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Drive sober for the holidays

David Pabst,
Director
WisDOT
Bureau of
Transportation
Safety

The holidays bring times of celebration with family and friends and, after the festivities, we want everyone to get home safely. There are several ways to make sure that your holidays don't end up with you in a crash or in jail as a result of impaired driving. You can designate a sober driver before you celebrate, or you can call a friend or a taxi. Another option is to use the Drive Sober mobile app, available here, which can help you find a safe ride home.

The Drive Sober or Get Pulled Over – Winter Holidays national enforcement mobilization runs from December 15 to January 1. Law enforcement throughout Wisconsin and the nation will have extra patrols dedicated to keeping our roadways safe. This increased presence is primarily intended to obtain voluntary compliance with OWI laws, so people make the right decision before getting behind the wheel. If a person decides to drive while impaired, however, law enforcement officers will stop, test and arrest.

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Good news

Progress with reducing large truck crash fatalities

The number of large truck fatal crashes in Wisconsin increased from 2009 through 2014, but the recent trend (see graph) has been encouraging. Preliminary data show that large truck crash fatalities dropped 8 percent in 2015 compared with the 2010-2014 average. For federal fiscal year (FFY) 2016, preliminary data show an extraordinary 28 percent decrease compared with FFY 2015.

This improvement is especially remarkable in light of recent national crash trends. The economy has been improving since its low point in 2009, and gas prices are low. Overall vehicle-miles-traveled (VMT) have been surging, and nationwide crash fatalities for all motor vehicles have been rising. The 7 percent increase from 2014 to 2015 was the largest in nearly 50 years.

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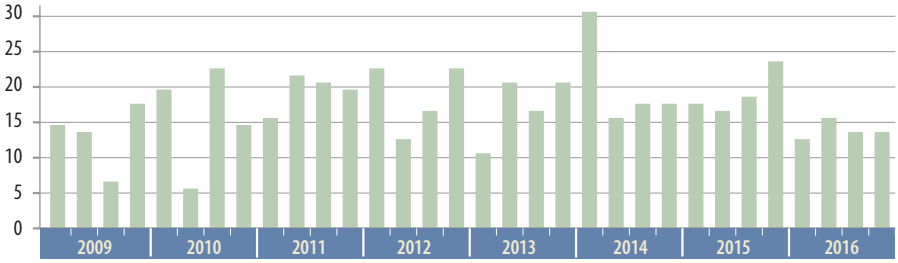
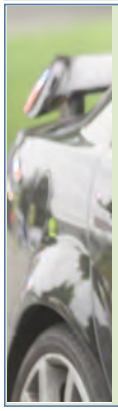
State Patrol trooper and inspector at work

Large truck fatal crashes in Wisconsin
by FFY quarters





Important update!

Implementation of new crash forms and crash database are on schedule for January 1.

Training material and videos available. Details on page 10.

Dane County study results

Roadside oral fluid testing device reliably detects presence of drugs

Driving under the influence of drugs is a fast-growing and all-too-often deadly problem nationwide. The most recent national data show that drugged driving is increasing while drunk driving is declining. Of fatally-injured drivers, 40 percent test positive for drugs, which is almost the same as those testing positive for alcohol.

A large and growing number of drugs can impair driving; many are illegal, but others are available by prescription or over-the-counter. Some drugs are especially impairing when used along with alcohol.

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Holiday challenge *page 1*

Between December 15 and January last year, 11 people were killed and 150 were injured in impaired driving crashes in Wisconsin. Last year, there were 271 fatalities in alcohol- or drug-related crashes, which was 49 percent of all fatalities on Wisconsin roads. Through high-visibility enforcement efforts, improved decision making by drivers, and the availability of various options for getting home safely, alcohol-related traffic fatalities have decreased by about 42 percent over the last ten years. Encouraging progress.

While celebrating with family and friends this holiday season, be sure that you drive sober and get home safely. Let's continue to work together to drive fatalities toward zero on Wisconsin roads. A vision and a New Year's resolution we can all live with.

NHTSA POSTER

WISCONSIN TRAFFIC SAFETY REPORTER

The *Wisconsin Traffic Safety Reporter* is published by the Bureau of Transportation Safety, Wisconsin Department of Transportation. Its purpose is to promote transportation safety, recognize worthwhile programs, and to educate and share ideas with safety professionals.

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Reducing large truck crash fatalities *from page 1*

The rate of fatal crashes involving heavy-duty trucks in the United States jumped four percent in 2015 compared with the previous year.

What factors are helping Wisconsin buck this worrisome national trend? As with all traffic safety issues, it's a combination of the "4Es": engineering, education, enforcement and EMS.

Enforcement

The State Patrol Motor Carrier Enforcement Section serves a variety of key functions in fostering large truck safety, including inspection, enforcement and educational outreach activities.

Statewide crash data are used to identify target areas—such as high-crash counties and corridors—for increased enforcement (see tables on page 3). During 2015, for instance, the State Patrol focused attention on the 15 counties with the most crashes in construction or work zones.

