

Toward Zero Deaths Conference

September 17–18, 2007

Duluth Entertainment Convention Center



A SUMMARY REPORT

The Minnesota Toward Zero Deaths (TZD) program is a multiagency partnership that includes representatives from the Minnesota Department of Transportation, Minnesota Department of Public Safety, Minnesota State Patrol, Federal Highway Administration, and the Center for Transportation Studies at the University of Minnesota. The ambitious goal of this program is to move toward zero deaths on Minnesota roads, using each of the “four E’s” of traffic safety: education, enforcement, engineering, and emergency services. Using these strategies, TZD partners are working to raise awareness of traffic safety issues and to develop tools to reduce the number of deaths and injuries resulting from traffic crashes on Minnesota roads.

The annual TZD conference provides a forum for reporting progress, sharing best practices in the areas of the four E’s, and charting the course for a future with fewer traffic fatalities and life-changing injuries.

Sponsored by:

*Minnesota Department of Public Safety
Minnesota Department of Transportation
Minnesota Toward Zero Deaths Program*

Hosted by:

Center for Transportation Studies, University of Minnesota



Welcome and Opening Remarks

Bernie Arseneau, State Traffic Engineer, Minnesota Department of Transportation

Cheri Marti, Director, Office of Traffic Safety, Minnesota Department of Public Safety

“We have to personalize the traffic safety issue and get people to realize that when someone dies in a crash or is seriously injured, dozens of people are affected.”

–Bernie Arseneau

“We have another incredible turnout this year,” Bernie Arseneau said in his opening remarks. “There are 570 registrants representing the ‘four E’s’ (education, enforcement, engineering, and emergency services) and all with the same goal of moving Minnesota toward zero deaths.”

Half the battle in reaching this goal, he said, is getting all motorists to think about the driving task and recognize that even the slightest bit of inattentiveness can get them into trouble. “We have to personalize the traffic safety issue and get people to realize that when someone dies in a crash or is seriously injured, dozens of people are affected for a long time, and sometimes for a lifetime.”

In 2006, Minnesota met its 2008 goal of having fewer than 500 crash fatalities. “We ended up at 494 fatalities last year, and for that you truly need to feel good,” Arseneau said. “But that’s not the end. Right now, we have 12 more fatalities than we did last year at this time...and now we’ve set a new goal of having fewer than 400 roadway fatalities by 2010. You and your colleagues must lead that effort.”

Arseneau then introduced the new director of the Office of Traffic Safety, Cheri Marti. Marti spent the past 15 years at the University of Minnesota working closely with engineers, faculty members, and private partners. “In that time, I learned that we must take a multidisciplinary approach to solving our complex transportation problems, and traffic safety is clearly one of those complex problems,” she said.

“We also must continue to challenge ourselves and not settle for what we currently know, or do things how we’ve always done them, but actively pursue new ideas, innovations, and best practices, and evaluate what works, what doesn’t—and then apply what we learn to our jobs,” Marti added. “This conference is clearly about learning and applying new ideas.... So let’s take a fresh commitment and passion with us as we look at the final quarter of 2007 and work hard to reduce this year the total fatalities from what we had last year.”

Opening Plenary: Case Study of the Ted Foss Crash

Colonel Mark Dunaski, Minnesota State Patrol

Lieutenant Mark Peterson, Minnesota State Patrol

Jack Shawn, Minnesota Trucking Association

In 2000, Minnesota State Patrol Corporal Ted Foss was fatally injured while on duty. While many might assume that Trooper Foss was shot in the line of duty, he was in fact killed with a weapon just as lethal as a gun: an inattentive driver. In this session, panelists revisited the fatal crash and discussed changes made since the incident, including the passage of Minnesota’s “Ted Foss” Move Over Law.

State Patrol Colonel Mark Dunaski opened the session by asking who, of the first responders in the audience, had been struck by a vehicle while performing emergency services, who had been struck more than once, and who had been struck more than five times. In response, many audience members stood, demonstrating that this is not an isolated problem. “The State Patrol’s number one worker’s compensation claim is for lower back and neck injuries resulting directly from motor vehicle crashes our troopers are involved in,” Dunaski reported. “It’s not from people getting shot or things that people typically think about in law enforcement.”

Between 1996 and 2005, 14 officers in Minnesota were killed; seven of those were in traffic crashes. And the issue of officers being struck while making routine traffic stops is not unique to Minnesota. Approximately 50 percent of law enforcement deaths

across the country are traffic related. “We often think, ‘It won’t happen to me...I am too careful during my stops.’ But these things happen so fast, and officers often don’t have time to react,” he said.

Dunaski used several video clips from patrol car dashboard cameras showing troopers on a typical stop being struck by a passing motorist. He noted that the issue affects not only law enforcement but also emergency response agencies, transportation department workers, and tow truck operators. “We’re all out on the highways—it’s our work zone. We need motorists to understand this, and we also need to learn how to keep ourselves safe out there.”

He went on to describe Trooper Foss’s last stop: Thursday, August 31, 2000, at about 2:20 p.m. on I-90 near Lewiston, Minnesota. Corporal Foss had stopped a minivan for speeding and was standing outside the driver’s door when a semi-truck veered off the roadway onto the shoulder, striking first the patrol car and then the minivan; Foss died at the scene. He was 35 years old and had 14 years of service.

In light of this tragic crash, the Minnesota State Legislature enacted a statute to give law enforcement officers a tool to help prevent this from happening again. The Ted Foss Move Over Law (Minnesota state law 169.18 subd. 11) states: “When approaching and

before passing an authorized emergency vehicle that is parked or otherwise stopped on or next to a street or highway having two or more lanes in the same direction, the driver of a vehicle shall safely move the vehicle to a lane away from the emergency vehicle.”

During the 2005 legislative session, the law was amended to clarify that on roads with two or more lanes in the same direction, a passing driver must provide a full lane of buffer space. Additionally, a four-hour provision, similar to that for school buses, was added that allows a peace officer to issue a citation based on probable cause for a violation of this statute within four hours of the actual violation.

At least 40 states have enacted “move over” laws. However, a recent survey revealed that more than 70 percent of respondents—citizens driving on the nation’s roadways—had no idea such a law existed and that they could get a ticket for not obeying it. To educate Minnesotans about the Ted Foss law, the Minnesota Department of Transportation (Mn/DOT) spearheaded a campaign, along with other agencies including the Office of Traffic Safety and the Minnesota State Patrol, that used a mix of 50 billboards and several metro bus posters designed to help get the word out. The State Patrol also placed information about the law on the back of warning citations and worked with AAA to create an informational flyer for distribution at various forums.

“As part of this larger Toward Zero Deaths program, taking care of the people who are out there trying to save other people’s lives has to become one of our primary concerns,” Dunaski said. “We have to continue to educate the public through all aspects of the media, and we need to do a better job educating ourselves on how to react at the scene and get off the road faster. It is my desire, my hope, and my prayer that I never have to attend another funeral like that of Ted Foss.”

