

Wisconsin Strategic Highway Safety Plan 2017 – 2020

Published by the Wisconsin Department of Transportation

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November 7, 2017

Dear Colleague:

I am pleased to present the 2017-2020 Strategic Highway Safety Plan (SHSP) for the State of Wisconsin. This document identifies the foremost highway safety problems in the state, recognizes opportunities and processes to address those problems, and determines the appropriate approaches and countermeasures. The SHSP articulates strategies for the Wisconsin Department of Transportation (WisDOT) and its many partners to address key challenges in the highway safety arena through 2020.

Successful implementation of the SHSP requires the coordination of highway safety efforts at the federal, state, and especially local levels. Partnership with local governments, the private sector, community organizations, and individual citizens throughout Wisconsin will remain a critical component of WisDOT's highway safety efforts. One of our primary vehicles for implementation will be through the statutorily required traffic safety commissions in each county. Through our shared objectives of decreasing fatalities and serious injuries on our roadways, Wisconsin will be able to reach the goals for highway safety outlined in this document and efficiently utilize resources in the public trust.

This strategic plan was produced under the sponsorship of WisDOT's Traffic Safety Council, a team consisting of professionals from many WisDOT divisions and offices, as well as external partners and highway safety experts. This plan was produced after input from 75 professionals from around the state during a peer exchange.

Thank you for your partnership in contributing to the success of the plan. Please use this plan to inspire and provide benchmarks for your ongoing efforts to make Wisconsin's transportation system safer.

Sincerely,

A blue ink signature of Dave Ross, the Secretary of the Wisconsin Department of Transportation.

Dave Ross
Secretary

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Executive Summary

Wisconsin's Strategic Highway Safety Plan (SHSP) is a statewide, comprehensive, and data-driven plan that implements the framework for supporting the safety goals. The SHSP examines a variety of issue areas that affect highway safety in Wisconsin. The ten highest priority issue areas and their associated tasks are listed below.

Improve Safety Culture, Safety Data, and Safety Technology

Task #1: Create a behavioral change work group that meets quarterly

Task #2: Change driver behavior through community engagement, education, and public outreach

Task #3: Improve data collection and availability

Task #4: Utilize innovative technology to increase safety

Reduce Driver Distraction/Improve Driver Alertness

Task #1: Continue to focus on the use of rumble strips to address the issue of driver alertness

Task #2: Promote public safety measures to deter distracted driving

Task #3: Create education campaigns with direct outreach to teen/young adult drivers and adult drivers

Task #4: Review the effectiveness of Wisconsin's texting ban and the ability of law enforcement to enforce and properly report distracted driving

Task #5: Explore marketing and signage on roadways to remind drivers to stay alert and not to text and drive

Task #6: Keep abreast of research on the effects of different types of roadway signage, stationary billboards, vehicle technology, and mobile billboards on drivers' visual and cognitive attention

Task #7: Explore the possibility of creating incentives for motorists with safe driving records

Task #8: Create a multi-disciplined distracted driving work group that meets quarterly

Reduce Alcohol & Drug-Impaired Driving

Task #1: Improve data collection, sharing, and distribution

Task #2: Continue the communication program

Task #3: Focus on the prevention of impaired driving

Task #4: Focus on impaired driving among persons younger than age 35

Task #5: Promote transportation alternatives

Task #6: Continue overtime enforcement

Task #7: Streamline the OWI process

Task #8: Improve drugged driving recognition

Task #9: Continue to support Traffic Safety Resource Prosecutors

Task #10: Create OWI courts

Task #11: Support the Intoxicated Driver Program

Task #12: Research lower allowable blood alcohol concentration (BAC)

Task #13: Increase compliance with ignition interlock devices (IIDs)

Task #14: Increase education related to impairment

Task #15: Continue quarterly impaired driving work group meetings

Reduce the Incidence and Severity of Motorcycle Crashes

Task #1: Continue to develop and display PSAs about motorcyclist safety

Task #2: Reduce the number of unlicensed riders

Task #3: Provide courses for riders to refresh their skills

Task #4: Market refresher courses to make them more desirable

Task #5: Quantify data to share information with riders and law enforcement agencies

Task #6: Involve law enforcement in reaching out to the public

Task #7: Continue quarterly meetings of the Motorcycle Safety Advisory Council (MoSAC)

Improve Driver Performance (Teens, Older, Competent)

Task #1: Improve teen driver performance

Task #2: Ensure drivers are licensed and competent

Task #3: Sustain proficiency in older drivers

Task #4: Create a multi-disciplined work group to meet quarterly on driver performance

Improve Non-Motorist Safety

Task #1: Use infrastructure and engineering treatments to strengthen the safety of vulnerable users

Task #2: Increase education for both motorists and non-motorists

Task #3: Use enforcement to protect non-motorists

Task #4: Support public information campaigns

Task #5: Utilize road diets, speed reduction methods, and stop laws

Task #6: Create a work group that meets quarterly regarding non-motorist safety

Improve Safety of Intersections

Task #1: Improve data and decision support

Task #2: Support knowledge development and knowledge sharing

Task #3: Implement cutting-edge design and engineering safety interventions

Task #4: Create a multi-disciplined work group on intersection safety

Increase Occupant Protection

Task #1: Increase public outreach to improve awareness

Task #2: Continue Click It or Ticket and other High-Visibility Mobilization initiatives

Task #3: Develop best practice on occupant protection

Task #4: Continue the participation of external partners in the Seat Belt and Child Safety Seat Work Group

Task #5: Continue the federally required annual field observation safety belt use survey

Task #6: Work with child safety seat advocates to improve education for individuals and agencies that transport children

Task #7: Continue to have quarterly meetings of the occupant protection work group

Curb Aggressive Driving/Reduce Speed-Related Crashes

Task #1: Increase targeted enforcement and strengthen the efficiency of prosecutions

Task #2: Increase innovative education and outreach

Task #3: Implement sound engineering practices as a defense against unsafe driving behavior

Task #4: Provide research and data to support sound policy making

Task #5: Establish rational speed limits on state and local roads

Task #6: Continue to have quarterly meetings through the aggressive driving work group

Reduce Lane Departure Crashes

Task #1: Develop and improve data and decision support systems for county/municipal and state engineering to reduce the incidence and severity of lane departure crashes

Task #2: Develop and implement a comprehensive program to reduce the incidence and severity of lane departure crashes

Task #3: Analyze and develop roadside and pavement strategies focusing on low cost treatment for rural highways that are not state trunk highways

Task #4: Create a multi-disciplined work group on lane departure crashes

Introduction

Wisconsin is proud to have one of the best highway safety records in the United States. It has a traffic fatality rate which has been below the national rate for more than a generation and has remained near or below 1.0 deaths per 100 million vehicle miles of travel (VMT) since 2009. Despite its low fatality rates, Wisconsin strives to further reduce these numbers. Any preventable death on Wisconsin's streets and highways is one too many.

Traffic crashes are not "accidents;" they are, with few exceptions, avoidable. They can be caused by a single factor or a chain of factors. Most often, these factors are human behavior, condition, and reaction of the vehicle operator, pedestrian, or bicyclist.

Wisconsin's fatality total has risen to 588 in 2016 since its recent low of 498 in 2014. Although these numbers remain below the national average, many of these deaths could have been prevented. Wisconsin is working to reduce traffic fatalities by enforcing laws and changing the behavior of roadway users.

In 2016, Wisconsin vehicle occupants, pedestrians, and bicyclists suffered 31,056 non-fatal injuries, and this number has been decreasing over the last few years. However, almost 2,900 of those injuries were serious and incapacitating. Injuries can be physically, and, in most cases, emotionally traumatic. Far too many of them translate to permanent disability and a dramatically changed quality of life.

The Wisconsin Department of Transportation (WisDOT) and its many diverse highway safety partners are challenged with continuing to lower the number and severity of traffic crashes. To that end, this Strategic Highway Safety Plan (SHSP) describes Wisconsin's most critically important highway safety issues. It outlines a course of action to significantly reduce crashes, injuries, and fatalities on the public streets and highways of the Badger State.

The targets will be reviewed and adjusted with each plan (every four years). The detailed strategies and action items described in this plan support the overall strategic goal:

By 2020,

- ***5% reduction in number of fatalities (2% reduction each year)***
- ***5% reduction in the rate of fatalities per 100 million VMT (2% reduction each year)***
- ***10% reduction in number of serious injuries (5% reduction each year)***
- ***10% reduction in the rate of serious injuries per 100 million VMT (5% reduction each year)***
- ***10% reduction in number of non-motorized fatalities and non-motorized serious injuries (5% reduction each year).***

This plan is divided into four sections:

Part I: Background – Overview of traffic safety in Wisconsin, including a look at what the patterns and trends have been.

Part II: Highest Priority Issue Areas – Strategies to address Wisconsin's most critical safety issues.

Part III: Continuing Safety Issue Areas – Progress and activity in several other significant safety issues.

Appendices – SHSP Peer Exchange participants, results, Traffic Safety Council members, and a list of acronyms.

Bringing Safety Partners Together

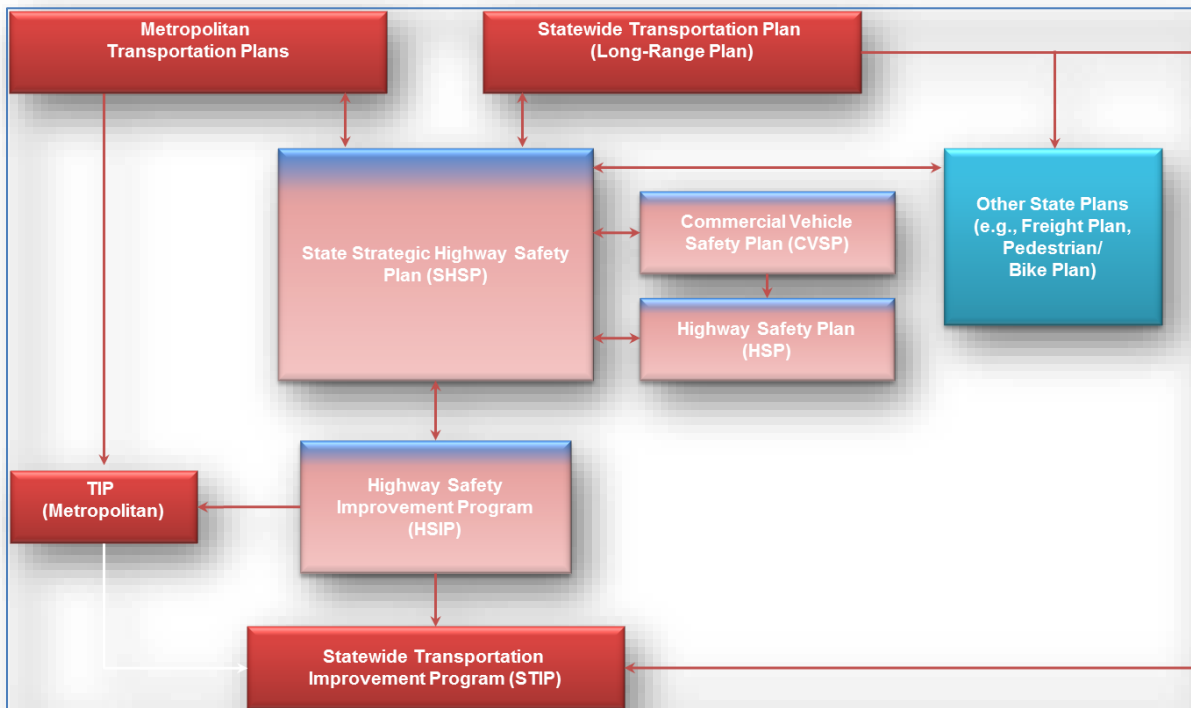
One of the most important functions of the Strategic Highway Safety Plan (SHSP) is to develop statewide goals and safety programs to help WisDOT and other state and local highway safety partners work together to better leverage resources and effectively meet common highway safety objectives.

The 2017-2020 SHSP will provide the framework for several WisDOT highway safety planning and program documents that are submitted annually to the United States Department of Transportation to guide allocation of federal funds provided to Wisconsin, as shown in the Figure below. Some of these include:

- Highway Safety Plan (HSP),
- Highway Safety Improvement Program (HSIP),
- Traffic Safety Information Systems Strategic Plan, and
- Motor Carrier Safety Assistance Program (MCSAP) Commercial Vehicle Safety Plan.

In addition, strategies and activities articulated in the 2017-2020 SHSP will be shared with other state and local entities to help guide their development and implementation of various annual and long-term plans and programs, including:

- State Transportation Improvement Plan (STIP) and
- Metropolitan Planning Organization (MPO) urbanized area transportation improvement plans.



The 2017-2020 SHSP is the fifth edition of a formally-adopted strategic highway safety plan. Like its four multi-year predecessors (2001-2003 SHSP, 2006-2008 SHSP, 2011-2013 SHSP, and 2014-2016 SHSP), the current plan was developed under the sponsorship of WisDOT's Traffic Safety Council (TSC).

The TSC is a multi-disciplined group of WisDOT staff, each with individual responsibility for some facet of highway safety programming or policy development and highway safety professionals and advocates

outside the department. TSC members meet the first Thursday of each month to share information, establish consensus on highway safety policy direction for the Department, and, when appropriate, sponsor major highway safety planning, programming, or policy initiatives, such as the multi-year SHSP.

The 2017-2020 SHSP was developed by the TSC in partnership with external highway safety partners. The active involvement of external partners in the process is a critical element to ensure not only an appropriately-focused SHSP, but also successful implementation of various initiatives articulated in the plan.

The 2017-2020 SHSP satisfies federal requirements for state allocation of highway safety funds.

The SHSP Prioritization Process

Wisconsin’s 2017-2020 SHSP was modeled on the conceptual framework used for the 1998 National Strategic Highway Safety Plan, which was developed by a multi-disciplinary coalition of organizations, under the leadership of the American Association of State Highway and Transportation Officials (AASHTO). For the 2017-2020 SHSP, 25 significant highway safety issue areas (shown in Table 1) were included in a structured group evaluation process.

Table 1: 2017-2020 Strategic Highway Safety Plan Issue Areas

Ensure Drivers are Licensed and Competent	Improve Teen Driver Performance
Improve Traffic Incident Management	Improve Driver Alertness
Improve Safety at Intersections	Improve Traffic Safety Culture
Improve Child Safety Seat Use	Improve Work Zone Safety
Enhance EMS to Increase Survivability	Reduce Driver Distraction
Improve Pedestrian Safety	Sustain Proficiency in Older Drivers
Reduce Deer & Other Animal Crashes	Increase Safety Belt Use
Curb Aggressive Driving	Reduce Alcohol & Drug-Impaired Driving
Improve Timeliness and Accuracy of Safety Data and Associated Analysis/Tools	Improve Safety Technology (Vehicle, Infrastructure, and Personal Devices)
Improve Bicyclist Safety	Improve Safety for Large Truck Travel
Reduce the Incidence and Severity of Motorcycle Crashes	Reduce Speed Related Crashes
Reduce Weather Related Crashes	Reduce Vehicle-Train Crashes
Reduce Lane Departure Crashes	

The first phase of the SHSP prioritization process involved an online survey. The Traffic Operations and Safety Laboratory (TOPS Lab) at the University of Wisconsin-Madison developed and hosted a survey on its website. Over a thousand highway safety professionals and advocates, including WisDOT staff and a variety of state and local partners, were invited to access the website during a four-week period in mid-2017 to complete the survey. All respondents remained anonymous. In total, 924 respondents, including engineers, planners, law enforcement professionals, elected officials, medical professionals, academics, safety experts, and concerned citizens, participated in the survey. [See the Appendix to this report for a copy of the internet survey.]

The second phase of the SHSP prioritization process involved a one-day peer exchange. Participation in the event, which was staged in Madison in May 2017, was invitation-only and brought together safety professionals with backgrounds from multiple disciplines and covering numerous jurisdictions statewide. A total of 75 highway safety professionals and advocates participated in the event; about 2/3 of them were WisDOT staff, and the other 1/3 were external partners. [See the Appendix to this report for a list of the SHSP Peer Exchange participants.]

The 25 issues listed in the survey were organized into ten significant issue areas. Participants in the SHSP Peer Exchange were divided into diverse groups based on background and experience to discuss four of the issue areas. Assigned to each issue area was a moderator to lead discussion. In the discussion, participants identified problems and barriers within the issue area and suggested ways to solve or mitigate them. The participants were encouraged to sign up for work groups for each issue area. They

were then responsible for compiling the observations and solutions into strategies for each issue area to be incorporated into the 2017-2020 SHSP.

Part I:

Background

Scope of Wisconsin's Highway Safety Challenge

Thanks in part to its many safety partners, Wisconsin has a notable highway safety record, and, in recent years, has achieved several milestones in terms of fatality and non-fatal injury reduction. However, far too many people still lose their lives or suffer a non-fatal injury every year on Wisconsin roadways, as can be seen in Figure 1: Wisconsin's Highway Safety Clock.

2015-2016 Key Facts and Figures

- There were 129,024 police-reported¹ traffic crashes in 2016 – an average of 353 per day.
- In 2016, 588 persons were killed in 524 fatal traffic crashes – an average of three lives lost every two days on Wisconsin roadways.
- 43,230 persons suffered non-fatal injuries in 2016 – an average of 118 people per day.
- Of the 588 persons killed in 2016, 27% (158) died in alcohol-involved² crashes and 27% (160) died in speed-related crashes.
- Of the 378 fatally injured drivers tested for alcohol concentration in 2016, 21% (79 drivers) had an alcohol concentration of 0.08 or above.
- Of the 588 persons killed in 2016, 10% were either pedestrians (47) or bicyclists (11), and 14% (82) were motorcycle drivers or passengers.
- When safety belt use could be determined by the investigating officer in 2016, 36% of persons killed in passenger car and light truck crashes were not using safety restraints.
- In 2016, when helmet use could be determined by the investigating officer, 87% of all motorcyclists killed in crashes were not wearing helmets.
- Roads and streets under local jurisdiction (*i.e.* non-State trunk or Interstate highways) accounted for 59% (75,654) of all crashes in 2016.
- There were 5,871,302 registered vehicles in 2016 – a 0.9% increase from 2015.
- There were 4,250,018 licensed drivers in 2016 – a 1.03% increase from 2015.
- There were 62,140,115,371 vehicle miles of travel in 2015 – a 3.5% increase from 2014.
- The fatality rate in 2015 was 0.89 deaths per 100 million vehicle miles of travel.
- The 2011-2015 average fatality rate per 100 million vehicle miles traveled for rural roads in Wisconsin was 1.85 compared to 2.1 for the 2008-2012 average.

