Safety Management in Iowa — After the Mandates

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In 1991, the federal Intermodal Surface Transportation Efficiency Act mandated that each state form a safety management system work plan by October of 1994 to address surface modes of transportation. Iowa complied, and the Iowa Highway Safety Management System (SMS) structure was developed. When the mandate was withdrawn in 1997, Iowa continued the success of the SMS initiative through the commitment and collaboration of the diverse SMS membership and the strength of the comprehensive Iowa SMS vision. In November 1999, the Iowa SMS Coordinating Committee received one of the first FHWA Partnership in Excellence Awards for its multi-disciplinary efforts with state and local governments, private industry, FHWA, and other federal agencies. The Iowa SMS has sustained leadership in a number of areas and has reinvented itself to address current issues and facilitate appropriate solutions through cooperation and collaboration. This paper contains a summary of the Iowa SMS history, current SMS activities including the Iowa Strategic Highway Safety Plan, the “toolbox” approach to matching remedies with issues, and the Iowa SMS vision for Iowa’s future roadway safety. Key words: safety management system, multi-disciplinary plan

THE IOWA INITIATIVE

The Iowa Safety Management System (SMS) Coordination Committee was formed and began regular monthly meetings in February 1995. At that time a federal mandate was in effect requiring states to implement safety management systems.

The Iowa Department of Transportation (Iowa DOT) was designated as the focal point, and the Iowa DOT Office of Transportation Safety Director was identified as the coordination committee chair. This organization was retained in Iowa after the federal mandate was dropped in January of 1997.

Since the earliest planning stages of the Iowa SMS, the Iowa Department of Public Safety’s Governor’s Traffic Safety Bureau (GTSB) has partnered with the Iowa DOT’s Office of Transportation Safety to develop and sustain the Iowa SMS.

During its early years, the SMS coordination committee established communication and cooperation among its interdisciplinary members, identified highway related safety problems, defined areas that could be improved, and established task forces to address these problems (see Table 1).

SMS members collaborate to develop and maintain a multi-disciplinary approach that provides a “toolbox” of strategies and ideas that may be selected and applied to transportation safety issues. Some of the tools involve hard engineering solutions. By contrast, some tools are less tangible and leverage education, aptitude, awareness, attitudes, and other human factors to resolve highway safety issues.

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<th>TABLE 1 Iowa SMS Coordinating Committee Members and Plan Authors</th>
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<td>American Association of Retired Persons (AARP) 55 ALIVE Program</td>
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<td>American Public Works Association municipalities representative</td>
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<td>American Automobile Association (AAA) Minnesota/ Iowa</td>
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<td>American Automobile Association (AAA) Iowa</td>
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<td>Cedar Rapids Police Department</td>
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<td>Highway Safety Engineering Consultant</td>
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<td>Federal Highway Administration, Iowa Division</td>
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<td>Governor’s Traffic Safety Bureau, (GTSB) Department of Public Safety</td>
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<td>Center for Transportation Research and Education (CTRE)</td>
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<td>National Highway Transportation Safety Administration, Region VII</td>
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<td>Retired Transportation Safety professionals</td>
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<td>State Farm Insurance</td>
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IOWA SMS CONCEPTS

Some of the concepts employed by the Iowa SMS Coordinating Committee and plan authors are the following:

1. Highway safety is the shared responsibility of federal, state, and local levels of government. Each branch is organized and positioned to make substantial, unique contributions to the entire effort. The SMS approach helps leverage funding and other resources for the best results across the state.
2. Multidisciplinary safety management procedures such as those used by the Iowa SMS insure that comprehensive program development and delivery attains the goals of saving lives, reducing injuries, and putting public funds to their best possible use.

3. While SMS can play a key role in a number of initiatives, there is no intent for SMS to manage or control initiatives in Iowa’s transportation safety community.

4. SMS can serve as a catalyst or source of “synergy” that helps coordinate and maximize transportation safety efforts statewide.

5. SMS is not intended to sustain existing programs or provide ongoing funding for new programs.

6. Cost effectiveness is critical to the success of this enterprise, and should be clearly established in the demonstration or pilot phases of the various emphasis areas. With credible documentation and history to demonstrate cost effectiveness, budget requests to fund the various strategies will be more realistic, more likely to succeed, and result in better public policy.

**MISSION, VISION, AND GOALS**

The mission of the Iowa SMS is to reduce human suffering and economic losses resulting from crashes on Iowa’s roadways through the identification of causes, resources, and safety implications of policy decisions.