Next, Lieutenant Mark Peterson introduced Jack Shawn from the Minnesota Trucking Association, who reiterated the association’s commitment to achieving

zero deaths on Minnesota’s highways. “Safety starts at the top of my company, with the owners and all management committed to providing the resources necessary to create a safe culture,” he explained. “This flows to our commitment to place only qualified, professional drivers behind the wheels of our trucks. It continues to ongoing training and coaching, tracking performance, and giving feedback on how to do it better. Putting a safe truck on the road is not only the right thing to do, it just makes good business sense.”

The good news, according to Shawn, is that these efforts work. The 2006 Minnesota Motor Vehicle Crash Facts reported that truck-related crashes dropped 14 percent, fatalities dropped 17 percent, and injuries dropped 12 percent from the previous year. However, fatal crashes continue to happen, and in rare instances, the truck is at fault as was the case with Trooper Ted Foss.

For this reason, Shawn explained, the Minnesota trucking industry supports efforts like the Minnesota Move Over Law. “But that is not enough,” he continued. “For the sake of every motorist, we also need to enact primary seat belt enforcement, reduce distracted driving, and educate other drivers about how to share the road. Unfortunately, there is even more work to do with the passenger car drivers.”

Independent studies done by the United States Department of Transportation (USDOT) and Transportation Canada found that passenger car drivers are responsible for car-truck crashes 71 percent of the time. A separate analysis done by the AAA Foundation found car drivers responsible for car-truck crashes 75 percent of the time, while the USDOT’s recently released large truck crash causation study found that in car-truck crashes, passenger car drivers, on average, are twice as fatigued as truck drivers.

“As chairman of the Minnesota Trucking Association, I want to challenge the highway safety community to think more creatively about how to incorporate the trucking industry into your ongoing safety initiatives,” Shawn said.



Colonel Mark Dunaski

“We’re all out on the highways—it’s our work zone. We need motorists to understand this, and we also need to learn how to keep ourselves safe out there.”

During this session, Colonel Dunaski showed a video clip from a documentary on the issue of officers being struck while making traffic stops. The documentary was created by the International Association of Chiefs of Police in cooperation with the National Highway Transportation Safety Administration. Contact Lieutenant Peterson for more information.



Luncheon Plenary: Special Award Presentation to Local Media

Trish Van Pilsum FOX TV-9 News

Rick Kupchella, KARE-11 TV News



Rick Kupchella

During a luncheon presentation, reporters Trish Van Pilsum with FOX TV-9 News and Rick Kupchella with KARE-11 TV News were presented TZD Star Awards for their work producing in-depth traffic safety news stories.

“A couple of years ago I did a story about teen driving,” Van Pilsum said, explaining how her “Room to Live” story came to be. “[State Patrol] Captain Mark Jonassen [with the Brainerd patrol district] showed me a picture of a car. Two kids were dead. They had been drag racing on their way home from school, crashed, and were ejected. Captain Jonassen said, ‘Look at this front seat.’ It hadn’t been touched. ‘We call that room to live.’ That’s when I thought, ‘We should do that story someday.’”

Van Pilsum went on to talk about her friend who had grown up on a farm and never learned to wear a seat belt. “‘Old habits die hard,’ Jeanette would say to me. Because she didn’t wear her seat belt, and sometimes neither did her daughters, I didn’t let my daughter carpool [to softball] with them,” Van Pilsum said.

One Sunday night, Van Pilsum saw Jeanette at the softball field cheering on one of the local teams. The next day Jeanette was dead.

Jeanette was driving with her twin daughters that Monday when their sport utility vehicle was hit by another car driven by an 18-year-old high school student. The SUV rolled, throwing Jeanette, who was not wearing her seat belt, from the vehicle. She died at the scene. One of her twin daughters in the car, who wasn’t buckled in, was seriously injured. Jeanette’s other daughter, who was riding in the front seat and wearing a seat belt, was not ejected and suffered only minor injuries. “Old habits do die hard, but so do beautiful, blue-eyed moms,” Van Pilsum said. “She touched a lot of kids’ lives, but she couldn’t, or rather she wouldn’t, save her own life. That’s how ‘Room to Live’ was born.”

The concept was very simple, she explained. “We asked law enforcement officials to call us whenever there was a rollover crash.” In her report, Van Pilsum climbed into several vehicles that had been involved in fatal crashes in which the occupant was not belted to give viewers an idea how a seat belt would have saved a life. In each instance, she found that they had “room to live” if only they had worn their seat belt. While some people were unnerved by this approach, she said, “The story worked for a lot of people. We received a lot of calls and letters from people who said they now wear their seat belts.”

Thousands of driver’s education students across the country are shown Van Pilsum’s seat belt story, as are

UPS drivers. Speedy Delivery Services showed it to all employees in its 2007 fall training, and AAA and the Minnesota High School League teamed up to show it at state high school tournaments.

As part of his three-part series, Kupchella went out with the Ramsey County Sheriff’s Department during four weekends to showcase the harsh realities of being arrested for DUI (“driving under the influence,” with a blood alcohol content of 0.08 percent or higher). As a separate experiment, he hosted a party in his home with controlled drinking and law enforcement officials administering Breathalyzer tests.

“Mercifully, I have never had a DUI, but I’ve known my share of people who have,” Kupchella said. “A DUI is an omnipresent kind of threat; there is a base of knowledge about it, largely because of the work you do. So we had to figure out how to get people to sit down and watch this story.” The greatest hurdle, he added, was gaining the behind-the-scenes access to do it.

According to Kupchella, Minnesota has “the most onerous system” in the nation in place for allowing public access to its courts through electronic media. “We argued there is no presumption of privacy in jail. We wanted to take people through every step of the process after being stopped by the officer and arrested for DUI,” he said.

“To the degree [those arrested] cooperated upon being released from jail, we wanted to follow them through the judicial process. We think we could have taken this story into further dimensions in getting the public to understand the consequences they face going through the courts [with more access to the court system]. Had we not gained the access we did through the help of the Ramsey County Sheriff’s Department, I don’t think we would have done this story.”

One of the things that struck Kupchella during the party experiment was how surprised his guests were at how quickly they became impaired and exceeded the 0.08 blood alcohol limit. “People can think they are stone cold sober and still be over the limit,” he said. “Tolerance or your experience to handle liquor is irrelevant; it’s about chemistry.” Kupchella also learned that most people don’t have an appreciation for the immediate civil consequences of losing their license for 90 days upon arrest for DUI. “How do you get to work? How do you get to court? People know the criminal side, but there also are immediate civil consequences people really don’t understand.”

