

# WISCONSIN TRAFFIC SAFETY REPORTER

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## The Dangerous D's



David Pabst,  
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Safety

Daylight saving time has ended, and winter is upon us. By now our bodies have adjusted to the time change, and we're all getting our needed sleep.

Or are we? Distracted, drunken and drugged driving continue to contribute to needless traffic injuries and fatalities. But there is another "D" lurking in the shadows and starting to get some much needed attention ... drowsy driving. While not everyone speeds, texts, or drinks and drives, getting enough sleep is an issue for many. NHTSA Administrator Dr. Mark Rosekind has recently announced a drowsy driving [initiative](#) that will take a closer look at this problem. To determine what we are up against, NHTSA plans to work with states to better measure and estimate the drowsy driver problem. It also plans to develop and test public awareness campaign techniques to effectively communicate the dangers of drowsy driving.

Past studies show that there is some overlap of sleepiness and alcohol-related crashes. NHTSA has found that drivers had consumed some alcohol in nearly 20 percent of all sleepiness-related, single-vehicle crashes. Combining sleepiness with alcohol, even below the legal limit, is dangerous because lack of sleep intensifies the sedating effects of alcohol, and the combination affects psychomotor skills more than sleepiness or alcohol alone.

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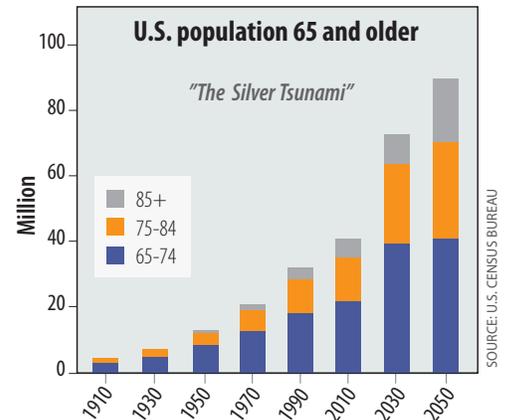
## More older drivers ... *challenges but much good news*

The United States is experiencing what could be called a "silver tsunami"; the aging of the Baby Boom generation. In 2013, the population ages 70 and older was 30 million. By 2030, this will have surged to 54 million (*U.S. Census Bureau*).

This tsunami is having sweeping effects on society, such as in population distribution, voting patterns, the job market and health-care costs. And of course it is also a big issue in the world of traffic safety.

Age-related declines in vision and cognitive functioning (ability to reason and remember), as well as other physical changes, can greatly affect older adults' driving abilities. Older adults tend to be more fragile, so they sustain injuries more easily; and more frail, which reduces their odds of recovering from injuries. They are far more likely to sustain injuries and more likely to die in low-severity crashes than younger people. For instance, at crash speeds of just over 30 mph, the risk of sustaining a serious injury increases dramatically. A 50-year-old

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Volunteer driver and passenger enjoy conversation during regular trips.

## Manitowoc & Sheboygan Counties High Visibility Education and Enforcement

In October, the International Association of Chiefs of Police (IACP), the Governor's Highway Safety Association, and NHTSA, along with four states—Delaware, Maryland, North Carolina and Wisconsin—launched a High Visibility Education and Enforcement (HVEE) pilot program.

This new program enhances the [Drive to Save Lives Campaign](#), a multi-year highway safety initiative led by the IACP.

As the first step in this pilot program, on October 13-14, state and local law enforcement, state associations of chiefs of police, and state highway safety office representatives

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## Dangerous D's from page 1

As winter slides in and the holidays arrive, we must remember to stay focused and continue to strive for **Zero in Wisconsin**. We must continue to spread the word about adjusting our speed to driving conditions, buckling up, paying attention, and driving sober and ... well-rested.



CREDIT: FLORIDA HIGHWAY SAFETY AND MOTOR VEHICLES



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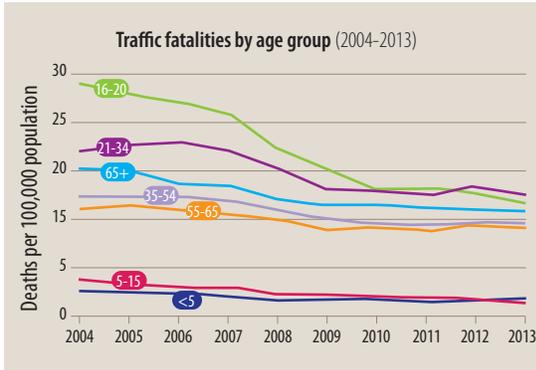
Funded by WisDOT and  
the National Highway Traffic  
Safety Administration.

[wisconsinidot.gov](http://wisconsinidot.gov)

## More older drivers from page 1

female has about a 10 percent risk of a serious injury in a frontal crash, but an 80-year-old female has about a 40 percent risk.

But older adults also have many positive driving attributes, such as having more experience, being more likely to follow the laws and less likely to take risks.



Today's older drivers are not only less likely to be involved in crashes than prior generations, they are less likely to be killed or seriously injured if they do crash. That's largely because vehicles are safer, and seniors are generally healthier. It's a marked shift that began to take hold in the mid-1990s and indicates that the growing ranks of aging drivers aren't making U.S. roads deadlier.

In fact, the last decade has brought important good news. The population of people 65 and older increased by 23 percent from 2004 through 2013, but, over this same period, driver fatalities in crashes involving older drivers declined by 9 percent. (NHTSA)

Eventually, many older people have to restrict their driving or give it up altogether and find alternate means of transportation. This often requires difficult, sometimes wrenching, changes in their lives.