This is the same data-driven process that the WisDOT Bureau of Transportation Safety (BOTS) uses when providing its law enforcement grants to agencies statewide.

As with other traffic safety efforts, another important factor in Wisconsin's success is strong partnerships. The State Patrol MCE has many key partners, including the Wisconsin Motor Carrier Association.

Federal grant

Also helping reduce large truck crash fatalities have been federal grants for boosted enforcement.

Recently, the Wisconsin State Patrol received nearly $400,000 in federal funding for:

High-visibility enforcement of speeding and other traffic safety laws in 28 counties where commercial motor vehicle serious injury and fatal crashes are the highest

Using federal funding, the State Patrol also will focus on the:

Safety of trucks transporting frac sand from mines in 12 counties in central and northwest Wisconsin (see page 3)

"The $399,257 in federal funding, combined with a matching grant of $99,814 in state funding, is allowing the State Patrol to mobilize more inspectors and troopers for targeted enforcement on highways with extensive commercial motor vehicle traffic," says State Patrol Capt. Brian Ausloos. "The State Patrol's Air Support Unit pilots are flying missions to assist enforcement efforts by officers on the ground. Our officers are focusing on speeding and other dangerous behavior behind the wheel by both commercial motor vehicle and passenger vehicle drivers. We also are increasing our efforts to inspect and weigh dump trucks transporting frac sands. Along with effective safety and weight enforcement, we are continuing to educate trucking companies hauling frac sand on ways to improve safety."

This is a Motor Carrier Safety Assistance Program (MCSAP) High Priority Grant (HPG) from the Federal Motor Carrier Safety Administration for FFY 2017.

It is the third and final one-year grant, and it is much larger than the previous two HGP grants. It will fund 280 enforcement details along with 36 State Patrol Aerial Support Unit details.

Speeding and other dangerous behavior

Compared to the previous two years, grant-funded enforcement for this FFY focuses more on speeding, aggressive and distracted driving. Driver behavior is by far the leading cause of crashes, and enforcement will focus on both truck drivers and passenger vehicle drivers. Many in the latter group cause crashes with trucks by speeding, inattentive driving, following too closely, driving in the truck driver's blind spots, and cutting trucks off.

Enforcement, which started October 1, is targeted to the corridors and counties with the worst crash problems: see list in table on page 3. Along the I-90/94 corridor, enforcement details can also cover connecting state highways and county roads.

continued on page 3

Reducing large truck crash fatalities *from page 2*

High-visibility enforcement (HVE) has proved to be effective nationwide, and many HVE task forces are now operating in Wisconsin. This grant funds saturation patrols to achieve high visibility.

Along with enforcement, another key element with this grant is education. A brochure (see at right) was purchased from AAA, and about 500 were provided to truck drivers during FFY 2016; one at each stop.

During FFY 2016, which ended on September 30, a total of 52 grant-funded enforcement details were conducted.

Speeding enforcement (FFY 2016)

County/corridors	Details completed	Serious injury & fatal crashes FFY 2011-13 average	FFY 2016
Brown (USH 41/I-43/STH 29)	9	23	23
Fond Du Lac (STH 26)	9	11	12
Juneau	3	10	12
Kenosha	3	23	27
Milwaukee (I-94)	6	153	144
Monroe	3	11	11
Rock	9	14	42
Sauk	8	16	14
Vernon	2	6	5
Total	**52**	**267**	**290**

Assessing crash data is often complex. It's not easy, for example, to pin down the significance of this higher actual crash total for FFY 2016. The grant-funded enforcement might have prevented the total from being higher.

Frac sand trucks

The FMCSA High Priority Grant process is competitive, and one of the unique things Wisconsin is doing is boosting education and enforcement to improve the safety of the numerous trucks transporting frac sand in the northwestern part of the state (see page 11).

In FFY 2014, crashes involving dump trucks in the frac sand counties increased by 13 percent compared to the FFY 2011-2013 average. These counties are generally rural, and:

- Rural crashes are more likely to be at higher speeds than urban crashes
- Victims of fatal crashes in rural areas are more likely to be unbelted
- It often takes first responders longer to arrive

Throughout the three one-year HPG grants, one important element has been raising safety awareness among frac sand mining companies and truck drivers. Each winter, before mining begins in the spring, State Patrol inspectors and other staff have held educational sessions for the companies and drivers, doing demo inspections and explaining regulations regarding issues such as weight of loads and containment of sand.

During FFY 2016, five grant-funded safety talks were presented, and 33 enforcement details were completed.