Jeff Baillon, also with FOX TV-9, received a Star Award for his work highlighting cable median barriers as an engineering approach and for his continuing

“People can think they are stone cold sober and still be over the limit. Tolerance or your experience to handle liquor is irrelevant; it’s about chemistry.”

interest in highway traffic safety. (Van Pilsum accepted the award for Baillon, who was unable to attend the conference.) “Those crashes involving vehicles crossing a center median are tragic events that typically end in death,” Mn/DOT’s Bernie Arseneau said. “I met with Jeff Baillon to discuss Minnesota’s comprehensive highway plan... Through

our discussions, Jeff realized that the cable median barriers [Mn/DOT] was installing were saving lives. He saw an opportunity to bring forward this message and did an in-depth story on the subject. He talked to people who had actually hit the barrier. One of these people said, on camera, ‘It was like the hand of God reached out and redirected my vehicle.’”

Roundabouts: Answers to Traffic Safety

Ken Johnson, Minnesota Department of Transportation

At intersections, vehicles cross paths, creating the potential for crashes and subsequent delay. Traffic engineers, therefore, use a variety of controls—two-way stops, all-way stops, traffic signals, and roundabouts—to improve the mobility and safety of intersections. In this session, Mn/DOT engineer Ken Johnson dispelled some of the myths about roundabout intersections and explained how their use is being met with acceptance rather than the previous derision.

Modern roundabouts are used extensively throughout Europe and in many other places around the world but are relatively new to the United States. Although the old-style traffic circles are common in the eastern states, the first modern roundabout was constructed in 1990 in Summerlin, Nevada, a community west of Las Vegas. Since then, interest in roundabouts has been growing. Several states, including Minnesota, have active programs to construct roundabouts.

Although the common misconception is that roundabouts are the same as traffic circles, Johnson pointed out major differences between these types of intersections. Traditional traffic circles tend to have a large diameter, have high circulating speeds, and require merging and weaving between lanes to exit. The traffic going around the circle has to yield to entering traffic, which doesn’t work very well. Overall, these intersections exhibit poor operations and high crash rates.

Modern roundabout intersections have a smaller diameter than most traffic circles, and vehicles can enter roundabouts much easier than traffic circles due to flared approaches, entry angles, slower speeds on the circulating roadway, and the fact that vehicles entering roundabouts always yield to circulating traffic. Although the speeds within a roundabout intersection are reduced, the continuous movement allows more vehicles in during a given time period. Thus, a properly designed roundabout in appropriate applications has less delay than other intersection types.

The number of potential conflict points—locations where vehicles cross paths—in a roundabout is reduced from 32 in a typical intersection to 8. While crashes at stop signs and traffic signals can be catastrophic, some of the most serious types of collisions, including head-on and broadside, don’t occur at roundabouts. “High-

speed crashes are more likely to result in serious injury or death,” Johnson explained. “Fewer conflicts lower the crash potential, and at slower speeds, the crashes that occur tend to be minor fender-benders.”

A 2006 study by the Maryland State Highway Association found that of the 19 single-lane roundabouts evaluated in Maryland, the overall crash rate was reduced by 68 percent, the injury rate was reduced by 86 percent, and the fatality rate was reduced by 100 percent after these intersections had been converted to roundabouts.

Pedestrians are also safer in roundabouts as they have to cross only one single-lane direction of traffic at a time and have considerably less exposure to vehicles than at conventional intersections. “The one possible downside is that roundabouts create potential issues with visually-impaired pedestrians,” Johnson noted. “Since roundabouts do not have the same audible queues used by visually-impaired pedestrians to cross stop-controlled and signalized intersections, they may require special design treatments to accommodate these users.”

Although roundabouts are now considered an alternative traffic control device that can improve safety and operational efficiency at intersections when compared to other conventional intersection controls, they are not the solution to all traffic problems at all locations; they can actually increase delay when there is a large disparity between the volumes on the intersecting streets. Careful study is required to identify the most appropriate control method at any given location.

Generally, roundabouts reduce crashes, traffic delays, fuel consumption, air pollution, and construction costs while increasing capacity and enhancing intersection aesthetics by incorporating landscaping features. All of this provides a traffic-calming effect that can decrease aggressive driving. In Minnesota, roundabouts also help meet several requirements outlined in Mn/DOT’s statewide transportation plan. Thus, Mn/DOT is considering roundabout applications throughout the state and so far has constructed 31 roundabouts on city and county systems. Five more roundabouts are under construction, 19 are in the design process, and 7 more are planned for construction, with 10 locations being considered for roundabouts.



Ken Johnson

“Fewer conflicts lower the crash potential, and at slower speeds, the crashes that occur tend to be minor fender-benders.”

Reintegration to Traffic Safety

Major John Morris, Minnesota Air National Guard



Major John Morris

When citizens leave the streets of Minnesota for the roads of Iraq, they learn how to drive under the constant threat of someone trying to kill them. When they return, they need to unlearn these combat behaviors—especially when they’re stuck in rush-hour traffic. In this session, Major John Morris, a chaplain with the Minnesota Air National Guard, offered insight into what returning veterans face as they rejoin society and described a National Guard program designed to help them.

Since the terrorist attacks of September 11, 2001, more than 7,700 Minnesota Army National Guard soldiers have been mobilized. When they return, they need to relearn, among other things, how to drive and acclimate to structured roads—often within a short transition time.

Returning soldiers may still be “locked and loaded” in a defensive frame of mind, Morris said. In combat, they are taught to drive aggressively. Stopping or even slowing down can put them in danger. “Over there, they rule the road,” he said. Consequently, when they’re home, they may have a low tolerance for traffic jams. “They know they can’t shoot, but they can honk their horn or threaten other drivers,” Morris said.

Typical driving-related issues for returning soldiers include aggressive driving, speeding, impaired driving, lack of seat belt use, driving in the middle of the road, and avoiding overpasses.

Law enforcement has to be especially vigilant during traffic stops and be prepared for a post-combat mindset, even when it’s someone they know, Morris said. Officers should expect an increase in traffic violations, aggression, and hostility, and they need to watch for weapons and assume they are loaded and will be used. Identifying combat vets by asking them if they have served in the military or by observing their body language, posture, clothing, or language might help prevent a bad situation from escalating. And finally, Morris said, law enforcement should hold veterans accountable for their actions—no “free passes.”

Society is quick to label certain behaviors as post-traumatic stress disorder, but that’s often not the issue. Depression, he said, is a bigger concern—and the way American males often deal with depression is by drinking, then driving or hopping on a motorcycle.

The state’s National Guard program offers training for soldiers, their families, and their community, and Morris gave a list of other resources for veterans that included their local National Guard representative, county veteran service officers, and Veterans Affairs (VA) vet centers. In addition, individuals can help returning veterans reintegrate by giving them transition time, asking about—and really listening to—what they did in Iraq or Afghanistan, and asking follow-up questions when appropriate.

See www.va.gov/rcs for information on VA centers and services.

Meet the Press: Inside the Newsroom

Trish Van Pilsum, FOX TV-9 News

Rick Kupchella, KARE-11 TV News

Moderator: Nathan Bowie, Department of Public Safety

“One thing you can do to stand apart is develop relationships with people in the news business.”