Since the Baby Boom occurred during 1946 to 1964, there have been decades available to plan and prepare for this inevitable, eventual graying of the US population. And

more good news: much has been done and many options and resources are now available to help with all aspects of ensuring safe mobility for older adults as long as possible.

## Wisconsin Senior Driving Summit

On October 2 the Wisconsin Senior Driving Summit was held at Madison College. It was hosted by WisDOT, AAA-Wisconsin and Madison College.

Nationally recognized experts from around the country made the initial presentations, and then a panel of experts from Wisconsin carried the discussion forward. Their fields of expertise included:

- how aging affects driving
- how law enforcement can help
- driver license renewal process
- driver evaluation by occupational therapists
- transportation alternatives
- traffic engineering
- traffic engineering research

The focus was on how to help older people stay mobile and stay connected to their communities as long as it can be done safely. Presenters and attendees explored the topics which follow here, considered how teamwork can be further improved, and looked ahead to further planning and preparation for what's on the horizon.

In this article, the term "older people" refers to those who are 65 and older, following NHTSA's usage.

## How aging affects driving abilities

In general, increased age is associated with declining functional abilities. Specific physical, cognitive and visual abilities can decline with advancing age, and fragility and frailty tend to increase.

But there are large individual differences in the onset and degree of functional impairments, so age alone is not sufficient information to judge driving ability.

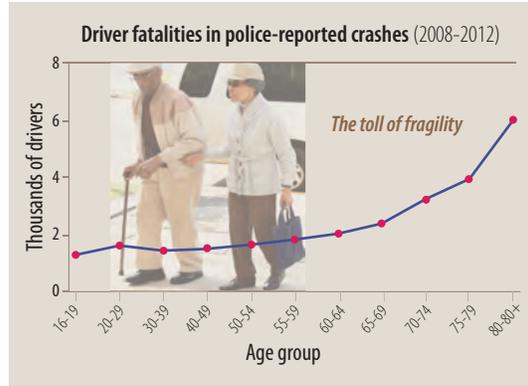
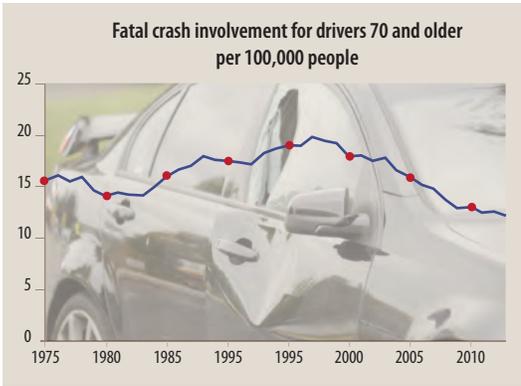
Still, functional impairments can interfere with driving and can become particularly evident in stressful

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## Wisconsin Senior Driving Summit

(l-r) Mary Ann Roelke, occupational therapist at Meriter - UnityPoint Health, Rebecca Thompson, manager of WisDOT Specialized Transit Program, Sandra Olafsson, WisDOT Medical Review Unit, William McNary, WisDOT state traffic engineer, Joy Schmidt, dementia care specialist at ADRC of Dane County, Deputy Leslie Fox, Dane County Sheriff's Office, David Noyce, UW TOPS Lab

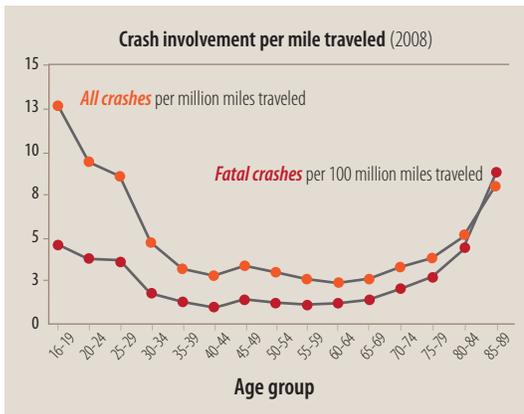


SOURCE: INSURANCE INSTITUTE FOR HIGHWAY SAFETY



The 81-year-old woman driving this car was seriously injured when she had a minor collision with a wall. She was 5'1" tall and weighed 94 pounds. The air bag didn't deploy, and she suffered from multiple fractures to her spine and right foot.

SOURCE: NHTSA



or challenging driving situations such as merging or changing lanes. Several studies have shown that higher levels of physical, cognitive or visual impairment among older drivers are associated with increased risk of crash involvement.

Many older drivers also take medications which can impair driving ability at any age but can be especially impairing for an older person.

Older drivers rarely speed or drive aggressively, but they can exhibit other risky behavior. Driving slower than prevailing traffic or failing to accurately judge the speed of an oncoming vehicle while making a left turn are examples of such behavior.

**Crash rates**

During the past two decades, the overall crash outlook for older drivers has markedly improved. Two prominent developments are helping lower the fatality rate among drivers age 75 and older:

- they are involved in fewer crashes per-mile-traveled
- they are surviving side impacts more often than previous generations

Reductions have been strongest among the oldest drivers (age 80 and older).

For older drivers, per-mile-traveled crash rates and fatal crash rates start increasing at about age 70. That said, caution should be used when comparing crash rates per-mile-traveled of different age groups. Older drivers generally travel fewer annual miles than most other age groups and, similar to low-mileage drivers of other ages, they tend to accumulate much of their mileage with city driving. In contrast, drivers who accumulate more miles tend to drive more on freeways or divided multilane roads, which generally have much lower crash rates than other types of roads. Hence, the elevated crash rates for older drivers when measured per-mile-traveled may be somewhat inflated.