Frac sand truck enforcement (FFY 2016)

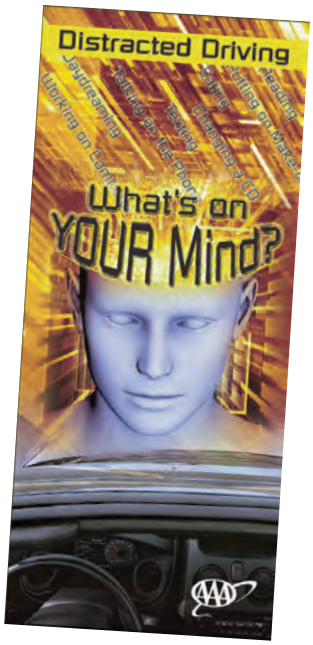
County	Details completed	Number of dump truck crashes 2012-14 average	thru 9/30/16
Barron	6	5.3	4
Buffalo	1	1.7	0
Chippewa	5	6.0	2
Clark	2	3.3	8
Columbia	2	4.6	0
Dunn	2	3.0	2
Eau Claire	3	1.7	6
Green Lake	0	1.3	2
Jackson	1	0.7	4
Pierce	2	2.7	1
St. Croix County	2	4.0	4
Trempealeau	1	1.3	0
Waupaca	0	3.7	2
Wood	6	3.0	5
Total	**33**	**42.3**	**40**

As part of its large truck safety initiatives, State Patrol inspectors also participated in 2016 Operation Safe Driver Week from Oct. 16 to 22. Sponsored by the Commercial Vehicle Safety Alliance and the Federal Motor Carrier Safety Administration, Operation Safe Driver aims to improve the decision-making and behavior of commercial motor vehicle drivers and all other motorists on the road.

During FFY 2016, about 35,000 inspections were completed, and thermal-imaging is now being used to check brakes, improving the efficiency and accuracy.

It has been well established nationwide that more inspections lead to fewer crashes.

Email Capt. Brian Ausloos: brian.ausloos@dot.wi.gov.



Roadside oral fluid device detects drugs

from page 1

For law enforcement, it is more difficult to detect drug-impaired driving compared with alcohol-impaired driving. According to the Governors Highway Safety Association: "a good saliva (oral fluid) device to test for the presence of key drugs would help roadside enforcement substantially. It would:

- provide objective data to justify an arrest and to require a blood or urine sample for an evidential test
- identify the drug category that the evidential test should examine.

It should be quick, easy, minimally invasive and inexpensive. Several states have conducted field tests of oral fluid screeners with promising results."

SOURCE: *Drug-Impaired Driving: A Guide for What States Can Do* (2015)

In Wisconsin, the Marinette Police Department has been using a Draeger Drug Test 5000 machine for oral fluid testing since 2013.

In March, a pilot study began in Dane County using a different instrument, the Alere DDS2 Mobile Test System. This device tests for the six major classes of drugs (page 5 middle graph) and yields positive or negative results.

Funding from the WisDOT Bureau of Transportation Safety (BOTS) was for:

- Purchase of four Alere DDS2 instruments
- ARIDE (Advanced Roadside Impaired Driving Enforcement) training for 48 officers from participating agencies: the Dane County Sheriff's Office, most police departments in the county, and the State Patrol

The 16-hour ARIDE training was developed by NHTSA, with input from the International Association of Chiefs of Police (IACP), to fill the gap between the training required to perform Standardized Field Sobriety Testing (SFST) and the training required to become a Drug Recognition Expert (DRE).

Purpose of pilot study

- Determine if roadside testing with the Alere DDS2 provides accurate drug detection
- Learn about the scope of drug-impaired driving in Dane County
- Gather data that might someday help oral fluid testing to become recognized in statute and by the courts so that it can be used roadside in the way a preliminary breath test (PBT) is currently used for alcohol-impaired driving

Process

- All drivers under suspicion of OWI—including both alcohol and other drug impairment—who were eligible were asked if they would participate in the study. Among those not eligible: offenders involved in OWI injury, great bodily harm or homicide crashes.
- The request to voluntarily participate was made after the arrest and blood draw, and before booking or release to responsible party.
- Oral fluid was taken and tested using the device. Test cartridge and swab were thrown away, and only the printed test result was saved. The Alere DDS2 devices were kept at local hospitals since most OWI blood draws were done there.

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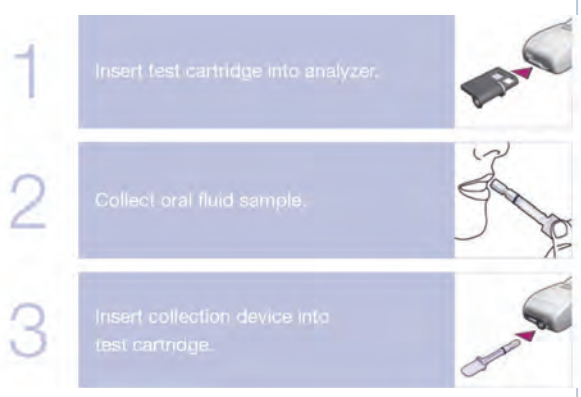

- Oral fluid test results and blood draws were sent to the State Laboratory of Hygiene. Officers received the copy of the drug results if it was an OWI arrest. There was no correlation between the oral fluid result and the lab's drug result until the information was de-identified from all samples.

The oral fluid testing isn't evidentiary and won't play any role in prosecuting impaired driving cases.

Study results

The study continued until 117 oral fluid samples had been collected; 104 turned out to be valid.