—Rick Kupchella

Working with the media can be a challenging and intimidating process for law enforcement personnel. This question-and-answer session featured two seasoned media professionals who shared their perspective on how TV stations gather stories that are timely, informative, and relevant to their audience.

Moderator Question: What criteria do you look for in a story? What makes for a good news piece?

Trish Van Pilsum: Daily news items...should be timely, highly visual, and conducive to a quick turnaround. They also should affect a lot of people or affect a few people but be of great interest. For longer-form stories, the story must be compelling and urgent enough, but also have a long shelf life. Most of my stories have a strong emotional component and a depth of information.

Rick Kupchella: One way to gauge the potential value of a story idea is if in talking to a friend or

relative, you explain some aspect of what you do and you get a “Are you kidding me?” That’s a flag. It’s also good to find those areas where you think there is a lot of public knowledge, but the reality is that people don’t know the whole story.

Q: How do you prefer to receive a story idea, and what elements should be included in a pitch?

Kupchella: News releases get read, but they need to contain several key things...the who, what, when, where, and why of the story. You can fax in a press release or e-mail it to a news organization’s assignment desk. One thing you can do to stand apart is develop relationships with people in the news business. Then, in addition to sending the press release, call these people and tell them why the story is important.

Van Pilsum: Some people send us press releases over the weekend because those are generally the slower news days, and there’s a better chance of

getting your story aired. Keep in mind, though, that we also have fewer staff on the weekends. And there are other variables... Your story is set to be aired, and then the I-35W bridge collapses.

Q: What is the best way to reach reporters, and how often to you want to get “bugged”? How do you get noticed without being bothersome?

Kupchella: The best way to reach me is by e-mail. The worst way is by phone. You know you’ve done enough when you know you’ve definitely made contact. But don’t be afraid to make several attempts. It doesn’t hurt to be repetitive.

Van Pilsum: I’m terrible at returning phone calls; sometimes I have to call me 10 times. Just keep trying.

Q: What “hot button” issues are compelling with regard to traffic safety?

Van Pilsum: Primary seat belt legislation is hot... Graduated driver’s licensing requirements is another hot topic. Speed is a huge issue along with traffic congestion, complacency, and distracted driving.

Kupchella: Traffic safety issues are always on the radar, like tax and health care issues. It’s a broad public issue.

Q: What issues do you have with law enforcement, both positive and negative? What can law enforcement do to help you?

Kupchella: High on the list is to be open and direct and have conversations with us. We want to be able to talk to and build relationships with you...so we understand how you see things.

Van Pilsum: We need access... What’s most helpful is if we approach you with a story idea, don’t immediately go to the “We can’t,” but think first



Trish Van Pilsum, Rick Kupchella, and moderator Nathan Bowie

about “What if we can?” Could we explore the possibility of finding a way to do it? After that if you can’t help us, could you not hurt us? Sometimes law enforcement personnel make it harder for us to get information we are entitled to. We are not the enemy, but sometimes I feel like we are.

Q: How do you deal with media liaisons?

Van Pilsum: If a law enforcement agency has a media liaison, we generally call that person first. But if I were to interview someone on camera, I’d rather have an officer, or someone on the scene, someone involved in the case and who has personal knowledge to share.

Kupchella: Liaison officers provide the greatest value with regard to the proactive efforts your department is working on and getting those messages out. When we’re on the scene where the action is and we’re given a number to call a liaison who is not involved with the current situation, that’s not helpful.

Get Moving—Jump on the TZD Bandwagon

Amy Roggenbuck, Safe Communities and TZD

Pat Hackman, Safe Communities of Wright County

Patricia Galligher, Washington County Safe Communities

Crystal Hoepner, Douglas County Safe Communities

Moderator Amy Roggenbuck opened the session with an overview of Safe Community Coalitions. Funded by the DPS Office of Traffic Safety, the coalitions—25 throughout the state—work at the community level to create awareness of traffic safety issues.

Although the state sets common goals for the program, “no coalition is just like any other,” Roggenbuck said. Common goals of the grants include increasing the use of seat belts; reducing impaired driving; decreasing the number of children who are not properly restrained; promoting the importance of safe driving practices; and reducing the number of traffic crashes.

The first presenter was Pat Hackman, who described the efforts of Safe Communities of Wright County. Motivated by a high crash rate, partners formed a Safe Communities coalition in 1997 and identified

community problems and initiatives. The coalition was formalized in 2000 as a 501c3 nonprofit, the only coalition to do so.

Membership has grown considerably, Hackman said, and now includes local law enforcement, hospitals, the Wright County Public Health Department and Highway Department, school districts, community business leaders, and concerned citizens.

One of the coalition’s projects was a distracted-driving community campaign. “By far, the number one cause of crashes in Wright County is driver distraction,” Hackman said. The campaign included billboards with brief messages such as “Put Down the Coffee,” home mailers, and media articles. After the campaign, 73 percent of residents surveyed indicated being more aware of distractions.

As part of a teen driving initiative, two hours of



Crystal Hoepner

“Our coalition was moved by the whole concept of marking fatal crashes. It’s a twofold message. What if that driver had lived? What if I drive too fast?”

classroom driver’s education training are dedicated to a panel of Safe Communities presenters. “This has been very successful in reaching our core audience and parents,” Hackman said. Other elements of teen outreach include a seat belt challenge, school year campaigns (with slogans such as “Kiss your date, not your windshield”), and a crashed car display.

Another initiative is the “Drive Wright” driver diversion course. The coalition and law enforcement offer a two-hour traffic safety class to drivers charged with minor traffic violations. After the class is completed, the ticket is void, and no history appears on the person’s driving record. The coalition receives a portion of the \$75 class fee. Eighty-nine percent of students say they will change the way they drive as a result of the class.

Because of that program’s success, Hackman said, county judges contacted the coalition to provide a similar diversion course for teens. This version, which is more interactive, requires students to bring a parent, and together they fill out a parent-teen driving contract. Eighty percent of parents say they will place restrictions on their child’s driving as a result of information learned at the class.

These programs have resulted in a 38 percent drop in Wright County crashes since 1997, Hackman said, with an economic impact of an estimated \$137 million. In closing, she gave advice for starting a coalition: “The key is to start small. You don’t have to accomplish the world. Find what you’re good at, and start there. When you do the job well, people will find you.”

Pat Galligher then took the podium to describe Washington County’s Safe Communities efforts. Nearly five years old, the coalition focuses its work on drunk driving because of the county’s high ranking for DUI violations within the state.

One effort was a poster featuring a group of law enforcement officers and a pointed message: “Spend the holidays with your families, not with us.” The coalition distributed the poster to gas stations, driver’s license offices, and local bars and restaurants. Survey results were very positive, Galligher said, and the coalition plans to do it again this holiday season.