Figure 1: Wisconsin's Highway Safety Clock



¹ All traffic crash figures used in this document refer to crashes reported to WisDOT by State Patrol, county sheriffs or local police departments – they do not include driver-reported crashes.

² "Alcohol-involved" means one or more drivers, pedestrians, or bicyclists involved in the crash were determined to have been drinking. The presence of alcohol does not mean the individual under the influence was beyond the legal limit or that they were the at-fault party in the traffic crash.

Section 148(g)(1) of Title 23 of the United States Code establishes a High Risk Rural Roads Special Rule, which requires states to track their fatality rate on rural roads. A high risk rural road means any roadway functionally classified as a rural major or minor collector or a rural local road with significant safety risks. These risks are determined by the Bureau of State Highway Programs and are based on the documentation of or potential for intersection and non-intersection crashes, as identified through data analysis of crash reports, roadway characteristics, or other information such as field reviews, safety assessments, road safety audits, and local knowledge or experience.

Every issue area can be addressed by the four Es - engineering, education, enforcement, and emergency medical services (EMS). Looking at this issue more globally, a fifth E, everyone, is responsible for highway safety. The issue areas are not independent, but overlap just like the contributing factors to traffic fatalities that can be seen in Figure 2.

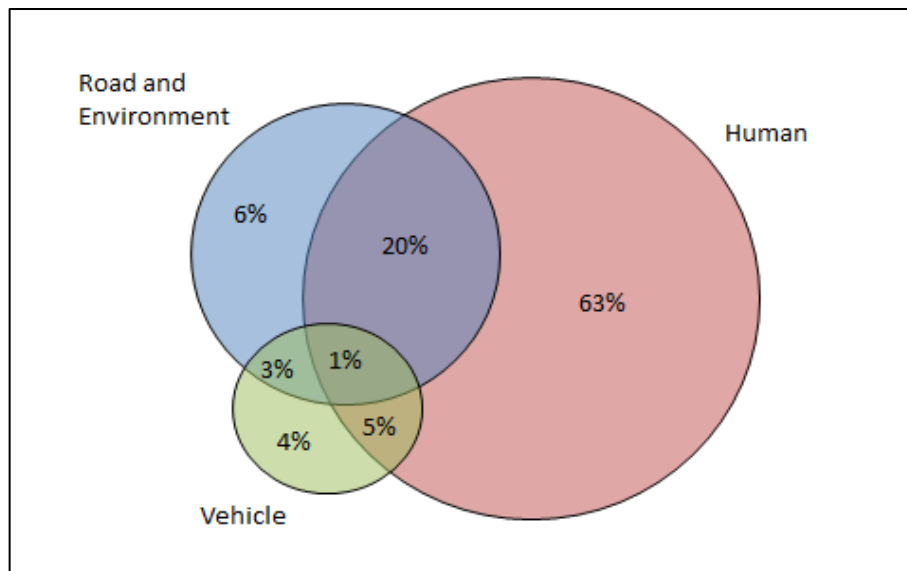


Figure 2: Contributing Factors to Traffic Fatalities

Wisconsin Transportation at a Glance³

- 11,800 miles of state and Interstate highways.
- 103,000 miles of locally-owned county, town and municipal streets.
- 13,700 bridges.
- 119 lightly traveled rural roads designated as Rustic Roads.
- 81 public bus and shared-ride taxi systems.
- 131 public use airports; 8 commercial airports.
- More than 6,000 active registered aircraft.
- Approximately 6.6 million people board commercial flights in Wisconsin each year.
- Approximately 119 million pounds of cargo are handled by Wisconsin airports each year.
- 3,600 miles of track.
- More than 180 million tons of cargo are carried by freight railroads each year.
- Two Amtrak passenger train routes (Hiawatha between Milwaukee and Chicago, Empire Builder between Chicago and the Pacific Northwest) carry about 800,000 passengers annually.
- 11% of all trips in Wisconsin are made by walking or bicycling.

³ Transportation at a glance facts from <http://wisconsindot.gov/Documents/about-wisdot/who-we-are/comm-couns/overview.pdf>

Where We've Been

Figure 3 shows the number of fatalities since 1966. Figure 4 shows that the numbers of licensed drivers, registered vehicles, and vehicle miles traveled have been increasing since 1990, while Figure 5 shows that crashes, fatalities, and injuries have generally been decreasing over the same period.

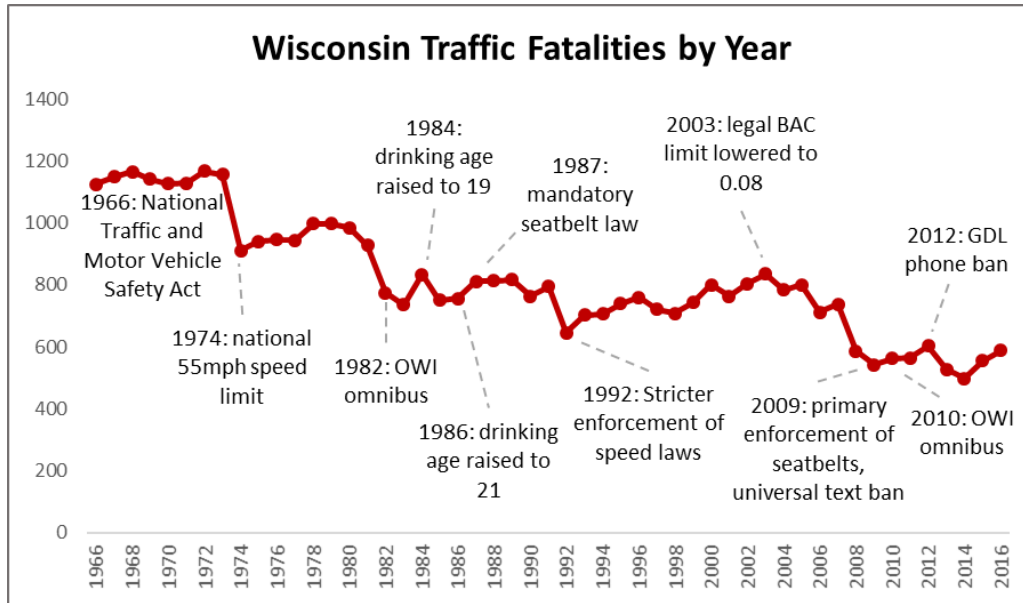


Figure 3: Wisconsin Traffic Fatalities by Year

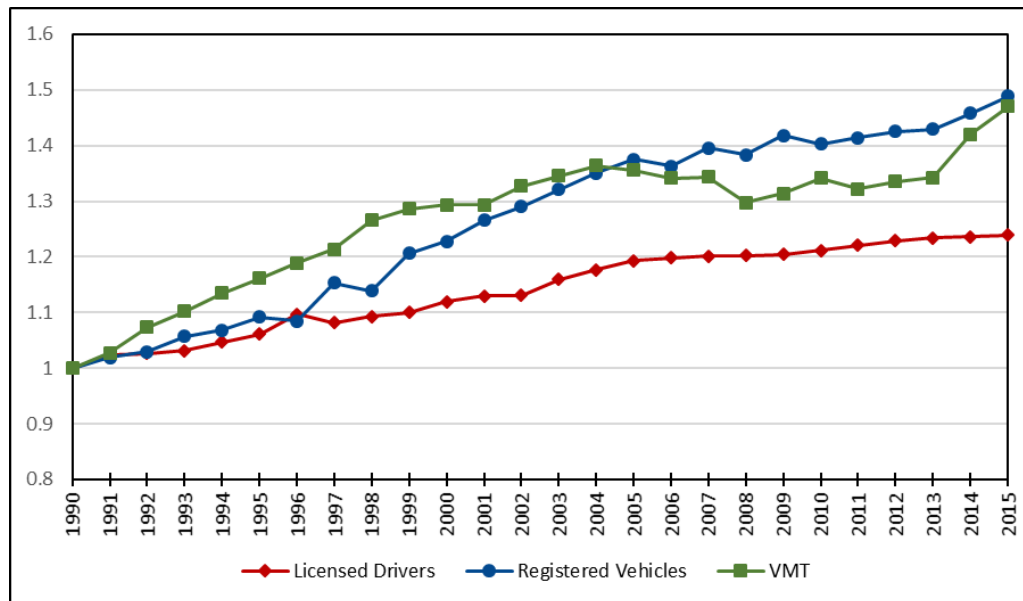


Figure 4: Relative Change since 1990 for Licensed Drivers, Registered Vehicles, VMT

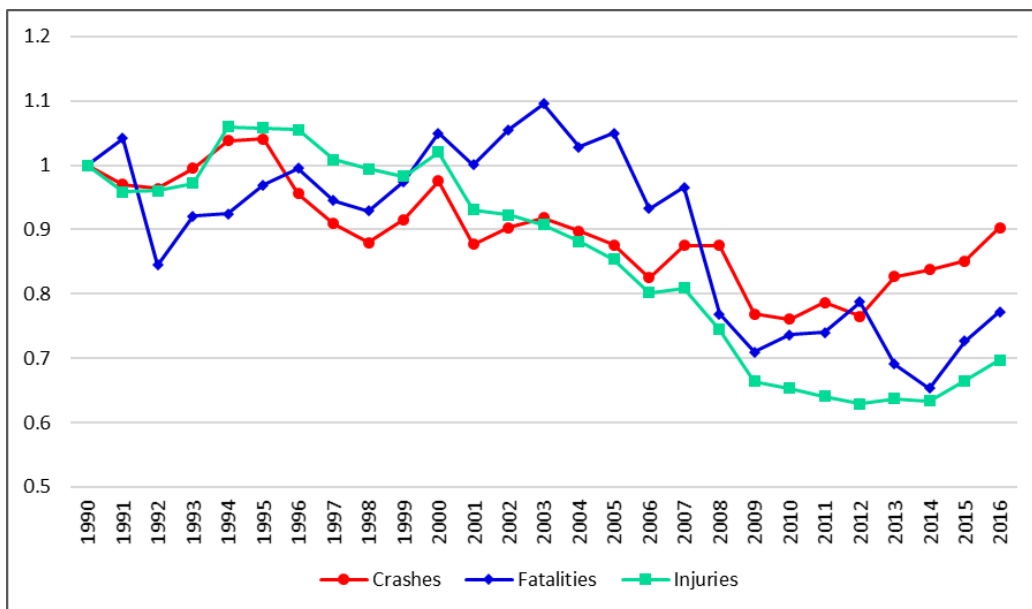


Figure 5: Relative Change since 1990 for Crashes, Fatalities, and Injuries

Since 1950, Wisconsin’s fatality rate and its fatality numbers have been steadily decreasing and, in 2009, the rate fell below 1.0 fatalities per 100 million vehicle miles traveled (VMT), as shown in Figure 6. Due to legal, technological, and cultural changes since the 1970s, this rate has continued to decrease significantly.

- A sharp, sudden decline occurred in 1974 during a year that saw a new, national 55 mph maximum speed limit, an oil embargo, engineering improvements, and the beginning of a recession.
- A sharp decline in traffic deaths took place in 1982, the first year of Wisconsin’s tougher drunk driving law and another recession.
- Another decline occurred in 1987 coinciding with the passage of a mandatory seatbelt law.
- Another sharp decline took place in 1992 with the passage of laws creating new penalties and treatment opportunities for Operating While Intoxicated (OWI) repeat offenders.

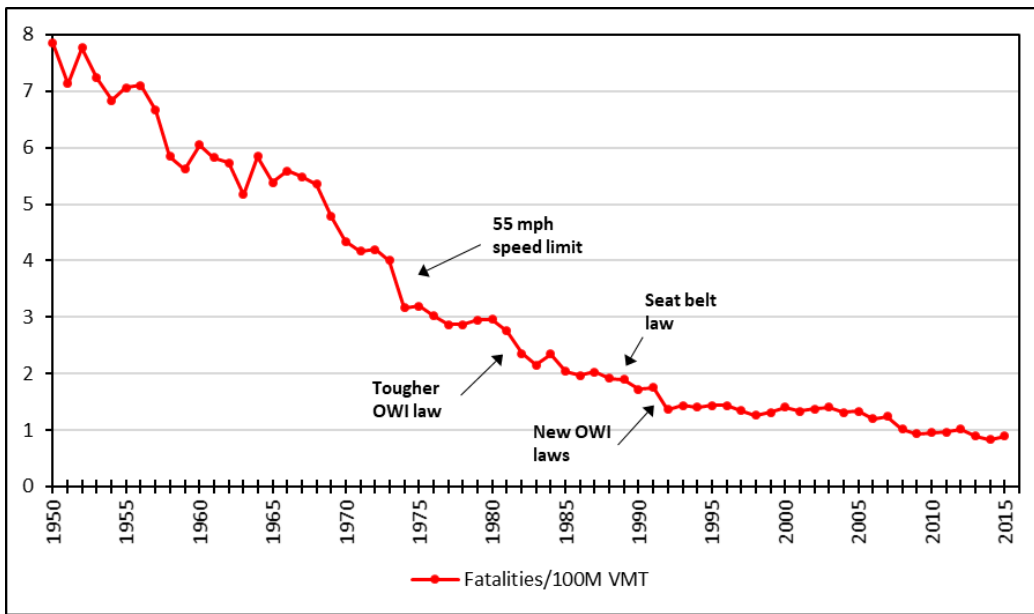


Figure 6: Fatality Rate per 100M VMT (1950-2015)

Traffic injury rates for the years 1950-2015 are shown in Figure 7. As with traffic fatalities, the rate of traffic injuries climbed through the 1950s and 1960s. However, as better safety features were incorporated into the design of motor vehicles, such as the use of safety belts, safety glass, plastics, and padded surfaces in automobile interiors, the rate of injuries steadily declined afterwards.

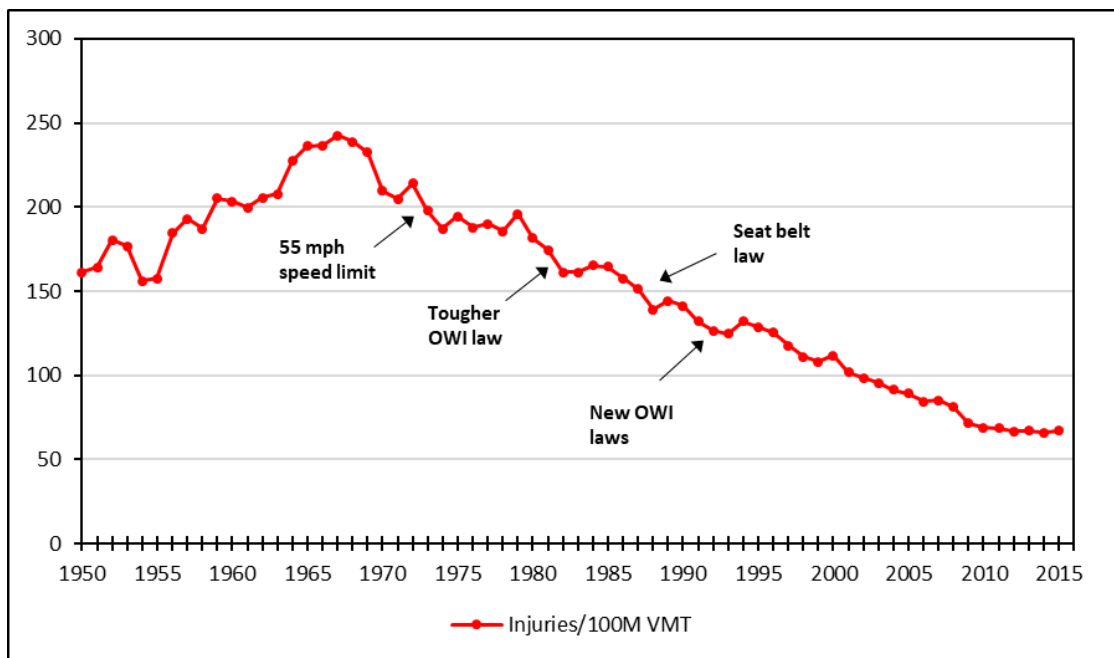


Figure 7: Injury Rate per 100M VMT (1950 – 2015)

Where We Need to Go

To reach the overall strategic goal of reducing traffic fatalities, injuries, and crashes on Wisconsin roadways, partners need to know the goal for each strategic area.

By 2020,

- ***5% reduction in number of fatalities (2% reduction each year)***
- ***5% reduction in the rate of fatalities per 100 million VMT (2% reduction each year)***
- ***10% reduction in number of serious injuries (5% reduction each year)***
- ***10% reduction in the rate of serious injuries per 100 million VMT (5% reduction each year)***
- ***10% reduction in number of non-motorized fatalities and non-motorized serious injuries (5% reduction each year).***

All the issue areas have similar challenges and needs: These needs include the following:

- *Data/information and decision support*
- *Knowledge development, knowledge sharing, and participation in related training*
- *Concept implementation*
- *Increased targeted enforcement and strengthen the efficiency of prosecutions*
- *Increased innovative education and outreach*
- *Implementation of sound engineering practices as a defense against unsafe driving behavior*
- *Provision of research and data to support sound policy*

The Traffic Safety Council (TSC) will shepherd the SHSP and will monitor the implementation with an informal annual check-in when the 2017 and 2018 crash data become available. At the conclusion of this SHSP (2020), the performance measures will be summarized in 2020 as soon as the 2019 crash data are finalized. The following divisions will be responsible for their respective issue areas.

- Division of State Patrol
 - Improve Safety Culture, Safety Data, and Safety Technology
 - Reduce Driver Distraction/Improve Driver Alertness
 - Reduce Alcohol & Drug-Impaired Driving
 - Reduce the Incidence and Severity of Motorcycle Crashes
 - Improve Non-Motorist Safety
 - Increase Occupant Protection
- Division of Transportation System Development
 - Improve Safety of Intersections
 - Reduce Lane Departure Crashes
- Division of Motor Vehicles
 - Improve Driver Performance (Teens, Older, and Competent)
- Division of Transportation Investment Management
 - Curb Aggressive Driving/ Reduce Speed-Related Crashes

Implementation at the local level will largely be carried out through local traffic safety commissions. Wisconsin has a unique opportunity through current law, which requires each county to have a community-level, multi-disciplinary traffic safety commission. Wisconsin has not yet fully capitalized on this opportunity for a grassroots approach to traffic safety. Some states have laws that allow but do not require cities or counties to establish similar groups; Iowa, for example, has only a handful of them.