Fragility increases starting around middle age and continues to rise with age. Older drivers' elevated fatal crash rates per-mile-traveled is mainly due not to their over-involvement in crashes but their fragility, defined as the risk of death in a crash.

**Crash characteristics**

Compared with younger drivers, older drivers are more likely to be involved in certain types of collisions: angle crashes, overtaking or merging crashes, and, in particular, intersection crashes. Among passenger vehicle drivers involved in fatal crashes in 2013, multiple-vehicle crashes at intersections accounted for 40 percent of the crashes for drivers 80 and older, compared with 19 percent for drivers ages 16-59.

Failure to yield the right of way is the most common error among older drivers. In a nationally representative

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**5 Top crash types for older drivers**

- 1 Turning left at an intersection with a stop sign
- 2 Turning left at an intersection on a green light without a dedicated green turn arrow
- 3 Turning right at a yield sign to merge with traffic at speeds of 40-45 mph
- 4 Merging onto a highway from a ramp that has a yield sign
- 5 Changing lanes on a road that has four or more lanes

**4 Common errors older drivers make before an intersection crash**

- 1 Not noticing potential conflicts or traffic signs and signals
- 2 Misjudging gaps when crossing traffic
- 3 Moving or stopping the vehicle too slowly
- 4 Conducting a visual search poorly

SOURCE: NHTSA

## More older drivers

from page 3



CREDIT: WWW.OLDERDRIVERSFORUM.COM

### Self-assessment resources

WisDOT: [Older Driver Workbook](#)  
[Be Safe, Not Sorry brochure](#)

NHTSA: [safe driving resources](#)

AAA: [driving ability evaluation](#)

frequent error made by drivers ages 70 and older was inadequate surveillance, which includes failing to look and looking but not seeing. Drivers ages 70 and older are more likely than drivers ages 35-54 to make inadequate surveillance errors or to misjudge the length of a gap between vehicles or another vehicle's speed.

**Pedal error** In May, NHTSA released a [safety advisory](#) about crashes caused by pedal error. Each year, about 16,000 preventable crashes occur due to pedal error when drivers mistake the accelerator for the brake. Drivers under the age of 20 or over 65 experience pedal error crashes about four times more often than other age groups.

In recent years, much media attention has focused on possible cases of "sudden acceleration." Sudden acceleration refers to unintended, high-power acceleration, accompanied by an apparent loss of braking effectiveness. It typically occurs at a low speed when the driver is trying to stop the vehicle. Investigations into reports of these incidents by NHTSA and others during the past 40 years have not identified any vehicle defects that can cause sudden failures of both the throttle and braking systems, and have attributed these complaints to pedal error by the driver. Field investigations over the past five years by NHTSA using pre-crash pedal application data from vehicle event data recorders have determined that drivers who believed they were applying the brake in such incidents were often mistakenly applying the accelerator instead.

### Adjusting driving to changing abilities

Just as society has had several decades to plan and prepare for the aging of the Baby Boomers, individuals, as they age, have decades to plan ahead and take steps to ensure their continuing safe mobility.

Most older drivers reduce their driving mileage as their capabilities and lifestyles change. Many avoid driving in situations in which they feel uncomfortable, such as at night, on high-speed roads, or in unfamiliar situations.

When people become unsafe drivers, it is often the result of an underlying medical condition or medications. Concerned family and friends of elderly people can regularly check their driving. AAA suggests watching for these warning signs:

- the driver has been issued two or more traffic tickets or warnings in the past two years
- the driver has been involved in two or more collisions or "near-misses" in the past two years.



CREDIT: WWW.OLDERDRIVERSFORUM.COM

Common mishaps for drivers with diminishing skills, depth perception or reaction time include rear-end crashes, parking lot fender-benders and side collisions while turning across traffic.

Family and friends, the elderly person's doctor or law enforcement can report an unsafe driver to the WisDOT Medical Review and Fitness Unit (MRU). Its newly updated [website](#) provides highlights of the review process and detailed information for medical professionals, law enforcement, family members and private citizens. The referring person cannot remain anonymous.

When law enforcement personnel have contact with a driver who exhibits concerning or dangerous behavior that may have been caused by a medical condition or a lack of driving skills, they should submit a [Driver Condition and Behavior Report](#) to the MRU.

The MRU reviews the information provided and determines the next course of action. Drivers might be required to submit medical information or be tested by the DMV.

Depending on the specific circumstances, an older person's license can be renewed, restricted or revoked. Restricted licenses include: daylight driving only, driving within a specific distance from home, driving within the city limits, continuous oxygen use required, or no freeway or interstate highway driving.

Wisconsin and most states have one or more renewal provisions specific to older drivers, such as shorter renewal cycles, required vision or road testing and in-person rather than mail or electronic renewal. The ages at which special regulations are required vary by state.

But do such regulations affect crash rates? A [study](#) by the AAA Foundation for Traffic Safety found that regulations

- requiring in-person renewal
- requiring vision testing in states where in-person renewal is not required

are the only policies that are associated with lower fatality rates among older drivers and only among drivers ages 85 and older.

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## OT evaluation

Operating under a physician's order, occupational therapists can provide an objective evaluation of a person's driving abilities and limitations.

Evaluation is available for anyone whose ability to drive safely is in doubt. For example:

- People with recent onset medical conditions resulting in significant impairment: e.g., stroke, head or spinal injury
- Suspected dementia or Alzheimer's disease
- People who need adaptations to vehicles



A Complex OT Evaluation consists of a clinical evaluation and a road test. The clinical evaluation lasts about 1.5 hours and assesses the patient's visual, physical and cognitive abilities as they relate to driving. The therapist then works with patients to determine how to obtain a road test suited to their needs.