The county fair was the site of another initiative. The coalition developed slogans, such as “Don’t Hesitate to Designate,” and displayed them in a beer garden run by the VFW. Servers at the beer garden wore aprons that said the same thing, and MADD placed a crashed car nearby. At the same time, “Sober Driver—Find Yours” posters were placed on gas pumps.

The coalition works very closely with the schools: 18 were involved in different activities this year,

such as awards for highest rate of seat belt use and highest rate of increase. In another activity, liaison officers tracked student license numbers, then visited classrooms and called out their names—giving them T-shirts with “I got caught...wearing my seat belt” on the front and back. “Schools loved it,” she said.

Douglas County’s coalition is also in its fifth year, said Crystal Hoepner, and it has a variety of partners similar to other coalitions. But in a different twist, the coalition works with local baseball and hockey organizations. The ballpark, for example, has an “Arrive Safe at Home” special awareness site near the exit.

The coalition partners with businesses to hold “Arrive Alive” worksite safety challenges. One business staged a skit on impaired driving while another held a nonalcoholic drink event. Yard signs for the campaign were visible in the entire community, Hoepner said.

This year the coalition formed a new club for teens in which members raise awareness at teen gathering spots such as concerts. In 2005, classmates of a junior killed the previous year developed the “Klick It for Kelsey” campaign (see page 20 for coverage of the closing presentation by her parents).

Another project involves fatal crash markers. “Our coalition was moved by the whole concept of marking fatal crashes,” Hoepner said, and it launched a campaign. After a negative article this year in the Minneapolis *Star Tribune* about public memorials, however, the coalition took a step back and contacted Kelsey’s family members for feedback. Seeing Kelsey’s marker, they said, made them ask themselves “what if?” The coalition decided to move ahead using this thought on their signage. “It’s a twofold message,” Hoepner said. “What if that driver had lived? What if I drive too fast?”

Partners adopted the new program in September. Markers will be installed by the public works department near fatalities from the past 10 years—28 total—then taken down after 10 years. If a family member objects, markers will be reviewed on a case-by-case basis, Hoepner said. An education campaign planned for October included rush-hour traffic safety programs, billboards, public service announcements, and a sign-unveiling ceremony with media at the crash site of Kelsey’s death.

If you are interested in forming a Safe Communities Coalition in your area, go to the Office of Traffic Safety Web site—www.dps.state.mn.us/ots—to find more information.

Innovative Impaired Driving Initiatives

Steve Heng, Minnesota County Attorney's Association

Judge John Holahan, Fourth Judicial District

Robert Roeglin, Hennepin County Probation

Impaired driving by repeat offenders continues to cause many deaths and injuries on the road. In this session, presenters discussed new programs aimed at reducing recidivism.

Steve Heng opened the session by describing the role of a traffic safety resource prosecutor (TSRP). A TSRP, by becoming an expert in a state's impaired driving and other traffic laws, works to improve enforcement and prosecution of those laws.

Laws and issues relating to impaired driving are complicated, Heng explained; a TSRP can help new prosecutors "increase their confidence level so they are at least on the same footing with defense attorneys who have done this for a number of years." A TSRP can also help keep traffic safety offenses visible so prosecutors continue to work hard on those cases and "don't just see them as a stepping stone to other cases," Heng said.

Some methods used to reach prosecutors include training and education, publications (such as regular newsletters), and technical assistance. A TSRP also promotes interagency cooperation by acting as a general liaison in the traffic safety community. Additionally, since TSRP programs currently exist in 35 states, there is a national network for sharing information and resources—for example, expert witnesses for a case.

Following Heng, Robert Roeglin with Hennepin County Probation described an ignition interlock pilot program used in Hennepin and Beltrami Counties.

An ignition interlock is a breath-testing device that prevents a vehicle from starting if alcohol is detected from the driver's breath sample. The device also requires a rolling retest, meaning the driver must perform another test after six minutes. Research has shown that the interlock program can reduce recidivism from 45 to 90 percent, Roeglin said. When the interlock is removed, recidivism rates return to levels comparable to non-interlock offenders, but the net benefit remains.

Participants in the pilot program must have two or more DUI offenses and must sign an agreement to follow the program standards. The device needs to be installed for a minimum of one year, during which time it is monitored by a probation officer.

The primary benefit for participants is that they'll have their license reinstated sooner (with limits). However, this hasn't so far been enough of an incentive to attract many participants, Roeglin said. Also, participants

must pay for the costs of the program (about \$120 per month), so some individuals make the argument that they can't afford it. More education about how the device works would help, Roeglin said.

Next, Judge John Holahan described Hennepin County's adult DWI Court. This alternative to traditional criminal probation is open to eligible defendants who enter a guilty plea or are convicted of driving while impaired (DWI). Participants make regular appearances before the designated DWI court judge, are subject to regular visits at home or work by law enforcement and probation personnel, and receive treatment that includes breath and urine testing, individual and group counseling, and self-help support and sponsorship meetings.

Participants who successfully complete the program are discharged from active probation; those who fail to comply are subject to sanctions that include more alcohol and drug testing, more frequent courtroom appearances, more intensive probation supervision, and jail time.

Holahan became interested in specialty courts when he observed one in Koochiching County. He wondered how Hennepin County, with 7,500 DWI defendants a year, could implement something similar.

Holahan started the process in 2005 by applying for a grant; he then put together a team, which in addition to himself included a prosecuting attorney, public defender, probation officers, police officers, district court staff, and human services/public health department staff, among others. After intensive team training, the pilot DWI Court began in January 2007.

Repeat DWI offenders are often alcoholics or chemically dependent, and this program gives them a chance to turn their lives around with dignity and respect, Holahan said. Participants have a chance to address the court during their weekly court dates, and often what they express is gratitude. "The traditional way of dealing with DWI offenders is to punish their behavior. Studies show that is pretty much ineffective. What we are trying to do is change behavior—to change underlying issues," he said. Holahan added that so far no one in the program has driven after drinking again. "That tells me it's working."



John Holahan

"The traditional way of dealing with DWI offenders is to punish their behavior. What we are trying to do is change behavior—to change underlying issues."

Rural Safety Issues: A Preview

Mike Marti and Karen Sprattler, SRF Consulting Group

Wayne Sandberg, Washington County

Wayne Fingalson, Wright County

Traffic safety statistics from materials for the upcoming workshops

In the average lifetime of a driver or passenger, only 1 in 100 people will NEVER be involved in a crash.

A 35-mph crash with no seat belt is equivalent to falling from a third-story window.

Three in 10 Americans will be involved in an alcohol-related crash in their lifetime.

One in eight Minnesota licensed drivers have one or more DUI arrests on record.

—Source: LRRB *Rural Road Safety Solutions*

This session gave a sneak peek at the Minnesota Local Road Research Board (LRRB) Research Implementation Committee's recently developed rural road safety training for city and county engineers. The workshops, planned for early 2008 in each Mn/DOT district, will provide roadway professionals the TZD perspective, tools, and technologies necessary for assessing and improving safety on rural roads in Minnesota.