A commission is required to include the following from the county:

- Chief traffic law enforcement officer (or designated representative).
- Highway safety coordinator (if there is one).
- Highway commissioner (or designated representative).

and from WisDOT:

- An engineer from the regional office.
- Regional Program Manager (RPM) or Law Enforcement Liaison (LEL) from the WisDOT Bureau of Transportation Safety (BOTS).
- State Patrol trooper/inspector.

along with representatives from:

- Education (*e.g.* driver education instructor, high school principal).
- Medicine (*e.g.* doctor, nurse, EMS provider).
- Law (*e.g.* DA's office, municipal prosecutor).

Additional members might include county highway committee members, county and/or town board supervisors, civic leaders, safety advocates, and the local news media.

Commissions must meet at least quarterly. State law specifies the following duties:

- Review local crash data and other traffic safety-related matters.
- Prepare "spot maps" showing crash locations on county and town roads and on city/village streets for places with populations under 5,000.
- For municipalities of 5,000 or more, spot maps are not required, but a traffic safety commission must look at the crash data.

Based on their review of this data and reports of citizens' concerns, traffic safety commissions can recommend corrective action to WisDOT, the county board or highway committee, or any other appropriate branch of government. Providing recommendations to government and responding to citizens often takes considerable initiative.

WisDOT provides commissions with crash and citation data for rural, county, and state highways, and the Bureau of Transportation Safety Regional Program Manager or Law Enforcement Liaison provides legislative updates and information on traffic safety initiatives and grant funding opportunities. Additional tools have been developed in recent years by the Bureau of Transportation Safety and the UW TOPS Lab to support traffic safety commissions with data and information. These include Community Maps, County Profiles, and TSC guidelines.

Traffic safety commissions can also:

- Ask the State Patrol or local law enforcement to increase patrols in problem areas.
- Ask WisDOT to review possible engineering problems on a state highway, and advise WisDOT on planned work zones or detour routes.
- Review proposals for local traffic safety improvements.
- Review fatal or other high-profile crashes, usually via in-squad video or in-person by a site visit.
- Foster public awareness of traffic safety issues and initiatives (*e.g.* by working with local news media).
- Encourage/sponsor local activities (*e.g.* bike rodeos, *Safe Routes to School* campaigns).

- Coordinate and plan for upcoming quarters by leveraging all disciplines participating in the meeting.

This information was taken from the Community Maps website and can be found at <https://transportal.cee.wisc.edu/partners/community-maps/crash/pages/TSCResources.jsp>.

Part II:

Highest Priority Issue Areas

Improve Safety Culture, Safety Data, and Safety Technology

Background

Driver's education encourages new drivers to take a defensive driving approach. However, as drivers become more experienced, they become more aggressive in their driving tendencies. On highways, vehicles weave between lanes, speed, tailgate, and honk their horns at slower drivers. This leads to an increase in the number of crashes.

Speeding is one of the most common traffic violations on the roads. In 2016, there were over 171,000 speeding convictions. Speeding leads to more crashes, and these crashes tend to be more severe because of the higher speed. WisDOT has developed several public service announcements (PSAs) to discourage speeding on its website.

Currently, WisDOT provides information on its website about the number of crashes, injuries, and fatalities over the past five years. WisDOT also offers information regarding motorcyclists, large trucks, pedestrians, and bicyclists. With the spread of data, Wisconsin hopes that drivers will practice a more defensive approach in order to decrease the number of traffic fatalities.

Wisconsin has also launched 511 Wisconsin, which sends traffic alerts to drivers. 511 offers information about road work, traffic speeds, crashes, and weather conditions. Additionally, Wisconsin uses message boards along highways, with the goal of warning drivers and encouraging them to find alternate route.

Looking forward, autonomous vehicles will connect pedestrians, bicyclists, cars, trucks, motorcyclists, and drivers together to increase safety on the roads. The United States Department of Transportation designated ten areas across the country as proving grounds. The UW-Madison is among these designated areas. Autonomous vehicles aim to reduce human error associated with driving, such as distracted driving.

As indicated earlier in this document, the implementation of the SHSP will take place at the local level through MPOs and county traffic safety commissions. Providing tools similar to 511 and improving tools like Community Maps will be one of the primary ways for the department to improve the timeliness and accuracy of data.

Performance Measure Goals

Outcomes

- Reduce aggressive driving tendencies by enacting and enforcing laws.
- Increase seat belt usage by 5% by 2020.
- Develop a safe way to use 511 on roadways without distracting the driver.
- Increase the use of 511 by vehicle occupants.
- Increase the use of Community Maps users by 25%.

Outputs

- Change driver behavior through community involvement, incentives, and better education.
- Develop technology to connect people and devices to their vehicles.
- Record more data about the demographics of those involved in crashes.
- Connect data with a general-purpose portal for easier access.
- Expand and improve 511 to retrieve data from more roadways.

SHSP Action Plan

Task 1: Create a behavioral change work group that meets quarterly

- Establish quarterly meetings.
- Set baselines for safety culture and safety data.
- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders as needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county's commitment to implementing a SHSP.

Task 2: Change driver behavior through community engagement, education, and public outreach

- Create a proactive "Safety Toolbox" with behavioral and engineering solutions.
- Partner with public health departments to implement the shared goal of reducing traffic fatalities at the county level.
- Encourage younger drivers to take responsibility for driving errors.
- Implement the incentive of a dropped citation upon completion of a driving course.
- Transform "yield for pedestrians" into "stop for pedestrians."
- Host informational meetings at any level to inform the public about traffic updates.
- Reward communities or individuals who improve safety.
- Connect drivers to the roads by encouraging a safe way to use 511 while driving.
- Create competitive county comparisons (*i.e.* county scorecards similar to county health rankings done by Wisconsin Department of Health Services).
- Develop a statewide curriculum for driver's education and for law enforcement that participates in Driver's Education classes.
- Develop a driver knowledge quiz at DMV centers – incentives to "pass" it.

Task 3: Improve data collection and availability

- Rate the quality of data by law enforcement agency.
- Improve tools for predicting and for sharing identified hot spots across engineering, law enforcement, and behavioral programs. Develop short-term and long-term responses to identified hot spots.
- Develop engineering tools and measures for local traffic safety commissions.
- Record overlay data to target certain demographics.
- Create a data portal for simpler access to records.
- Develop a data repository for arrest and conviction data.
- Incorporate safety data in the Wisconsin Information System for Local Roads (WISLR) system.
- Develop surveying tools for traffic safety commissions and MPOs to compare local, state, and national data.
- Implement local data collection of non-reportable crashes.
- Reassess VMT calculation methods at the state level and develop VMT calculation methods for locals.
- Add/overlay additional elements on Community Maps.

Task 4: Utilize innovative technology to increase safety

- Connect cars to older drivers to assist in watching for dangers.

- Create a system which will disable cell phones while the vehicle is in motion to reduce distracted driving.
- Consider developing an app which will allow drivers to connect with municipalities outside Wisconsin.
- Update drivers regularly through 511 apps, message boards, and new innovations.

Highlighted Safety Initiatives

- Improved electronic crash report form.
- UW-Madison was named one of ten areas for autonomous vehicle proving grounds.

Reduce Driver Distraction/Improve Driver Alertness

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 23,030 crashes with “Inattentive” as a driver factor [19.3% of all traffic crashes]
- ✓ 100 deaths in crashes with “Inattentive” as a driver factor [18% of all traffic fatalities]
- ✓ 10,372 injuries in crashes with “Inattentive” as a driver factor [25.4% of all non-fatal injuries]
- ✓ 745 incapacitating injuries in crashes with “Inattentive” as a driver factor [23.4% of all incapacitating injuries]

Background

The dangers of distracted driving have become a prominent traffic safety challenge. Research by the National Highway Traffic Safety Administration (NHTSA) shows that in 2015, nearly 3,500 people were killed and 391,000 people were injured in crashes involving a distracted driver nationwide. Almost 20% of all crashes that same year involved some type of distraction. Figure 8, shown below, depicts the increase in distracted driving crashes in Wisconsin over the past 5 years.

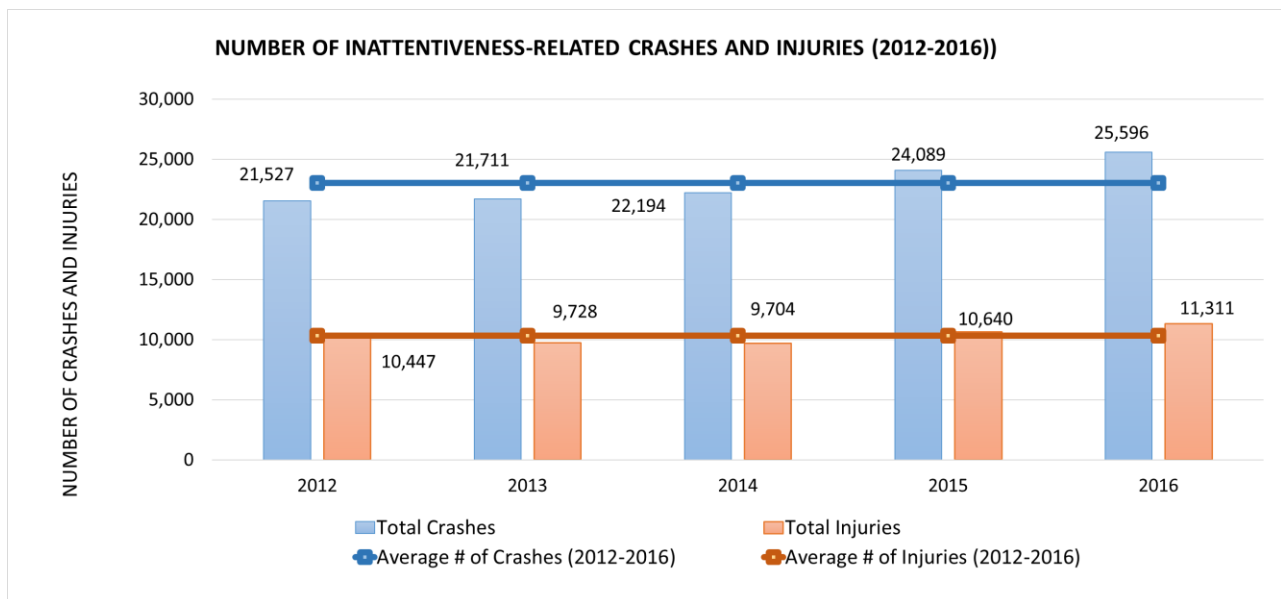


Figure 8: Inattentive-Related Crashes and Injuries (2012-2016)

Although various forms of distracted driving have been problems for decades, cell phone use, particularly texting, has been identified as an egregious, prevalent, and dangerous form of distracted driving because it severely reduces the visual, mechanical, and mental focus needed behind the wheel. Wisconsin has taken steps to address the growing problem of texting while driving by enacting a ban that went into effect on December 1, 2010. Wisconsin also banned the use of handheld devices in work zones on October 1, 2016.

Undoubtedly, there will be continued discussion and debate on whether to ban all cell phone use while driving. The National Safety Council (NSC) is calling for a national ban. While this debate continues, traffic safety law enforcement and education efforts in Wisconsin can be focused on preventing all texting while driving and motivating motorists to voluntarily put away their cell phones while driving.

Performance Measure Goals

Outcomes

- Reduce the five-year average number of distracted driving crashes by 10% by 2020.
- Reduce the five-year average number of distracted driving injury crashes by 10% by 2020.

- Reduce the number of fatal and incapacitating injury distracted driving crashes by 5% by 2020.

Outputs

- Continue to install rumble strips on all appropriate road projects.
- Reduce illegal cell phone use through increased enforcement.
- Reduce illegal cell phone use through increased education.
- Incorporate the collection of data on cell phone usage into the annual Seat Belt survey starting in 2017.
- Provide analysis of a new research project relating to distracted driving annually to WisDOT and its partners.

SHSP Action Plan

Task #1: Continue to focus on the use of rumble strips to address the issue of driver alertness

- Continue to research and install rumble strips on rural roads as possible.
- Create an educational component for rural drivers and those who live near rumble strips.

Task #2: Promote public safety messages to deter distracted driving

- Continue the use of the PSA “The Distractor” produced by WisDOT.
- Develop opportunities for earned media (news releases, speeches, and other public information) regarding distracted driving.
- Target websites and banner ad messages to target audiences through partnerships statewide.

Task #3: Create education campaigns with direct outreach to teen/young adult drivers and adult drivers

- Programs focused on teens and young adults:
 - Focus on creating peer-to-peer safe driving programs.
 - Continue partnership with AT&T and AAA on the *It Can Wait* campaign.
 - Partner with additional cell phone companies and distracted driving prevention groups to create teen safe driving programs.
 - Continue using the Distracted Driving simulator in high schools and colleges.
 - Work with sporting associations and the School Board’s Association to consider an expectation regarding distracted driving to the Code of Conduct for all high school athletes and extracurricular participants.
 - Research what programs/policies/instruction affect teen and young adult behavior.
 - Create a teen advisory board or actively engage existing teen groups throughout the state to provide input and direction.
- Programs focused on adults:
 - Create a campaign for adults which includes messages from kids to parents.
 - Create a campaign for novice drivers.
 - Explore peer-to-peer education campaigns.
 - Work with businesses and the Wisconsin Department of Administration to institute “No distracted driving” policies for all company vehicles and rental cars used on business time.

Task #4: Review the effectiveness of Wisconsin’s texting ban and the ability of law enforcement to enforce and properly report distracted driving

- Review enforcement details from other states with handheld device bans to determine what type of enforcement is effective.
- Determine if interstates or intersections are impacted more by distracted driving to indicate where law enforcement should focus.
- Support communities' creation of task forces and high-visibility enforcement to help enforce the texting ban.
- Review the data gathered from the task forces to identify the extent to which texting while driving is a traffic safety problem in Wisconsin.
- Provide research to the legislature and Department secretaries regarding hands free vs. handheld cell phone use while driving.
- Review law enforcement's process for completing crash forms and create a focus on distracted driving as a contributing factor.
- Explore possible research opportunities within WisDOT and with external partners using the naturalistic driving study data collected by Virginia Tech, insurance companies, cell phone companies, and vehicle manufacturers.
- Incorporate cell phone usage into the annual Seat Belt survey.
- Expand marketing to parents of young drivers and pre-drivers on the law requirements of graduated driver licensing.
- Work with insurance companies and cell phone companies to allow the sharing of data from their cell phones for research projects.

Task #5: Explore marketing and signage on roadways to remind drivers to stay alert and not to text and drive

- Market rest stops and tourism centers as "Texting Stops."
- Offer free Wi-Fi at rest stops. Work with cell phone companies to create "Hot Spots."
- Research potential partnership with a gas station or private company to create a "Stop and Rest" campaign. Allow campaign to offer free products from the private company.
- Research use of "Pull Off Areas" used in other states.

Task #6: Keep abreast of research on the effects of different types of roadway signage, stationary billboards, vehicle technology, and mobile billboards on drivers' visual and cognitive attention

- Work with partners to assist in promoting rest stops as places to stop if the motorist is drowsy.
- Keep abreast of upcoming technology and how it relates to distracted driving and vehicle safety and share this information accordingly.

Task #7: Explore the possibility of creating incentives to motorists for safe driving records

- Review vehicle registration practices to see if there are opportunities to promote safe driver incentives.
- Consider incentives with insurance companies.

Task #8: Create a multi-disciplined distracted driving work group that meets quarterly

- Establish quarterly meetings.
- Set baselines for safety culture and safety data.

- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders as needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county’s commitment to implementing the SHSP.

Highlighted Safety Initiatives

- Over five hundred miles of centerline and shoulder rumble strips were cut on roads around the state.
- WisDOT developed a PSA involving a personality called “The Distractor” which illustrates the dangers of the lesser known distractions.
- WisDOT acquired a driving simulator and has educated an estimated 10,000 students, teachers and the general public at schools and sporting events around the state.
- WisDOT has partnered with AT&T and AAA on over 50 presentations to high schools on the dangers of texting and driving.
- In 2016, Wisconsin enacted a law banning the use of handheld devices through work zones.

Reduce Alcohol & Drug-Impaired Driving

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 5,051 alcohol-related crashes [4.2% of all traffic crashes]
- ✓ 188 deaths in alcohol-related crashes [33.9% of all traffic fatalities]
- ✓ 2,815 injuries in alcohol-related crashes [6.9% of all non-fatal injuries]
- ✓ 485 incapacitating injuries in alcohol-related crashes [15.2% of all incapacitating injuries]
- ✓ 5,275 impaired crashes [4.4% of all traffic crashes]
- ✓ 198 deaths in impaired crashes [35.8% of all traffic fatalities]
- ✓ 2,997 injuries in impaired crashes [7.3% of all non-fatal injuries]
- ✓ 506 incapacitating injuries in impaired crashes [15.9% of all incapacitating injuries]

Background

Alcohol and drug-impaired driving is illegal and dangerous. Although alcohol-involved crashes are a relatively modest portion of all crashes (4.2%), they tend to result in more severe outcomes. For example, over the past five years (2012-2016), alcohol-involved crashes accounted for 6.9% of all non-fatal injuries, 15.2% of all serious, or incapacitating, injuries, and 33.9% of all fatalities. Clearly, making positive strides in reducing impaired driving over the next several years will contribute significantly toward the highway safety goals of Wisconsin. The figure below illustrates the five-year trend of serious injuries and fatalities resulting from a crash involving alcohol.