- 73% of cases: alcohol detected
- 55% of cases: positive oral fluid result

A total of 18 DRE evaluations were completed.

Correlations were checked among:

- DRE evaluations
- oral fluid and blood test results

The data shown in the middle graph indicate a good overall correlation between drug screening results from:

- Oral fluid samples collected by the Alere DDS2 device
- Blood samples collected the usual way

For many drugs, the relationship between a drug's presence in the body, its effect on driving, and its effect on crash risk is complex, not well understood, and varies from driver to driver. Another issue requiring further research is how drivers' impairment is affected by having both alcohol and various other drugs in their systems. (See bottom graph.)

Law enforcement's experience

During the pilot study, participating officers received ARIDE training and had opportunities to use the Alere DDS2 device.

Feedback from officers has been positive:

Sgt. Richard (Matt) Alsaker of the Dane County Sheriff's Office reports that officers wanted to know when such devices would be deployed, but this would require legislative changes. The devices proved useful in many cases. For instance, a motorist who seemed impaired was stopped on U.S. 12 in western Dane County, and the PBT showed no alcohol. In cases like this, the person's driving could be affected by some medical condition, but the Alere DDS2 showed a positive result for amphetamine.

Officer Deanna Reilly, DRE and traffic specialist with the Madison Police Department, helped with the ARIDE trainings. As a DRE, she is encouraged that successful use of the device supported what officers learn in this training. New officers have to get used to PBTs confirming the results of Standardized Field Sobriety Tests (SFST). Now officers are learning that a roadside oral fluid device can serve a similar function by detecting the presence of other drugs.

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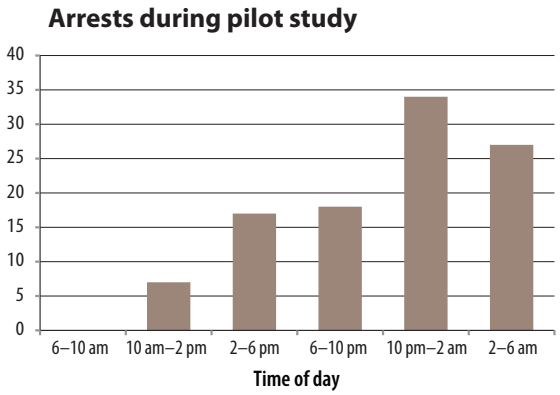
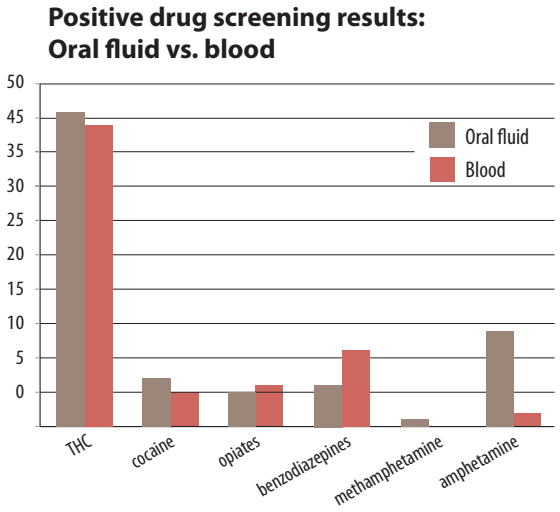


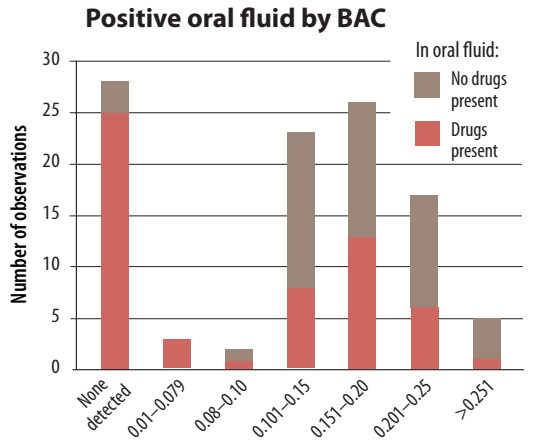
Among the notable results: the substantial number of arrests during the workday.



THC: the psychoactive ingredient in marijuana

Opiates include: opium, morphine, heroin and oxycodone

Benzodiazepines include: Valium and Xanax



Many drivers had very high BACs, far over the legal limit of 0.08. Also, many had both alcohol and some other drug in their systems, which can increase impairment in unpredictable ways.

SOURCE: WISCONSIN STATE LABORATORY OF HYGIENE – TOXICOLOGY SECTION

Roadside oral fluid device detects drugs *from page 5*

This newsletter will report Phase 2 results when available, probably in the spring.

Sharing the study results

In August, State Laboratory of Hygiene chemists presented the study results at the Governor's Conference on Highway Safety in Green Bay. (Conference materials will be available on the WisDOT website.) They will now publish their study in a peer-reviewed journal. They will also disseminate results to all interested parties, including WisDOT BOTS, Wisconsin Department of Justice, NHTSA and the International Association of Chiefs of Police.