Mike Marti described the planned four-part structure of the workshop. The first section will introduce the issues and provide data that participants can take back to their agencies and communities for further outreach (see sidebar). "Past generations focused on combating disease such as polio," he said. "Our generation's focus is combating traffic deaths."

What are Minnesota's greatest safety problems? The second section of the workshop will provide an understanding using the state's new Strategic Highway Safety Plan (SHSP), said Karen Sprattler. The SHSP is an update of the Comprehensive Highway Safety Plan (CHSP) created in 2004 (see page 14). The training will focus on the critical emphasis areas identified in the SHSP. One key area, for example, is to improve the design and operation of highway intersections.

The third section is an overview of tools and techniques. The training will touch on a number of tools to identify problem areas, Wayne Sandberg said, such as road safety audits, the Minnesota Crash Mapping Analysis Tool (see page 18), the SHSP, and Safe Communities Coalitions (see page 7). The

course will then turn to techniques for solving these problems, including:

- Rumble strips/stripEs
- Lighting
- Intelligent transportation systems (e.g., dynamic speed display signs, dynamic curve warning systems, intersection warning systems)
- Improved sightlines
- Safety wedges
- Signing
- Edge treatments

"If you are a county engineer," Sandberg said, "you should be budgeting for safety items."

Putting safety into practice is the focus of the fourth section. "Every program needs money, and this is no exception," Wayne Fingalson said. Fortunately, SAFETEA-LU emphasizes safety, and there are many funding options. "You almost need a workshop to keep up with all the funding sources," he said.

Stakeholder involvement is another important element. "It could be as informal as a county engineer meeting with the county sheriff, or [involve] more formal structures," Fingalson said. The workshop will encourage a "culture of safety" including the four E's of engineering, enforcement, education, and emergency medical services. "It should involve everyone...and be incorporated into everyday activities," Fingalson said.

The training will close with various case studies, such as the successes of the Safe Communities of Wright County coalition.

More Highway Madness: Highway Incident Management

John McClellan, Mn/DOT Traffic Management Center

Every day in the Twin Cities metro area, approximately 800,000 vehicles flood the roadways during the afternoon rush hour, and during this time, there are typically 10 to 30 vehicle crashes and 30 to 70 stalls. Clearing these incidents safely and quickly depends on coordinated, effective highway incident management. This means moving motorists through the scene and providing approaching motorists with information to make informed decisions about travel in the affected area or areas—which helps prevent secondary crashes, explained Mn/DOT's John McClellan. "The crash/congestion cycle can last hours, impacting miles of freeway and spawning multiple secondary crashes."

The Federal Highway Administration (FHWA) reports that secondary crashes make up approximately

20 percent of all incidents. Most of these secondary incidents are minor, but some are severe, resulting in death or serious injury. The congestion and delay caused by both primary and secondary traffic incidents can have an enormous economic cost as well. Traffic incidents caused half of the highway congestion in the metro area in 2004, McClellan reported, which resulted in an economic cost of \$1 billion to the area, or \$1,000 per driver.

The FHWA *Manual on Uniform Traffic Control Devices* (MUTCD) has long been an established national standard for the use of traffic control devices such as signs, signals, and pavement markings for traffic control procedures. Part 6 of the MUTCD (Temporary Traffic Control) was formerly dedicated

to work zones but now contains requirements for traffic control for incidents. The 2003 edition of the MUTCD includes a new Chapter 6-I that more specially describes traffic control concepts for traffic incident scenes.

Several elements are required to safely set up emergency traffic control at a scene. This includes incorporating appropriate advanced warning to alert and direct motorists. Advanced warning is particularly crucial in high-speed areas, areas with limited visibility (curves, hills, etc.), poor weather conditions, rural areas, and at night. Setting up emergency traffic control may also involve blocking one or more lanes of traffic. "The key is to make the scene longer, not wider," McClellan noted. "The more lanes you block, the greater your exposure to traffic and the greater the chances of being struck. Lane blockages may create a scene that is more hazardous than simply remaining on the shoulder. Just be flexible in the layout and keep in mind that if poor road conditions caused the first crash, [they] will cause more, so set the scene accordingly."

Nighttime incidents involving lane closures present particular problems because drivers approaching these

incidents are often traveling at higher speeds due to lighter traffic conditions and don't expect to be slowed or stopped. In addition, reduced lighting makes visibility more difficult and accentuates confusion or visual blinding caused by flashing lights and strobes on emergency vehicles.

McClellan suggested a variety of basic emergency traffic control tools responders carry and use to secure the scene and guide traffic through the area. These include enough Class II safety vests for all responders on the scene, a minimum of six orange cones with two reflective collars, and several flares, flashlights, and traffic control wands. He also recommended use of Mn/DOT-approved retro-reflective portable signage. "These are probably not practical to carry in a squad car, but they are a good option for fire and rescue vehicles."

He also reminded audience members of the FHWA's new high-visibility mandate, which takes effect November 24, 2008, and requires the use of high-visibility safety apparel for all workers—including DOT crews, first responders, and even media representatives—who are working within the rights-of-way of a federal-aid highway.



John McClellan

"The key is to make the scene longer, not wider. The more lanes you block, the greater your exposure to traffic and the greater the chances of being struck."

For more information or for DVD copies of the full-length training class John McClellan offers, contact him at 651-234-7036 or at john.mcclellan@dot.state.mn.us.

Best Practices in Traffic Enforcement: The Anoka County NightCAP Project

Sergeant Bill Hammes, Lino Lakes Police Department
Lieutenant Paul Vanvoorhis, Minnesota State Patrol

High-visibility enforcement is one method for improving traffic safety. In this session, Lieutenant Paul Vanvoorhis and Sergeant Bill Hammes explained how Anoka County's DWI Task Force aims to reduce the number of impaired drivers on the county's roads and take it off Minnesota's "13 deadliest counties" list.

In 2006, Anoka County had 26 fatal crashes that resulted in 29 fatalities; 12 deaths were alcohol-related. In response, law enforcement formed the Anoka County NightCAP DWI Task Force. Participating agencies include the police departments from 10 cities, the Anoka County Sheriff's Department, the Minnesota State Patrol, Anoka County prosecutors, the Minnesota Attorney General's office, and the Minnesota Department of Public Safety and its Office of Traffic Safety. The revamped Anoka County NightCAP project kicked off in May 2007 and will run through September 2010.

NightCAP is a project that uses law enforcement to saturate specific roadways where impaired driving is likely. While Anoka County ran NightCAP and other traffic safety-related programs prior to this new effort, those programs were used in individual cities and areas, and enforcement was scattered throughout the

county, Hammes said. Low visibility led to the public's perception that the police weren't doing anything about traffic safety.

This new effort required involvement from many different agencies. The program benefited from a joint powers agreement with every participating city, and Hammes reports they've not seen any dispute over borders. Having good program representatives to carry the message back to their respective agencies was also critical, Vanvoorhis said.