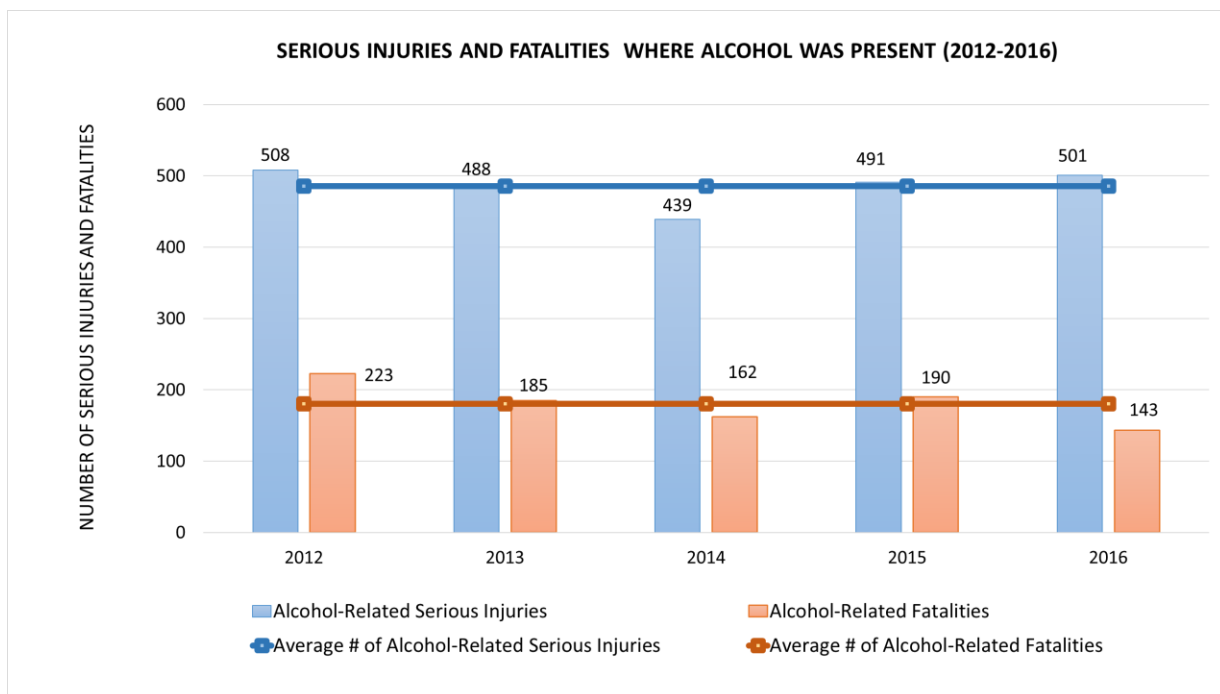


Figure 9: Serious Injuries and Fatalities Where Alcohol Was Present (2012-2016)

Performance Measure Goals

Outcomes

- Reduce the five-year average number of impaired driving crashes by 10% by 2020.
- Reduce the five-year average number of impaired injury crashes by 10% by 2020.
- Reduce the number of crashes resulting in a fatality or an incapacitating injury by 5% by 2020.
- Increase the number of tests in impaired driving crashes that come in having full panels with statistically valid sampling by 5% by 2020.

- Increase the number of Advanced Roadside Impaired Driving Enforcement (ARIDE) trained officers by 10% by 2020.

Outputs

- Continue to engage law enforcement agencies in the *Drive Sober or Get Pulled Over* national enforcement mobilizations promoted by the National Highway Traffic Safety Administration (NHTSA).
- Maintain commitment to the multi-jurisdictional high-visibility enforcement model for impaired driving targeted enforcement grants.
- Address impaired driving among persons younger than age 35.
- Promote transportation alternatives with safe-ride grant programs. Increase awareness of this program. Increase the number of rides through grants provided to municipalities, counties, and non-profit organizations.
- Continue to gain presence through social media.
- Consider increasing the number of OWI courts and 24/7 sobriety programs, which work to prevent recidivism.

SHSP Action Plan

Task 1: Improve data collection, sharing, and distribution

- Encourage data sharing between state and local agencies, including schools, emergency medical professionals and trauma centers, the law enforcement community, and prosecuting attorneys.
- Link data, identify the needs of collectors and users, and plan future data collection efforts.
- Increase officer follow through on filling out all information on crash forms, including OWI-related data.
- Investigate the best methods to collect data regarding driving under the influence of drugs (DUID).
- Develop different countermeasure strategies as appropriate for impairment due to different types of drugs using data and research.
- Refine the process of obtaining place of last drink (POLD) and assisting locals in compiling and utilizing the data.

Task 2: Continue communication program

- Continue to develop a statewide public information and education campaign using contractual services including product placement, printing, and postage to reduce OWI injuries and fatalities based on NHTSA's goals and objectives.
- Utilize the placement of information on websites, on social media, in print, on the radio, or on television.
- Provide up-to-date educational materials and current data to the public related to impaired driving.
- Collaborate with community prevention organizations to assist them in developing successful evidence-based prevention programs.
- Collaborate with partners, revise and update all information, identify specific needs, and target information to various audiences, including Spanish speakers.
- Utilize message boards to remind people to drive sober.
- Continue making the point that the number of all-terrain vehicles is increasing on roadways. Collaborate with other agencies to decrease intoxicated use of ATVs.
- Utilize social norming to discourage first offense impaired driving. Encourage focus groups at the local level.

Task 3: Focus on prevention

- Develop, design, and implement a program focusing on the impact to employers who employ staff with drinking problems, especially as it relates to impaired driving, missed work time, and additional health and societal costs.

Task #4: Focus on impaired driving among persons younger than age 35

- Increase the enforcement of existing laws.
- Review the WisDOT *Drive Sober* mobile app to gauge its impact on this age group.
- Increase education for bartenders regarding overserving.

Task #5: Promote transportation alternatives

- Collaborate with the Tavern League of Wisconsin and other counties, municipalities, and non-profit organizations in administering safe-ride grant programs.
- Expand alternative transportation programs into communities without taxis or mass transit services.
- Publicize alternative forms of transportation using safety messages.
- Explore the feasibility of partnerships with ridesharing services.
- Increase awareness of ridesharing services in the state.
- Encourage people to utilize alternative drivers.

Task #6: Continue overtime enforcement

- Plan statewide participation and encourage voluntary participation in the two *Drive Sober or Get Pulled Over* national enforcement mobilizations around Labor Day and the winter holidays.
- Encourage law enforcement agencies to make OWI enforcement a priority by arresting impaired drivers, sponsoring media events, educating the public about enforcement initiatives, and working overtime in geographical areas where impaired driving is highest.
- Provide overtime funding for sustained multi-jurisdictional high-visibility enforcement task forces, particularly focusing on enforcement during nighttime hours. Work with the media to increase program visibility in targeted jurisdictions.
- Stop impaired drivers before they crash.
- Increase involvement of traffic safety commissions in enforcement efforts.
- Promote enforcement of OWI laws at any time of day in all jurisdictions as a core function, regardless of the existence of a special federally funded task force.

Task #7: Streamline OWI process

- Invest in and increase the use of roadside evidentiary testing technology.
- Continue to utilize innovative roadside testing technology.
- Increase the use of high-visibility enforcement task forces.
- Increase the efficiency of the local court process.
- Develop quicker results for drug tests.

Task #8: Improve drugged driving recognition

- Consider implementing the training of Drug Recognition Experts (DREs) on a large-scale basis.
- Continue targeting DRE programs in the interim.

- Expand abbreviated training such as Advanced Roadside Impaired Driving Enforcement (ARIDE) to a larger range of law enforcement officers.
- Transition to make training similar to ARIDE a standard training procedure.
- Increase the use of roadside impairment testing devices.
- Consider the efficacy and legal acceptance of the oral fluid matrix in DUID cases.
- Promote both alcohol and drug testing on every OWI case.

Task #9: Continue to have Traffic Safety Resource Prosecutors

- Provide salary and fringe for two Traffic Safety Resource Prosecutors (TSRPs) who will serve as statewide experts on legal issues surrounding OWI and other vehicular crimes.
- Utilize Traffic Safety Resource Prosecutors (TSRP) at traffic safety commissions.

Task #10: Create OWI courts

- Work with other agencies to fund start-up costs for OWI and drug courts and implement these programs.
- Utilize best practices and lessons learned from other drug courts in the state.
- Work with other agencies to create a judicial outreach liaison position modeled after the Traffic Safety Resource Prosecutor program.
- Partner with other agencies to provide training for Screening, Brief Intervention, and Referral to Treatment (SBIRT) practices targeting new and innovative programs.

Task #11: Support the Intoxicated Driver Program

- Utilize data to evaluate the effectiveness of the Intoxicated Driver Program (IDP) assessment tool.
- Improve the assessment tool to better identify the appropriate intervention with the goal of reducing recidivism.

Task #12: Research lower allowable blood alcohol concentration (BAC)

- Gather information on lower allowable BAC and outlet density (impact of alcohol outlet density on alcohol-related crashes and OWI arrests for analysis and evaluation).
- Retest blood in cases over 0.08 for drugs to better understand the extent of the drug problem in Wisconsin.

Task #13: Increase compliance with ignition interlock devices (IIDs)

- Conduct enforcement campaigns associated with IID compliance.
- Work with the Department of Health Services to reach out to persons with IID orders for notification of access to local substance abuse services.
- Strengthen IID laws to require all OWI offenders to have an IID and allowing an IID citation immediately after an order.
- Research ways to make IID laws more effective.
- Attempt to ensure IID vendors are in compliance with IID laws and rules.

Task #14: Increase education related to impairment

- Add and update issue questions related to impairment due to alcohol and drugs to driver education programs and driver tests.
- Review the DARE program to gauge its effectiveness and recommend improvements if needed.

- Improve education on drug impairment.
- Consider differences between licensed and unlicensed drivers, and consider different strategies to address impaired drivers among those two groups.

Task #15: Continue quarterly impaired driving work group

- Establish quarterly meetings.
- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders as needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county’s commitment to implementing the SHSP.

<p>Highlighted Safety Initiatives</p>
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Wisconsin’s Statewide Impaired Driving Task Force is a multi-disciplinary working group that includes professionals in the fields of education, law, engineering, policy, enforcement, medicine, and insurance.

- 23 multi-jurisdictional high-visibility enforcement OWI task forces have been formed around the state.
- WisDOT has developed a Drive Sober mobile app which can be downloaded for free. The app, which offers functions to help select a designated driver, calculate impairment, and provide resources to find a safe way home, has been downloaded over 70,000 times.
- Two designated Traffic Safety Resource Prosecutors are funded at the Wisconsin Department of Justice with the goal of assisting in the streamlining of impaired driving prosecution.
- “Daredevils” PSAs were developed to reinforce the dangers of impaired driving to young people aged 18-34.
- In 2010, Wisconsin mandated IIDs in all vehicles registered to repeat OWI offenders and first OWI offenders with a BAC at or above 0.15.
- In 2014, the Mad Rollin’ Dolls, a female roller derby league, partnered with WisDOT to campaign against drunk driving.

Reduce the Incidence and Severity of Motorcycle Crashes

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 2,271 crashes involving motorcycles [1.9% of all traffic crashes]
- ✓ 85 motorcyclist deaths [15.3% of all traffic fatalities]
- ✓ 2,024 motorcyclist injuries [5% of all non-fatal injuries]
- ✓ 526 motorcyclists suffering incapacitating injuries [16.5% of all incapacitating injuries]

Background

In 2016, motorcycles represented 5.7% of all registered vehicles in Wisconsin; however, motorcyclist fatalities represented 15.3% of all traffic fatalities. These figures are significant when one considers that the motorcycle riding season typically averages seven months of any given year in Wisconsin.

What may not be obvious to the motoring public, and even to some motorcyclists, is the fact that the cognitive skill and dexterity required to minimize risk when operating a motorcycle is significantly greater than all other types of motor vehicles. This being the case, motorcyclists are more susceptible to the adverse effects of weather, fatigue, and the effects of alcohol or drugs. On average over the five-year period 2012-2016, alcohol or drugs are believed to have played a role in 40% of all motorcyclist fatalities.

In addition, motorcyclists are also more likely to be injured or killed in the event of a crash, since they rely primarily on the use of protective riding gear for protection. It should also be noted that the appropriate riding gear not only serves as protection, but also serves to make the motorcyclist more visible in traffic. On average, during the five-year period noted, 73% of motorcyclist fatalities were not wearing a helmet. The figure below shows the percentage of motorcyclists involved in crashes who were wearing helmets or eye protection.

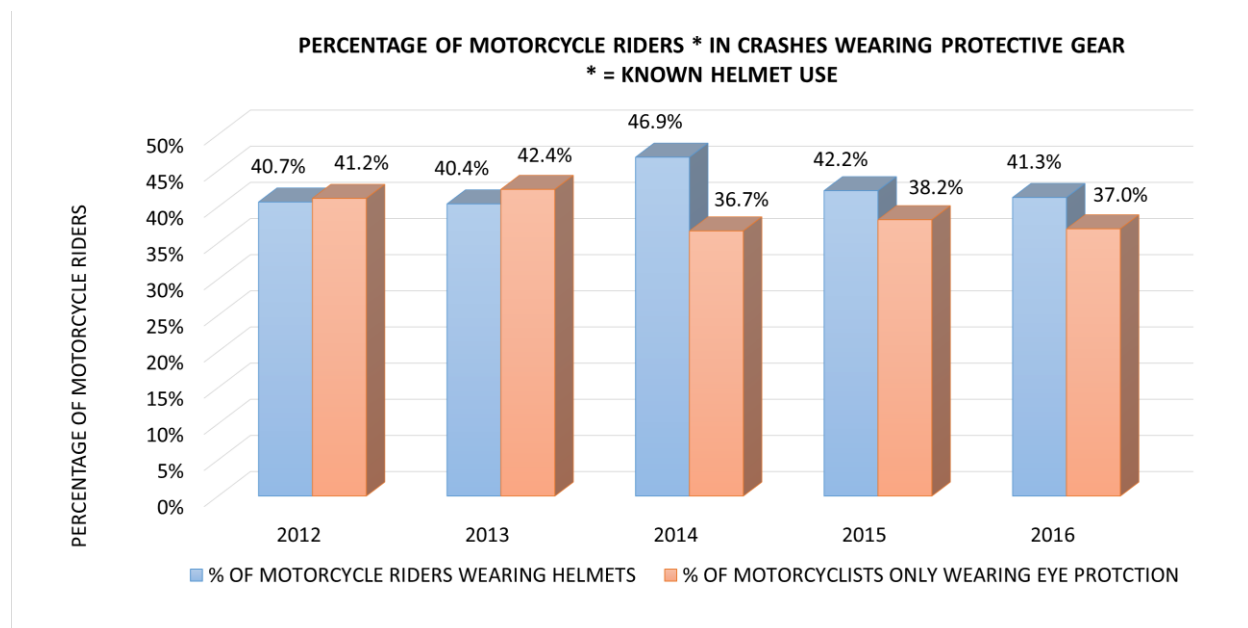


Figure 10: Percentage of Motorcycle Riders in Crashes Wearing Protective Gear

Motorcyclists, like aircraft pilots, need to continually sharpen their mental and physical skills so as to maintain a margin of safety and minimize their level of risk. Motorcycling is predominantly a mental activity, in that motorcyclists must exhibit appropriate behavior and make appropriate choices to manage and minimize risk. Nearly 52% of motorcyclist fatalities during the period noted were single

vehicle crashes. Most of these single vehicle crashes occurred on curves, often as a result of a motorcyclist lacking a license to operate a “Class M” vehicle or a motorcycle instruction permit, misjudging the appropriate speed for the turn and losing control of the motorcycle. It is also likely that many of these crashes occurred because the motorcyclist was unable to make proper adjustments to speed or lean angle while on a curve. Another contributing factor to motorcycle crash fatalities are encounters with a deer or other animal. 10.1% of motorcyclist fatalities between 2012 and 2016 involved an incident with a deer or other animal. In order for a motorcyclist to manage and minimize risk, and ultimately be a lifelong motorcyclist, that motorcyclist must become a lifelong learner and be committed to continually developing and improving their mental and physical skills relative to motorcycle operation.

Performance Measure Goals

Outcomes

- Reduce the five-year average number of motorcycle-involved crashes by 5% by 2020.
- Reduce the five-year average number of motorcyclist injury crashes by 5% by 2020.
- Reduce the number of fatal and incapacitating injury motorcyclist crashes by 5% by 2020.
- Reduce the number of alcohol-involved motorcyclist crashes and fatalities by 5% by 2020.
- Increase the number of licensed motorcycle riders.
- Improve the collection process of rider education student data.
- Increase public/private partnerships when promoting safety messaging.
- Target training information toward returning riders to refresh skills.
- Ensure motorcycles are represented in dialogue regarding Vehicle to Vehicle (V2V) technologies.
- Target additional enforcement grants in areas where large scale riding events take place.

Outputs

- Increase messaging and PSAs that focus on rider responsibility for safety.
- Increase messaging and PSAs regarding risks of speed and the importance of safety gear use.
- Increase messaging and PSAs to reflect risks of impaired riding.
- Increase messaging and PSAs that focus on motorcycle awareness by all motorists.
- Create a campaign to provide law enforcement officers with information regarding advanced training options. This information would be used during traffic stops with unlicensed motorcyclists.
- Create or adopt an automated process for collecting, storing, and retrieving rider education student data.
- Work with large, well known partners to promote safety messaging related to training and risk reduction while riding, and to “humanize” the crash information.
- Appoint the proper representatives to ensure that motorcycles are included in policy and legal decisions related to Vehicle to Vehicle (V2V) Technologies.
- Review scheduled large-scale riding events and target additional enforcement efforts to those areas with high crash rates during these events.

SHSP Action Plan

Task #1: Continue to develop and display PSAs about motorcyclist safety

- Increase the viewing of PSAs about motorcyclist safety gear.
- Increase the viewing of PSAs regarding the low visibility of motorcycles.
- Continue to display PSAs regarding the dangers of impaired driving.
- Create a PSA “Last Ride.”
 - Compare pictures of a brand-new bike and a bike after a crash.

- Display the message to get trained or their bike could be ruined.
- Relate PSAs to those affected by motorcycle crashes.
- Remind the public about the low visibility of motorcyclists.

Task #2: Reduce the number of unlicensed riders

- Include information about training courses and how to get licensed on the bottom of citations.
- Reduce the cost of gaining or renewing a license to operate a “Class M” vehicle.

Task #3: Provide courses for riders to refresh their skills

- Encourage returning riders to complete a course to regain skills lost over time.
- Provide different training courses for transitioning to a different size bike.
- Provide a course specifically for those who have a license to operate a “Class M” vehicle.