Study results will be useful in legal cases involving drug-impaired driving.

Wisconsin is one of the states where the Daubert standard applies in legal cases. This standard provides a rule of evidence regarding the admissibility of expert witness testimony. One key element: the judge serves as "gate-keeper" to assure that scientific expert testimony truly is based on scientific knowledge. Such knowledge, derived from the scientific method, must be:

- based on empirical testing
- subjected to peer review and publication

This standard is now the law in federal court and more than half of the states.

With a new technology such as roadside oral fluid testing devices, each judge decides if there should be a Daubert hearing. As more judges learn from experts about the technology and make rulings, other judges are influenced by those rulings.

Chemists from the State Laboratory of Hygiene often testify in such hearings, and the results of this study and studies from several other states will shed light on the device's reliability.

Phase 2

State hygiene lab chemists are now proceeding with Phase 2 of this pilot study.

The lab's Cancellation Policy stipulates that blood samples with BACs greater than 0.10 aren't tested for other drugs unless the crash caused a fatality or great bodily harm.

The lab routinely archives all blood samples for six months, and about 115 samples were available that had BACs more than 0.10 but which hadn't been tested for other drugs. Now, these 115 samples are being tested for other drugs.

Phase 1 results (see lower graph, page 5) clearly suggest that some of these samples are likely to be positive for other drugs.Unlike the phase 1 oral fluid and blood samples, these tests won't have any oral fluid results available for comparison. But they will provide further data about the presence of other drugs in drivers whose BAC was over 0.10.

This will be useful for the scientific and traffic safety communities by providing a larger sample size regarding the extent of drug-impaired driving problem in Wisconsin. Among many other issues, this will help clarify the extent to which such a roadside oral fluid-testing device is needed.

WisDOT launches Superior SWEF

On June 15, WisDOT Secretary Mark Gottlieb, along with local, state and federal officials, cut the ribbon for the state's newest Safety and Weight Enforcement Facility (SWEF) on US 2 and 53 southeast of Superior.

Designed for the Wisconsin State Patrol to efficiently weigh and inspect large trucks on a heavily traveled route, the Superior SWEF replaces an obsolete and deteriorating facility built in the 1960s. Its technologically advanced features will help:

- protect highway infrastructure from damage caused by overweight trucks
- improve the safety of large trucks
- minimize delays to trucks that are in compliance with safety and weight requirements

WisDOT operates 15 SWEFs around the state, and this video shows Wisconsin State Patrol inspectors in action at one.

Engineering research boosts traffic safety

A perspective from Professor John Lee
Industrial and Systems Engineering
University of Wisconsin-Madison

Along with education, enforcement and EMS, engineering is one of the core "4Es" of traffic safety. New technology is rapidly changing our vehicles and roadways, and any technological change can be beneficial in some ways and harmful in others. Engineering researchers study new technologies to learn how to reduce the harm and improve safety and overall benefits.

UW-Madison is home to outstanding engineering research programs devoted to improving traffic safety. One is the TOPS (Traffic Operations and Safety) Lab in the Department of Civil and Environmental Engineering and another is the Cognitive Systems Laboratory (CSL) in the Department of Industrial and Systems Engineering.

Lee with driving simulator in the Cognitive Systems Laboratory

The research of CSL Director John Lee focuses on understanding how people interact with technology. He and his colleagues, for example, conduct experiments using the lab's driving simulator. "Vehicles are getting smarter, and we need to get ahead of that rapid change to understand how drivers respond to the technology," he says. "The fundamental reason for the simulator is to understand how people respond to technology so we can design it better and save lives. The simulator is designed from the ground up to be the car of the future and something we can use to develop and test next-generation vehicle technology and road infrastructure."

The simulator allows researchers to test a wide variety of driver behaviors and responses, many of which aren't economically or ethically possible to test on actual roads. Drivers, for instance, can be dosed with alcohol or learn to navigate a new intersection design.

If you sit down with Lee to discuss traffic safety, you can learn a lot about what he and other researchers are doing to improve safety in several key areas.

Teen drivers Rapidly evolving technology, Lee observes, has huge potential to affect driving safety—both positively and negatively. Young drivers are particularly vulnerable to distractions posed by infotainment systems, but they could benefit greatly from driver support systems. For example, a promising way to tailor new technology in the car to the needs of young drivers is to use technology to enhance graduated driver licensing (GDL) and to mimic the benefits of an adult passenger. GDL and supervised driving have yielded impressive safety benefits. Specific ways technology could extend GDL include:

- Limiting speed
- Locking out certain vehicle functions, such as the radio, during early stages of independent driving
- Limiting exposure to specific hazards by using route guidance systems that provide safer routes

Another goal for researchers is to learn how to improve the effectiveness of driver education.

