

IOWA COMPREHENSIVE HIGHWAY SAFETY PLAN



September 2006

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"The care of human life and happiness... is the first and only objective of good government."

Thomas Jefferson



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Executive Summary

In Iowa, hundreds of people die and thousands more are injured on our public roadways each year despite decades of efforts to end this suffering.

Past safety efforts have resulted in Iowans benefiting from one of the best state roadway systems in the nation. Due to multi-agency efforts, Iowa has achieved 90 percent compliance with the state's mandatory front seat belt use law, earned the nation's second-lowest percent of alcohol involvement in fatal crashes and made safety gains in system-wide roadway design and operational improvements.

Despite these ongoing efforts, the state's annual average of 445 deaths and thousands of life-changing injuries is a tragic toll and an unacceptable public health epidemic in our state.

To save more lives on our roadways, Iowans must be challenged to think differently about life-saving measures addressing young drivers, safety belts, and motorcycle helmet use and accept innovative designs such as roundabouts. Iowa must apply evidence-based strategies and create a safety culture that motivates all citizens to travel more responsibly. They must demand a lower level of tolerance for Iowa's roadway deaths and injuries.

The Iowa Comprehensive Highway Safety Plan (CHSP) engages diverse safety stakeholders and charts the course for this state, bringing to bear sound science and the power of shared community values to change the culture and achieve a standard of safer travel for our citizens.

How many roadway deaths and injuries are too many? Iowa's highway safety stakeholders believe that, "One death is one too many" and effective culture-changing policy and program strategies must be implemented to help reduce this death toll from an annual average of 445 to 400 by the year 2015.

Top Five Safety Policy Areas

- Young drivers
- Occupant protection
- Motorcycle safety
- Traffic safety enforcement
- Traffic Safety Improvement Program

Top Eight Safety Program Areas

- Lane departure
- Safety corridors
- Intersections
- Local roads
- Crash data records
- Senior mobility
- Safety training and education
- Unpaved rural roads

Motor vehicle deaths remain the number one cause of death for children and adults through age 34.

The economic impact of crashes in Iowa was \$1.3 billion in 2005.

This statistic is based on 2001 National Safety Council Human capital costs values adjusted to 2006 values. Human capital costs are defined as direct costs such as medical and non-medical services and indirect costs such as the value of production (wages or household work and childcare).



The 2006 Iowa Comprehensive Highway Safety Plan (CHSP)

"Building on the past to create the future"

National Highway Safety Status

Over 40,000 lives are lost annually in the United States. This level of loss is unacceptable and, compared to other industrialized countries, our nation is losing ground in providing safe mobility for our citizens. In 1998, the American Association of State Highway and Transportation Officials (AASHTO) addressed this trend and developed a Strategic Highway Safety Plan (SHSP). This comprehensive plan became the national template for addressing all aspects of roadway crashes and the Federal Highway Administration (FHWA) encouraged all states to develop similar safety plans.

In 2003, AASHTO reported that the national fatality rate on U.S. highways stood at nearly 1.5 deaths per 100 million vehicle miles traveled (VMT), placing the United States tenth in this measure of public health, behind many European countries, Canada and Australia. The organization then set a challenge goal to "Reduce the incidence and severity of motor vehicle crashes and lower the fatality rate to not more than 1.0 per 100 million VMT by 2008." Recognizing that top-level leadership and support within state departments of transportation is an essential ingredient for success, AASHTO leadership issued a nationwide challenge for states to help achieve this goal. In addition, strong alignment among organizations responsible for safety across the spectrum of engineering, education, enforcement, and emergency services (the 4Es of highway safety) is critical for success. Despite this attention, the U.S. fatality trend has not yet declined.

Federal Transportation Safety Legislation

Congress included this comprehensive highway safety approach in the August 2005 transportation funding legislation. The Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) creates a new core Highway Safety Improvement Program (HSIP) "to achieve a significant reduction in traffic fatalities and serious injuries on public roads."

The SAFETEA-LU also mandates state strategic highway safety plans and requires each state's department of transportation (DOT) to lead diverse road safety disciplines such as engineering, education, enforcement, and

emergency response services in collaborating to develop their state's plan. Whenever possible, the various program and operations plans of state DOTs and other agencies with a stake in transportation safety should complement and explicitly support this comprehensive state highway safety plan. Proposed strategies must address safety needs of all public roads, include projects or strategies that are regularly evaluated, and be reported to the Secretary of the U.S. Department of Transportation annually. The state highway safety plan must be approved by the governor or the responsible state agency.

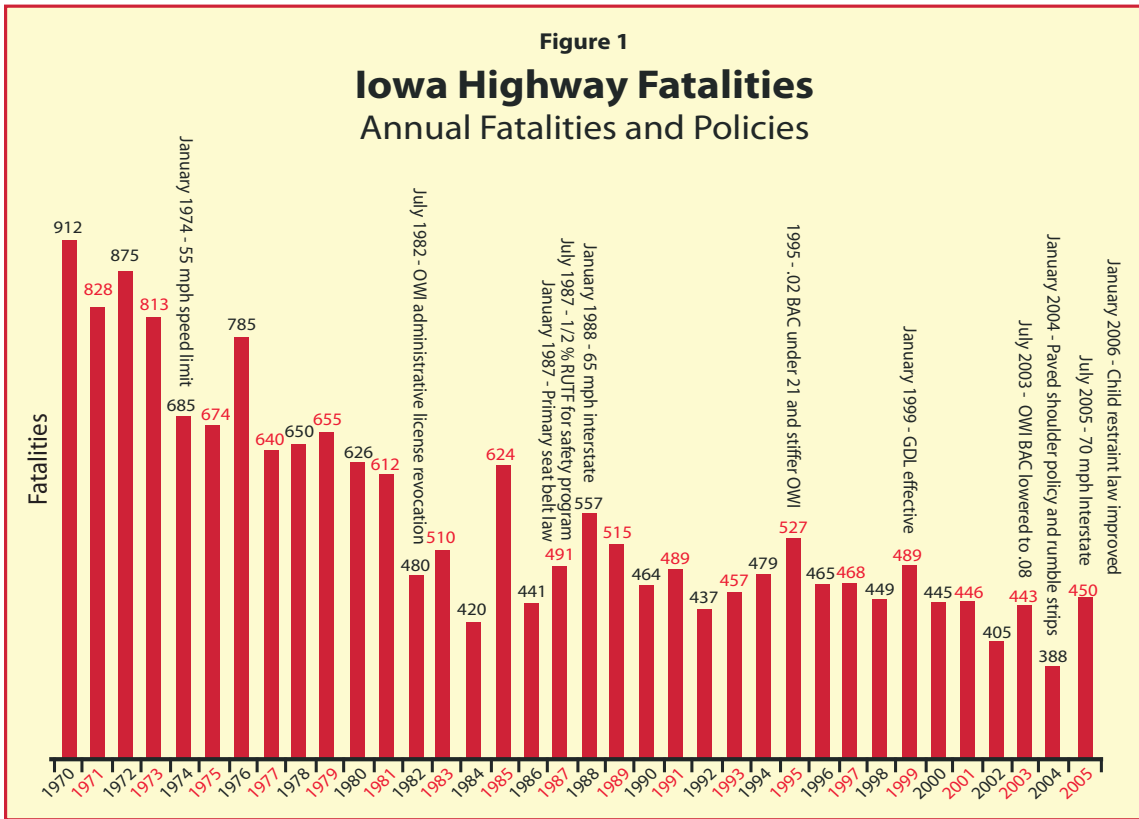
Iowa Highway Safety Background

Recognized nationally as ranking among the best states in its commitment to safety, Iowa has already developed and sustained a comprehensive, collaborative and data-driven approach to traffic safety for more than a decade. The foundation for this success rests in Iowa's partnerships among committed key agencies and stakeholders that are fostered by the Safety Management System (SMS) Coordinating Committee and the Statewide Traffic Records Coordinating Committee (STRCC). Each group maintains a membership of 60-100 agencies and individual representatives, and supports a varied number of working groups.

Iowa was one of few states to use the AASHTO SHSP model and by late 2001 the SMS membership developed Iowa's collaborative Toolbox of Highway Safety Strategies. Developed as a resource rather than a mandate for safety stakeholders, the toolbox provides a range of strategies for state and local leaders to adapt and implement when and how they are appropriate for Iowa. Each year the SMS members have studied crash statistics to analyze crash causes, track effective countermeasures, identify emerging trends, and identify and implement promising strategies for improving safety.

Safety stakeholders have chosen to replace "strategic" with "comprehensive" in the title of Iowa's highway safety plan to better represent Iowa's broad and collaborative stakeholder approach to highway safety. The Iowa Comprehensive Highway Safety Plan (CHSP) is a thoughtful update to the state's practices and procedures.





Iowa Highway Safety History

Since the 1970s, Iowa’s success in reducing fatalities and injuries by one-half is largely the result of Iowans’ commitment to identifying and implementing effective highway safety policies and programs. (See Figure 1.)

In the 1980s, the Iowa legislature often led the way in adopting important state policies addressing occupant protection, drinking and driving and funding for roadway safety improvements.

In the 1990s, the Iowa departments of Public Safety (DPS) and Transportation (DOT) established shared leadership on two important partnership organizations, primarily through committed staff in the Iowa DOT’s Office of Traffic and Safety and Iowa DPS’s Governor’s Traffic Safety Bureau (GTSB). The Iowa SMS and STRCC multidisciplinary partnerships, including many agencies, organizations and individuals, have provided important evidence-based proposals, data and efficacy measures for Iowa’s legislature and other decision makers. Ten years ago, based on a 10-year average, 486 Iowans died annually on the roadways. Today, despite continued increases in traffic volume, that average has been reduced to 445, but the trend of decline has reached a plateau.

Iowa Highway Safety Data-Based Decisions

Iowa has been a leader in developing and implementing collaborative crash data tools to gather, integrate and analyze data. Many stakeholder agencies provide parts of Iowa’s data and analysis tools. Their collaboration creates Iowa’s virtual traffic records system and ensures that state and local officials can access a variety of quality data to help them identify and implement effective safety measures. Future safety gains will require implementing bold evidence-based safety initiatives.