Task #4: Market refresher courses to make them more desirable

- Partner with insurance companies to consider discounts to those who complete refresher courses.
- Consider discounts at motorcycle gear stores upon completion of the course.
- Allow for a refresher course to lower the cost of a citation.
- Provide discounts for additional refresher courses.
- Normalize refresher courses and advertise them as an expected routine.

Task #5: Quantify data to share information with riders and law enforcement agencies

- Collect data on marijuana impairment.
- Determine the risks of mixing smaller amounts of different drugs together.

Task #6: Involve law enforcement in reaching out to the public

- Train officers to recognize different impairment factors.
- Implement follow-up reports for citations and crashes.
- Distribute pocket cards at routine stops which include information about training courses.
- Attend large-scale riding events to distribute information and as a high-visibility enforcement task force.

Task #7: Form work group through already existing Motorcycle Safety Advisory Council (MoSAC)

- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county’s commitment to implementing the SHSP.

Highlighted Safety Initiatives

- In 2015, the Transportable High-End Rider Education Facility (THE REF) participated in approximately 54 motorcycle specific and general public events and activities.
- Four SMARTrainers were purchased and utilized around the state in 2013 at 15 different locations.

- Through a collaborative effort between ABATE and the WisDOT, a poster has been designed, produced, and is being distributed throughout Wisconsin promoting the need for, and value of existing motorcyclists obtaining their license to operate a “Class M” vehicle.
- The enactment of Wisconsin Act 371 on April 23, 2014, affords existing motorcyclists in Wisconsin the opportunity to obtain a motorcycle waiver by successfully completing an advanced rider education course.
- May is recognized as National Motorcycle Safety Awareness Month, and WisDOT has partnered with the Wisconsin Department of Tourism since 2013 to promote motorcycle awareness via strategically located electronic and static billboards, as well as radio and television ads, and posters.

Improve Driver Performance (Especially Among Teens and Older Drivers)

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 62 deaths in crashes involving drivers age 16-19 [11% of all traffic fatalities]
- ✓ 7,446 injuries involving drivers age 16-19 [18% of all non-fatal injuries]
- ✓ 73 deaths in crashes involving drivers age 65-74 [13% of all traffic fatalities]
- ✓ 4,596 injuries involving drivers age 65-74 [11% of all non-fatal injuries]
- ✓ 67 deaths in crashes involving drivers age >74 [12% of all traffic fatalities]
- ✓ 2,820 injuries involving drivers age >74 [7% of all non-fatal injuries]

Background

WisDOT provides oversight, policy expertise, outreach, testing, and enforcement to ensure that drivers of all ages are licensed and competent. This includes improving teen driver performance and sustaining proficiency in older drivers.

DMV provides an array of driver licensing and testing services that are designed, collectively, to ensure drivers are licensed and competent. These include licensing requirements (testing, retesting, operating restrictions, medical screening), license withdrawals due to violations or disqualification, license reinstatements, and driver improvement programs. DMV works closely with Federal Motor Carrier Safety Administration (FMCSA) to comply with the federal regulation of commercial driver licenses (CDLs), including ensuring drivers meet federal medical requirements.

DMV also offers products and services that benefit older drivers. These include offering a large print condensed version of the motorist handbook called The Wisconsin Driver's Book, as well as an audio version of the Driver's Book. Additionally, specialized skills testing is offered and restricted/limited area licenses are available for drivers of all ages. DMV remains committed to partnering with statewide organizations and advocates to identify and meet the needs of aging drivers. Because medical conditions are likely to increase with age, many of these activities are designed to support drivers of all ages with medical conditions.

DMV also offers extensive programming intended to keep younger drivers safe.

DMV staff members continue to provide outreach and training to senior groups, health care professionals, support groups, health organizations, family members, law enforcement, and driver educators.

Performance Measure Goals

Outcomes

- Improve teen driver performance and reduce the average of teen crashes by 5% by 2020.
- Ensure drivers are licensed and competent and reduce the average of fatalities by 5% by 2020.
- Sustain proficiency in older drivers by increasing outreach to medical professionals, law enforcement, and the general public on how to report unsafe drivers.

Outputs

- Provide resources and tools for parents to be more involved with their teen's driving.
- Continue to work with and provide support to our partners who are responsible for educating teens.
- Continue to publish and provide outreach on the Parent's Supervised Driving Program Guide.
- Continue to educate teens, parents, and educators on the impacts of distracted driving.
- Explore the benefits of GDL for all probationary license holders.

- Continue to provide support to partners at Wisconsin technical colleges.
- Continue to provide resources and oversight to ensure drivers are trained, eligible, and medically qualified for all vehicles.
- Provide resources and promote continuing education regarding new law changes.
- Participate in outreach to family of elderly drivers.
- Provide resources for alternatives to driving.
- Improve signage, roadway markings, etc.
- Provide additional training to DMV staff on how to help older drivers.
- Provide more resources on driving with a medical condition or a disability.
- Update and advertise procedures for reporting unsafe drivers.
- As a participating jurisdiction in multi-state collaboration to decrease any potential duplicate pointers amongst participating jurisdictions to ensure one driver/one license/one record.

SHSP Action Plan

Task #1: Improve teen driver performance

- Support parent awareness with the GDL (graduated driver's license) restriction. Maintain a teen/parent portal website.
- Staff members from the Department will participate in Driver Education Classes, "Parents Night," and traffic safety conferences throughout the state when invited. Create and strengthen partnerships within the Department (DMV and BOTS), and provide educational opportunities and/or resources to educators.
- Continue to maintain, update, and publish the Parent's Supervised Driving Program Guide. Continue to make available an electronic copy of the guide and other parent resources on the WisDOT website.
- WisDOT will continue to create and promote distracted driving campaigns. Continue to build partnerships with outside organizations such as AAA and AT&T to increase awareness of the dangers of distracted driving.

Task #2: Ensure drivers are licensed and competent

- Study the possibility of extending the GDL program to drivers who are over 18 years old and have never had any classroom training. Research the availability of any studies showing that drivers are safer when they are on a more restricted license.
- Provide tools and expertise to the technical colleges to ensure their instructors are able to continue with the Traffic Safety School and multiple offender courses.
- Provide enhanced web pages to make sure drivers understand the importance of being medically safe to operate a motor vehicle. Continue to provide the expertise and outreach to stake holders who ask for information on safe driving.
- DMV will provide additional accessible information to drivers online and on social media. It is very important to reach out to drivers and inform them of new law changes and how these laws affect their ability to drive. DMV will create new web pages and possibly smart phone applications that will help drivers understand these new law changes.
- As a participating jurisdiction in State to State, continue work to decrease any potential duplicate pointers amongst participating jurisdictions to ensure one driver/one license/one record.

Task #3: Sustain proficiency in older drivers

- Create PSAs and tools aimed at adult children on resources available for surrendering the license of a parent when they become unsafe to drive. DMV will continue to do outreach with senior

centers, work with the Department of Health Services, and other older driver resource centers to ensure they understand about driving cessation.

- Continue to update DMV web pages annually (and possibly more often) to reflect the changes in older driver resource centers in their county. DMV should partner with the Department of Health Services and come up with ideas on how cities and counties can provide better services to the older population that may not want to drive or cannot drive because of a medical condition.
- Study the effect of larger signs and better roadway markings on older drivers. DMV can update its manuals to include information on new and improved signage and work with AAA and AARP on best practices.
- DMV will provide additional training to DMV staff on how to help older drivers keep their driving privileges if medically safe to do so. It is important to have frontline staff understand the needs of senior drivers, and the driving impacts—short-term or long-term—of medical conditions. It is also important to include information about drivers with disabilities.
- DMV will provide additional resources on its website about driving with a medical condition and how to report unsafe drivers. Although this information is on the site, it may require more outreach so citizens understand what they can do to report a driver.
- DMV will review research and alternatives for more frequent testing of older drivers.

Task #4: Create a work group to meet quarterly on driver performance

- Establish quarterly meetings.
- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders as needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county's commitment to implementing the SHSP.

Highlighted Safety Initiatives

- Wisconsin implemented probationary licenses which hold restrictions on new drivers for the first nine months. These restrictions include:
 - Drivers may not drive between midnight and 5:00 a.m.
 - The vehicle may only carry one passenger, with the exception of immediate family members, adults 21 and older who hold full licenses, or a spouse at least 19 years of age.
- Wisconsin passed a primary enforcement seat belt law in 2009, meaning that law enforcement can stop a driver for not wearing a seat belt.
- In 2010, Wisconsin banned texting and driving.
- Wisconsin implemented a program involving demerit points for moving-traffic violations. This process helps to determine if the driver is competent enough to continue to hold a driver's license.
- AARP and AAA offer courses for older drivers to refresh their driving skills.
 - Some insurance companies will lower rates upon completion of these courses.
- The FHWA released a guidebook suggesting improvements to road designs to accommodate for older drivers, such as:
 - Increasing the size of letters on signs
 - Installing more street and traffic lights for increased visibility

Improve Non-Motorist Safety

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 2,239 crashes involved pedestrians and bicyclists [1.9% of all crashes]
- ✓ 55 pedestrians/bicyclists were killed [9.9% of all traffic fatalities]
- ✓ 2,171 pedestrians/bicyclists suffered injuries [5.3% of all injuries]
- ✓ 311 pedestrians/bicyclists suffered incapacitating injuries [9.8% of all incapacitating injuries]

The figures below show the number of pedestrians and bicyclists involved in and injured in crashes

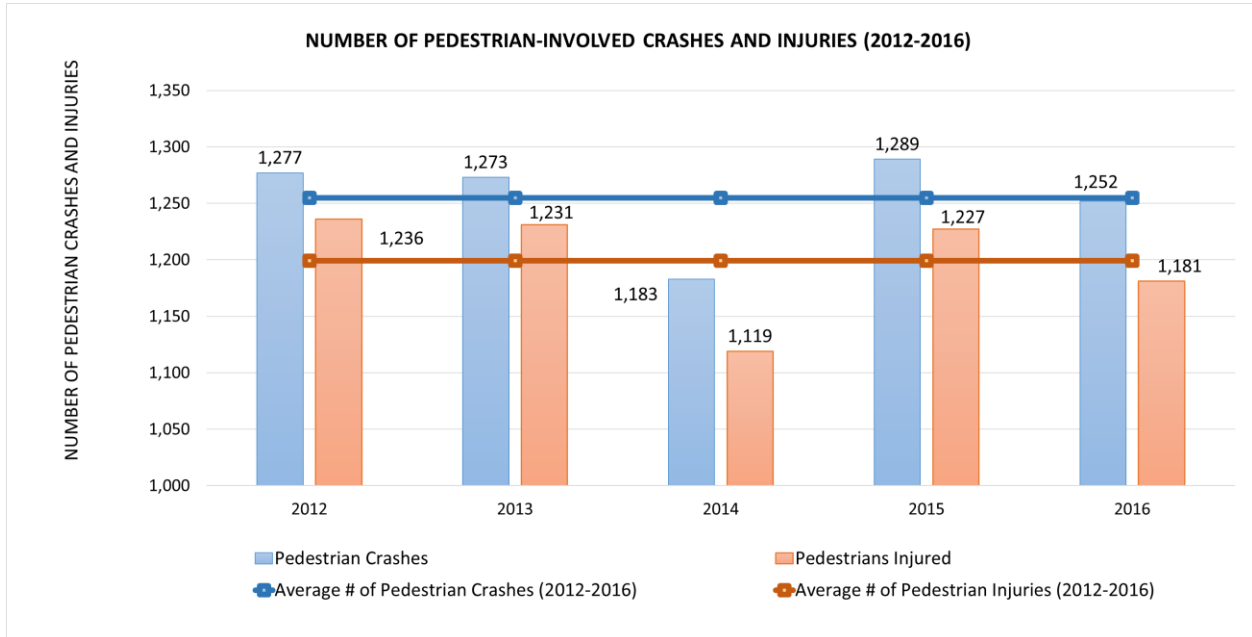


Figure 11: Pedestrian-Involved Crashes and Injuries

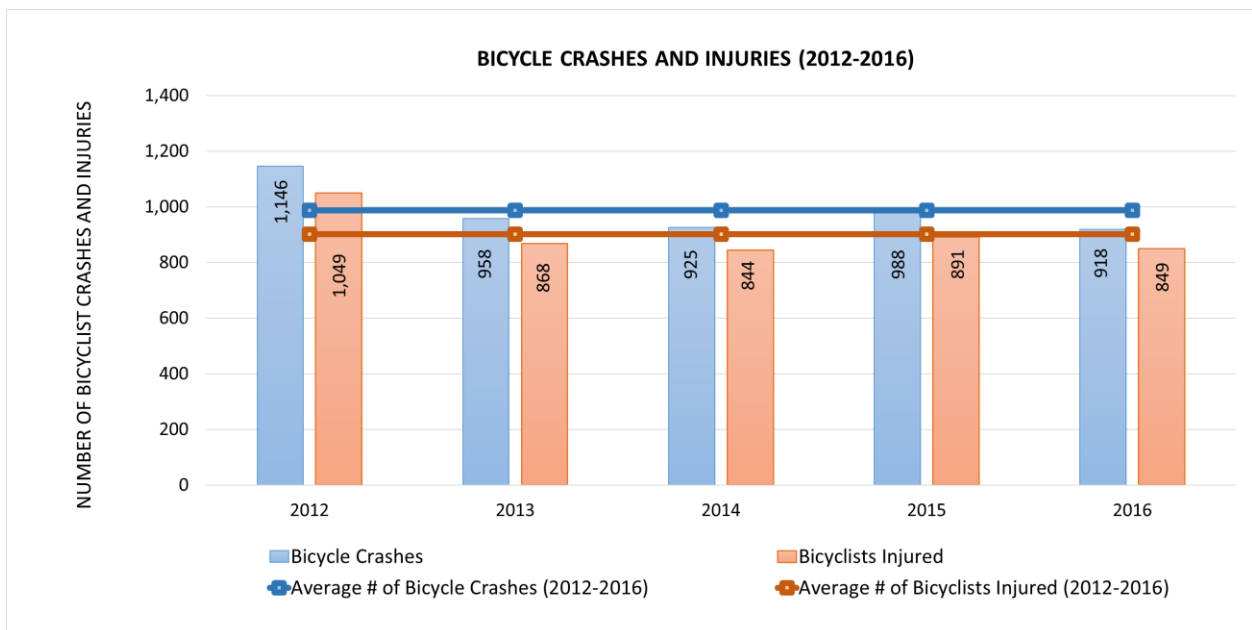


Figure 12: Bicycle Crashes and Injuries

Background

The Wisconsin Department of Transportation has hosted training workshops and provided technical guides to reduce pedestrian and bicycle injury and fatal crashes. WisDOT developed the “Wisconsin Guide to Pedestrian Practices” which provides detailed information to improve safety in the pedestrian environment. This guide functions parallel to the “Wisconsin Pedestrian Policy Plan 2020.”

WisDOT produced the Wisconsin Bicycle Facility Design Handbook as part of the “Wisconsin Bicycle Plan 2020.” This handbook gives bicyclists information about their rights, expectations, and safe riding principles.

WisDOT provides trainings annually to reduce injury and fatal pedestrian and bicycle crashes. Designing for Pedestrian Safety workshops are hosted in partnership with the Federal Highway Administration to instruct engineers, designers, and planners on the best countermeasures to improve pedestrian safety. These courses are well attended by WisDOT employees as well as representatives from local government. WisDOT also hosts a Teaching Safe Bicycle series with instruction provided by Share & Be Aware ambassadors. This is a “train-the-trainer” style workshop that teaches attendees the skills they need to instruct youth cycling.

Additionally, WisDOT hosts a Wisconsin Pedestrian/Bicycle Law Enforcement training course to provide local law enforcement with an in-depth overview on laws related to pedestrians, bicyclists, and motorists. Finally, high-visibility enforcement grants are provided to increase traffic enforcement related to non-motorist users, including motorist violation laws. Whenever possible, local law enforcement should enact a plan to enforce traffic laws as part of their regular duties. In locations where crashes are extremely high, WisDOT should provide additional funding to enhance traffic enforcement initiatives.

WisDOT provides financial support and direction for the Share & Be Aware program. This initiative is a collaborative effort with the Wisconsin Bike Federation. The Share & Be Aware program is a statewide campaign that strives to make walking and biking more safe by educating all road users (pedestrians, bicyclists, and motorists) about traffic safety.

Performance Measure Goals

Outcomes

- Reduce the five-year average of pedestrian/bicyclist crashes by 5% by 2020.
- Reduce the five-year average of pedestrian/bicyclist injury crashes by 5% by 2020.
- Reduce the number of fatal and serious injury pedestrian/bicyclist crashes by 5% by 2020.

Outputs

- Continue to install infrastructure which increases the safety of pedestrians and bicyclists.
- Provide better education about the presence of pedestrians and bicyclists, and remind the public to yield to them.
- Educate the public and law enforcement about the consequences of failing to yield to a pedestrian or bicyclist.
- Encourage the public to walk and bike more often.

SHSP Action Plan

Task #1: Infrastructure and engineering

- Make designing facilities that increase pedestrian/bicyclist safety a priority, with an emphasis on infrastructure for people walking and biking (for example, sidewalks and bike lanes).

- During new construction and resurfacing projects, emphasize road diets, bike lanes, sidewalks, and other proven safety countermeasures for pedestrians.
- Provide paved shoulders on highway projects. Fill in sidewalk gaps and provide continuity in the bike and pedestrian transportation network.
- Increase the use of signage and pavement markings to improve safety for bicyclists/pedestrians.
- Utilize improved lighting at crosswalks, paths, and intersections to improve nighttime pedestrian/bicyclist visibility to motorists.
- Create “rescue islands” so pedestrians can cross a street in more than one signal cycle

Task #2: Education for both motorists and non-motorists

- Provide education targeted toward motorists to reduce crashes, especially serious injury and fatal pedestrian/bicyclist crashes.
- Educate motorists about laws requiring them to yield for pedestrians in crosswalks.
- Inform motorists about how driver behavior causes crashes (for example, speeding and red light violations).
- Educate motorists about distracted driving and how it has led to an increase in crashes.
- Instruct motorists to always watch and look for bicyclists and pedestrians. It is easy to miss what you are not expecting.
- Dispel incorrect assumptions about non-motorist laws to reduce animosity between motorists and non-motorists.
- Educate pedestrians and bicyclists about the traffic laws that impact their method of travel.
- Ensure that non-motorists understand and obey laws to reduce crashes. Encourage pedestrians to cross streets where crosswalks are provided to increase safety.
- Educate pedestrians and bicyclists on avoiding distracted walking and bicycling.
- Educate pedestrians and bicyclists on the benefits of wearing protective clothing.