The vision of the Iowa SMS is a state whose citizens enjoy the safest highway system possible. This system is achieved when service providers and citizens communicate needs, coordinate efforts, and cooperate across political and professional boundaries in the pursuit of the mission. The Iowa SMS is the tool for achieving and sustaining this vision and must:

- accommodate Iowa’s specific social, economic, and geographic conditions;
- foster an interdisciplinary approach to problem solving;
- provide a forum for leadership in safety management; and
- achieve continuous improvement.

The goal of the Iowa SMS is to reduce the number and severity of crashes on Iowa’s roadways by promoting systematic processes to identify, implement, and evaluate all opportunities for improvement relating to:

- highway planning, design, construction, maintenance, and operations;
- traffic and transportation law, law enforcement, and adjudication;
- emergency response, trauma patient care, and the educational activities of the health care community related to highway safety;
- other safety programs relating to vehicles, cargo, and people (included are special users groups such as older drivers, pedestrians, bicyclists, motorcyclists, commercial motor carriers, and hazardous material carriers);
- integration with railroads and with public transportation (included are railroad-highway grade crossings and relevant data such as number of trains, crossing warning devices, FRA numbers for linkage with motor-vehicle crash files, etc.);
- information systems to accomplish the above-mentioned tasks and for prioritizing problems and effectively utilizing resources.

**TASK FORCES AND PROJECTS**

The membership of each task force is developed as issues and their related experts, funding, resources, policy makers, and stakeholders are identified.

**The Access Management Task Force** launched a statewide study of the effectiveness of access management techniques and a program to educate project decision makers and business owners on the benefits and economic impacts of access management.

**The Speed Limit Task Force** began its work in 1996. The task force continues to produce annual comprehensive summaries of speed-related crash data and risk assessment related to speed limits for use by state legislators.

**The Emergency Medical Services Task Force** was formed when an SMS member identified highway construction as a disruption to dispatch patterns. The results of their study help facilitate planning, communication, and understanding between local emergency providers and the central highway authority.

Emergency Response Information System (ERIS) is underway to add fire, rescue, and EMS response areas to Iowa’s safety data GIS. It will enhance communication among hundreds of urban and rural response agencies and with other segments of Iowa’s SMS.

**The Statewide Traffic Records Advisory Committee (STRAC)** was organized in June 1994 and is now an SMS standing subcommittee. It conducts strategic planning including the requirements for Section 411 funding, and it collaborates with Iowa’s National Model for transportation safety data, supported in part by the FHWA. (The State of Iowa was recently awarded the National Partnership for Reinventing Government Hammer Award for major re-invention in collecting, transmitting, and managing highway safety data in Iowa.)

**The Red Light Running Task Force** is studying the use of automated enforcement of traffic signal violations in Iowa. Local traffic safety organizations and law enforcement agencies are key members of this group.

Multi-disciplinary local traffic safety groups operate under the umbrella of SMS in several Iowa communities. Further development of these groups is an important goal for SMS leadership. This grassroots network of local problem identification and problem solving can be enhanced with SMS resources, and effective solutions can be replicated in other Iowa communities, thereby multiplying the success of local initiatives.

**SMS and the Iowa Traffic Control and Safety Association** help support education efforts and conferences for members of both groups and other Iowa transportation safety individuals.

**The Pavement Marking Visibility for Older Drivers** study is underway to assess the effectiveness of improved highway markings for older drivers.

**The Older Drivers Task Force** formed with representatives from a number of public and private entities and stakeholder groups to address sustaining competent driving, highway engineering accommodations, and related transportation concerns for Iowa’s aging population. Entering the year 2000, Iowa has a
DEVELOPMENT OF THE IOWA STRATEGIC HIGHWAY SAFETY PLAN

SMS Committee members, transportation safety experts, and interested parties collaborated to write the August 1999 draft Iowa Strategic Highway Safety Plan identifying transportation safety issues with possible strategies and solutions. The plan will be used to help identify and focus resources on specific highway safety issues and collaborative strategies used in resolving them. The plan is conceived as a “living document” that will continue to change and evolve as a central source for highway safety discussion and strategy development for all of Iowa’s roadways. It serves as a “tool box” of strategies to apply in resolving specific issues facing Iowa’s transportation safety community.

The plan addresses traditional concerns for infrastructure as well as driver, occupant, vehicle, and post-crash responsibilities. Moreover, many initiatives within this strategic plan are built upon safety programs already in existence while others suggest new programs. Another important highway safety initiative, Intelligent Transportation Systems (ITS) will generally address a different set of issues, although both may investigate some of these issues and correlate their results.