Strategies in the Iowa CHSP are based on multidisciplinary collaboration and data supported by these and other Iowa traffic records data tools and practices.

- The Iowa DOT’s Motor Vehicle Division led development of a data collection tool as part of the “National Model”¹ that became TraCS (Traffic and Criminal Software) with support from FHWA, Iowa DPS and other stakeholders. TraCS is a PC-based crash reporting system designed to expedite police data capture

¹ National Model for the Statewide Application of Data Collection and Management Technology to Improve Highway Safety



“The plan must not only be evidence based, but it must have sharp teeth.”

Halving Roadway Fatalities, A Case Study from Victoria, Australia

for crashes. (TraCS-based software is now used by 18 other states and two Canadian provinces for a variety of traffic and crime data functions.)

- The Iowa DPS and local law enforcement agencies use TraCS and other means to accurately investigate and report crashes and driver citations to the Iowa DOT's Motor Vehicle Division. Eighty percent of Iowa's crash reports are expected to be reported electronically through TraCS by early 2007.
- The Iowa DOT's Motor Vehicle Division and the Highway Division's Office of Traffic and Safety partner to maintain the weekly post-submission edit process. This timely review ensures that crash records are complete and accurate.
- The Iowa DOT distributes crash data to state and local safety data users annually, quarterly or more often depending on their level of use.
- The Iowa DOT's Office of Traffic and Safety staff developed Safety, Analysis, Visualization, and Exploration Resources (SAVER) as a powerful traffic safety analysis resource which facilitates in-depth crash analysis with geographic information system (GIS) mapping capability. SAVER utilizes statewide data from the Iowa DOT plus integrates other records such as roadway features and rail, river and corporate limits which are vital to highway safety analysis.
- Crash Mapping Analysis Tool (CMAT) is a less comprehensive tool widely used by local governments. Incident Mapping Analysis Tool (IMAT) provides law enforcement and other local agencies with access to their own crash data as soon as they submit the electronic form. Both tools were developed at Iowa State University Center for Transportation Research and Education (CTRE) with support from Iowa DPS and DOT.
- The Iowa DOT provides free analysis software and training to Iowa crash data users.
- The Iowa Traffic Safety Data Service (ITSDS) is housed at CTRE and provides data analysis services to state and local entities and is also jointly funded by the Iowa DOT and DPS.

Iowa Highway Safety Status

In the past decade, Iowa has achieved a highway safety record better than national analysts had projected - considering Iowa's increasing travel volumes and extensive roadway systems.³ Iowa's comprehensive, data-driven approach and stakeholder collaboration are credited for this success.

Although progress has been made, 445 preventable deaths per year is not acceptable and represents a serious and unacceptable public health epidemic in Iowa because, “One death is one too many.”

Future Challenges

Although Iowa has been recognized nationally for innovation and leadership in highway safety, the potential risk for crashes is dynamic and policy-makers must be vigilant in countering trends that conspire to slow or reverse progress in reducing crash fatalities and injuries.

Elements affecting Iowa's crash exposure and survivability include:

- increased risk exposure with Iowa's growing numbers of vehicle miles traveled, vehicles registered and licensed drivers; (See Figure 2.)
- reduced state and local law enforcement staffing and resources;
- growing at-risk or vulnerable user groups with more registered motorcycles, licensed motorcycle operators and aging Iowa drivers who will routinely drive more miles and continue to drive later in life than previous generations;
- increased driver distraction and aggressive behavior; and
- fewer volunteers in local emergency response systems and declining numbers of trauma and emergency care centers, especially in rural areas.

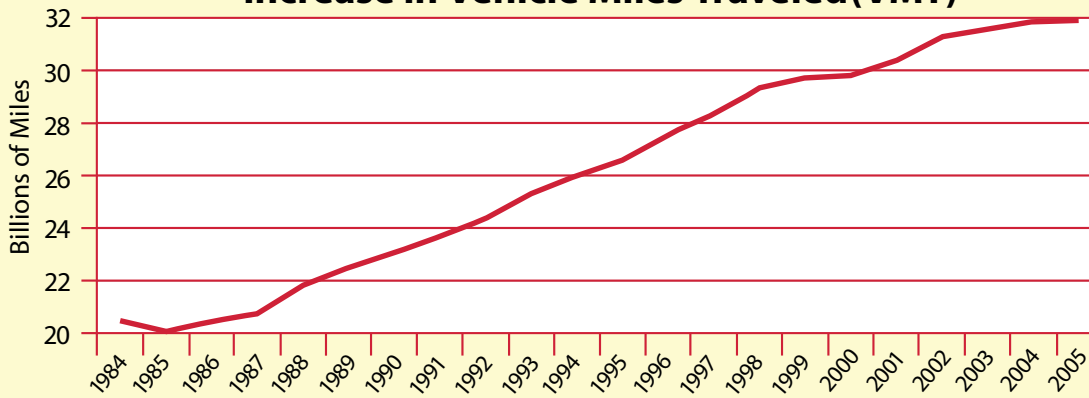
Despite the remarkable progress made in Iowa, future gains will be increasingly more difficult to achieve. Unless driver behaviors change, and safety improvements increase at a faster rate than roadway exposure increases, the total number of people killed or suffering life changing injuries will likely increase.

³ Charles (Tony) Aiken FHWA, *Moving the Numbers FHWA Use of Data for Safety, Traffic Records Forum July 26, 2004*



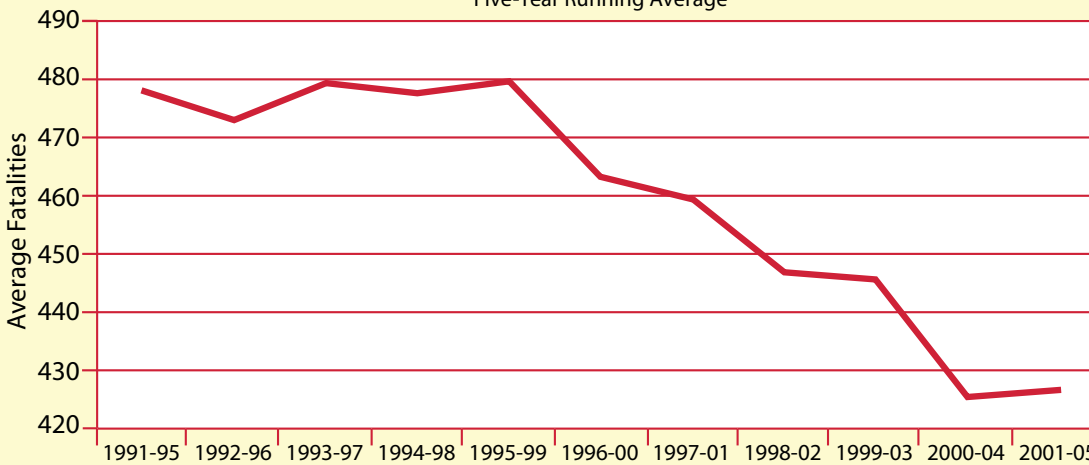
Figure 2

Increase in Vehicle Miles Traveled(VMT)



Iowa Highway Fatalities

Five-Year Running Average



The Driving Culture

Although safety gains have been enhanced with improved technology in vehicles and road systems, the most difficult element to change in highway safety still is the driver. Drivers are the dominant contributing factor in crashes with over 95 percent of reported crashes including one or more element of driver behavior or error. For safety to progress in saving lives, the driving culture must value driving as a personal responsibility, a complex learned skill and an earned privilege requiring full attention and lifelong learning.

Much of the success experienced in other states, and especially in European countries, has been attributed to culture change in the motoring public's beliefs about their responsibility and vital role in ensuring safe travel in their community.

Changing Iowa's Driving Culture

American drivers tend to view driving as an individual freedom and right, but achieving safe mobility is everyone's responsibility. Enacting life-saving policies to change driver behavior and enforce legal consequences is often met with public resistance and they fail before they can be implemented. We can do better.

To continue progress in reducing death and injury, Iowa's leadership must challenge citizens to move to the next level and effect a change in the highway safety culture. Iowans value their transportation freedom, but how many lost lives and injuries are an acceptable cost for mobility? Iowans must conclude that, "One death is one too many."



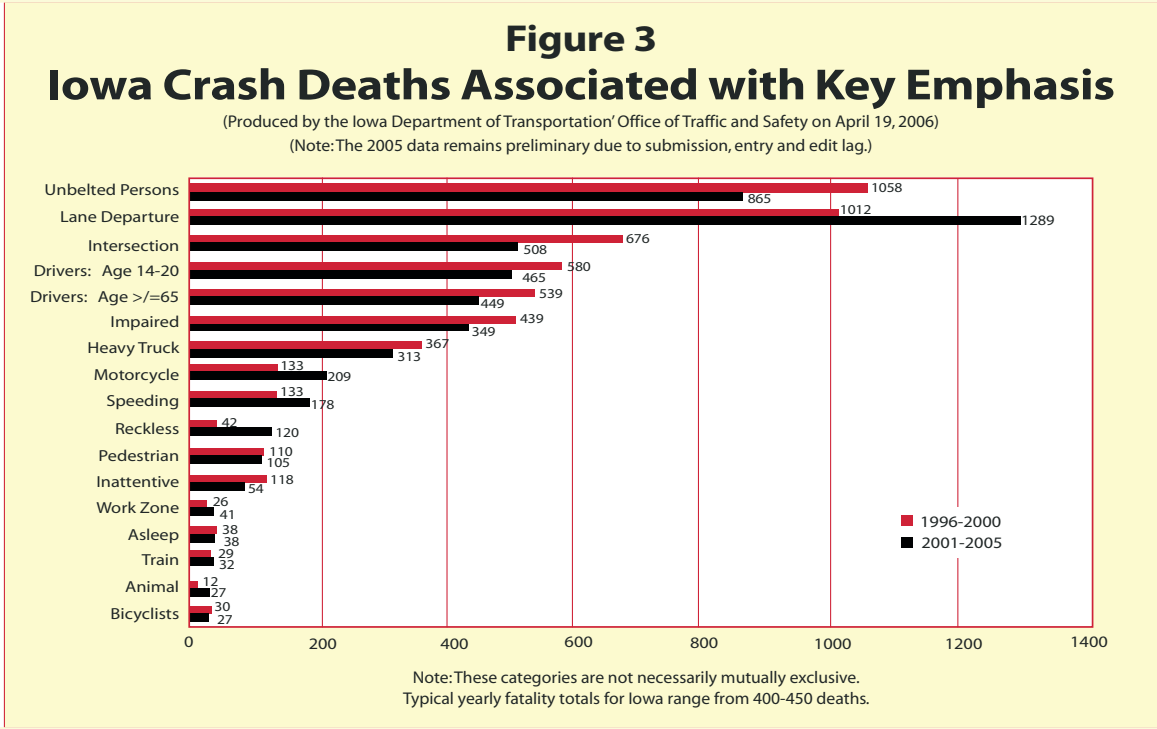
The CHSP Process

Iowa has given careful thought to what it will take to increase roadway safety through the development of its CHSP. The Iowa DOT contracted with Cambridge Systematics, Inc. to help facilitate the process and provide an outside perspective to challenge Iowa stakeholders to consider new safety possibilities. After updated federal SHSP guidance was issued April 5, 2006, formal CHSP development was initiated at the Iowa Safety Stakeholders Summit held April 26, 2006. More than 100 people attended the summit, representing a full-range of public and private sector safety stakeholder organizations.