The therapist and road test evaluator let the patient know their recommendations and also send them to the person's doctor for further discussion.

An occupational therapist at Meriter-UnityPoint Health in Madison, Mary Ann Roelke, explains that families play an important role in this process, often being aware of safe driving concerns. She welcomes family involvement and support, and sometimes, when difficult changes are necessary for a patient, she can explain the objective evaluation results and allow the patient to blame her rather than their family for the upsetting news and the need to make changes.

## Silver Alert program

In August 2014, Wisconsin launched its new [Silver Alert program](#). Silver Alerts notify the public when a vulnerable elderly person goes missing.

- They may be issued for any missing person over age 60 who is believed to have Alzheimer's, dementia or other permanent cognitive impairment that poses a threat to the person's safety
- The Silver Alert request should be made within 72 hours of the person's disappearance, and there needs to be sufficient information to disseminate to the public to help locate the missing person

Families are encouraged to keep a photo, in electronic form, of their loved one who might wander.

Silver Alerts can be broadcast via television and radio, lottery display terminals, and highway digital messaging signs through WisDOT.

To receive Silver Alerts via email, text message or fax, people can register at: [www.wisconsincrimealert.gov](http://www.wisconsincrimealert.gov).

Currently, about 116,000 people in Wisconsin have some form of dementia, and about 60 percent will wander away at some point as their condition progresses.

The bipartisan Silver Alert legislation was sparked, in part, by the experience of Claire Baed, an 80 year-old retired nurse, and her late husband, Leo. The Green Bay couple got lost in June, 2013, while en route to see family nearby. They were located more than 24 hours later after having traveled several hundred miles.

Claire has dementia and, while driving had never been a problem before, on this trip something went wrong. "My brain just malfunctioned," she recalls. Along the way people tried to help them. When they stopped for gas and couldn't figure out how to fill up, a stranger filled their tank for them. When they pulled off the highway for a nap and then couldn't navigate their way back to the highway, a passerby gave them directions. What these good Samaritans didn't know was that Claire and her husband were lost, and their family was desperately trying to find them.

Eventually a police officer in West Bend came across them and realized something was wrong. Unfortunately, by then the ordeal had been too much for Leo, a 92 year-old World War II veteran. He had become dehydrated and passed away shortly after they were found.

Two of Claire's daughters had then approached Rob Gundermann, public policy director at the [Alzheimer's & Dementia Alliance of Wisconsin](#). He worked with the family to help start the process to create Wisconsin's Silver Alert program so that, as Claire said when she testified at Assembly and Senate Committee hearings, "this won't happen to anyone else."

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*University of Michigan researcher studies biomechanics of elderly person.*



*(l-r) Rob Gundermann, public policy director at the Alzheimer's & Dementia Alliance of Wisconsin, Bernie Baeb, Governor Scott Walker, Claire Baeb, Lorraine Randall and Diane Smith. Bernie, Lorraine and Diane are Claire's children.*

### More older drivers

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CREDIT: WISCONSIN DHS

### Dementia care in Wisconsin

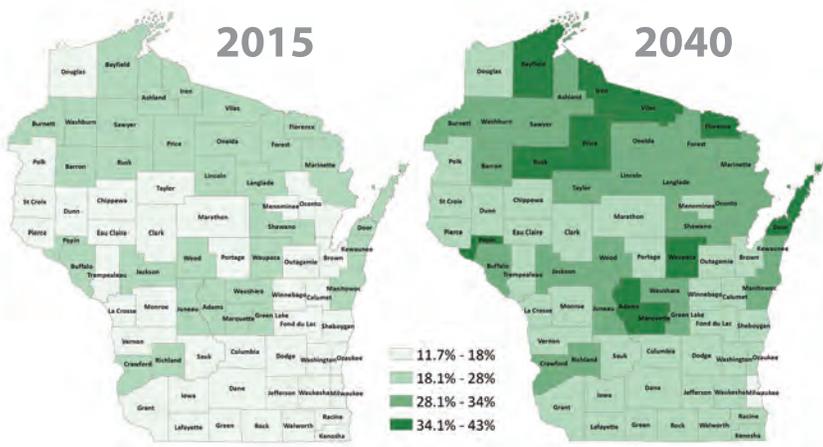
Wisconsin, like the rest of the nation, is graying, especially in rural areas (see maps).

The Wisconsin Department of Health Services, along with its community partners, has launched the [Healthy Brain Initiative](#), including providing the *Building Dementia-Friendly Communities* tool kit to help communities and businesses develop ways to be accessible and welcoming to people with dementia and their caregivers.

In many Wisconsin counties, [Aging and Disability Resource Centers](#) (ADRCs) provide accurate information on all aspects of life related to aging or living with a disability. Concerned families, friends or professionals can get help tailored to their situation. Dementia care specialists, for example, provide cognitive screening, a brief test to evaluate memory, judgment and the ability to understand visual information.

Joy Schmidt, dementia care specialist with the ADRC of Dane County, says, "Because it's a progressive disease, a diagnosis of Alzheimer's doesn't necessarily mean a person can't drive. The key is proper assessment and letting people know what resources are available."

### Projected percentage of population ages 65 and older



CREDIT: WISCONSIN DHS

### Transportation alternatives

Most non-drivers ages 65 and older rely on rides from family and friends (*SOURCE: Journal of Safety Research*).