Task #3: Enforcement

- To successfully reduce pedestrian/bicyclist crashes, injury crashes, and fatal crashes, law enforcement must be actively engaged in managing traffic in their communities.
- Educate law enforcement about enforcing traffic laws that result in pedestrian/bicycle crashes, including failure to yield to pedestrians in crosswalks, red light violations, speeding, 3’ when passing, inattentive driving, impaired driving, sudden pedestrian movement, and pedestrians/bicyclists failing to yield.
- Law enforcement should provide education and enforcement in the event of a crash.
- Provide a comprehensive law enforcement training program in Wisconsin to reduce the knowledge gap related to pedestrian/bicyclist laws.
- Because Wisconsin law does not address pedestrian attire, failure to yield laws of motorists should be enforced despite the color of the clothes worn by pedestrians and lighting levels.

Task #4: Public information campaign

- Create a pedestrian/bicyclist safety campaign similar to *Click It or Ticket*; pair this safety campaign with education and enforcement focusing on motorist and bicyclist/pedestrian behaviors that cause crashes.
- Make looking and stopping for pedestrians in crosswalks (marked or unmarked) a key message.
- Focus the campaign on specific motorist behaviors that cause crashes; for example, speeding, distracted driving, and impaired driving.
- Personalize the messaging to attract public attention and/or use a celebrity.

- Remind pedestrians to cross streets at crosswalks and not at any other location.

Task #5: Road diets, speed reduction, and stop laws

- Implement and improve road diets to slow down motor vehicle traffic and to increase pedestrian/bicycle visibility and safety.
- Increase the number of pedestrians/bicyclists in the traffic environment which will increase safety for non-motorists and encourage them to walk and bike more often.
- Establish rational speed limits on state and local roads.
- Consider changing “yield” to “stop” for pedestrians because the current law to yield can be ambiguous to drivers, pedestrians, bicyclists, and law enforcement.

Task #6: Create a work group that meets quarterly regarding non-motorist safety

- Establish quarterly meetings.
- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders as needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county’s commitment to implementing the SHSP.

<p>Highlighted Safety Initiatives</p>
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- A high-visibility pedestrian enforcement and education pilot was developed in the city of La Crosse to address crashes.
- A bicycle safety PSA was created to encourage the use of safety gear while biking.
- Due consideration given to Trans 75 requiring bikeways and sidewalks on state and federally funded highway construction and reconstruction projects.
- Improved design guidance on enhancing pedestrian/bicyclist safety infrastructure at intersections, including shortening crossing distances and providing refuge areas.
- Began implementation and developed outreach materials for enhanced pedestrian crosswalk solutions including Pedestrian Hybrid Beacons (PHB) and Rectangular Rapid Flashing Beacons (RRFB).
- In 2016, WisDOT received a Pedestrian/Bicyclists Safety Assessment by a panel of experts through NHTSA.

Improve Safety of Intersections

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 45,268 intersection crashes [37.8% of all crashes]
- ✓ 161 deaths in intersection crashes [29.1% of all traffic fatalities]
- ✓ 20,740 non-fatal injuries in intersection crashes [50.8% of all non-fatal injuries]
- ✓ 1,241 incapacitating injuries in intersection crashes [39% of all incapacitating injuries]

Background

Intersection safety is a national, state, and local transportation priority because intersection crashes represent a disproportionate percentage of the safety problem on our roadways. Intersections make up only a small fraction of Wisconsin's roadway system, yet over 25% of all fatal crashes occur at intersections, and over 50% of all non-fatal injuries result from intersection crashes. Intersections are planned points of conflict in a roadway system where motorized and non-motorized users cross paths as they travel through or turn from one route to another, so it is not surprising that crashes are concentrated at intersections. Strategies to address intersection safety are diverse and constantly evolving.

Performance Measure Goals

Outcomes

- Reduce the five-year average number of intersection crashes by 5% by 2020.
- Reduce the five-year average number of injuries in intersection crashes by 5% by 2020.
- Reduce the five-year average number of fatal and incapacitating injuries in intersection crashes by 5% by 2020.

Outputs

- Install reduced conflict intersections and interchanges. Encourage and support this installation by providing design guidance, training, and outreach to stakeholders. Prove that reducing the number and type of conflict points at intersections lowers the frequency and severity of crashes.
- Provide roundabout outreach and education to reduce improper lane use and failure to yield issues.
- Install Intersection Conflict Warning Systems (ICWS) at high-speed rural intersections to reduce right angle crashes, which are often severe.
- Install a signal per lane at signalized intersections to improve the visibility of traffic signals and signs.
- Install flashing yellow arrow lights at signalized intersections to improve driver compliance with permissive left turn signal indications. Continue education efforts through design guidance, training, and outreach to stakeholders. Improve compliance with left turn signal indications to reduce the frequency of left turn crashes, which are widely recognized as the highest risk movements at signalized intersections.
- Optimize traffic signal timing through a periodic retiming program.
- Implement a systemic approach to safety to reduce targeted crash types at high-risk intersections. Develop a pilot program within Wisconsin's Highway Safety Improvement Program.
- Continue development of standards, policies, and evaluation tools that enhance safe decision making. Develop an intersection inventory to facilitate a more efficient evaluation of intersection safety.
- Increase visibility at intersections by improving sight distance, clearing brush and other obstacles from sight triangles. Offset turn lanes where appropriate.

- Continue to enhance pedestrian and bicycle safety at intersections by installing infrastructure treatments that fit the context of the intersection and surrounding corridor.

SHSP Action Plan

Task #1: Improve data and decision support

- Improve safety data management tools, such as the WisTransPortal, to share crash data across WisDOT and with local transportation partners. Develop more timely data and improved graphical capabilities in order to share crash data across WisDOT and with local transportation partners.
- Develop a process to inventory intersection data including traffic volumes, roadway attributes, and traffic asset data for use in traffic safety evaluations.
- Develop safety performance benchmarks for a range of intersection types to improve intersection safety decision making. Develop a process to compare the benefits of installing alternative safety treatments as part of transportation improvement projects.
- Include new research findings and crash modification factors (CMF) in WisDOT’s CMF table for new signalized intersection technologies including retroreflective backplates, advanced signal timing strategies, and flashing yellow arrows. If national data does not exist, consider state-specific safety evaluations.
- Develop a process for completing before and after safety evaluations for new safety treatments.
- Implement the Highway Safety Manual to allow quantitative safety evaluation of intersection alternatives.
- Calibrate the Highway Safety Manual intersection Safety Performance Functions (SPF) for use on Wisconsin’s State Trunk Network. The calibration factors should incorporate Wisconsin data to more accurately analyze safety data.

Task #2: Support knowledge development and knowledge sharing

- Institutionalize traffic safety fundamentals through training and outreach to state, local, and consultant practitioners. Specific topics should include:
 - Intersection safety analysis training.
 - Design and operation of roundabouts.
 - Design and operation of traffic signals.
 - Alternative intersection analysis and design.
 - Highway Safety Manual.
 - Pedestrian/bicyclist facility planning and design.
- Identify dedicated staff to serve as leaders for roundabout safety, design, and operational elements.
- Participate in national research on intersection safety to share knowledge with other agencies and to discuss implementation planning. WisDOT should continue to participate in the following research:
 - FHWA’s Highway Safety Manual Implementation Pooled Fund Study.
 - FHWA’s Evaluation of Low-Cost Safety Improvements Pooled Fund Study.

Task #3: Implement concepts

- Install reduced conflict intersections and interchanges including, but not limited to, roundabouts, restricted crossing U-turns (RCUT), and diverging diamond interchanges (DDI).
- Develop pilot projects using proven safety countermeasures identified in the Evaluation of Low-Cost Safety Improvements Pooled Fund studies.

- Install Intersection Conflict Warning Systems (ICWS) at high-speed rural intersections to reduce right angle crashes.
- Complete pilot testing of traffic signal technologies to improve dilemma zone detection on high-speed signalized intersection approaches.
- Install proven safety countermeasures identified in the Safe Transportation for Every Pedestrian (STEP) initiative.
- Consider policy modifications:
 - Incorporate Highway Safety Manual methods to quantify safety to the Intersection Control Evaluation (ICE) process.
 - Pedestrian Facility Design Manual development.

Task #4: Convene a multi-disciplined work group on intersection safety

- Establish quarterly meetings.
- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders as needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county’s commitment to implementing the SHSP.

<p>Highlighted Safety Initiatives</p>
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Improve data and decision support

- Created a new Wisconsin Motor Vehicle Crash Report Form (DT4000) and created a new crash database to enhance the usability for intersection safety studies.
- Completed third phase of Roundabout Safety Evaluation.
- Developed policy and guidance for quantifying safety on WisDOT projects using Crash Modification Factors (CMF).
- Updated policy and guidance for WisDOT’s Intersection Control Evaluation (ICE) process:
 - Clarified what instances require an ICE report and the preferred timeline for the process.
 - Developed Brainstorming Guide and Traffic Control Summary Tables to assist with intersection alternative development.
 - Incorporated use of Crash Modification Factors (CMF) in safety analysis within ICE process.

Support knowledge development and knowledge sharing

- Hosted 5th Annual International Roundabout Conference.
- Hosted four days of in-person training on the Highway Safety Manual crash prediction methods.
- Provided training to state, local, and consultant practitioners on improving design and operation of intersections.

Implement concepts

- Continued installation of reduced conflict intersections.
- Began installation of Intersection Conflict Warning Systems (ICWS).

Increase Occupant Protection

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 187 unrestrained passenger vehicle occupants killed [53% of all passenger vehicle occupant fatalities]
- ✓ 688 unrestrained passenger vehicle occupants suffering incapacitating injuries [27% of all passenger vehicle occupant incapacitating injuries]

Background

In 2016, observed average statewide safety belt use was at an all-time high of 88.4%. This percentage has been constantly increasing over the past five years, and is predicted to reach 94% by 2019, as shown in Figure 13 below.

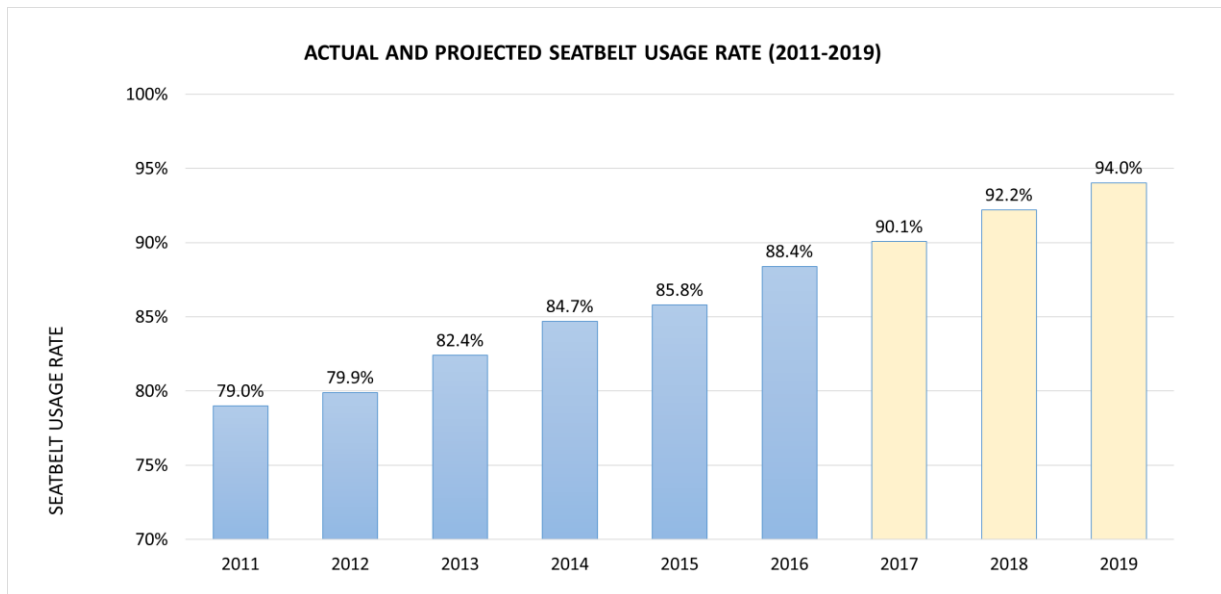


Figure 13: Actual and Projected Seatbelt Usage Rate (2011-2019)

Safety belts and child safety restraint systems help protect occupants from injuries. A safety belt prevents the occupant from being partially or completely ejected from the vehicle in the event of a crash. Not wearing a safety belt makes the occupant almost 50 times more likely to be ejected. It can also prevent the occupant from hitting the air bag before it is fully inflated. Safety belt usage greatly reduces the risk of a fatality. The figure below shows the injury severity of occupants who were wearing a safety belt or child safety seat during a crash.

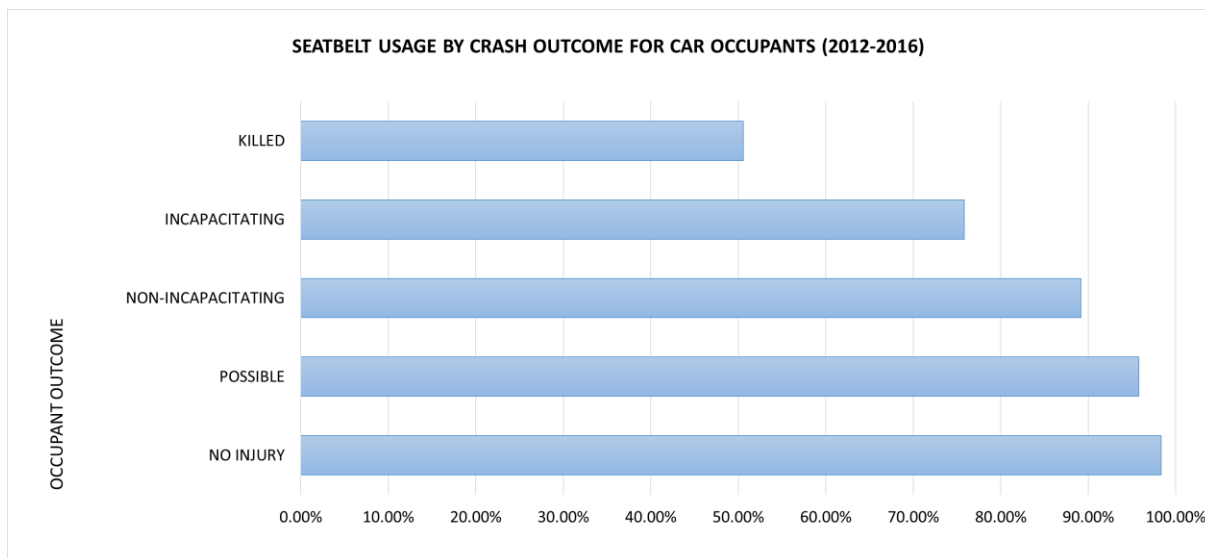


Figure 14: Safety Belt Usage by Crash Outcome for Car Occupants (2012-2016)

Children are at a greater risk when they are not in a child safety restraint system in the event of a crash. Children also suffer more injuries when their child safety restraint system is not properly secured. In an effort to educate parents about how to properly secure their child in the appropriate safety restraint system, the National Child Passenger Safety Board developed a DVD that was distributed to birthing hospitals and parents which informed them on the appropriate restraint for their child’s size, and how to properly secure the child in the restraint and the seat in the vehicle.

Performance Measure goals

Outcomes

- Increase safety belt use by passenger vehicle front seat occupants to 92% by 2020.
- Reduce unrestrained passenger vehicle occupant fatalities by 5% from the most recent five-year average.
- Reduce unrestrained passenger vehicle occupant serious injuries by 5% from the most recent five-year average.

Outputs

- Continue strong statewide law enforcement participation in the national *Click It or Ticket* mobilization to promote sustained high-visibility law enforcement presence and to increase safety belt use.
- Recruit at least 400 state, county, municipal, and tribal law enforcement agencies to participate in the national *Click It or Ticket* mobilization each year to promote safety belt enforcement efforts statewide.
- Continue with two (pre- and post- mobilization) safety belt surveys to provide visual verification of seat belt use on Wisconsin’s roadways.
- Continue to support child safety seat fitting stations with funding for equipment to educate parents and caregivers about how to properly fasten children in the appropriate seat for the child’s height and weight.
- Continue to support certification training for child safety seat technicians.
- Continue to provide funding to help purchase child safety seats for families in need of a proper child seat, but who are unable to afford one.
- Maintain the number of high-visibility enforcement task forces to promote coordinated, multi-jurisdictional law enforcement efforts to enforce traffic safety laws.

SHSP Action Plan

Task #1: Increase public outreach to improve awareness

- Work with communities and schools to increase awareness of the primary enforcement safety belt law and the importance of wearing a safety belt.
- Work with employers around the state to encourage safety belt use for their employees.
- Encourage law enforcement agencies that receive federal highway safety program funds to develop and enforce an employee safety belt use policy.
- Encourage health care providers to make questions about safety belt use a regular part of their health risk screening.
- Encourage insurance companies to encourage policy holders to consistently and properly use safety belts and child safety seats.

Task #2: Continue Click It or Ticket and other High-Visibility Mobilization initiatives

- Encourage statewide participation from both voluntary and overtime-funded law enforcement agencies in the national high-visibility *Click It or Ticket* mobilization, other expanded mobilizations, and nighttime enforcement initiatives.
- Promote zero tolerance for safety belt violations.
- Continue to promote sustained high-visibility enforcement through coordinated, multi-jurisdictional task forces that maximize law enforcement participation and educate the public through highly visible and nighttime enforcement campaigns. Utilize the media to reach as broad an audience as possible.
- Focus public attention on the life-saving benefits of safety belts and child safety seats through a targeted paid and earned media campaign.
- Develop an active social media presence to reach the desired targeted audiences.