Iowa has one of the nation's best crash data collection and analysis systems, which provided participants with accurate and timely safety data. The Iowa DOT and DPS summit organizers issued a challenge to the participants, "Identify target areas and strategies that will 'move the numbers' to significantly reduce fatalities and injuries on public roadways."

Figure 3 provides a simple comparison of fatal crash attributes and trends. This chart and other data were provided to stakeholders attending the CHSP safety summit, along with a summary of how safety data and research are used to help develop strategies.

- Crashes are complex – resulting from a combination of vehicle, road and driver factors. Safety stakeholders used additional in-depth analysis to identify crash characteristics that may be addressed to reduce deaths and injuries.
- Comparing several years of data helps identify trends and areas where safety is gaining or losing ground, and may reflect the positive impact of effective policies or the negative consequences of changing travel or vehicle use patterns.
- Safety practitioners also use other data and research to craft effective strategies, combining multidisciplinary countermeasures from engineering, enforcement, education, and emergency response services to further address known crash causes and consequences.



National research reveals these basic categories of crash causation:

- Driver conditions and behavior are a contributing factor in at least 95 percent of crashes and a primary factor in 67 percent of crashes.
- Roadway design and environment are a contributing factor in 28 percent of crashes and a primary factor in 4 percent of crashes.
- Vehicle characteristics and condition are a contributing factor in 8 percent of crashes and a primary factor in 4 percent of crashes.

The stakeholders summit attendees participated in breakout sessions to identify target areas where the greatest safety issues exist and the greatest safety gains could be made. Their findings were compiled and discussed in a final general session. Many specific areas of concern initially identified were included in broader categories and eight target areas were selected for further study.

Following the summit, these eight multidisciplinary target area teams were formed:

- Senior mobility
- Occupant protection
- Intersections
- Lane departure
- Local roads
- Young drivers
- Impaired drivers
- Driver distraction

The teams met during the next three months to identify policy and program strategies that would improve safety in these areas of concern. Some strategies primarily address infrastructure and others target driving behavior or the need for culture change to significantly “move the numbers.”

The detailed work of the eight target area teams is documented and provides support for the Iowa 2006 CHSP and ongoing implementation of safety strategies in existing programs.

Following a review by the CHSP project management team, the Iowa DOT presented a report to key state agency leaders for review Sept. 14, 2006. (See teams listed on page 1.) The input from these leaders was included with the core elements the team put forward for the Iowa DOT and DPS to include in Iowa’s 2006 CHSP.

The next decade of improving Iowa’s highway safety will require a change in Iowa’s highway safety culture including implementing strategies that demand firm stakeholder commitment and public acceptance. Based on the work of the target area teams and leadership input, the following policy and program strategies are recommended for implementation.

These strategies build on Iowa’s past success in reducing fatalities and remind citizens and policy-makers that, “One death is one too many” and Iowa can do better.



National research reveals three basic categories of crash causation: driver, roadway and vehicle.



Iowa Safety Stakeholders Summit breakout session (above) and one of the target area teams (below).



Top Policy and Program Strategies

Top Five Safety Policy Strategies (Legislative)

- Young drivers - Strengthen minor school license (MSL) and graduated driver's license (GDL) laws with stronger provisions that are proven to reduce specific risks and save lives.
- Occupant protection - Require occupant restraints in all automotive vehicle seating positions.
- Motorcycle safety - Restore a motorcycle helmet law.
- Traffic safety enforcement - Support traffic safety enforcement and adjudication with adequate resources.
- Traffic Safety Improvement Program - Increase Iowa Traffic Safety Improvement Program funding from .5 percent to a full 1 percent of Iowa's Road Use Tax Fund.

Top Eight Safety Program Strategies (Administrative)

- Lane departure - Enhance lane departure-related design standards and policies (e.g., paved shoulders, rumble strips and median barriers).

- Safety corridors - Identify safety corridors and use multidisciplinary strategies to mitigate specific crash causes such as impairment, speeding, driver inattention, and other factors.
- Intersections - Promote innovative intersection designs, such as roundabouts and other configurations.
- Local roads - Create local multidisciplinary safety teams to identify and resolve local crash causes.
- State traffic records - Enhance data availability and use by all stakeholders.
- Senior mobility - Develop a single point of contact to help older persons and their caregivers navigate existing programs regarding changing mobility needs.
- Safety training and education - Provide state and local multidisciplinary traffic safety education programs for professionals and the driving public.
- Unpaved rural roads - Promote public awareness of the risks of driving on unpaved rural roads.

These top strategies are further described beginning on page 12 and followed by a list of additional strategies developed in the target area teams.

Figure 4
Iowa's CHSP Year 2015 Goal 400
Based on Five-Year Averages

2006 Average Annual Fatalities 445	Estimated Average Annual Impact	2015 Estimated Average Annual Fatalities
With Only Program Strategies Implemented	20 lives saved	425
With Only Policy Strategies Implemented	25 lives saved	420
With Both Program and Policy Strategies Implemented	45 lives saved	400



CHSP Goal

In setting a long-term strategic goal, the CHSP management team believes that the policy changes recommended in the Top Five Policy Strategies have the most potential to save lives (25 annually) and change the culture in Iowa. (See figure 4.)

The Top Eight Program Strategies could save additional lives (20) if fully implemented.

A significant decrease in deaths (45 annually) will be achieved if both the Top Five Policy Strategies and the Top Eight Program Strategies are implemented.

Believing that, “One death is one too many,” Iowa’s highway safety stakeholders are committed to implementing these vital policy and program strategies to meet Iowa’s 2015 goal of 400 or fewer average crash fatalities per year.

CHSP Implementation

This comprehensive plan is only the first step toward saving more lives on Iowa’s roadways. The next step is to engage the wide range of safety stakeholders involved in the CHSP to implement important plan strategies. These individuals, organizations and other Iowans have the opportunity to improve Iowa’s quality of life by implementing evidence-based strategies to reduce deaths and injuries that occur on Iowa roadways.

A revitalized partnership of state and local highway safety stakeholders is aligned with the CHSP goals with a motivating vision for changing Iowa’s driving culture expressed as “One death is one too many.” Iowa’s new “Traffic Safety Alliance” replaces the Safety Management System Coordinating Committee (SMS) under Iowa DOT sponsorship.

This alliance will support multidisciplinary efforts with action teams and standing committees focused on implementing specific CHSP strategy projects or providing key data and research support for important policy development. An annual safety summit will stimulate stakeholder involvement and promote multidisciplinary networking with annual CHSP project reporting.

Iowa’s highway safety success is based on commitments from state and local organizations and individuals who contribute to safety both in their own programs and in collaborative efforts. The Iowa DOT will track shared CHSP implementation progress and provide annual reports to FHWA as required by SAFETEA-LU provisions.



Top Five Safety Policy Strategies (Legislative)

“Graduated driver’s licensing programs reduce the incidence of fatal crashes of 16-year-old drivers by an average of 11 percent. After completing our study, it is clear that more comprehensive programs have the greatest effect.”

Susan P. Baker, MPH,
Johns Hopkins
University
July 3, 2006

Young Drivers

Strengthen minor school license (MSL) and graduated driver’s license (GDL) laws with stronger provisions that are proven to reduce specific risks and save lives.

On Jan. 1, 1999, Iowa’s GDL law took effect, creating a three-tier licensing system for young drivers. Between 1998 (before the law) and 2005, the 16-year-old driver moving violations declined 41 percent and the overall 16-year-old driver crash rate declined 31 percent. Despite these gains, Iowa’s teens are still over-represented in crashes.

Since Iowa’s GDL went into effect, national studies report that stronger comprehensive GDL provisions are most effective. These are areas where Iowa could strengthen GDL and other young driver provisions:

- raise the school license age;
- increase practice hours with parents;
- reduce night driving;
- restrict passengers;
- require occupant restraints in all seating positions; and
- prohibit use of cell phones when the vehicle is in operation.

Iowa data:

- Teens and young adults (15- to 24- year-olds) are 17 percent of Iowa’s licensed drivers, but suffer 40 percent of all fatal and serious traffic injuries.
- Fourteen-year-olds are allowed to drive unsupervised on public roadways in Iowa and in only three other states (minor school license or MSL).
- Comparing same-age drivers, unsupervised MSL drivers are 11.5 times more likely to have a traffic crash, and 6.5 times more likely to have moving violation conviction than supervised instructional licensed (IL) drivers.
- When a teen drives with more than one passenger, the risk of crashing is three to five times higher than while driving alone.
- Just 39 percent of teens that were fatally injured in traffic crashes were wearing safety belts.
- The majority of people killed in young driver crashes are people other than the teen drivers.

In June 2006, the Insurance Institute for Highway Safety gave Iowa’s current GDL program only a “fair” rating.



Occupant Protection
Require occupant restraints
in all seating positions

The largest determinant of whether a person survives or is seriously injured in a crash is whether a safety belt is worn. However, Iowa requires only front seat occupants to buckle up and unbelted passengers can put themselves and others more at risk of injury by becoming projectiles during crashes.