Also available are a wide range of [transportation alternatives](#) that include:

- public transit
- paratransit service
  - Aging organizations, public transit, and private agencies provide door-to-door or curb-to-curb transportation using mini-buses or small vans.
- volunteer driver programs
  - Local nonprofit and faith-based and nonprofit organizations frequently have a network of volunteers who offer flexible transportation.
- door-through-door (escort) service
  - Agencies provide drivers or escorts who offer personal, hands-on assistance.

[WisDOT's website](#) provides information on alternative transportation options in all Wisconsin counties.

Many organizations statewide are devoted to helping people learn about and use these alternatives, including:

- County Aging and Disability Resource Centers (ADRCs), noted above
- [Greater Wisconsin Agency on Aging Resources](#)

New trends in alternative transportation include the growing popularity of low-speed vehicles (LSVs) for short, low-speed trips. Especially in the Sun Belt, golf carts are increasingly being used by retirees to get around beyond the golf course. For instance, south of Atlanta, suburban Peachtree City has [11,000 golf carts](#) for 13,000 households.



CREDIT: WWW.NEIGHBORRIDE.ORG



CREDIT: US DHHS

## How law enforcement can help

Law enforcement plays three main roles in improving the safety of older drivers (NHTSA):

**Enforce traffic laws** For instance, NHTSA stresses that well-publicized enforcement of seatbelt laws can increase belt use by older drivers and occupants.

**Provide information and education** Law enforcement officers form many partnerships with public and private organizations to give talks, teach safe driving courses, work with media on news stories and public service announcements, and other outreach initiative. See [NHTSA campaigns](#).

**Identify drivers** with potential driving impairments and refer them to licensing agencies. Traffic stops and crash investigations provide officers with excellent opportunities to observe and evaluate driving behavior. Nationwide,



SOURCE: MEDICALERT

officers provide more than one-third of all referrals to licensing agencies for driver screening and assessment.

As the WisDOT Medical Review Unit explains, if a driver exhibits dangerous behavior that in other situations would result in a citation, not issuing one for a senior driver might be a disservice. Receiving a citation might help

motivate an elderly driver to re-evaluate the decision to drive. It might provide the impetus a family needs to help an aging loved one investigate alternatives to driving or consider relinquishing his or her driver's license.

From NHTSA for law enforcement:

- [Video Toolkit](#) on Medical Conditions in Older Drivers

From the International Association of Chiefs of Police (IACP):

- **NEW**— [Pocket Card](#)—10 Signs & Steps:
  - *10 Warning Signs a Driver May Have Alzheimer's Disease*
  - *10 Steps for Interacting with Drivers Who May Have Alzheimer's Disease or Dementia*
- [Brochure: Identifying and Helping a Driver with Alzheimer's Disease](#)

## Safer vehicles

Some newer vehicle features that help protect occupants of all ages are especially beneficial to older occupants. For instance, side airbags with head and torso protection have been estimated to reduce fatalities in nearside impacts by 45 percent for front seat occupants ages 70 and older, which is significantly larger than the 30 percent reduction for front seat occupants ages 13-49. And the safety belts in older cars tended to be less effective for older occupants, but modern safety belts with pretensioners and load limiters are generally equally effective for adults of all ages. The same is true of frontal airbags.

## Safer roads

Just as many vehicle safety features benefit all occupants, especially older people, likewise many road design improvements are beneficial to all travelers but especially for the elderly.

Examples include improved visibility of road signs and pavement markings.

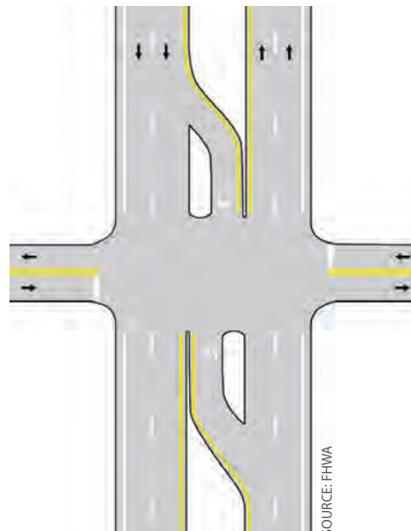
Left turns are the most dangerous movement motorists make and, as noted earlier, they are especially hazardous for older drivers.

A variety of road designs improve left-turn safety. One example: offset left-turn lanes (see diagram) which improve the sight distance for left-turning drivers.

Roundabouts eliminate left turns altogether and greatly reduce the severity of intersection crashes. Drivers of all ages can find some roundabout situations confusing, and WisDOT [provides](#) brochures and videos about how to navigate them safely.

Due to the wide variety of left-turn signals in use nationwide, there was a need to establish a consistent message.

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In its [Handbook for Designing Roadways for the Aging Population](#), the Federal Highway Administration (FHWA) explains that, with this design, "Left-turn lanes should be positively offset (as shown here) at least 4 ft to the left of the opposing left-turn lane to achieve the desired sight distance for the left-turning driver. This will provide a margin of safety for aging drivers who, as a group, do not position themselves to the far left within the lane and within the intersection before initiating a left turn."

**More older drivers**  
from page 7



FHWA has adopted the flashing yellow arrow as a national standard. The flashing yellow arrow is part of a four-arrow arrangement within a signal located over the left turn lane. It provides a more direct message for left turns: left turn is permitted, but driver must first yield to opposing traffic and pedestrians, then proceed with caution.

A national study found that flashing yellow left-turn arrows are easier to understand than traditional yield-on-green indications, reducing crashes by 24 percent.