When working NightCAP, the officers' aim is to target certain roadways and stop vehicles for any violation of Minnesota law. "It's the closest thing to a checkpoint you can do without having a checkpoint," he said.

Drivers entering an enforcement zone will see conspicuous signs (often lighted construction signs), but rather than cause impaired drivers to turn around and take another route, "It's like it sucks them in," Vanvoorhis said. Some drivers want to see if they can slip through, and many think they won't get caught anyway. "We want to change that perception," he added.

Visibility for the effort is aided by the Breath Alcohol Testing Mobile (BATmobile) and the bright reflective

vests that the officers working NightCAP wear. Officers also hand out business cards to drivers that explain the project.

Since the task force hopes to raise public awareness of the program, it pushes for media coverage, Hammes said. Each agency issues press releases and is encouraged to keep the issue on the front burner. Media as well as local politicians attended the task force's kickoff event, and several Twin Cities' TV news affiliates aired stories on the project.

Another critical element in a successful NightCAP program is the city, county, and state prosecutors, whom Vanvoorhis called "the closing pitchers." "Without them, there are no consequences," he said. To involve the prosecutors, the task force held an evening information

meeting. Task force members also met with an Anoka County judge who took the message forward to the rest of the bench and offered some good advice to help prevent DWI convictions from being tossed out, Hammes said.

Others who play an important role are the clerk of courts, dispatchers, office staff, and reserve officers. "We wanted everyone's support so we didn't have to put out little fires throughout the program," Vanvoorhis said.

The task force is currently conducting a survey to learn how the program is working. Hammes and Vanvoorhis report that as of September 14, 2007, the county has had zero alcohol-related fatalities.

Public/Private Partnerships

Carol Bufton, Minnesota Safety Council

Gail Weinholzer, Minnesota-Iowa AAA

"Partnerships are a powerful tool for social change.... Today business is much more active, and not just [for] writing checks."

—Carol Bufton

"Partnerships are a powerful tool for social change," began Carol Bufton. Until the 1960s the roles of the sectors—government, business, and nonprofit—were very clearly defined and didn't overlap as they do today. Activities, however, overlapped and efforts were duplicated. "Today business is much more active, and not just [for] writing checks," she said. "Nonprofit organizations like the Minnesota Safety Council (MSC) have their foot in both camps, and organizations have blended goals."

What makes a good partnership? Clear identification of problems, a solid plan, the right players at the table, a shared agenda, and combined resources. "Effective public-private partnerships have a new math: one plus one equals three," Bufton said. "Somehow [a partnership] becomes bigger than any of our organizations."

Bufton described several broad categories of partnerships: operational, focusing on work (such as Safe Communities Coalitions); policy and strategy, addressing new or complex concepts difficult for any one organization (such as the Minnesota Seat Belt Coalition); advocacy (such as Mothers Against Drunk Drivers); and multifaceted (think TZD).

Partnerships share common traits: they build on mutual strengths, are voluntary, bring mutually beneficial results, and work for the common good. Benefits include extended reach, a fresh view, access to resources, and shared risks and rewards. "The strength of us working together lends weight to the issue and credibility," Bufton said.

Gail Weinholzer and Bufton then gave several examples of public-private partnerships. One is an informational campaign for the state's new "move over" law. The campaign includes a public service announcement featuring a AAA tow truck and a state trooper, and brochures and folders printed by AAA. The State Patrol, MSC, and AAA are distributing the

materials. "We're doing everything we can to help emergency response stay safe," Weinholzer said.

A second example is a new Web site—developed by AAA with an idea from the Minnesota Safety Council—to raise awareness of proper car seat installation (www.csms.org). The working group included DPS, Hennepin County Medical Center, and child passenger advocates. Tools to promote the site include mailings, posters, and prescription sheets—in multiple languages—for doctors to share with patients.

Law enforcement suggested using ECHO TV (Emergency and Community Health Outreach) to reach limited-English speakers. ECHO TV broadcasts health and safety messages in six languages on Twin Cities public television. The working group, with partners including AAA, the State Patrol, and 911 dispatchers, developed segments on child passenger safety and the proper use of 911.

MSC coordinates the Minnesota Network of Employers for Traffic Safety (NETS) program, which helps employers implement policies, workplace programs, and community activities relating to traffic safety. Supported by DPS, NETS partners with other programs such as Safe Communities. It offers turnkey resources that include free phone consultation, lunch seminars, brochures, and a Distracted Driver Tool Kit. "It's a classic example of government and nonprofits, through employers, reaching out to employees and families," Bufton said.

The last example cited was the Minnesota Seat Belt Coalition, funded by the National Highway Traffic Safety Administration through DPS. The coalition includes about 170 organizations representing public agencies, private companies, industry associations, hospital associations, auto dealers, insurance companies, and many others. All are working together toward the goal of passing a primary seat belt law in Minnesota.

EMT Response Times and Trauma Facts

Tim Held, Minnesota Department of Health State Trauma Program

Bob Norlen, EMS Regulatory Board

Tom Horan, Center for Excellence in Rural Safety, Humphrey Institute of Public Affairs, University of Minnesota

Janis Carey Wack, Brain Injury Association of Minnesota

Delays in receiving emergency care in sparsely populated areas put many rural Americans at greater risk of permanent injury or death than those driving in urban areas. An effective trauma care system, therefore, is crucial to the health care of rural Americans.

Tim Held, State Trauma Program coordinator, explained Minnesota's expanding trauma care. Most trauma comes from motor vehicle crashes, and in Minnesota, most of these crashes occur in rural areas, Held said. For a severely injured person, the time between injury and receiving definitive care—the so-called “golden hour”—is the most important predictor of survival. With this in mind, officials at the Minnesota Department of Health worked with representatives of nearly 15 professional organizations between 2003 and 2005 to develop a comprehensive statewide trauma care plan. In July 2005, legislation was passed to enact a statewide trauma system, and in 2006, legislation was passed establishing the State Trauma Advisory Council.

Minnesota's statewide trauma system is a voluntary inclusive network of trained and equipped trauma care providers throughout the state working to ensure that optimal trauma care is available and accessible everywhere. Participating hospitals receive one of four levels of trauma designation corresponding to their capabilities and resources (not quality of care). The goal of the trauma system is to decrease injured patients' time to definitive care by ensuring that quick, confident decisions are made that appropriately match patients' medical needs with hospitals' resources.

States that have had a statewide trauma system in place for many years have increased trauma patient survival rates by 15 to 20 percent and decreased motor vehicle crash deaths by 9 percent. “This is what we are shooting for [in Minnesota], but it won't happen this year or next. It's a long-term vision,” Held said.

Bob Norlen, with the Minnesota Emergency Medical Services Regulatory Board (EMSRB), discussed how his agency is working to improve the emergency medical services (EMS) response to trauma injuries, especially as they relate to motor vehicle crashes outside of the Twin Cities metro area.