Task #3: Develop best practice on occupant protection

- Participants in the SHSP Peer Exchange and Seat Belt and Child Safety Seat Work Group suggested this agenda could consider a variety of options:
 - Increase the fine for safety belt violations to no less than \$50.
 - Consider an increased fine for subsequent violations.
 - Add court costs to recoup local adjudication expenses.

Task #4: Continue the participation of external partners in the Seat Belt and Child Safety Seat Work Group

- Further develop external partnerships with community groups, business organizations (grocery stores, banks, convenience stores, etc.), churches, and safety advocates to generate a community-based approach to increasing safety belt usage.
- Develop approaches to better reach drivers and passengers who practice only situational or short-distance usage of safety belts.
- Improve social norming initiatives so that societal influences further encourage consistent and proper safety belt and child safety seat use.

Task #5: Continue the federally required annual field observation safety belt use survey

- Collect data and information from other states about best practices in data collection.

- Improve crash-related occupant protection data collection methods through a new crash database to improve data-driven decision making relating to improved safety belt and child safety seat usage.
- Add information gathered through NHTSA’s Fatality Analysis Reporting System (FARS) to provide more robust data about behavioral issues affecting safety belt usage and the exact location of crashes to assist with targeting enforcement efforts.

Task #6: Work with Child Safety Seat advocates to improve education for individuals and agencies that transport children

- Ensure that child passenger safety seat users are educated about how to properly install child safety seats and how to properly fit children in the seat that is most appropriate for the child’s height and weight.
- Develop additional public information to promote child safety seat usage.
- Provide funding for the purchase of child safety seats for families who are unable to afford them to make sure their children are fastened in the appropriate safety seat.
- Work with health care providers, AAA, physical therapists, and educators to promote Senior Cart Fit seminars to ensure that seniors are properly fitting into their vehicles and safety equipment.

Task #7: Continue to have quarterly meetings of the occupant protection work group

- Establish quarterly meetings.
- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county’s commitment to implementing the SHSP.

Highlighted Safety Initiatives

- Updated seat belt field survey to a more standardized methodology beginning in 2013.
- Implemented a new targeting methodology for enforcement grants that incorporated high-risk populations including pick-up truck drivers, people driving at night, and rural areas.
- Seat belt task forces were developed around the state.
- The National Child Passenger Safety Board developed and distributed DVDs to birthing hospitals around the state to inform the public about state requirements regarding child safety seats and to provide more resources about getting children in the appropriate seat for their height and weight.
- In Federal Fiscal Year 2013, approximately 4,500 child safety seats and booster seats were distributed to families around the state who were unable to purchase their own.

Curb Aggressive Driving/Reduce Speed-Related Crashes

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 19,139 speed-related crashes [16% of all crashes]
- ✓ 165 deaths in speed-related crashes [30% of all traffic fatalities]
- ✓ 7,822 non-fatal injuries in speed-related crashes [19.1% of all non-fatal injuries]
- ✓ 817 incapacitating injuries in speed-related crashes [25.7% of all incapacitating injuries]

Background

In Wisconsin, aggressive driving is a factor in 50% of traffic crashes and 67% of fatal traffic crashes. Common crash factors that would be considered “aggressive” include failure to yield, following too closely, disregarding signals, driving outside traffic lanes, improper overtaking, and speeding. Aggressive driving is typically understood as the exercise of multiple aggressive behaviors in a short amount of time. Any of these behaviors alone, while dangerous, would not necessarily be considered aggressive. When concurrent or in rapid succession, they become the behavior of high-risk drivers.

Performance Measure Goals

Outcomes

- Reduce the five-year average number of speed-related/aggressive driving crashes by 5% by 2020.
- Reduce the five-year average number of speed-related/aggressive driving injury crashes by 5% by 2020.
- Reduce the number of fatal and incapacitating injury speed-related/aggressive driving crashes by 5% by 2020.

Outputs

- Develop a new PSA warning of the monetary penalties and dangers of speeding.
- Maintain 80 aerial enforcement deployments per year. In addition to being a NHTSA countermeasure, this is also a WisDOT MAPSS measure.
- Add one additional Speed Task Force per year. High-visibility enforcement is more effective than single officer deployments.

SHSP Action Plan

Task #1: Increase targeted enforcement and strengthen the efficiency of prosecutions

- Promote the use of high-visibility enforcement strategies in areas with a disproportionate number of speed-related crashes.
- Continue to use aerial support deployments for collaborative speed enforcement task forces.
- Utilize multi-jurisdictional saturation enforcement efforts along targeted corridors with speed-related crash histories.
- Promote sustained enforcement following a saturation patrol.
- Reduce vacancies within the Wisconsin State Patrol.
- Provide law enforcement agencies with speed detection tools for enhanced enforcement of speed violations.
- Provide training to local prosecutors on the consequence of unmanaged speeds and aggressive driving.
- Educate law enforcement officials on uniform enforcement practices to reduce speed tolerances.
- Enhance speed conviction data tracking for more efficient decision processes by law enforcement agencies.

Task #2: Increase innovative education and outreach

- Develop innovative PSA campaigns to raise awareness of the personal, financial, and legal consequences of speeding, such as the risk of injury and/or death, cost of citation, and loss of license.
- Develop public and private partnerships to expand the reach of targeted PSAs.
- Promote calling 911 as an appropriate means of reporting dangerous driving.
- Encourage the use of alternative transportation options to mitigate instances of speeding and aggressive driving.
 - For example, public transit, biking, and walking

Task #3: Implement sound engineering practices as a defense against unsafe driving behavior

- Facilitate the appropriate use of engineering countermeasures to help reduce opportunities for speeding and aggressive driving.
 - For example, innovative pavement markings, signal coordination, bulb outs, and roundabouts
- Promote project-level implementation of principles to target speed considerations that permanently embed traffic calming strategies into specific roadway designs.
- Encourage intergovernmental collaboration in the development of community sensitive design in state projects.
- Continue implementing countermeasures to address wrong way driving occurrences, particularly on new and existing interchanges.

Task #4: Provide research and data to support sound policy making

- Monitor state legislative activity for proposals that will impact speeding and aggressive driving.
- Promote sound policy by providing relevant data and research to decision makers in both the executive and legislative branches.
- Propose best practices that will have a positive impact on curbing speeding and aggressive driving.

Task #5: Establish rational speed limits on state and local roads

- Increase availability of the Wisconsin Speed Management Guidelines.
- Encourage the development and completion of local speed studies.
- Promote intergovernmental collaboration on speed study research.
- Expand the use of speed management concepts and conduct outreach through local media outlets.
- Promote the use of USLIMITS2 web tool.

Task #6: Continue to have quarterly meetings through the aggressive driving work group

- Establish quarterly meetings.
- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders as needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county's commitment to implementing the SHSP.

Highlighted Safety Initiatives

- A speed task force model was developed in coordination with aerial enforcement deployments from the WisDOT Division of State Patrol's Air Support Unit.

Reduce Lane Departure Crashes

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 1,511 head-on crashes [1.3% of all crashes]
- ✓ 72 deaths in head-on crashes [13% of all traffic fatalities]
- ✓ 1,380 non-fatal injuries in head-on crashes [3.4% of all non-fatal injuries]
- ✓ 251 incapacitating injuries in head-on crashes [7.9% of all incapacitating injuries]

- ✓ 102 run-off-the-road crashes [0.09% of all crashes]
- ✓ 1 death in run-off-the-road crashes [0.2% of all traffic fatalities]
- ✓ 58 non-fatal injuries in run-off-the-road crashes [1.2% of all non-fatal injuries]
- ✓ 6 incapacitating injuries in run-off-the-road crashes [0.2% of all incapacitating injuries]

- ✓ 2,672 rollover crashes [2% of all crashes]
- ✓ 37 deaths in rollover crashes [7% of all traffic fatalities]
- ✓ 1,676 non-fatal injuries in rollover crashes [4% of all non-fatal injuries]
- ✓ 265 incapacitating injuries in rollover crashes [8% of all incapacitating injuries]

- ✓ 3,013 freeway/expressway cross-median crashes
- ✓ 21 deaths in freeway/expressway cross-median crashes

Background

A “lane departure” crash is a “non-intersection crash which occurs after a vehicle crosses an edge line or a center line, or otherwise leaves the travel way.” While lane departure crashes represent a relatively modest portion of all traffic crashes, they result in a greatly disproportionate number of fatalities and serious injuries. Almost 20% of all traffic fatalities result from lane departure crashes, while they only account for less than 5% of all traffic crashes.

Lane departure crashes are both a rural and urban problem. In 2014, the Federal Highway Administration (FHWA) conducted a study on fatal and fixed object crashes that indicated 51% of the crashes occurred in rural areas, while 47% occurred in urban areas.

Performance Measure Goals

Outcomes

- Reduce the five-year average number of lane departure crashes by 5% by 2020.
- Reduce the five-year average number of lane departure injury crashes by 5% by 2020.
- Reduce the number of fatal and incapacitating injury lane departure crashes by 5% by 2020.

Outputs

- Make presentations to the Wisconsin County Highway Association (WCHA) Annual Meeting and other units of local government.
- Develop training videos for roadside design. Provide two sessions per year of the *Hybrid Roadside Design Course* from the National Highway Institute (NHI) or an equivalent option.
- Identify locations and segments on state and county trunk highways with high numbers or rates of lane departure crashes and recommend systemic safety improvement strategies.
- Educate stakeholders on the connection between lane departure crashes and other emphasis areas such as speed related crashes, distracted driving, impaired and drowsy driving, and

improved occupant protection. Connecting these issues and addressing these problems will assist in reducing lane departure crashes.

- Sponsor research regarding lane departure crashes. This will allow WisDOT to find technical solutions for lane departure crashes that are appropriate for Wisconsin roadways.
- Continue to participate in national and regional research; such participation will make it easier to implement national research on roadside design. WisDOT should continue to contribute to the following research projects:
 - Midwest Regional Safety Facility (MwRSF) Pooled Fund
 - National Cooperative Highway Research Program (NCHRP) Panel on roadside design
 - AFB20 Committee on Roadside Safety
 - American Association of State Highway and Transportation Officials (AASHTO) Technical Committee on Roadside Safety
 - FHWA's Evaluation of Low-Cost Safety Improvements Pooled Fund
 - TTI Crash Testing Pooled Fund

SHSP Action Plan

Task #1: Develop and improve data and decision support systems for county/municipal and state engineers to reduce the incidence and severity of lane departure crashes

- Review whether existing software (e.g. Safety Analyst, Roadside Safety Analysis Program (RSAP), and the Interactive Highway Safety Design Manual (IHSDM)) can be implemented into a decision support system for designers and engineers.
- Integrate the lane departure crashes decision support system into the WisDOT project planning/programming process and at the design level to determine the required level of improvement.
- Evaluate data needs for Safety Analyst, Highway Safety Manual, RSAP, and IHSDM implementation for lane departure crashes.
- Develop/maintain an inventory system of roadside geometry data (e.g. lateral clearances, clear zone width, fore slopes, back slopes, shoulder type/widths, and curves) for a more effective use of analytical safety software.
- Assist local agencies with relevant data collection and maintenance of an inventory system for roadside geometry data.
- For the State's highway network:
 - Determine feasibility of Light Detection and Ranging (LiDAR) datasets to meet WisDOT business needs (e.g. to calculate shoulder slopes and to identify clear zone encroachments).
 - Update the roadside geometry data inventory system at reasonable intervals.
 - Continue annual efforts to identify CMC "hotspots" and program projects to provide median protection (UW TOPS Lab, WisDOT Regions, Bureau of Project Development, and Bureau of State Highway Programs).
 - Develop data collection mechanisms necessary to implement Safety Analyst and the Highway Safety Manual.
- Develop project design policy and guidance to increase emphasis on safer roadside design.
 - Update or add various standard detailed drawings to assist designers and construction staff.
 - Update the Construction Materials Manual to assist construction staff on the installation of roadside hardware (e.g. crash cushions, beam guards).
 - Add additional Facilities Design Manual (FDM) guidance on roadside design.
 - Roadside Grading Guidance.

- Add design information from NCHRP Report 612: *Safe and Aesthetic Design of Urban Roadside Treatments*.
- Limit the use of curb and gutter on roadways with design speeds greater than 45 mph (per AASHTO Roadside Design Guide).
- Add design information from NCHRP Report 737 Design Guidance for High-Speed to Low-Speed Transition Zones for Rural Highways.
- Continue to sponsor roadside design improvement research projects at Midwest Roadside Safety Facility.

Task #2: Develop and implement a comprehensive program to reduce the incidence and severity of lane departure crashes

- Communicate the importance of roadside design to county/municipal and state engineering staff by providing training workshops and other technical presentation opportunities at conferences and meetings. These presentations should emphasize the importance of roadside design and help designers make appropriate roadside design decisions. Some possible opportunities are:
 - Provide roadside design updates during the Annual Construction Specification Training.
 - Provide regional NHI hybrid roadside design training classes.
 - Provide speakers as needed for maintenance, traffic, regional staff and other meetings.
 - Ask if the Wisconsin County Highway Association would like a presentation on roadside design issues at one of their meetings.
 - Participate in Regional Maintenance Meetings to discuss roadside design issues when asked.
- Provide support for other focus areas that influence lane departure crashes (*e.g.* speed related crashes, distracted driving, impaired driving and improved occupant protection).

Task #3: Analyze and develop roadside and pavement strategies focusing on low cost treatments for rural highways that are not state trunk highways

- Identify locations and segments on county trunk highways with high numbers or rates of lane departure crashes for the High Risk Rural Road Program (HRRRP) and recommend systemic safety improvement strategies.
- Review research provided by FHWA’s Evaluation of Low-Cost Safety Improvements Pooled Fund. Determine which strategies could be implemented on rural non-STH highways.
- Encourage counties to use Safety Edge on their roadways.

Task #4: Create a lane departure crash work group that meets quarterly

- Establish quarterly meetings.
- Review tasks set out by the Peer Exchange and define needed actions and participants.
- Identify new stakeholders as needed.
- Create incentive-based funding proposals.
- Develop a minimum commitment scale that illustrates a county’s commitment to implementing the SHSP.

Highlighted Safety Initiatives

Efforts recently completed with the objective of preventing/mitigating head-on, cross-median, and other lane departure crashes have included:

- The following WisDOT sponsored research projects have been implemented into state standards:
 - Normal Midwest Guardrail System (MGS) beam guard with Omitted Post.
 - Adhesive anchors for Temporary Concrete Barriers.
 - Working Width for MGS beam guard at Lower Test Levels.
 - Normal MGS beam guard with 2.5:1 slope behind the post.
 - MGS Transition to Rigid Barrier with Curb.
 - Extending TL-2 Short Radius beam guard to Larger Radii.
 - Zone of Intrusion for Permanent 9.1 Degree Single Slope Concrete Barrier.
 - Predictive and retroactive Cross Median Crash Warrants.
- Participation in National Roadside Design Research:
 - Midwest Regional Safety Facility (MwRSF) Pooled Fund.
 - NCHRP Panels on roadside design.
 - NCHRP PROJECT PANEL C22-33 Development of a Collaborative Approach for Multi-State In-Service Evaluations of Roadside Safety Hardware.
 - NCHRP Panel 15-65 Develop of Comprehensive Objective Criteria to Reduce Serious and Fatal Lane Departure Crashes and Prepare a Major Update to the Roadside Design Guide.
 - AFB20 Committee on Roadside Safety.
 - WisDOT staff have given presentations at national meetings.
 - AASHTO's Technical Committee on Roadside Safety.
 - WisDOT Staff are on the AASHTO Technical Committee on Roadside Safety.
 - WisDOT staff have had influence on the FHWA/AASHTO MASH Implementation Agreement.
 - WisDOT staff have had influence on what research projects have been funded by NCHRP.
 - WisDOT staff have rewritten parts of the AASHTO Manual for Assessing Safety Hardware.
 - WisDOT staff participated in an AASHTO/FHWA work group to try to resolve MASH questions.
 - FHWA's Evaluation of Low-Cost Safety Improvements Pooled Fund.
 - TTI Crash Manual for Assessing Safety Hardware (MASH) Pooled Fund.
 - WisDOT has joined the TTI MASH Pooled Fund.
 - WisDOT staff has been asked to be on a Technical Task Force by FHWA to address methods of identifying hardware.
 - WisDOT sponsored research has been published in research journals.
 - WisDOT has been contacted by others about research it has sponsored.
- Throughout the course of the 2014-2016 Strategic Highway Safety Plan, a significant amount of staff time has been invested in discussions on beam guard and terminals and meeting the FHWA/AASHTO MASH Implementation Agreement.
- The following training and presentations have taken place since the 2014-2016 Strategic Highway Safety Plan:
 - Local Unit of Government Outreach
 - 4 Transportation Information Center Highway Safety Class presentations on roadside design.
 - 1 presentation to the Wisconsin County Highway Association.
 - 1 utility conference.
 - Training for staff, consultants, and contractors
 - 5 Hybrid NHI Roadside Design classes.

- 9 presentations on roadside design at the annual Standard Specification Training Class.
 - 2 region specific training classes on roadside design.
- WisDOT has sponsored the following research:
 - Safety Investigation and Design Guidance for Curb and Gutters Near Energy-Absorbing Terminals.
 - Vehicle Dynamics Testing, Validation of Vehicle Models, and Computer Simulation of Rock Ditch Liners.
 - Evaluation of Anchored Temporary Concrete Barrier to MASH 2016 TL-3.
 - Dynamic Testing and Evaluation of Culvert-Mounted, Strong-Post MGS to TL-3 Guidelines of MASH 2016.
 - Transition from Free-Standing Temporary Barrier to Reduced Deflection Temporary Barrier.
- WisDOT is sponsoring research to identify locations on the Backbone where the lane departure crashes are more frequent.
- WisDOT has implemented research to identify cross-median crash locations.
- WisDOT has implemented research to help staff make decisions on fixed objects in urban locations.
- WisDOT has implemented a Hazard Review Process to help identify and document the treatment of various roadway hazards. It also helps project staff properly scope a project.

Part III:

Continuing Highway Safety Issue Areas

Failure to be ranked in the high priority highway safety issue areas for the 2017-2020 SHSP does not mean the topic is unimportant, nor does it mean WisDOT will discontinue planned or ongoing initiatives and programs to strive for continued progress in the safety performance.

In some cases, these continuing highway safety issue areas overlap one or more of the higher priority issue areas identified for emphasis in the 2017-2020 SHSP (e.g. truck travel is a key subset of intersection safety).