WisDOT's [website](#) has a brochure and an animated demonstration of how they work.

William McNary, WisDOT state engineering section chief, notes that traffic engineers carefully monitor the rapid changes in the auto industry in order to be prepared for new designs and major developments on the horizon such as [vehicle infrastructure integration](#) and eventually autonomous vehicles.

**Traffic engineering research**

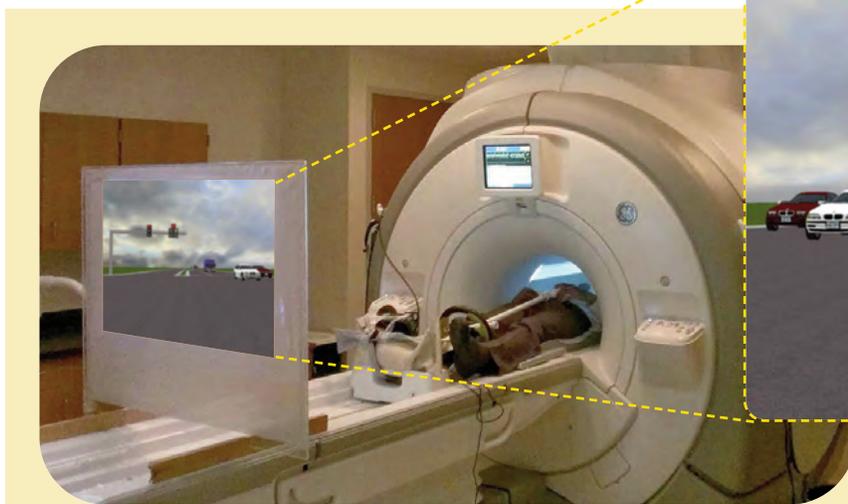
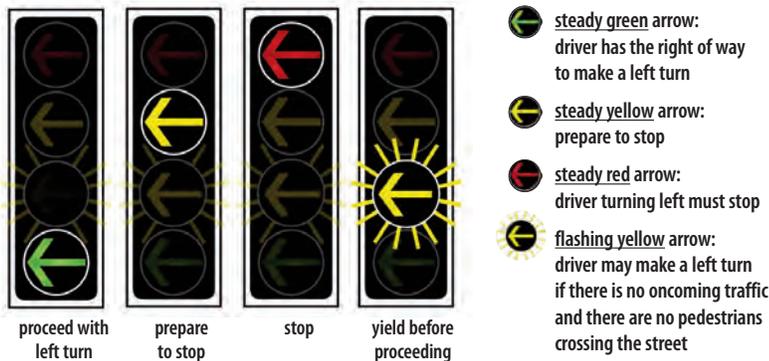
The [Wisconsin Traffic Operations and Safety \(TOPS\)](#) Laboratory at the University of Wisconsin-Madison has led a variety of pioneering research projects, including work on the safety benefits of flashing yellow arrow signals (see David Noyce profile on page 9). TOPS has also studied roundabout performance in Wisconsin to identify how improvements can be made.

One of its new research projects has potential to improve our understanding of how aging affects driving.

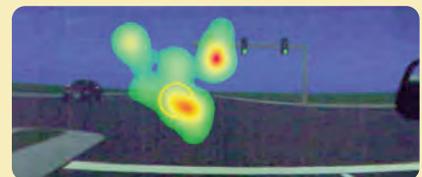
Currently, there is no consensus on a set of tests to accurately identify unsafe older drivers. TOPS Lab researchers have teamed up with radiologists, kinesiologists and occupational therapists to use fMRI (functional magnetic resonance image) scanning to investigate age-related differences in the brain networks engaged during simulated driving tasks. One goal is to find whether these fMRI measures can accurately predict unsafe driving behavior, and how such brain-based measures compare with conventional neuropsychological measures now being widely used.

The researchers are now working with older drivers in normal health, but they aim to eventually tackle the complexities of conditions such as Alzheimer's disease, which is highly variable. As we learn more about the brain, we could gradually also learn how to better "exercise" and heal it as we do with other body parts.

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**Driving tasks in MRI scanner** with MRI-compatible steering wheel and pedals. Lying in the MRI, an elderly person wears special goggles so he or she can see the screen located beyond their feet. MRI measures include glance duration and fixation, as shown here. The "hot spots" (at right) show where the person looked the most.



## David Noyce, Ph.D., P.E.

Director, Traffic Operations and Safety (TOPS) Laboratory, UW-Madison

Professor and chair, Dept of Civil and Environmental Engineering, UW-Madison



Professor Noyce has more than 30 years experience in transportation engineering, including in state government, private consulting and academia. Since 2003

he has been director of the [TOPS Lab](#), which conducts research in traffic safety, traffic operations, information technology, ITS and product development.

WisDOT is the lab's primary public sector partner.

"My research," he describes, "is focused on the operational and behavioral aspects of transportation safety and operations. Recent research has focused on traffic control devices, left-turn signalization, centerline rumble strips, and applications of advanced technologies."

"Improving the operational and safety aspects of left-turns," he says, "has been an interest of mine for 20 years. It's been a signature piece of research for me." "This research helped identify the safety benefits of [flashing yellow arrows](#) (FYA) at left turns.

His pioneering FYA research got started when the Federal Highway Administration surveyed the United States and found that in different areas a variety of different left-turn signals were being used. And some of these signals were confusing.

For example, the widely-used circular green light indicates that drivers may proceed straight through the intersection, with all other vehicles yielding the right of way. But, on the other hand, drivers turning left with a circular green light are required to yield the right of way to opposing vehicles before proceeding. Therefore, circular green lights provide two different messages.