NHTSA reports (DOT HS 811 108):

> *Despite the seemingly universal appeal of driver education, scientific evaluations have indicated that such programs generally do not produce safer drivers. Perhaps most noteworthy is the DeKalb study (in the late 1970s and early 1980s) where driving tasks were established, ranked, and used to create a state-of-the-art program, the Safe Performance Curriculum (SPC), which overall did not reduce crashes. There have been many additional studies since DeKalb, nearly all showing similar results.*

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Funded by UW-Madison and WisDOT, the simulator includes a Ford Fusion cab and 240 degrees of computer-generated virtual driving environment. Projectors render images at the same resolution the human eye does. The screens and a surround-sound system simulate the visual and auditory experience of driving on-road. Movement and vibration that accompany on-road driving are produced from a motion platform. The TOPS Lab also uses the simulator.

Engineering research

from page 7

Contact Lee at:
jdlee@engr.wisc.edu

Researchers are exploring technology that might improve driver ed effectiveness. Lee and colleagues from the University of Iowa have worked with a company that provides feedback to teen drivers and their parents. The system records video of the forward view and of the driver during the seconds before and after severe braking or steering events—events that might have resulted in a crash had circumstances been slightly different. This feedback dramatically reduced the frequency of such events. See, for instance, this study. American Family now offers this device to its customers in Wisconsin.

A NHTSA-sponsored study (DOT HS 812 235) published in January reported:

> *The results of this study provide perhaps the first encouraging evidence that brief, computer-based training interventions can have a positive influence on driving safety for newly licensed teen drivers.*

How risky are distractions? Figuring out the role that cellphone use and other distracting behavior play in crashes is a challenge for researchers. In most cases, there is no reliable record of what a driver was doing in the moments leading up to a collision.

To get a handle on the role of distraction in crashes, researchers often turn to naturalistic driving studies, in which a group of drivers is continuously monitored for an extended period.

The biggest-ever naturalistic study of distracted driving has now been completed. Conducted under the auspices of FHWA, AASHTO and the National Research Council, the study accumulated a vast trove of data. More than 3,000 drivers were monitored for up to three years during 2010-13. Footage of normal driving was collected, along with video of all crashes and the moments leading up to them. Lee and his colleagues are among the many researchers nationwide involved in assessing this data.

Research has shed light on the problem of distraction, and Lee notes that a key thing to keep in mind is that many things—not just use of cell phones and other technology—can cause distraction. One especially dangerous distraction, for example, is simply taking one's eyes off the road and reaching for something.

Drowsy driving A new report from the Governors Highway Safety Association, *Wake Up Call! Understanding Drowsy Driving and What States Can Do*, points out that nearly 83.6 million sleep-deprived Americans are driving every day. And it's taking a toll—an estimated 5,000 lives were lost in drowsy driving-related crashes last year.

Lee reports that researchers are exploring ways to prevent such crashes with technologies that monitor drivers for signs of drowsiness such as eyes closing or sudden jerks of the head or steering wheel. He notes that once a driver is feeling drowsy, it's already a dangerous situation with the prospect of falling asleep at the wheel. Visit: NHTSA Research on Drowsy Driving.

Automation in vehicles A revolution is underway in vehicle automation. Lee observes that complex engineering challenges come with such automation. Some vehicles, for instance, now have automatic emergency braking. But if a car will stop even if the driver isn't paying attention, this may foster even more inattention. One way to avoid this danger, he says, is to design the braking system so it only engages in emergency situations and does so quite sharply.

He foresees fully autonomous, driverless vehicles on the not-too-distant horizon. For an overview of this fast-approaching, momentous change, he suggests this TED talk, "How a driverless car sees the road", by Chris Urmson who heads up Google's driverless car program.

SOURCE: WIKIPEDIA

Toyota Prius modified by Google to operate as a driverless car

A report from the Insurance Institute for Highway Safety highlights the complexity of distracted driving:

"Early studies linked talking on a cellphone directly to increased crash risk. Surprisingly, though, this apparent safety risk hasn't translated into higher crash rates. In fact, crashes reported to police and insurers have declined as cellphones and other electronic devices have proliferated. New research by the Institute and the Virginia Tech Transportation Institute examined how drivers' near-crash and crash risk changes as their cellphone usage patterns change and how cellphone use fits in with other driver behavior and affects attention to the road. The research confirms that frequent cellphone users have more near misses or crashes. However, a new finding is that individual drivers' overall near-crash or crash rates don't increase the more they use their phones. That may be because drivers tend to do other things that take their eyes or minds off the road when they aren't engaged in phone conversations. There's also evidence that drivers compensate for the distraction of using cellphones, for example, by making calls while stopped or during less-demanding driving situations."

Grassroots event in Milwaukee fosters community safety

To promote safe driving habits and increase seat belt use, the Milwaukee Police Department, Milwaukee Public School System, Wisconsin State Patrol and WisDOT BOTS teamed up for a grassroots community outreach event on October 1 in Milwaukee. It was held on the city's north side, in the Sherman Park neighborhood, at Washington High School.