“When I was 16, I crashed into the ditch from a county road on my way to school. Since I wasn’t wearing my seatbelt, I was thrown from the car and suffered a broken back and other injuries. Now I may never walk again, but I will always wear my seatbelt and tell my friends to do the same.”

Eddy Burroughs

Iowans may wrongly believe that rear seat positions are safe enough without safety belts because buckling up is not required by law.

The National Highway Traffic Safety Administration (NHTSA) has reported these occupant protection research conclusions:

- Of the total passenger vehicle occupants who were totally ejected from the vehicle, 75 percent were killed. Only 1 percent of the occupants reported to have been using restraints were ejected, compared with 30 percent of the unrestrained occupants.
- Back seat lap/shoulder belts are 44 percent effective in reducing fatalities when compared to unrestrained back seat occupants in passenger cars, and 73 percent effective in passenger vans and sport utility vehicles.
- The odds of death for a belted driver seated directly in front of an unrestrained passenger in a serious head-on crash was 2.27 times higher than if seated in front of a restrained passenger.

Iowa data:

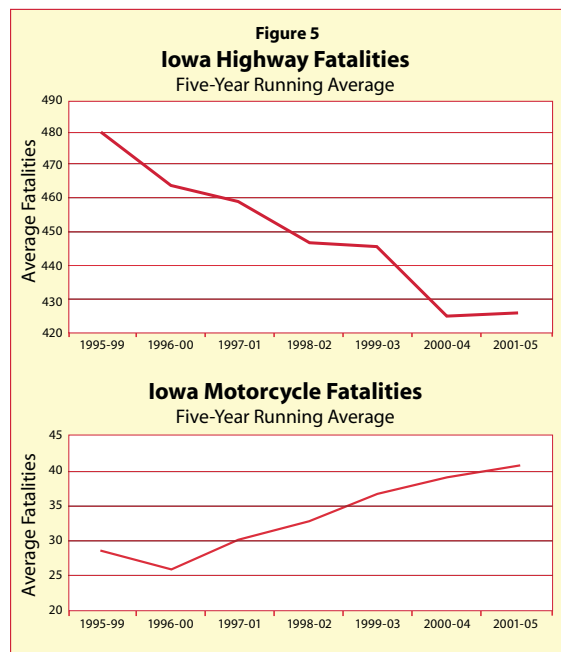
- Iowa’s front seat belt law compliance rate for occupants is 90 percent.
- Nearly 50 percent of people who die in Iowa crashes are not wearing safety belts.
- From 2001-2004, less than 40 percent of teens and young adults in fatal or serious injury crashes were belted.
- Frequently at-risk back seat riders include several demographic groups that are over-represented as unbelted crash fatalities including: children between child passenger seat age and driving age, teen passengers and older persons.

Motorcycle Safety
Restore a motorcycle helmet law.

The number of motorcycle fatalities is rising faster than any other type in Iowa and all across the country. Because these fatalities are increasing exponentially while other crash types and fatalities have generally declined in recent years, Iowa and other states are renewing their efforts to prevent motorcyclist crashes, injuries and deaths. (See Figure 5.)

Iowa data:

- Average motorcycle fatalities rose 46 percent from 1995-2005, while average fatalities overall declined nearly 15 percent from 1995-2005. (See figure 5.)



Sixteen states and the District of Columbia have laws requiring safety belts in all automotive vehicle seating positions.

Iowa Life Toll
The life toll is a record of the number of people who have escaped serious injury or death because they were buckled up at the time of the crash, as determined by the investigating law enforcement officer.

From July 1, 1986, to Nov. 15, 2006, 5,772 people have been saved because they wore their safety belts.



After the first year of the enactment of universal helmet use laws, the following reductions in motorcycle fatalities occurred in these states.

- Oregon (33 percent)
- Nebraska (32 percent)
- Texas (23 percent)
- Washington (15 percent)
- California (37 percent)
- Maryland (20 percent)

- Motorcycle travel represents less than 1 percent of total travel, but motorcycle fatalities represent 12 percent of travel fatalities .
- The number of motorcycle fatalities is rising faster than increases in motorcycle licensing and vehicle registration.
- In November 2006, 53 motorcycle crash fatalities had been already recorded for the year.
 - Five people died during the Labor Day weekend alone.
 - Five people died as a result of deer-motorcycle crashes.
 - Nearly 66 percent of the crashes were reported with motorcyclist contributing circumstances such as speed or loss of control.
 - Over 80 percent of the 53 who died were not wearing helmets.
- Iowa is one of just four states in the nation with no motorcycle safety law. Twenty states have a universal helmet law. In another 27 states other forms of helmet laws are in effect for those under a certain age or other conditions. The National Highway Traffic Safety Administration reports helmet use is markedly different between states with and without universal helmet use laws and that, when states enact universal helmet laws, motorcycle fatalities are reduced. (See list of state law changes at left.)



In May 2006, Derek Doebal crashed while riding his motorcycle in Ames. He woke up 13 days later. "The nurses at Mercy told me six other motorcycle riders came in injured that weekend and no one else made it. I am lucky to be alive." Today he always wears his helmet when riding his motorcycle and says "I see a helmet as a mental seatbelt. If we have seatbelt laws to protect us in automobiles, we should have helmet laws to protect us on motorcycles."

Traffic Safety Enforcement
Support traffic safety enforcement and adjudication with adequate resources.

Iowa's communities depend on law enforcement to help maintain the state's quality of life in its level of safety in neighborhoods and on public roadways. In highway safety, Iowa law enforcement has used the model of statewide, high visibility, multi-agency, enforcement cooperation, paired with public information blitzes, to achieve:

- the second lowest percentage of impaired driving-related fatalities in the nation; and
- 90 percent seat belt compliance.

A generation of citizens, policy makers and safety advocates joining forces has produced a culture change by enacting and enforcing laws and raising public awareness. In these efforts, the public has accepted life-saving law changes that resulted in safety belt and child seat use becoming the social norm for average citizens, and driving while impaired growing less and less socially accepted. *Iowans now have less tolerance for crash deaths and injuries resulting from these driver behaviors.*

Still, there is more work to be done. Even with seat belt compliance at 90 percent, nearly 50 percent of Iowa's crash fatalities were not wearing seat belts when they crashed; alcohol-related crashes are twice as common in rural areas; and 18- to 24-year-olds are involved in 31 percent of fatal crashes, but only represent 13 percent of licensed drivers. Enforcement efforts aimed at specific problems like these can help save more lives and further meet public safety needs.

State and local law enforcement agencies and courts require dedicated funding to be fully staffed and have adequate resources to continue their work and further address the public's state and local health and safety needs.





State and local law enforcement agencies collaborated in public education and enforcement campaigns when Iowa's rural interstate speed limit was raised to 70 mph in 2005.

Iowa data:

- Iowa lost about 500, or 10 percent, of the state and local law enforcement workforce in recent years.
- Iowa's vehicle miles traveled (VMT) have increased by 50 percent since the mid-1980s, while traffic citations have declined modestly over the same period.
- Consistent, high visibility traffic enforcement results in greater driver compliance with safety laws and has the added benefit of deterring or interrupting criminal behaviors like drug trafficking and smuggling on public roadways.

Iowa's safety stakeholders recognize that the culture change and many of the important driver behavior strategies in this plan cannot be effectively implemented without adequate state and local law enforcement services. With public support and adequate funding, Iowa law enforcement can effectively enforce traffic laws, and ultimately move Iowa's driving culture to develop less tolerance for traffic deaths and a higher expectation for driver responsibility.

Traffic Safety Improvements

Increase Iowa Traffic Safety Improvement Program funding from .5 percent to a full 1 percent of Iowa's Road Use Tax Fund.

In 1987, Iowa's legislature provided .5 percent of Iowa's Road Use Tax fund to be used for the Traffic Safety Improvement Program (TSIP) to improve safety on state or local public roads, conduct safety research and provide safety-based public information.

Since its inception, this program has provided \$4 to \$5 million annually for traffic safety improvements or studies on public roads under county, city or state jurisdiction. The applications for site specific and traffic control awards must

include a calculated safety benefit and are reviewed by a committee of state and local engineers, with final approval given by the Iowa Transportation Commission.

Since 1987, TSIP project costs have increased exponentially, making it harder for local governments to find the local funds to cover rising construction costs.

- The Iowa DOT's analysis of construction contract award prices for the last three and a half years showed roadway excavation prices have risen by 66.4 percent, hot-mix asphalt by 28 percent, Portland cement concrete by 2 percent, reinforcing steel by 33 percent, structural steel by 18 percent, and structural concrete by 9.5 percent.
- Reflected in these higher construction prices are the increased costs of materials, machinery, wages, fuel, and insurance. For instance, diesel fuel used in asphalt mixes and construction vehicles and equipment rose 88 percent in the last two years.

Increasing the TSIP program is expected to improve Iowa's highway safety and save more lives by supporting collaboration between the Iowa DOT and local governments in continuing to address the state's most pressing city and county safety improvement needs.



Installation of larger chevrons and other low cost remedies help reduce crashes on state and local roads identified in a recent TSIP project.



Summary of Potential Policy Performance Measures

The Iowa CHSP will be reviewed on an annual basis and progress will be reported to the Federal Highway Administration. These are some of the performance measures that may be used to track the effectiveness of strategies as they are developed and implemented.

Young Drivers

- The passage of enhanced graduated driver's license (GDL) legislation
- The percent of all fatal and serious crashes involving young drivers in Iowa

Occupant Protection

- The passage of all positions safety belt law
- Statewide safety belt use rate
- The percent of fatal and serious injury crashes in which safety belts were not used

Motorcycle Safety

- The passage of an Iowa helmet law
- Statewide helmet use rate
- The number of fatal and serious injury crashes among motorcycle riders in Iowa
- The percent of fatal and serious injury motorcycle crashes in which a helmet was not used

Law Enforcement

- Increased funding and staffing for state and local law enforcement
- The number of fatal and serious injury crashes involving impaired-driving
- The involvement of 18- to 24-year-old drivers as a percent of all drinking drivers in fatal and serious injury crashes
- The number of fatal and serious injury crashes involving impaired motorcycle operators

Traffic Safety Improvements

- The passage of legislation increasing program funding from .5 percent to 1 percent of Iowa's Road Use Tax Fund
- The fatal and serious injury rates at program sites

Top Eight Safety Program Strategies (Administrative)

Lane Departure

Enhance state and local lane departure-related design standards and policies including: paved shoulders, centerline and shoulder rumble strips, pavement markings, signs, and median barriers.