FYA signals provide an unambiguous message. Years of research and extensive field testing identified numerous FYA safety benefits, including:

- left-turn confusion is significantly reduced
- the display works at all signalized intersections
- "yellow trap" is eliminated when the FYA display is logically tied to the opposing through-movement green light

"Yellow trap" can occur when the circular green signal turns yellow and then red, while oncoming traffic still has a circular green. This traps left turning cars in the intersection while oncoming traffic continues to flow. It can also fool drivers into mistakenly assuming that oncoming traffic also has a yellow light, so they turn across traffic, causing a crash.

Despite the evidence of safety benefits, initially traffic engineers and government agencies were reluctant to try FYA signals because of liability issues. But FYA are now being [used](#) in thousands of cities nationwide.

The TOPS Lab includes a full-scale driving simulator. "We have used the simulator," he explains, "to study regulatory signs, traffic

signal displays, rumble strips, young and old drivers, distraction, and the effects of low BAC on driver performance. Currently, we are looking at new technologies to improve the realism of the simulated environment."

David also directs the Safety Research using Simulation Center ([SAFER-SIM](#)).

"We're now working," he says, "on improving permitted left-turn modeling and using real-time information to optimize intersection traffic operations. I'm also interested in crash data recording (black box) technology and vehicle crash analysis. We have worked with state and federal agencies to research issues in all modes of transportation, including pedestrian and bicyclist."

One project researchers at the lab are working on, involving older drivers, is described on page 8.

On the horizon, he sees further profound changes in transportation coming, with great potential safety benefits. These include, eventually, self-driving vehicles. He notes that automakers are now making rapid advances, and traffic engineers and researchers are working hard to keep up.



David monitors the driving simulator.

## Conclusion

NHTSA has published a [strategic plan](#), *Traffic Safety for Older People – 5-Year Plan*, a road map for how states can address the mobility needs of older people. The overarching goal: to achieve safe mobility for older people as long as possible. The focus is on:

- **vehicle safety**
- **improved data collection**
- **driver behavior**
- **pedestrian safety**

In recent decades, much has been prepared, with foresight and teamwork, for the mobility needs of the aging



CREDIT: IHHS

Baby Boom generation. We all have loved ones who are aging and facing changes in how they get about. Continued learning and teamwork can help us all to better understand the challenges, make best use of the wealth of transportation options and resources available in Wisconsin, and also develop sound plans for future generations.



### High Visibility Education and Enforcement

from page 1

from each of the four states met in Alexandria, Virginia, to participate in an HVEE Strategic Planning Forum. The focus was on creating strategies to address a particular traffic safety issue in each state based on state and federal crash data.

In Wisconsin, high-visibility, multi-jurisdictional task forces have been achieving good results and are becoming more common statewide (see map).

The HVEE pilot program in Wisconsin, in Manitowoc and Sheboygan Counties, focuses on OWI enforcement. It started out with deployments on November 22 and 25 and December 13. The first and third were on Packer game days, and the second was on the day before Thanksgiving, which, as Lt. Robert Arps of the Manitowoc PD explains, is one of the year's biggest drinking days locally.

Participating agencies are the two county sheriff's departments; the Elkhart Lake, Kohler, Manitowoc, Plymouth, Sheboygan and Two Rivers police departments; and the Wisconsin State Patrol.

A planning and coordinating meeting had been held on October 29 at the Manitowoc Police Department. Representatives from these law enforcement agencies were joined by staff from the WisDOT Bureau of Transportation Safety (BOTS) and Office of Public Affairs (OPA). The HVEE pilot is being conducted under existing BOTS grants.

The Interstate 43 corridor through both counties forms the backbone for this campaign, but much of the enforcement is being done on highways and local roads within the counties. State Patrol troopers help support local law enforcement, including in more rural areas.

The overall goal of all high-visibility law enforcement campaigns is not to write more tickets but rather to deter unsafe driving, and this pilot program includes extra attention to public outreach and education to achieve deterrence. Participating agencies are showing initiative and creativity in identifying outreach strategies suited to their own communities, building on existing partnerships.



#### Posters & coasters

Officers distribute these, with a message encouraging people to download the WisDOT Drive Sober mobile app. Both include a QR code that can be scanned by a smartphone, taking the person right to the app. The app itself includes: a blood alcohol estimator, a designated driver selector, a resource for finding a ride, impairment goggles and daredevil videos.

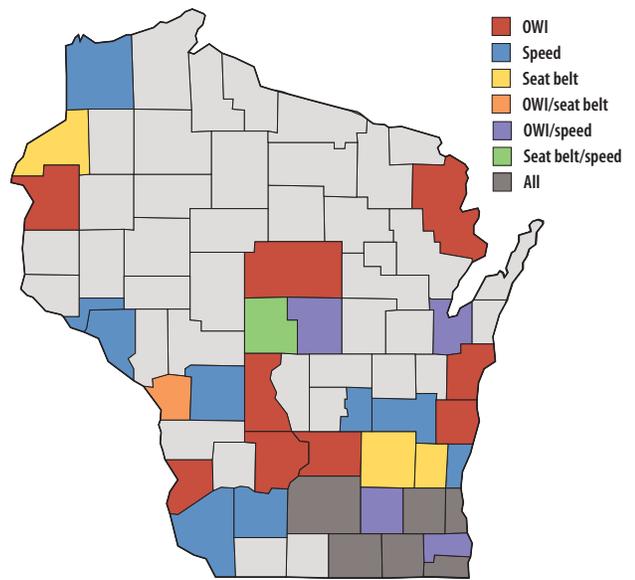


Sheboygan PD officer teams up with state trooper during HVEE deployment.