The event included:

- A seat belt competition, with teams of four aiming to buckle up and unbuckle the fastest
- Demonstration of proper child safety seat installation
- Bike helmet fittings and BMX bike show
- Simulators that provide the feel for riding a motorcycle in traffic
- Safety presentations and information about local resources for families

"Last year, there were 81 deaths from traffic crashes in Milwaukee County, and many of those deaths could have been prevented if people had buckled up, slowed down, driven sober, and paid attention behind the wheel, " says State Patrol Captain Tony Burrell. "Our goal with this event was to help prevent needless deaths and injuries that devastate individuals, families, and whole communities."

This year there have been several especially serious crashes in Milwaukee: news report 1, report 2 and report 3. In these crashes, speeding and impaired driving were involved, and several people weren't properly bucked up, with two children ejected and killed. Nationwide, black and Hispanic children are less likely than white children to be restrained by safety seats or seat belts (see graph).

Captain Burrell grew up in Milwaukee and still lives there. He felt he had to do something extra to help raise safety awareness at the grassroots level, so he helped organize the event and bring in community partners.

Originally focused on traffic safety, the event evolved to include a variety of community safety issues. Also participating were:

- Children's Hospital of Wisconsin
- Employ Milwaukee
- AAA Wisconsin
- WisDOT Division of Motor Vehicles
- Safe Kids Southeast Wisconsin
- Share and Be Aware
- Safe and Sound

Children at a day care center in the Sherman Park neighborhood having fun with officers. Two children each won a bike and helmet.

Raising traffic safety awareness

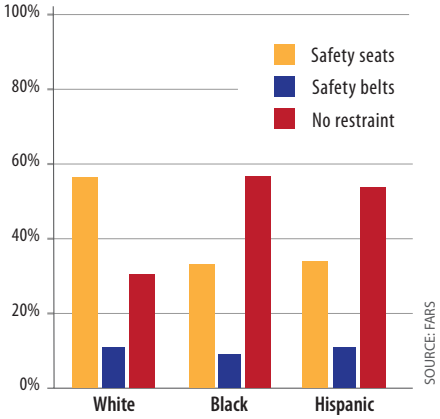
Free hot dogs, chips and bottled water added to the festive atmosphere.

The DMV helped people with driver licenses and photo IDs.

Though it was a rainy day, about 200 people attended. Additional benefits of the event were strengthening partnerships among law enforcement agencies and helping show community members that officers are devoted to promoting safety and helping kids.

Event organizers will hold an after-event session and consider how similar events can be held in neighborhoods in north and south Milwaukee. They hope to inspire other communities in Wisconsin to organize their own grassroots events.

Child fatalities in passenger vehicles — age 4 and younger (United States: 1999-2004)



Training at the Waukesha County Technical College in August

Important update! *from page 1*

New crash forms & crash database on schedule for January 1

A project team that includes staff from every WisDOT division and a team from the UW-Traffic Safety and Operations Laboratory (TOPS Lab) will be ready to launch new crash report forms and a new crash database on January 1, 2017.

The current crash form (MV4000) and crash database haven't been updated for 20 years and are missing fields that provide critical data for improving traffic safety. Enforcement, education and engineering experts universally agree that timely, accurate and complete data are imperative for making effective decisions to prevent crashes.

The new crash form (titled DT4000) will have many new data collection fields for items including:

- crashes at roundabouts
- crashes involving cell phone use
- additional information about crashes involving motorcycles

Beginning January 1, law enforcement officers must submit the new form electronically through the TraCS (Traffic and Criminal Software) 10 format.

Law enforcement agencies will no longer be able to submit paper copies of crash forms.

The state will also be transitioning to a new electronic Driver Report of Crash form (DT4002), replacing the old paper MV4002 form. Starting January 1, this form must also be submitted electronically.

A major responsibility in the transition to the new DT4000 crash form is training law enforcement officers on its use. WisDOT has sponsored numerous training sessions around the state. About 900 law enforcement officers and staff have been trained, and WisDOT has received positive feedback from those who have attended.

Click for:

Crash form (DT4000) training material

Links to the presentation and other training documents are at the bottom. Please be careful about choosing to print the very large PowerPoint presentation; the smaller one should be sufficient to conduct your trainings.

Training videos

Located at the top in four parts.

WisDOT Crash Records Unit

The next issue of this newsletter will include an article about this unit, which recently moved from the WisDOT DMV to the Bureau of Transportation Safety within the State Patrol.

Unit staff are working closely with the UW TOPS Lab on the implementation of the new crash report forms and crash database.

This implementation will lead to more timely, accurate and complete crash data, which are a crucial element in improving traffic safety.

BOTS welcomes …

Jennifer Laack

Pedestrian/Bicycle Safety Program Manager

Jennifer has replaced Larry Corsi in this position. She transferred from Wisconsin Emergency Management where she served as the state's community preparedness coordinator. Previously, she was the Madison Police Department's pedestrian/bicyclist ambassador. In her current role, she is focused on reducing bicycle and pedestrian injuries and fatalities in Wisconsin. An important early step—she has become comfortable with the WISE-Grants system.

Contact Jennifer at (608) 709-0066 or JenniferL.Laack@dot.wi.gov.