The WisDOT Traffic Safety Council will continue to monitor key performance measures in each issue area and will recommend Department-sponsored initiatives to respond to emerging challenges, as necessary.

The remaining highway safety issue areas include:

Make Large Truck Travel Safer

Key Performance Measures (2012-2016 Annual Averages)

- ✓ *6,961 crashes involving large trucks [5.8% of all traffic crashes]*
- ✓ *72 deaths in crashes involving large trucks [13% of all traffic fatalities]*
- ✓ *2,113 non-fatal injuries in crashes involving large trucks [5.2% of all non-fatal injuries]*
- ✓ *230 incapacitating injuries in crashes involving large trucks [7.2% of all incapacitating injuries]*

Background

Within the Division of State Patrol's (DSP) Motor Carrier Enforcement Section, the DSP utilizes Motor Carrier Safety Assistance Program (MCSAP) funding to target activities in its mission to reduce the number and severity of commercial motor vehicle (CMV) crashes. Each year, the DSP develops the Commercial Vehicle Safety Plan (CVSP) that outlines the goals and activities for accomplishing large truck safety. For 2017, Wisconsin's broad goal is to maintain large truck and bus fatalities to 10% of all fatalities or less.

DSP activities to support this goal include:

- Inspecting commercial vehicles and their drivers at safety and weight enforcement facilities (SWEF) and at mobile roadside locations to ensure that vehicles are mechanically sound and to ensure that driver behavior complies with federal and state laws and regulations.
- Assuring the implementation of the Federal Motor Carrier Safety Administration (FMCSA) initiatives to further large truck safety and program quality standards.
- Providing outreach, education, and enforcement to new carriers and their drivers through the reviews of existing motor carriers in Wisconsin.
- Developing motor coach destination inspections through strike forces and addressing related unsafe driver behavior such as speeding, following too closely, operating in violation of an out-of-service order, and hours of service violations.
- Monitoring emerging and existing industry initiatives throughout the state using special details to ensure that safety, size, and weight regulations are being followed.
- Ensuring oversight of data measures to assure that Wisconsin remains in good standing with all rated FMCSA categories.
- Ensuring that a motor carrier's operating authority is confirmed during each inspection and that action is taken if not in compliance.

- Actively participating in national enforcement strike forces targeting Hazmat shippers, cargo tank repairers, and other shippers.
- Conducting post-crash MCSAP inspections.

In addition to WisDOT’s Division of State Patrol, the Division of Motor Vehicles (DMV) also enhances large truck safety through the commercial driver licensing (CDL) program as does the Division of Transportation System Development (DTSD) through the provision of its oversize/overweight permitting program. The DTSD provides for large truck safety and the safety of other motorists through the design, development, and approval of transportation infrastructure for safe truck travel, and through the development of safety and weight enforcement facilities (SWEFs) for weighing and inspecting large trucks (operated by DSP on a daily basis).

Enhance EMS to Increase Survivability

Key Performance Measures (2012-2016 Annual Averages)

- ✓ *Injury-to-Fatality Ratio in Wisconsin: 74:1*

Background

WisDOT conducts annual inspections of ambulances and promulgates administrative rules governing ambulance equipment. The Department of Health Services is directly responsible for regulating/licensing EMS personnel and coordinating improvements in EMS-related services in Wisconsin.

WisDOT’s BOTS has provided \$70,000 for electronic transfer of run reports to the Wisconsin Ambulance Run Data System, for capacity building, data validation and integration into the National EMS Information System.

WisDOT’s BOTS provides \$50,000 annually in federal safety funding to train and equip volunteer first responders.

Reduce Vehicle-Train Crashes

Key Performance Measures (2012-2016 Annual Averages)

- ✓ *38 vehicle-train collisions at public crossings [0.03% of all traffic crashes]*
- ✓ *2 deaths in vehicle-train collisions at public crossings [0.4% of all traffic fatalities]*
- ✓ *18 non-fatal injuries in vehicle-train collisions [0.04% of all non-fatal injuries]*
- ✓ *4 incapacitating injuries in vehicle-train collisions [0.1% of all incapacitating injuries]*

These totals do not include deaths/injuries that occurred on private property or did not involve motor vehicles

Background

The Division of Transportation Investment Management (DTIM) manages the WisDOT section 130 federal funds intended to improve railway-highway grade crossing safety. At least half of these funds must be spent on railroad crossing warning devices. The remaining portion is available for warning devices and other safety-related improvements at railway-highway grade crossings (*e.g.* upgraded crossing surface, channelization, separation structures, roadway relocations, closures, traffic signal pre-emption, etc.).

- DTIM staff manages the Railroad Crossing Information System (RCIS), which includes rail crossing inventory data (track data, train crossing frequency and speed, approach roadway data, motor vehicle crossing frequency, and speed). The RCIS interfaces with the Federal Railroad Administration’s (FRA) database, which includes crash data reported by railroad companies.
- DTIM staff uses a WisDOT-developed computer procedure that analyzes a dataset created from information in the RCIS database to identify and prioritize railway-highway grade crossing

warning device upgrade needs from a statewide perspective. This analysis is performed on an as-needed basis, at minimum once every two years, to ensure railway-highway grade crossing projects with the highest need receive funding.

- WisDOT provides the Office of the Commissioner of Railroads (OCR) annually \$2.7 million in federal funds and \$1.7 million in state funds to implement high-need railway-highway grade crossing safety improvements. The OCR also utilizes a statewide data analysis to inform programming decisions.
- The Wisconsin Chapter of Operation Lifesaver, Inc. collaborates with the OCR, WisDOT, and various railroad companies to provide public education programs to prevent collisions, injuries, and fatalities on and around railroad tracks and railway-highway grade crossings. These important education efforts emphasize how all roadway users, including pedestrians and bicyclists, can help prevent accidents from occurring. Safety education and outreach will continue to play a critical role in improving Wisconsin's rail safety as rail lines experience an increase in train frequency and speeds. This is particularly true for communities seeing significant increases in train traffic on previous dormant or minimally used rail lines.

Improve Incident Management

Background

Information about roadways' conditions and their environments, user characteristics and behaviors, and traffic crashes and their outcomes, should be timely, complete, consistent, accurate, and readily accessible. State of the art technologies and procedures should be applied to gather, integrate, and utilize information. Institutional cooperation and coordination, both within and outside WisDOT, resulting in open, coordinated, defensible, decision-making processes, will ensure the best use of limited resources and improved safety on Wisconsin roadways.

Improve Work Zone Safety

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 2,153 traffic crashes in work zones [1.8% of all traffic crashes]
- ✓ 10 deaths in work zone crashes [1.8% of all traffic fatalities]
- ✓ 851 non-fatal injuries in work zone crashes [2.1% of all non-fatal injuries]
- ✓ 49 incapacitating injuries in work zone crashes [1.5% of all incapacitating injuries]

Background

Highway work zones can pose major safety risks for motorists, as well as utility, construction, and maintenance personnel. Work zone fatalities can occur on every type of highway – rural or urban, high volume or low volume, two-lane or divided. In the past decade, work zone crashes, fatalities and injuries have declined, but they have not been completely eliminated.

Work zones require special attention because motorists are often faced with unique situations requiring them to exercise special care. Increasing traffic volume on an aging highway network necessitates the need for more work zones in the future, work zones that often will be done under live traffic conditions. Recent and projected increases in the number of resurfacing and reconstruction projects require the Department to continue to give high priority to ensure the safety of motorists traveling through work zones, as well as the safety of personnel working in the zones.

Task #1: Adopt improved procedures to ensure effective practices for managing work zone operations.

Task #2: Enhance and extend training for the planning, implementation, and maintenance of work zones to maximize safety.

Task #3: Enhance the safety of work zone driving through education and enforcement actions.

Safe Travel in Bad Weather

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 18,725 crashes involving bad weather [15.7% of all crashes]
- ✓ 65 deaths involving bad weather [11.7% of all traffic fatalities]
- ✓ 6,041 non-fatal injuries involving bad weather [14.8% of all non-fatal injuries]
- ✓ 404 incapacitating injuries involving bad weather [12.7% of all incapacitating injuries]

Bad weather includes rain, snow, fog, sleet, and wind

Background

As a northern tier Midwestern state, Wisconsin typically faces challenging travel conditions during winter months. Wisconsin receives an average of 55 inches of snowfall each year, and many drivers are not prepared to drive in these conditions. Snow makes roads slippery, which causes its own problems. The stopping distance is increased, often causing rear-end crashes. Maneuvering becomes more difficult. This can cause fish-tailing, drifting into other lanes, and running off the road. Wisconsin currently utilizes techniques for clearing snow and ice, including pre-wetting streets, snowplowing, and anti-icing.

Wisconsin receives on average 33.1 inches of rainfall each year. Driving in rainy conditions can cause tires to hydroplane, where tires lose all traction with the road. This is a cause of many crashes, and can be prevented by a vehicle slowing down in the rain.

Reduce Deer/Other Animal Crashes

Key Performance Measures (2012-2016 Annual Averages)

- ✓ 19,187 police-reported deer-involved crashes [16% of all traffic crashes]
- ✓ 10 deaths in police-reported deer-involved crashes [1.7% of all traffic fatalities]
- ✓ 420 non-fatal injuries in deer-involved crashes [1% of all non-fatal injuries]
- ✓ 69 incapacitating injuries in deer-involved crashes [2.2% of all incapacitating injuries]

These totals do not include unreported deaths/injuries that occurred in "swerve-to-avoid crashes

Background

As crash data is entered into the DMV database, current extracts are provided at monthly intervals. From these, the Bureau of Transportation Safety pulls the latest deer/other animal crash data to fulfill data requests from government agencies, media agencies, and the general public. Deer crash data is also provided to the public in the form of statistics in the Wisconsin Traffic Crash Facts book and the Deer Crash Monograph. Both of these documents are updated annually and provided on the WisDOT website:

<http://wisconsindot.gov/Documents/safety/education/crash-data/2015/deerfacts-2015.pdf>

Each spring and fall, BOTS records a radio message on deer safety that is distributed to various radio networks. This message usually contains the number of deer crashes, injuries, and fatalities in the previous year along with safety tips of what to do if you see deer while driving. Knowing that BOTS has this data available, various news outlets call frequently for the latest crash statistics concerning deer. WisDOT also maintains a link to the Deer Vehicle Crash Clearinghouse:

<http://www.deercrash.org/>

Appendices

SHSP 2017 Survey Update

Thanks for providing input to the update of WI's SHSP; to find more information on SHSP, please visit the WisDOT website. The collective results will be used to inform discussion at a one-day peer exchange in May, 2017; responses will be kept anonymous. This exercise should take no more than 10 minutes.

Q1a: Wisconsin faces many traffic safety challenges. Among the competing priorities are the 25 issue areas shown below. From this list, which FIVE do you think are most important for Wisconsin to focus on for the next three years? (Select up to, but no more than 5)

- Reduce Speed-Related Crashes (1)
- Improve Safety for Large Truck Travel (2)
- Reduce Lane Departure Crashes (3)
- Sustain Proficiency in Older Drivers (4)
- Improve Safety at Intersections (5)
- Enhance EMS to Increase Survivability (6)
- Improve Timeliness and Accuracy of Safety Data & Associated Analysis/Tools (7)
- Curb Aggressive Driving (8)
- Ensure Drivers are Licensed & Competent (9)
- Reduce the Incidence and Severity of Motorcycle Crashes (10)
- Improve Bicyclist Safety (11)
- Reduce Vehicle-Train Crashes (12)
- Reduce Alcohol & Drug-Impaired Driving (13)
- Improve Pedestrian Safety (14)
- Reduce Driver Distraction (15)
- Improve Driver Alertness (16)
- Improve Traffic Incident Management (17)
- Improve Work Zone Safety (18)
- Reduce Weather-Related Crashes (19)
- Reduce Deer & Other Animal Crashes (20)
- Improve Teen Driver Performance (21)
- Increase Safety Belt Use (22)
- Improve Child Safety Seat Use (23)
- Improve Safety Technology (Vehicle, Infrastructure, & Personal Devices) (24)
- Improve Traffic Safety Culture (25)

Q1b: For each of the selected issues, what one or two specific activities or initiatives should be pursued? Please limit responses to 50 words. *

Issue 1 (Please specify which issue you are discussing in the response)

Issue 2 (Please specify which issue you are discussing in the response)

Issue 3 (Please specify which issue you are discussing in the response)

Issue 4 (Please specify which issue you are discussing in the response)

Issue 5 (Please specify which issue you are discussing in the response)

Q2: Are there any issue areas that you think present a unique opportunity for progress over the next 3 years? Please state the issue area and why you think there is a window of opportunity? (You can select up to three issues).

- Issue Area (1) _____
- Public concern/media attention (2)
- Political will to change law/provide resources (3)
- New/emerging technology (4)
- Changing population demographics (5)
- Easy to implement/low-cost fix available (6)
- Other (7) _____

Q3: Is there another traffic safety issue that was not included among the 25 issue areas but you think you should have been?

Q6: What area(s) are you most concerned about? (Select all that apply)

- Local Road Safety Issues (1)
- County Road Safety Issues (2)
- State Road Safety Issues (3)
- Interstate Road Safety Issues (4)

The full survey results are available by request.

SHSP Peer Exchange Participants

A one-day peer exchange was held in Madison, WI on 05/15/2017. Participation was by invitation-only. A total of 75 highway safety professionals and advocates participated in the event; about 2/3 of them were WisDOT staff, and the other 1/3 were external partners. The full roster is shown below.

Name	Name
Adesijuwola Olusegun	John Reblin
Amy Miles	Josh Olson
Andi Bill	Joshua Falk
Andy Winga	Karl Ackerman
Beth Heflin	Kurt Schultz
Bill Bremer	Kwame Amegashitsi
Bill Wondrachek	Lee Gibbs
Bob Bott	Libbe Slavin
Bob Schneider	Martin Broyles
Brad Byom	Marquis Young
Brent Matthews	Michelle Brokaw
Brian Ausloos	Mike Davis
Chokkalingam Muthumari	Mike Satteson
Chris Ohm	Mitch Moline
Colleen Hoesly	Molly Zemke
Cory Roeseler	Nick Jarmusz
Dale Halloway	Paul Wolfe
Danny Mager	Peter Rafferty
Dave Jolicoeur	Randy Romanski
Dave Perlman	Rebecca Szymkowski
David Pabst	Richard Miller
Deanna Reilly	Rich Coakley
Dennis Hughes	Rob Miller
Donald Lyden	Ryan Hoel
Greg Patzer	Ryan Mayer
Ian Wright	Shannon Riley
Jeff Heil	Steve Krejci
Jennifer Sarnecki	Tim Tomann
Jennifer Wineberg	Tom Faella
Jennifer Robertson	Tony Kemnitz
Jim Kuehn	Tracy Buchman
Joe Davis	Yu Song

SHSP Peer Exchange Follow-Up

A follow-up survey was sent out after the SHSP Peer Exchange and provided feedback for future peer exchanges.

List of Acronyms

AASHTO	American Association of State Transportation Officials	MPO	Metropolitan Planning Organization
BOTS	Bureau of Transportation Safety	MUTCD	Manual on Uniform Traffic Control Devices
CDL	Commercial Driver's License	MwRSF	Midwest Roadside Safety Facility
CMC	Cross Median Crash	NCHRP	National Cooperation of Highway Research Program
CMF	Crash Modification Factor	NHTSA	National Highway Traffic Safety Administration
CMV	Commercial Motor Vehicle	NSC	National Safety Council
DMV	Division of Motor Vehicles	NHI	National Highway Institute
DSP	Division of State Patrol	OWI	Operating While Intoxicated
DTIM	Division of Transportation Investment Management	PHB	Pedestrian Hybrid Beacon
DTSD	Division of Transportation System Development	PSA	Public Service Announcement
EMS	Emergency Medical Services	RRFB	Rectangular Rapid Flashing Beacons
FDM	Facilities Design Manual	RSAP	Roadside Safety Analysis Program
FHWA	Federal Highway Administration	ROR	Run-off-the-road
FMCSA	Federal Motor Carrier Safety Administration	SHSP	Strategic Highway Safety Plan
GDL	Graduated Driver Licensing	SIMS	Signing Inventory Management System
HRRRP	High Risk Rural Road Program	SPF	Safety Performance Functions
HSP	Highway Safety Plan	STH	State Trunk Highway
HSIP	Highway Safety Improvement Program	STIP	State Transportation Improvement Plan
HVE	High-Visibility Enforcement	SWEF	Safety and Weight Enforcement Facility
ICE	Intersection Control Evaluation	TOPS Lab	Traffic Operations and Safety Laboratory
ICWS	Intersection Conflict Warning System	TSC	Traffic Safety Council
IID	Ignition Interlock Device	TSRP	Traffic Safety Resource Prosecutor
IHSDM	Interactive Highway Safety Design Manual	UW	University of Wisconsin-Madison
LEL	Law Enforcement Liaison	VMT	Vehicle Miles Traveled
LiDAR	Light Detection and Ranging	WCHA	Wisconsin County Highway Association
MASH	Manual for Assessing Safety Hardware	WisDOT	Wisconsin Department of Transportation
MCSAP	Motor Carrier Safety Assistance Plan	WISLR	Wisconsin Information System for Local Roads
MGS	Midwest Guardrail System		

WisDOT Traffic Safety Council (2017-2020)

Division of State Patrol

David Pabst (TSC Chair)

Randy Romanski

Laura Vande Hey

Larry Corsi

Chokkalingam Muthumari

Martin Broyles

Evan Moorman

Ian Wright

Division of Transportation System Development

Bill McNary

Rebecca Szymkowski

Brian Porter

Jerry Zogg

Rodney Taylor

Mike Finkenbinder

Kelly Jackson

Rose Phetteplace

Marquis Young

Division of Transportation Investment Management

Justin Shell

Rae Keasler

David Leucinger

Darren Schoer

Mike Schumacher

Division of Motor Vehicles

Rob Combs

Deborah Kelley

Corey Kleist

Reggie Paradowski

Ann Perry

Executive Offices

James Amberson

Robert Miller

Ex Officio

Andrea Bill (UW TOPS Lab)

Dave Jolicoeur (FHWA)

Mark Gessler (FMCSA)

Mark Oesterle (FMCSA)

Xiao Qin (UW-Milwaukee)