to the construction of school buses, including a stringent rollover protection requirement. Legislative action has since rid Iowa's school bus fleets of all school buses manufactured prior to April 1, 1977, and we have since experienced no on-board school bus fatalities as a result of a rollover-type crash.

The Sheldon crash involved the death of an 11-year-old student. In this incident, the school bus and a semi collided at an uncontrolled rural intersection. The bus, which had the directional right-of-way, was struck by the semi just behind the driver's compartment on the left side of the bus and at the seated position of the student.

Off-Board Fatalities

There have been 16 fatalities in Iowa since 1955 involving students that were outside the school bus. These students were either struck by motorists who illegally passed the stopped school bus during the loading or unloading process or, as in the most recent incident, were struck by the school bus itself at loading and unloading site. The most recent occurrence on September 10, 1998, involved a six-year-old Woodward, Iowa, student who was run over by her own school bus after alighting from and crossing in front of the bus.

Iowa's fatality experience is very similar to the nationwide experience. Students are extremely safe while riding inside the school bus; they become most vulnerable after leaving the confines of the school bus. Therefore, it would seem reasonable that we focus our highway safety efforts and limited resources in those areas that have been shown to be most dangerous for school bus passengers: those areas outside and surrounding the school bus.

11. Making School Bus Travel Safer

POTENTIAL STRATEGIES

Legislation, Policy, and Enforcement

- Encourage or facilitate law enforcement agencies and school administrators, and bus drivers to work cooperatively to report, investigate, and prosecute violators of the school bus stop law.
- Prosecute school bus passing violators using license plate numbers reported by bus drivers.
- Coordinate the development of and improve the availability of comprehensive school bus passenger safety programs and instructional materials for all local, state, public, and private entities involved in student transportation.
- Develop a “tool” to help employers of bus drivers in the processes of selecting, training, retaining, and targeted retraining necessary to maintain their pool of safe drivers.
- Establish a plan for ongoing reviewing and reporting of hazardous weather and roadway conditions.
- Monitor the changes in safe bus transportation ridership demographics and needs brought on by changes in population growth and decline, relocation, ages, preferences, and other factors.
- Support and promote school bus driver and passenger safety education programs within schools.
- Include written and skill tests to determine basic “school bus specific” knowledge and skill levels in the procedure for acquiring a CDL to operate a school bus.
- Encourage school bus operations to conduct initial and periodic performance evaluations of all school bus drivers at least annually.
- Encourage school bus operations to establish a plan for daily and periodic school bus route evaluation and reporting, and correction or avoidance of observed route hazards.
- Provide adequate funding resources for the purchase and replacement of school buses with the safest design and construction technology available.
- Encourage school bus operations to adopt a safety plan for school bus passengers, including sanctions for improper student behavior on the bus. Provide parents with school bus safety information, encourage them to reinforce safety procedures with students in the home, and periodically distribute reminder materials to students.
- Encourage school bus operations, law enforcement, and emergency services to review and practice safety procedures for mechanical



11. Making School Bus Travel Safer

breakdown, road impasse, emergency evacuations, crashes, and other roadside scenarios.

- Encourage school bus operations to collaborate periodically with local emergency officials in considering potential scenarios where buses could provide safe transportation in emergencies.
- Consider a statewide model for communications and other intelligent transportation systems (ITS) applications that could incorporate road and weather information, passenger data, and other information critical to safe bus route operations.

Education and Public Awareness

- Promote increased awareness, observance, and enforcement of motor vehicle laws relating to motorists approaching or following school buses that are about to stop on the highway to take on or discharge passengers.
- Conduct public information and awareness campaigns before the start of school each year, during National School Bus Safety Week in October, and at other times throughout the school year.
- Provide initial training and regular in-service opportunities for drivers to strengthen the knowledge and skills necessary to interact with students and the motoring public. Include brochures, videos, and other media.
- Conduct safe ridership instructional programs for school bus *passengers* at least twice per school year in accordance with rules established by the Iowa Department of Education. Focus on the youngest riders who are most at risk.
- Strengthen school bus related awareness and education in student driver education programs for both students and instructors, in driver's license examinations, and in the *Iowa Driver's Manual*. Use brochures, video, and other media to achieve this.
- Include Iowa's school bus passing laws in brochures distributed to visitors, tourists, and newcomers in brochures placed in driver licensing stations, highway rest areas, local tourist, and chambers of commerce offices and other appropriate sites.

Design and Technology

- Promote school bus passenger safety and cost effectiveness through the systematic purchase and replacement of school buses and equipment meeting all state and federal school bus construction requirements and scientifically proven driver and passenger safety technology.

11. Making School Bus Travel Safer

- Heighten awareness of driver responsibilities through roadside signage where school buses operate.
- Monitor the National Transportation Safety Board “Putting Children First” initiative and its research regarding school buses and alternative school transportation vehicles.
- Monitor and support safer school bus design and construction standards reviews, research, recommendations, and—where appropriate—national-level adoption of standards.
- Use technology to enhance communication and safe operations with radio communication systems, global positioning system (GPS), weather and roadway information, or other applicable technologies.
- Enhance visibility to other motorists with increased reflectivity, LED turn signals, and other technologies.

SUCCESSES AND STRATEGIES IMPLEMENTED

- The National Association of State Directors of Pupil Transportation Services has developed a School Bus Route and Hazard Marking System model for NHTSA.
- Most public school systems have installed electronic communications systems on their school buses.
- School bus driver and passenger safety programs and materials have been made available through the Iowa Department of Education on an ongoing basis.
- A brochure explaining motorist responsibilities when approaching or following a school bus has been developed by the Iowa Pupil Transportation Association and has been printed and distributed by the Iowa Department of Education to all schools, driver’s licensing stations, Iowa State Patrol, and other interested parties. These will continue to be available as long as funding resources are available.
- Iowa school bus construction standards currently meet or exceed all federal motor vehicle safety standards.
- In 2001, Iowa SMS provided funding for on-board video cameras to document school bus passing in a pilot program in several Iowa school districts.



NOTE

The potential strategies in this chapter do not represent specific recommendations of the Iowa Safety Management System (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:** Terry Voy (primary), J.P. Golinvaux, and Peter Hallock.

American Association of State Highway and Transportation Officials

Strategic Highway Safety Plan (Sept. 1997):

A comprehensive plan to substantially reduce vehicle-related fatalities and injuries on the nation's highways.

safetyplan.tamu.edu/plan/toc.asp

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

Iowa Crash Facts—Buses (1999)

www.dot.state.ia.us/mvd/ods/facts99/bus.pdf

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

National Highway Traffic Safety Administration

www.nhtsa.dot.gov

Traffic Safety Facts (1999):

www-fars.nhtsa.dot.gov/pubs/8.pdf

Traffic Safety Facts—School Buses (1999):

www.nhtsa.dot.gov/people/ncsa/pdf/Schbus99.pdf

National Driver Registry

www.nhtsa.dot.gov/people/perform/driver/

National Transportation Safety Board

www.nts.gov

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