The single largest category of fatal and serious injury crashes involves drivers leaving the travel lane (see Figure 3 on page 8). These crashes often occur when the driver is distracted, fatigued, impaired, and/or driving too fast for the conditions. Strategies for reducing the number and severity of lane departure crashes must address ways to keep drivers in their travel lane and ways to reduce the consequences when they leave their travel lane.

Lane departure crashes include:

- single vehicle run-off-the-road (SVROR); and
- multiple vehicle cross-centerline/cross-median (MVCC/CM).

Low-cost safety improvements have proven to be very effective when data is systematically used to identify and address locations with high crash rates or other potentially high-risk conditions such as two-lane curves with narrow shoulders.

Improvements may include: paved shoulders, rumble strips and stripes, lighting, higher retro-reflective signage, flattened curves, median barriers, and clear zones. These improvements help increase driver awareness, prevent crashes and mitigate their consequences. (See Highway Safety Low Cost Investments.)

In 2004, the Iowa DOT adopted a paved shoulder and rumble strip policy on selected two- and four-lane facilities. In 2005, 298 miles of shoulders were paved. There are many more miles of state and local roadways where lane departure improvements can save lives.

Iowa Data:

- Sixty percent of all fatal crashes involve a lane departure.
- Fifteen percent of SVROR fatal crashes and 25 percent of severe injury crashes occur on curves.
- Eleven percent of MVCC/CM fatal crashes and 18 percent of severe injury crashes occur on curves.
- More than 70 percent of unpaved-road, lane-departure crashes occur on very low volume roads (less than 100 vehicles per day).



Highway Safety Low Cost Investments

Paved Shoulders and Rumble Strips



*20% reduction in single vehicle run-off-the-road crashes
Cost: \$110,000 per mile*

Cable Barrier



*90% reduction in cross-median crashes
Cost: \$130,000 per mile*

Bigger and Brighter Curve and Chevron Signs



*25% reduction in single vehicle run-off-the-road crashes
Cost: \$1,000 per curve*

Milled Centerline Rumble Strips



*25% reduction in head-on and sideswipe crashes
Cost: \$5,000 per mile*

Safety Corridors

Identify safety corridors and use multidisciplinary strategies to mitigate specific crash causes such as impairment, speeding and driver inattention.

Iowa has one of the best traffic records systems in the nation, providing timely and accurate data from a wide range of sources and geographic information system (GIS) based analysis tools to help multidisciplinary safety practitioners make evidence-based decisions for highway safety. Since the causation factors of crashes can be complex, it is imperative that highway safety practitioners including engineering, enforcement and human behavior perspectives, collaborate in addressing specific combinations of crash factors that are the most deadly.

Iowa currently supports annual statewide multi-agency corridor enforcement and education events through the Governor's Traffic Safety Bureau (GTSB). These high visibility events on Iowa's interstates and primary highways raise public awareness and remind citizens to obey Iowa's state and local traffic laws while traveling. State and local safety engineers also study crash data and roadway elements to apply targeted roadway environment improvements that may

assist drivers in navigating the roadway. (See Figure 6 on page 18.) Iowans recognize that these safety programs usually address single aspects of crash reduction such as driver behavior or roadway elements.

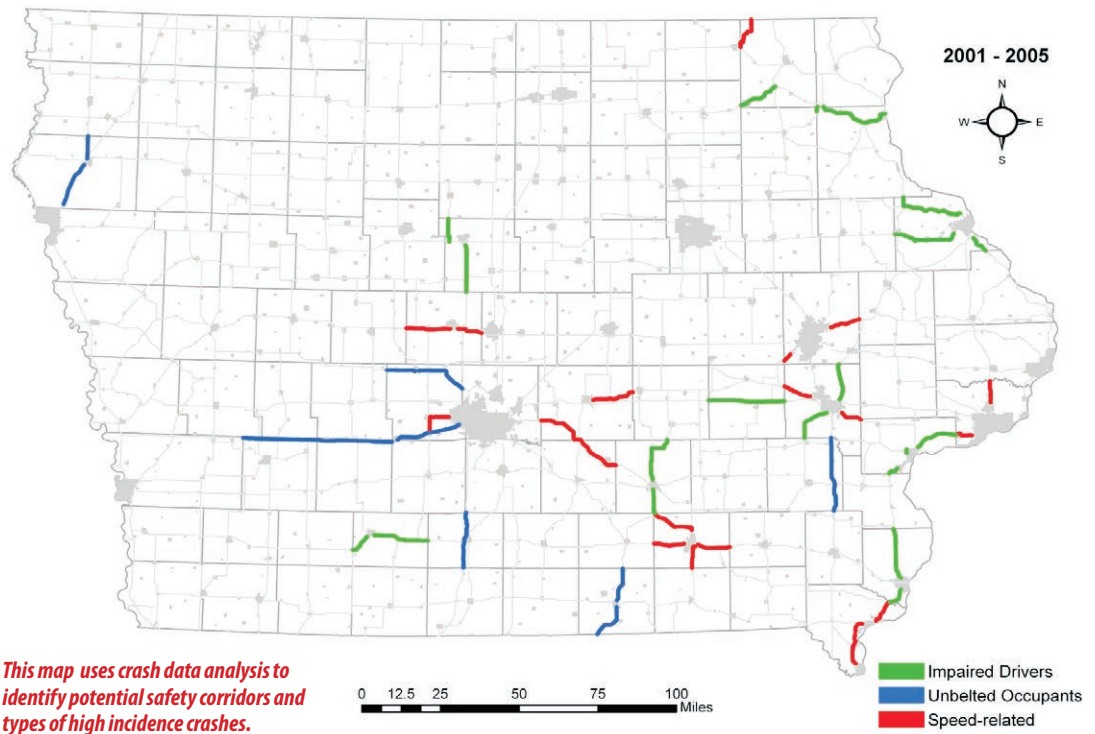
Combining known human behavior crash factors with roadway characteristics in analyses may yield a correlation that a location-specific combination of engineering, enforcement and education strategies to change driver behavior or compensate for driver failures may mitigate. A safety corridor approach can provide opportunity for diverse state and local entities to address multiple safety factors and combine data and multi-pronged strategies to save lives.

Multidisciplinary countermeasures on designated state or local safety corridors may include combinations of the following:

- brighter and larger advance warning signs for curves or intersections;
- increased speed enforcement or reduced speed limits on certain road sections;
- local public awareness campaigns to draw attention to a section of roadway where extra caution is advisable;



**Figure 6
Potential Safety Corridors**



- increased enforcement targeting high risk locations and time periods;
- business and local safety officials partnering to deter citizens from drinking and driving; and
- local schools, engineers and law enforcement partnering to inform young drivers of hazards to avoid when traveling to and from school.

Intersections

Promote innovative intersection designs such as roundabouts and other new configurations

In Iowa, intersection crashes account for over one-third of all traffic fatalities and serious injuries. Approximately 64 percent of those crashes occur in urban areas. The rural portion, though smaller, tends to be more severe. Among the most severe crash types are broadside crashes at intersections. The dynamics of traffic and human behavior produce numerous intersection conflicts resulting in crashes. Changing traffic patterns to reduce these conflicts are effectively being used in roundabouts and other innovative designs.

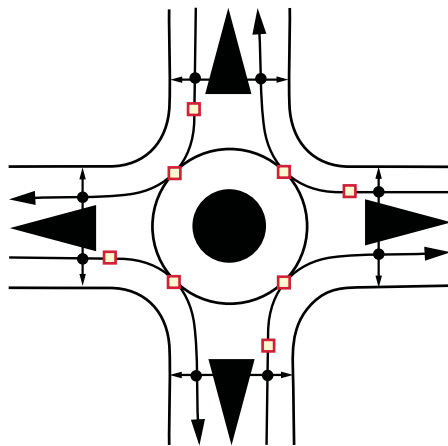
For example, a typical four-legged intersection has 32 vehicle-to-vehicle conflict points and 24 vehicle-to-pedestrian conflict points. By comparison, a four-legged roundabout has only eight vehicle-to-vehicle conflict points and eight vehicle-to-pedestrian conflict points. (See Figure 7.) This is an approximate 70 percent reduction in conflict points. In addition, since all vehicles are traveling in the same direction and at a lower speed in a roundabout, crashes are generally minor rear end or sideswipe in nature. Left-hand, right-angle (T-bone) and head-on crashes are virtually eliminated in a roundabout.

While roundabouts are a relatively new type of intersection in Iowa, they are becoming more common as evidence of their benefits grows. Improved traffic flow, aesthetics and cost savings make roundabouts a good idea, and the safety gains are compelling. In recent years, they have been used in the United States to reduce crashes, traffic delays, fuel consumption, air pollution, and construction and maintenance costs.

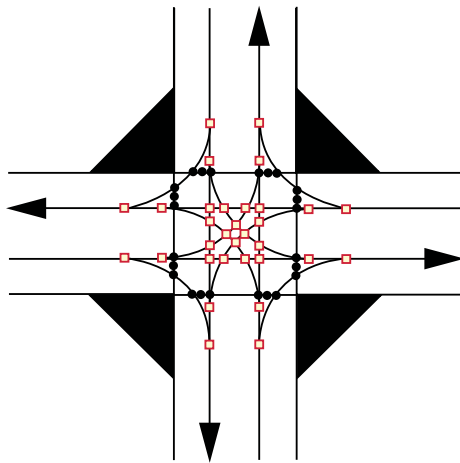
Similarly, other new and innovative intersection designs have been developed which can reduce the number and severity of intersection crashes.