Producing more natural gas with

Fracking and horizontal drilling

In recent years, natural gas production in the United States has risen dramatically. Mainly this has been due to a technological revolution; the use of hydro-fracking and horizontal drilling to extract gas from unconventional deposits, such as the huge shale gas formations in the southern, eastern and western United States.

Unlike conventional natural gas, which resides in highly porous reservoirs and can be easily tapped by standard vertical wells, shale gas is trapped in its original source rock.

Hydro-fracking (short for hydraulic fracturing) involves drilling a typical natural gas well thousands of feet below the earth's surface and using explosives to create small cracks (fractures) in the rock. Then water, special frac sand and chemicals are pumped under high pressure into the well to expand the cracks and hold them open. By fracturing the rock and holding the fractures open with sand, natural gas trapped in the rock can be removed (see video).

Developments in horizontal drilling, in combination with fracking, now allow for the economical extraction of natural gas and oil from shale and other formations.

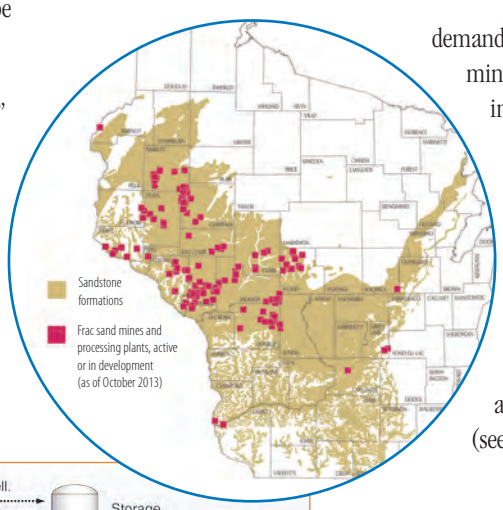
Wisconsin has the best frac sand

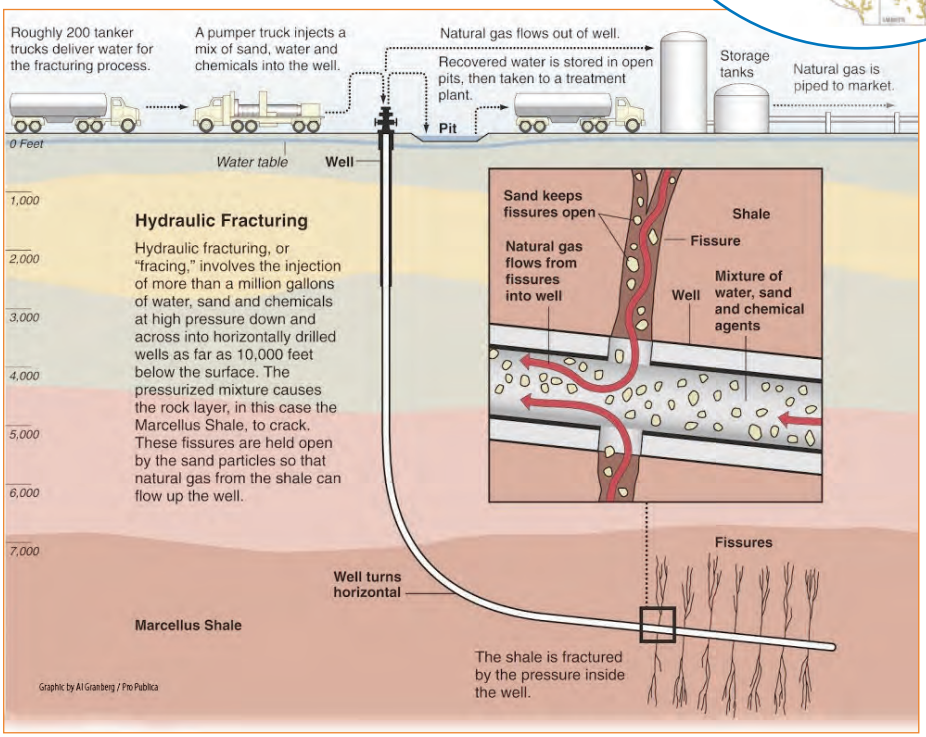
Wisconsin sandstones, especially the formations in western and central parts of the state, produce the best frac sand, which must be nearly pure quartz, very well rounded, extremely hard, and of uniform size. The boom in fracking for natural gas has boosted demand for frac sand. In 2011, 41 such mines were operating or proposed in the state; by 2014, this number had increased to 108.

From the mines (virtual tour), conveyor belts move the sand to trucks or rail heads to be loaded onto trains. Heavy frac sand trucks can damage roads, and they also can create traffic hazards (see second table on page 3).

LUKAS KEAPPROTH/WCIJ

Covered semi-trucks carry sand from mines in Wisconsin to Winona, Minnesota for processing and shipping along the Mississippi River.





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From bottom right, a conveyor carries sand from the crushing area to a wash plant tower to be washed and sorted by grain size at the Preferred Sands plant in Blair, Wisconsin. (2012)