The American Association of State Highway Transportation Officials’ Strategic Highway Safety Plan, dated September 1997, was used as a model for developing the Iowa plan. The AASHTO Plan contained six major topics with a total of 22 key emphasis areas. The original AASHTO plan can be viewed at http://safetyplan.tamu.edu.

In the Iowa Plan, some emphasis areas were deleted or combined, and five were added. The Iowa Plan contains now 25 key emphasis areas, with a list of proposals for each section (see Tables 2 and 3).

TABLE 2 DRAFT Iowa Strategic Highway Safety Plan Table of Contents

Drivers
1. Instituting Graduated Licensing for Young Drivers
2. Ensuring Drivers are Fully Licensed and Competent
3. Sustaining Proficiency in Older Drivers
4. Curbing Aggressive Driving
5. Reducing Impaired Driving
6. Keeping Drivers Alert
7. Increasing Driver Safety Awareness
8. Increasing Safety Belt Usage and Improving Air Bag Effectiveness

Special Users
9. Making Walking and Street Crossing Safer
10. Ensuring Safer Bicycle Travel
11. Ensuring School Bus Safety
12. Improving Motorcycle Safety and Increasing Motorcycle Awareness
13. Making Truck Travel Safer
14. Reducing Farm Vehicle Crashes

Highways
15. Reducing Train-Vehicle Crashes
16. Reducing Deer-Vehicle Crashes
17. Implementing Road Safety Audits
18. Accommodating Older Drivers
19. Keeping Vehicles on the Roadway and Minimizing the Consequences of Leaving the Road
20. Improving the Design and Operation of Highway Intersections
21. Reducing Head-On and Across-Median Crashes
22. Designing Safer Work Zones

Emergency Response
23. Enhancing Emergency Response Capabilities to Increase Survivability

Management
24. Improving Information and Decision Support Systems
25. Creating More Effective Processes and Safety Management Systems

TABLE 3 Sample of Section Proposals

Chapter 6 Keeping Drivers Alert
A. Assemble a synthesis of current research on cell phone usage and crash involvement.
B. Prepare a drowsy driving PSA and brochure
C. Ensure that driver fatigue elements are included in the new Iowa crash report form.
D. Ensure that ample information is in the Iowa Officer Reporting Guide
E. Ensure that driver alertness is emphasized in officer training at the Iowa Law Enforcement Academy.
F. Support engineering efforts to increase shoulder width, paved shoulders, and the use of rumble strips
G. Educate the public about the importance of shoulder rumble strips
H. Support legislation for headlight use during low visibility
I. Monitor and support ITS
J. Support the recommendations of the Rest Area Task Force’s Rest Area Needs Study
K. Increase the availability of passenger car rest areas
L. Monitor and support the Commercial Driver Hours of Service regulations
From this base of information, ideas, and responses, the Iowa SMS Coordination Committee believes that an ongoing, comprehensive approach will marshal Iowa’s best strategies and leverage results gained from multi-disciplinary collaboration. This integrated approach will produce measurable results to significantly reduce deaths, injuries, health care costs, and other losses on our highways.

IMPLEMENTATION STRATEGIES

The strategies developed for the key emphasis areas are designed to address each area’s major problems or to advance effective practices by means that are both cost effective and acceptable to a significant majority of Iowans. Some strategies will apply existing federal programs to Iowa, supplement, or apply such programs more effectively. Other strategies involve enhancement of programs developed within the state. Still other strategies will require pilot projects to demonstrate benefits of implementing new strategies.

The SMS coordinating committee will periodically review the proposals made and determine when to initiate or fund them. Consideration may include: which proposals best address current critical needs; which have the best chance for success; which can leverage other funding sources; or which contribute the most safety benefit for the funding identified.

SMS members acknowledge that it can be difficult to compare strategies when the outcomes range from hard engineering changes to driver behaviors, training, education, and the quality of human life. SMS members expect that most decisions will result from a range of tangible factors and conditions rather than competing on a direct value comparison.

CONCLUSION

Perhaps the most rewarding aspect of Iowa’s Safety Management System, is strengthened cooperation and collaboration among its many many groups in helping to fill Iowa’s transportation safety “toolbox” with the most innovative and effective solutions available.

Iowa’s Safety Management System for highway safety has continued to succeed through the strength of its diverse membership and its vision for continually improving Iowa’s highway safety. Using a multi-discipline approach, SMS is able to identify issues, comprehensively test and evaluate strategies, and ultimately apply tangible solutions that leverage the most return from available resources.