Figure 7



Single-lane roundabout



Standard two-lane intersection

□ Possible Conflict Points

Local Roads

Create local multidisciplinary safety teams (MDSTs) to identify and resolve local crash causes and enhance crash response practices

Local roads are defined as those under the jurisdiction of Iowa’s 99 counties and 947 cities. Iowa’s total roadway system of approximately 114,000 miles consists of about 79 percent county-owned rural roads and 13 percent city streets. By contrast, Iowa DOT is responsible for 9,372 miles of state-owned highways and ramps, or about 8 percent of the total system.

Considering the vast network of local roads and streets in Iowa, and the random nature of crash occurrence, a local multidisciplinary approach is vital for efforts to reduce serious traffic crashes and improve safety to be successful. Local safety stakeholders may include: engineers, planners, law enforcement, transit, business leaders, driver educators, public health, emergency responders, and other concerned parties.

Several Iowa metro or regional and multi-state areas have had successful MDSTs for a number of years. Their focus is determined by the traffic safety needs in their communities and they are often led by law enforcement with help from their local metropolitan planning organizations or regional planning agencies.

Local groups use multidisciplinary approaches to help address local safety concerns as they arise. Their efforts are shaped by changing local needs and may include: traffic conditions, transportation planning, event traffic, public emergencies, school traffic, business traffic, parking patterns, traffic management, incident management, construction planning, and a wide range of other situations affecting road safety locally.

Iowa data:

- Iowa communities that currently support an MDST include: Clinton, Council Bluffs, Davenport, Des Moines, Dubuque, and Sioux City.
- Fifty percent of Iowa’s traffic fatalities occur on local roads.
- Eighty percent of serious crashes in urban areas occur on municipal streets.
- Sixty percent of rural area serious crashes occur on low-volume county roads (less than 400 vehicles per day), many of which are un-paved.

Iowa data:

- More than one-third of all traffic fatalities and serious injuries occur at intersections.
- On urban local roads most fatal and serious injury crashes occur at intersections.
- Locations of Iowa roundabouts in operation include: Bettendorf, Clive, Coralville, Des Moines, Ottumwa, Urbandale, and West Des Moines.
- Roundabouts are planned for the following Iowa locations: Clive, Pella, Polk City, Oskaloosa, Urbandale, Waterloo, and Iowa County.

Studies by the Insurance Institute for Highway Safety show that roundabouts provide:

- **90 percent reduction in fatal crashes;**
- **76 percent reduction in injury crashes;**
- **30 to 40 percent reduction in pedestrian crashes; and**
- **10 percent reduction in bicycle crashes.**



"If you design for the Old - You include the Young.

If you design for the Young - You exclude the Old."

**Dr. Bernard Isaacs,
Renowned Geriatric
Physician and Author**

- Alcohol-related fatal and serious injury crashes are almost twice as common in rural areas (16 percent versus 9 percent in urban areas).

State Traffic Records

Enhance data availability and use by all stakeholders

The demand for data is evident throughout this plan and success of CHSP implementation will rely heavily on the availability and use of data. Sustaining Iowa’s state traffic records system is critical to Iowa’s continued success in reducing crash fatalities and injuries.

Iowa has been a leader in developing and implementing collaborative crash data tools to gather, integrate and analyze data. Many stakeholder agencies provide parts of Iowa’s data and analysis tools. Their collaboration creates Iowa’s virtual traffic records system and ensures that state and local officials can access a variety of quality data to help them identify and implement evidence-based safety measures that succeed.



The Iowa DOT provides free crash data, analysis software and training to state and local traffic engineers and law enforcement.

The Iowa Statewide Traffic Records Coordinating Committee (STRCC) conducted its traffic records assessment in late 2005 and produced the Iowa Traffic Records Strategic Plan which was approved for National Highway Traffic Safety Administration 408 Program funding in mid-2006. This traffic records plan charts the way to achieve the shared goals of Iowa’s traffic safety data community. It also is one of several state plans that complement and support the Iowa CHSP. It is further understood that CHSP implementation will complement and support the traffic records plan.

Especially key to the CHSP implementation is sustaining and supporting these tools and strategies for using and sharing data:

- Provide the ongoing dedicated funding support required for Iowa’s basic collection and analysis data systems including:
 - TraCS (Traffic and Criminal Software);
 - ITSDS (Iowa Traffic Safety Data Service);
 - collection and utilization of crash injury data by the Iowa Department of Public Health; and
 - enhancement to desktop crash data analysis tools including SAVER (Safety, Analysis, Visualization, and Exploration Resources), IMAT (Incident Mapping Analysis Tool) and CMAT (Crash Mapping Analysis Tool).

- Continue proactive support for integrating and analyzing data with emphasis on local users having access to data, analysis tools and training.

- Enhance data availability and assistance to state and local safety programs for problem identification and evidence-based decisions.

- Provide free periodic and on-demand analysis training and local data analysis assistance in user-friendly geographic information system maps, charts and tables for various user groups, including:
 - law enforcement (speed and alcohol crash involvement);
 - engineering (roadway elements);
 - planning (density and crash causes in metropolitan planning organization's or regional planning agency's area); and
 - special areas (school routes, motorcycles, older drivers, etc.).

- Provide understandable safety data and representations to the public to help inform and ultimately transform Iowa’s driving culture to believe that, “One death is one too many.”



Senior Mobility

Develop a single point of contact to help older persons and their caregivers navigate existing programs regarding changing mobility needs.

As drivers age, changes in their physical and cognitive capabilities may eventually affect their ability to drive safely. These changes may include vision, strength, range of motion or reaction time and occur as the result of a combination of health conditions, illness or medications. Recognizing these changes and making conscious decisions to adjust their driving patterns can help drivers continue to drive safely and enjoy their mobility independence.

“Our mission is not to take drivers off the road and there is no magic age where we believe people must stop driving. In fact, we prefer to help. We believe that people should stay on the road as long as they can drive safely to retain their cherished independence and the quality of life that comes with self-sufficient mobility.”

Terry Dillinger,
Iowa Department of Transportation’s
Office of Driver Services

Iowa data:

- Sixteen percent of Iowa licensed drivers are 65 or older, but this group suffers 21 percent of fatalities and 17 percent of serious injuries in traffic crashes.
- Iowa has the fifth highest percentage of persons age 65 and older in the nation.



“Older Iowans can enjoy driving safely well into their 80’s or 90’s when they know their limits and adjust their driving habits and patterns appropriately.”

Dr. Levi Spohnheimer
(Levi Spohnheimer was a longtime AARP driver safety instructor.)

- Iowa’s population age 60 and older is expected to increase more than 44 percent by 2030.
- With an aging population, the “design driver” of this century is the older driver.

Iowa’s older driver program strategies

Older person safety is increased when the driving environment is made safer, when they adjust their driving patterns to match their changing capabilities, and when they choose alternatives to driving if they cannot or do not wish to drive.

- The Iowa DOT’s Highway Division has implemented new roadway improvements that assist older drivers and provided training to state, city and county traffic engineers to extend state and local use of these elements.
- The Iowa DOT’s Motor Vehicle Division has adopted licensing strategies that help officials and drivers identify changes and adjust driving patterns as driver capabilities and transportation needs change.
- Other citizens, officials and agencies serving aging Iowans recognize that older drivers and their families need assistance to navigate the complexities of changing the driving patterns and even the lifestyle choices of older drivers to ensure their well-being and safely meet their transportation needs.

Safety Training and Education

Provide state and local multidisciplinary traffic safety education programs for professionals and the driving public.

Iowa transportation safety officials have long recognized the value of sharing knowledge and meaningful data to enhance driver awareness, safety programs and decisions. Because changing the culture is a primary element for future success in highway safety, training and education are key elements for most of the proposed strategies. For the CHSP to succeed in saving lives, it is critical these efforts be continued, and additional efforts applied to both safety practitioners and the driving public.





Thanks to ongoing training and education efforts, Iowa has over 500 trained child seat technicians who offer community events and consultations in all 99 counties to help parents and others learn to use child seats properly.

Joining forces (citizens, policy makers and advocates) can contribute to effect a culture change by promoting law changes and raising public awareness. In a generation of these efforts, the public has accepted life-saving legislation that resulted in safety belt and child seat use becoming the social norm for all citizens, while driving impaired has grown less socially accepted. Iowans now have less tolerance for crash deaths and injuries resulting from driver behavior.

In the same way, peer exchanges and educational opportunities for those working in highway safety related programs can help individuals and organizations apply new program strategies and renew their resolve to save lives on our roadways. The CHSP success will depend on extensive safety training and education.

Public information and education examples:

- The Iowa DOT provides radio spots, press releases and tip sheets on areas of concern as crash trends are recognized or driver awareness is needed to adjust to changing seasons and traffic patterns.
- The Iowa DOT's Motor Vehicle Division staff works with communities to address young and aging driver groups.
- The Iowa Department of Public Safety's (DPS) Governor's Traffic Safety Bureau (GTSB) issues alerts for weather-related roadway conditions, seasonal concerns and special enforcement efforts to promote seat belt use and speed compliance.



Iowa DOT crews learn how to use reflectometer equipment to ensure proper paint application and maintenance. New materials and quality-controlled application can help provide drivers with more visible and resilient pavement markings.

Training and safety education examples:

- Engineering
 - The Iowa DOT's safety engineers provide up-to-date workshops for state and local engineers on subjects such as older drivers and intersection safety.
 - The Iowa DOT's Office of Traffic and Safety provides diverse safety colleagues and partners with peer discussions and reports on new safety tools, best practices, lessons learned, and recent developments in highway safety.
- Enforcement
 - The Iowa DPS trains law enforcement officers in better ways to utilize traffic crash reports and crash data in their daily work.
- Injury Prevention
 - The Iowa departments of Public Safety and Public Health train child safety seat technicians and provide instruction to families at special fitting stations.

Multidisciplinary efforts include:

- The GTSB sponsors an annual conference for law enforcement and other safety practitioners.
- Iowa DOT personnel train state and local safety practitioners on the use of crash data and analysis to help them identify where to apply safety strategies.
- The Safety Management System (SMS) sponsors forums on special topics such as aging drivers, motorcycle safety and safety conscious planning.

Unpaved Rural Roads

Promote public awareness of the risks of driving on unpaved rural roads.