One example is their outreach efforts to local taverns and restaurants. Before deployments, officers provided taverns with written material about the goals of the campaign. They also provided Drive Sober App coasters (see photo) and promoted awareness of alternative transportation options. In Manitowoc, for instance, the SafeRide program has started offering to pick up people at their homes.

Bar checks are done by more than one officer and aim to foster more relaxed interaction and welcome feedback. The Sheboygan Tavern Safety Coalition is helping with the campaign, informing local establishments about the effort and addressing issues such as over-serving. Chief Christopher Domagalski of the Sheboygan PD says that this is a natural collaboration; law enforcement aims to get voluntary compliance, and businesses know that better practices will lead to less need for law enforcement presence and less harm to their patrons.

Public awareness is also being boosted with local media coverage, billboards (see page 1), portable diamond-shaped



SOURCE: WISDOT

OWI HVE signs, changeable message boards, and the Choose Your Ride squad car. Wide use is being made of social media, using Facebook before, and Tweet-alongs by auxiliary or academy officers during, deployments.

The HVEE pilot program also emphasizes officer safety. Officers are encouraged, but not required, to wear high-visibility vests during deployments. Roll calls include discussion /training on vehicle approach and placement, right-side approach, along with weapon safety during bar checks.

Agencies aim to have Drug Recognition Experts (DREs) available to assist with drugged-driving detections confirmations and to promote ARIDE training for officers that haven't had it yet. Participating agencies will report their numbers of stops, arrests and crashes, as they do with other mobilizations.

More deployments are planned for early 2016, allowing time to adjust tactics in light of lessons learned during these initial deployments.

Each state involved in the pilot program will report on their progress and successes.

An HVEE workshop will be developed for the 2016 Governor's Conference on Highway Safety.

Contact Mike Panosh, WisDOT BOTS, at michael.panosh@dot.wi.gov.



This vehicle is a harsh reminder of the consequences of operating while under the influence of alcohol and drugs. In this tragic accident, two young men named Christopher Mark and Zachary Gates lost their lives in a drunk driving accident.



At approximately 2:30 a.m. on March 3, 2013, a man under the influence of drugs and alcohol left a downtown Manitowoc bar with his friends and started traveling northbound on N. 9th Street. The vehicle, a red 4-door Cadillac Seville, was traveling at speeds over 90 mph. The vehicle ran the stop sign at 9th and Huron and



t-boned this vehicle traveling east on Huron. Chris and Zach were in this vehicle along with another friend, who suffered major lifelong injuries and was the only survivor. The surviving friend was in the passenger seat, the driver was Chris, and the rear passenger was Zach. The vehicle skidded off the road, through a high snow bank and a cedar hedge into a nearby yard, resulting in severe damage. The vehicle that caused the accident was found flipped upside down, but the driver and his three passengers suffered non-life threatening injuries. The driver is now facing a prison term of 12 years.

Manitowoc PD officers take this crashed car on a trailer to prominent locations, such as the city's main intersection. Plaques (shown here) explain the crash and its tragic outcome. Lt. Robert Arps notes that the goal is not to scare people but rather to help influence them to make good decisions.

Zach Gates was raised in Two Rivers, WI, and lived every day to its fullest. Having lost his mother to a car accident at age 10, he and his brother became their dad's whole world still living with him at the age of 24. On March 3, 2013, that all changed when his dad got an unexpected knock on the door in the early morning hours with the terrible news. At that moment, his dad's whole world was torn apart with only fond memories left behind. There was no warning and no chance to say goodbye. With his passing, he left behind a father and a brother, along with many friends and relatives that cared about him deeply. We'll never know what life had in store for Zach.



**Zach Gates**  
1988 - 2013

Two Rivers High School  
Graduating Class of 2006



Zach had made a couple of choices on the last night of his young life. He chose to go out and have a few drinks with his friends and later he chose to call his dad just hours before he died, reassuring him he had a ride home. Unfortunately, another young man made some very different choices. This young man chose to drink excessively and do drugs and get behind the wheel of his car while speeding and ignoring all traffic signals, giving no thought to his safety or that of others. And now, because of these choices, Zach Gates will no longer be with us, however, his memories will not be forgotten and his story will be told.

Christopher Michael Mark was born on August 24, 1989. He was the first and only grandson on his mom's side. He grew up in a blended family that included five sisters and four brothers, none of whom used the "step" or "half" word to define one another. Chris went to St. Francis Xavier for grade school. He had an active childhood; figure skating, hockey, football, and hunting. Christopher went to St. Francis Cabrini for middle school. After middle school, Christopher decided to go to Roncalli High School where he became a Jet and was a concert choir member. He could be stubborn and obstinate and hated chores, but would help anyone out who needed it. Chris worked at Northern Labs as a blender. He made friends easily and was never embarrassed to bring them home. There were always a multitude of bikes being worked on in the driveway and later on, cars and trucks.



**Christopher Mark**  
1989 - 2013

Roncalli High School  
Graduating Class of 2008



He loved dogs and little kids and they loved him back. He had a fantastic sense of humor and made his mom laugh often. Chris will never get to marry and have kids of his own. He will not be able to raise puppies or see his nieces and nephews grow up. What's more, his family and friends will not be able to enjoy his company, his smile, or take part in what his future could have brought. There is no way to describe what this catastrophic incident has done not only to his family, but the entire community.