Iowa has more than 104,000 miles of local roads, making Iowa one of the nation's top states in its ratio of public road miles per citizen served. The average traffic count on rural county roads is 160 vehicles per day compared with 21,800 per day on rural interstate roads. About 70 percent of the local mileage consists of unpaved roads with very low daily traffic volumes. Maintaining these local roads falls to 99 county and 947 municipal governments. Road characteristics generally make unpaved roads more vulnerable to weather, seasons and use by heavy equipment than paved roads and this variability contributes to driver errors resulting in crashes.





Unpaved rural roads are especially perilous for inexperienced drivers.

The public generally understands and accepts a lower level of service for these low volume roads serving rural neighborhoods. These roadways are less forgiving when a vehicle leaves the travel lane and young or less experienced drivers may not realize how much their safety and room for error is affected by the narrower shoulders, granulated surface and steeper ditches on unpaved roads.

Crash records indicate that drivers need to drive slower and more carefully on Iowa's unpaved roads. Despite their low volumes, these roads are overrepresented in serious injury and fatal crashes.

- Twenty-one percent of SVROR fatal and severe injury crashes occur on unpaved public roads.
- More than 70 percent of unpaved-road, lane-departure crashes occur on low volume roads (less than 100 vehicles per day).
- Crash victims are most likely to be unbelted (45 percent) on rural unpaved secondary roads.
- The most common contributing circumstances to serious and fatal crashes on rural local roads are speed and loss of control, which together are involved in nearly one-third of these crashes.

You're the COACH! ***A Guide for Parents of New Drivers.***

Iowa Department of Transportation's Office of Driver Services

Control of Speed on a Gravel Road

Tell your teen driver about how loose gravel will build up on the sides of rural roads. If the front tire enters the loose gravel, steering control may be at risk. If the vehicle's speed is too great, the gravel may pull the vehicle into the ditch. The vehicle may roll, strike an object or embankment, or become submerged in water. Novice drivers should be introduced to gravel roads after becoming comfortable driving on hard surfaces, if at all possible.

Summary of Potential Program Performance Measures

The Iowa CHSP will be reviewed on an annual basis and progress will be reported to the FHWA. These are some of the performance measures that may be used to track the effectiveness of strategies as they are developed and implemented.

Lane Departure

- The number of fatal and serious injury lane-departure crashes by system type and surface type roads in Iowa.
- The number of lane-departure crashes as a percentage of all crashes.

Safety Corridors

- The successful development of a safety corridor program.
- Targeted before and after results on the program corridors.

Intersections

- The number of fatal and serious injury crashes at intersections that have higher than the state average crash rates.
- The fatal and serious injury crashes at intersections on urban local roads.
- The severity of crashes at intersections.

Local Roads

- The number of local roads teams developed within Iowa.
- The number of fatal and serious injury crashes on Iowa's low-volume local roads (less than 400 vehicles per day).



Crash Data Records

- Data availability and its use by all stakeholders.

Senior Mobility

- Successful creation of a single point of contact to help older persons and their caregivers navigate existing programs regarding changing mobility needs.

Safety Training and Education

- The development and delivery of safety practitioner training.
- The development and delivery of public education and information efforts.

Unpaved Rural Roads

- The number of fatal and serious injury crashes on Iowa's unpaved local roads.
- The development and delivery of a public awareness program on the risks of driving on unpaved rural roads.

Additional Potential Strategies

Stakeholders participating in the eight CHSP target area teams developed a broad range of additional potential strategies to help “move the numbers” and save lives on Iowa’s roadways. Many of these strategies support the top 13 priority list and could be implemented by efforts in related programs and stakeholder groups when appropriate opportunities arise.

Senior Mobility

Safety policy strategies

Establish a manager of older Iowan safe mobility position to serve as a clearinghouse for all aspects of education and outreach activities related to the safe mobility of older persons through all stages, from active driver to assisted rider.

Safety program strategies

- Develop and update assessment and decision-making tools for older drivers, their families/caregivers, the medical community, human services agencies, and other interested persons and organizations.
- Develop and disseminate a newsletter targeting the older road user.
- Sponsor multidisciplinary conferences throughout the state to provide education and assistance to older drivers and caregivers.
- Promote increased compliance with safety belt laws through older driver education materials, public service announcements and enforcement. (Note: Occupant protection is a target area, but the strategy also is included here given the need to target this population.)

- Sustain or increase education on engineering and design for older populations to Iowa DOT’s district and local engineers through all safety programs and free courses on special topics in safety engineering for older persons. (See Local Roads, Intersections and Lane Departure sections for additional engineering strategies that help older drivers.)

Occupant Protection

Safety policy strategies

- Make safety belt citations a moving violation.
- Increase the penalties and consequences for failure to abide by the occupant protection laws.

Safety program strategies

- Sustain or increase effective national, state and local programs such as "Click-It or Ticket" to increase the use of safety belts with particular emphasis on high-risk population groups including pickup truck drivers, teens, older adults, and commercial motor vehicle drivers.
- Use data on safety belt use in specific high-crash corridors to develop local targeted public information and enforcement plans.
- Publicize the costs of failure to wear belts and use child safety seats to families, employers and society.
- Highlight the importance of complete and accurate crash reporting on safety belt use as a part of ongoing education programs for the enforcement community.



- Work with state agencies and employers to institute policies requiring safety belt use in fleet vehicles and promote as a wellness and risk management practice.

Intersections

Safety program strategies

- Promote installation of automated speed and red light running enforcement at high-risk intersections.
- Continue public release of the Iowa Safety Improvement Candidate Location List.
- Provide intersection/geographic information system crash maps to diverse local entities to raise awareness and show locations where mitigation efforts may be needed.
- Implement more strategies focused on larger, more visible/reflective advance street signs, longer left and right turn lanes, offset left and right turn lanes, acceleration/deceleration lanes at intersections, protected left turn signal phasing, and guidance for left turns at uncontrolled intersections. Conduct daytime and nighttime multidisciplinary road safety audits of intersections with high fatal or major injury crash rates.

Lane Departure

Safety program strategies

Strategies are grouped by the type of roadway system.

All roadway systems

- Enhance the policies regarding utility poles located in clear zones. The clear zone is the area along the roadway that allows a driver to recover control if the vehicle leaves the roadway. Strategies may include: restrict poles in clear zone, require removal of poles from within clear zone when utility company conducts routine pole replacement, modify the permitting process to include pole delineation requirements within the clear zone, explore a partnership with utility companies to provide incentives (e.g., a tax break) if a pole is installed in a conforming manner, and identify standard delineation products for poles.
- Provide law enforcement with maps showing single vehicle run-off-the-road/multiple vehicle cross-centerline/cross-median

(SVROR/MVCCCM) crash locations. Show which of the high-crash locations are characterized by impaired driving, unbelted occupants and speeding.

- Continue support for enforcement of safety belt violations (i.e., issue tickets, not warnings) particularly on secondary roads.
- Reduce the consequences of SVROR/MVCCCM crashes by continuing to implement low-cost safety improvements (e.g., signing, delineation, shoulder widening on horizontal curves, and use of rumble stripes where widening is not feasible) as an ongoing proactive business practice during maintenance and reconstruction.
- Increase use of fluorescent yellow chevron signs on curves and improve grading and signing practices on vertical curves.

Primary and secondary systems

- Enhance paved shoulder/shoulder rumble strip policy. Pave shoulders on roads of lower traffic volumes based on crash analysis. The Iowa DOT's current policy is to implement four-foot paved shoulders and rumble strips on roadways with greater than an average daily traffic (ADT) count of 3,000. On roadways with less than 3,000 ADT, the policy is to install a two-foot paved shoulder.
- Research nighttime effectiveness of markings and signs.

Unpaved secondary roads

- Conduct public awareness on the risks of driving too fast on unpaved roads.
- Improve driver education by specifically requiring exposure to driving on unpaved, secondary roads as part of supervised driving requirements in GDL provisions.

Paved secondary roads

- Improve pavement marking practices on secondary roads to improve lane visibility. Create a funding program with a local match to facilitate metropolitan planning organizations' or regional planning agencies' purchase of reflectometers for loan to counties for performance monitoring. Reflectometers measure the level of reflectivity of pavement markings and can be used to ensure all markings meet a defined threshold.



Local Roads

Safety program strategies

- Undertake an in-depth study of fatal and serious injury crashes on low-volume rural roads to include: location, time, first harmful event, contributing factors, and driver/road user characteristics.
- Continue and enhance programs that provide meaningful geographic information system based crash data to local agencies and planning organizations to help them identify locations of potential concern. For example: provide data on fatal and serious crashes to larger cities, counties and metropolitan planning organizations/regional planning agencies and provide data on speed, alcohol, unbelted occupants, and crash and severity factors to enforcement agencies.
- Provide data, information, technical assistance, and support for enhanced enforcement efforts at urban intersections.
- Promote ongoing education programs for city and county engineering staff (see Senior Mobility section) and urge local rural agencies to examine low-volume roads for possible needed safety improvements that can be accomplished at low cost, such as signing upgrades.
- Encourage local agencies to employ public information efforts to advise road users on potential safety concerns such as red-light running and high-speed travel on unpaved surfaces.
- Work with local agencies to establish and support multidisciplinary traffic safety teams in metropolitan areas beyond the six that exist in Davenport, Dubuque, Clinton, Des Moines, Council Bluffs, and Sioux City.
- Collaborate with rural emergency responders to identify opportunities and tools (e.g., incident management training) to improve effective and timely response to serious crash sites and tools.
- Promote automated speed and red-light running enforcement. Provide the results to elected and appointed officials and the public. (See Intersection Target Area section.)

- Conduct awareness of the risks of driving too fast on unpaved roads. (See Lane Departure Target Area section).

Young Drivers

Safety policy strategies

- Provide evidence-based information and data to elected officials, parents and the public along with a recommendation to raise the minimum age of the licensing program.

Safety program strategies

- Increase enforcement of GDL and conventional license violations by young drivers.
- Increase parental knowledge of young driver risk factors and encourage more involvement. Teach parents how to identify effective, professional driver education programs. Provide sample parent-teen contract provisions and encourage parents to use a contract as a way to stimulate communication about driving, setting limits and establishing consequences for failure to adhere to the terms of the contract.
- Upgrade and standardize the driver education curriculum. Research best practices for driver education course materials and include information on: distracted driving, night driving, driving on unpaved roads (see also Lane Departure section for strategies related to unpaved secondary roads), and provide real-life scenario training that helps students identify hazardous driving situations.
- Identify technologies (e.g., speed monitors) which can be effectively used to encourage safer driving among teens.
- Identify and improve alternative transportation systems for school and extracurricular activities.

Impaired Drivers

Safety policy strategies

- Provide exceptions to the Health Insurance Portability and Accountability Act (HIPAA) to remove barriers to consistent investigation of traffic crashes resulting in serious injury or death.



- Research administrative motorcycle license revocation for operating a motorcycle with an alcohol concentration of .04 or greater. A higher level of judgment, coordination and alertness is required for safe operation of a two-wheel motorcycle.

Safety program strategies

- Initiate targeted state and local public information, education and enforcement programs for the 18- to 24-year-old age group to deter impaired driving.
- Identify and implement programs designed to deter alcohol impaired vehicle operation in high-risk demographic groups including motorcycle operators.
- Utilize the Crash Outcome Data Evaluation System (CODES), death certificates, Emergency Medical Service (EMS) run reports, technical crash investigation data, etc., to better identify alcohol and drug impairment after a crash occurs. Enforce laws such as the .02 BAC limit for drivers under 21.
- Continue public education and information to make impaired driving socially unacceptable.

Driver Distraction

Note: The distracted driving team reported that most data is presently insufficient for identifying evidence-based strategies in this area. Driver distraction is generally believed to be under-reported and crash forms may not include specific distracted driving elements. Because new in-vehicle technologies are adding to driver distraction and providing more opportunities to monitor driver distraction, pending research should be monitored for proven countermeasures.

Safety policy strategies

- Monitor research on the safety impact of restrictions on cell phone use while driving. If the data support it, consider implementing restrictions.

Safety program strategies

- Utilize national studies to define egregious distracted driving. Consider education and enforcement as appropriate.
- Develop and implement employer-based driver distraction reduction/risk management programs.

- Increase officer awareness of driver distraction as a risk factor in traffic crashes. Incorporate instruction on documenting distracted driving into ongoing law enforcement training on crash investigation and documentation.
- Define the threshold for distracted driving as a moving violation under current Iowa policy, and communicate the information to the enforcement community.
- Remove distraction from its current location in the police accident report and create a new section in the report with an expanded list of distracters.
- Partner with cell phone companies to develop integrated safety systems and data collection strategies.
- Conduct education and awareness campaigns targeting the general driving public about the risks of distracted driving, including education on the impact of the use of cell phones and other technologies on driving ability. As data permits, implement programs targeting selected populations at increased crash risk due to distracted driving, such as young drivers.
- Incorporate information on distracted driving into driver education programs.
- Develop educational materials for parents and teachers to foster dialogue on distracted driving with young drivers. Parents often provide teens a cell phone for safety purposes without realizing the driving risk associated with cell phone use.
- Research the impact of cell phone use on driver performance with simulation and actual field data, and compare the results to the use of other in-vehicle devices.
- Identify engineering technologies that reduce the level of distraction for drivers or alert drivers when they are distracted (e.g., rumble strips).

CHSP Report and Implementation

The Cambridge Systematics, Inc. consultant team completed a full report of the CHSP development process including the underlying data available and the target area team reports. This record will provide additional resource for the CHSP implementation.



Iowa Safety Stakeholders Summit and Target Area Teams Participating Organizations

3M Company
 AARP Defensive Driving Course
 American Traffic Safety Services Association (ATTSA)
 ABATE of Iowa, Inc.
 Bandy Motorcycle Training
 Bi-State Regional Commission
 Black Hawk County Engineer’s Office
 Blank Children’s Hospital
 Bureau of Emergency Medical Services
 Iowa Department of Public Health
 Cambridge Systematics, Inc.
 Center for Transportation Research and Education
 (CTRE), Iowa State University
 CH2M Hill
 City of Ames Police Department
 City of Ames Public Works
 City of Cedar Rapids
 City of Des Moines
 City of Harlan
 City of Marion Police Department
 College of Engineering, Iowa State University
 College of Engineering, University of Iowa
 Customized Management Services
 Des Moines University
 East Central Intergovernmental Association
 Federal Highway Administration Iowa Division (FHWA)
 Federal Motor Carrier Safety Administration (FMCSA)
 Gold Wing Road Riders
 Governor’s Traffic Safety Bureau (GTSB)
 Iowa Department of Public Safety
 High School Students
 Injury Prevention Research Center
 (IPRC), University of Iowa
 Iowa Association of Area Agencies on Aging (I4A)
 Iowa Association of Chiefs of Police and Peace Officers
 Iowa Association of County Engineers
 Iowa Association of School Boards
 Iowa Attorney General’s Office
 Iowa Department of Education
 Iowa Department of Elder Affairs
 Iowa Department of Public Health
 Iowa Department of Public Safety
 Iowa Department of Transportation (DOT)

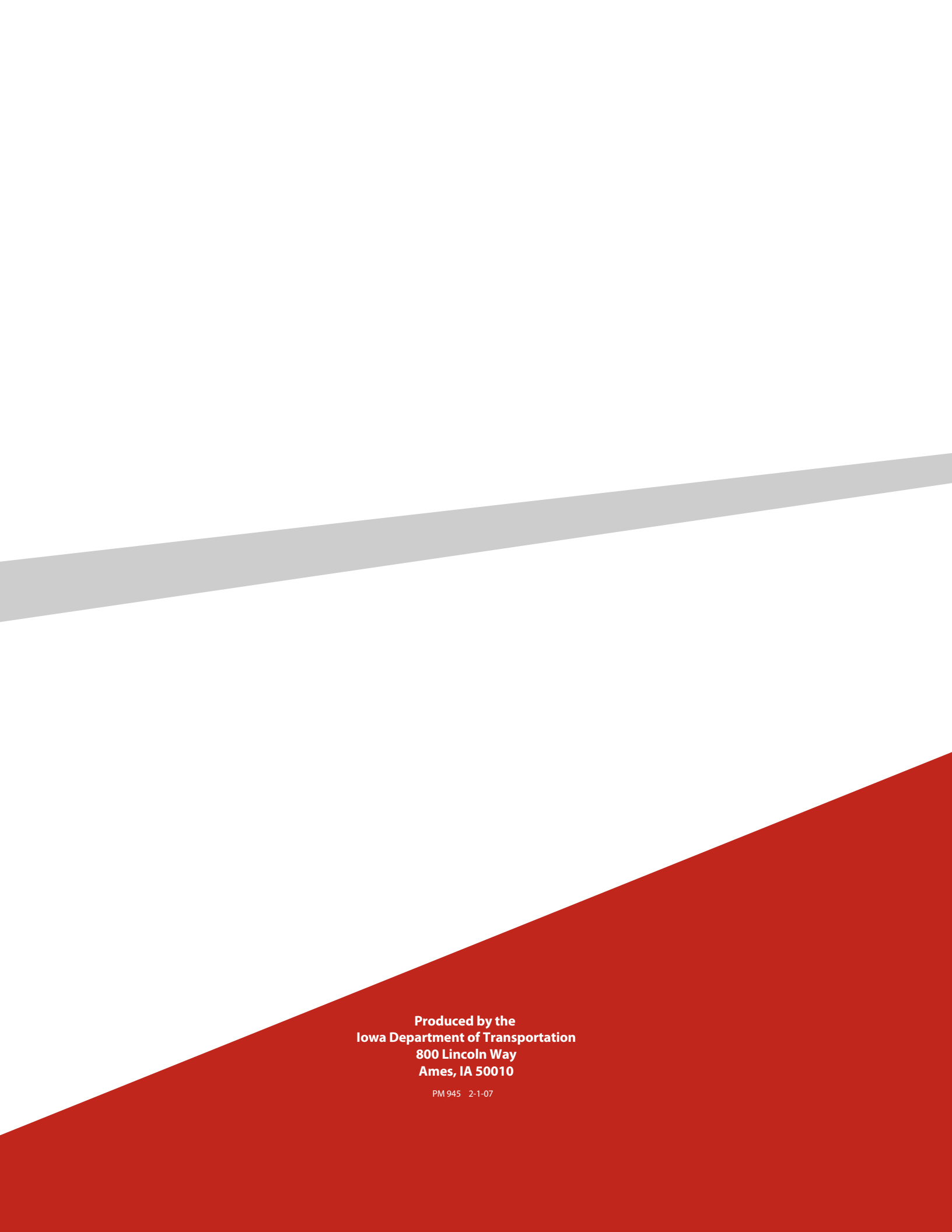
Iowa Motor Truck Association (IMTA)
 Iowa Northland Regional Council of Governments
 (INRCOG)
 Iowa Pupil Transportation Association
 Iowa Safety Educators Association
 Iowa State Patrol
 Iowa Department of Public Safety
 Iowa State Sheriffs’ and Deputies’ Association
 Iowa State Troopers Association
 Iowa-Illinois Safety Council
 Marion Police Department
 Metropolitan Area Planning Agency-
 Omaha-Council Bluffs (MAPA)
 Minnesota-Iowa AAA
 National Advanced Driving Simulator (NADS),
 University of Iowa
 National Highway Traffic Safety Administration,
 Region VII (NHTSA)
 North Iowa Area Council of Governments (NIACOG)
 Osceola County
 Public Policy Center, University of Iowa
 Quality Traffic Control, Inc.
 Southeast Polk Community Schools
 State Farm Insurance
 Story County Sheriff’s Office
 Tama County Engineer
 Traffic Control Corporation
 United Parcel Service (UPS)

Iowa Comprehensive Highway Safety Plan (CHSP) Partners

Many highway safety partners contributed their time and resources to develop the Iowa CHSP. It is important that these and other CHSP stakeholders join forces to implement strategies to change the culture and save lives. More safety partners are needed to join in efforts to achieve Iowa’s goal of reducing fatalities to an average of 400 per year by 2015. If you are interested in getting involved, contact the Iowa Department of Transportation’s Office of Traffic and Safety at 515-239-1169.

Thank you, Iowa highway safety stakeholders. Your efforts make a difference!





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