The EMSRB is the lead agency for regulation and oversight of EMS, he explained. It is responsible for a variety of functions including licensing ambulance services, certifying emergency medical personnel, approving emergency medical services training programs, and administering the volunteer ambulance training grant program. EMSRB also manages the Web-based statewide data system known as Minnesota Statewide Ambulance Reporting (MNSTAR), first

available in April 2003. All licensed ambulance services in Minnesota are required to report, through MNSTAR, certain data for every call they respond to, Norlen said.

These EMS data are collected under the National Highway Traffic Safety Administration (NHTSA)/National EMS Information System (NEMSIS) 2.2.1 data set, which is the most current data set recognized by NHTSA. Minnesota submits its EMS data to the national database and teamed up with four other states that do the same.

MNSTAR collects data on more than 400,000 ambulance runs each year, and most of the data are clearly defined to help ensure information is collected accurately and that all providers collect the same information. These data help drive EMS improvements as they relate to the requirements of the statewide trauma system. Specifically, after July 1, 2009, ambulance services will be required to implement a set of new triage and transport guidelines to ensure trauma patients with critical injuries are appropriately entered into the trauma system to receive definitive care. “Briefly, the new guidelines state that major trauma patients will be immediately transported to the nearest designated trauma hospital,” Norlen said. “The intent is to curtail the under-triage of major trauma patients and to hasten their access to definitive care.”

Collaboration among all components of the trauma system is important, he added, and the data must be standardized across the state and nationally—which is why Minnesota has moved to the current NHTSA/NEMSIS data set.

Further improving EMS response in rural areas also means gaining a better understanding of the differences that exist in rural versus urban transportation and health services and examining the role technology plays in improving access to, as well as timeliness and quality of, rural services. Tom Horan, a researcher with the University of Minnesota's Hubert H. Humphrey Institute of Public Affairs and its Center for Excellence in Rural Safety, described the Center's efforts to facilitate research, training, and outreach activities related to rural transportation safety.

The Center's recent research of traffic fatalities indicates that not every day is equal. Preliminary studies reveal that summer months and major holidays are more dangerous times to travel on rural byways. In a study of traffic fatalities in the Brainerd/Baxter, Minnesota, area over the Fourth of July holiday, Horan's team found that 54 percent of the drivers involved in a rural fatality had an urban zip code. “This points to the fact that rural fatalities are not just



Tom Horan

“This points to the fact that rural fatalities are not just a rural problem—they are really a statewide problem.”

a rural problem—they are really a statewide problem,” Horan said.

Horan’s team is now working to construct a data model illustrating the flow from the initial 911 call through dispatch, response, coordination, and treatment. Ultimately, Horan’s team hopes to apply this data in a Google Earth framework that allows anyone to access it and easily see the distribution of fatalities and response times in a state. “We think this will provide an interactive way for the public to start to see and understand the nature and severity of these fatal crashes,” he said.

These efforts to improve trauma care mean that more patients survive what were previously fatal head injuries. Still, many of these survivors are left with permanent, devastating problems. According to the Centers for Disease Control and Prevention (CDC), an estimated 5.3 million Americans, including 100,000 Minnesotans, live with traumatic brain injury (TBI)-related disabilities. For these people, the financial cost is only part of the burden.

The long-term disabilities arising from cognitive, emotional, sensory, and motor impairments often permanently alter a person’s vocational aspirations and have profound effects on social and family relationships. Yet many of these disabilities are not readily apparent, and TBI is often referred to as the “silent epidemic,” Janis Carey Wack said. Wack is the education manager with the Brain Injury Association of Minnesota, the only organization in Minnesota

supporting brain injury patients, their families, and friends long-term.

Wack explained that a TBI is caused by a blow or jolt to the head or a penetrating head injury that disrupts the normal function of the brain. The severity of a brain injury may range from mild (e.g., a brief change in mental status or consciousness) to severe (e.g., an extended period of unconsciousness or amnesia after the injury). According to Wack, mild brain injuries make up the majority of all brain injuries. “Most people don’t know they have an injury in these cases. But people don’t need to lose consciousness to suffer a life-changing brain injury,” she said.

There are often many physical changes that occur after a person sustains a TBI, including vision and hearing problems, mobility, speaking and communication difficulties, and seizures. People may also have depression or anxiety disorders, Wack said. “Think about your own lives and if you couldn’t control your memory, you couldn’t problem solve... Imagine how these things dramatically impact your quality of life.”

Along with these physical changes after a brain injury is a person’s loss of identity, she continued. “People may not know who they are any more, because they can’t do things they used to do...they don’t feel as competent and thus, they lose self-esteem...The biggest part of what we do is educate and empower people...so they can manage as much of their lives as possible.”

For more information on the Brain Injury Association of Minnesota, visit www.braininjurymn.org.

Proactive Low-Cost Safety Initiatives

Howard Preston, CH2M Hill

Minnesota’s Strategic Highway Safety Plan (SHSP), published in June 2007, says that the best way to address safety in rural areas is to focus on a few low-cost and highly effective strategies that can be widely deployed across a system of highways. Howard Preston discussed the development of the plan and some of the high-priority strategies it recommends.

The SHSP is an update of the Comprehensive Highway Safety Plan (CHSP) issued in 2004. Partners in the SHSP development process were Mn/DOT, the Department of Public Safety, the Department of Public Health, the Federal Highway Administration, and county highway agencies.

While the CHSP gave a statewide perspective, Preston said, the new plan also disaggregates the data district by district, and by state trunk highway system and local system. The SHSP differs from its predecessor in several other key ways:

- It is data driven, better linking the factors that cause severe crashes with mitigation strategies.
- It is comprehensive, including all four safety E’s.

- It is systematic, considering all roads and not just the state trunk highway system.

In another important change, the SHSP uses a new safety performance measure: fatal and life-changing injury crashes. (Since SAFETEA-LU, the FHWA requires this measure for agencies across the country.) The previous measure—all crashes—was based on high crash rates and densities. Many of those crashes were at suburban intersections, and although high in number, they accounted for just 10 percent of state fatalities. In contrast, almost half of fatalities occur on outstate local roads. “This changes [the plan] from a metro to rural focus,” Preston said.

Nationally, traffic fatalities are trending up, but not in Minnesota. The number of fatalities fell from 650 to 494 last year, the lowest number since 1945. The 0.87 fatality rate is the lowest in Minnesota history and one of the lowest in the country. “It’s not just about Mn/DOT,” Preston said. “Partnerships with counties [are also] driving that number down.”

The plan sets a new safety goal: 400 or fewer

fatalities by 2010. “Is it a reach? I think so,” Preston said. “Is it the right thing to do? Absolutely.” The goal set in the CHSP—fewer than 500 fatalities by 2008—was met in 2006.

To meet this new goal, the SHSP identifies critical emphasis areas to focus investment toward the causes of fatal crashes. For the state, the top three critical emphasis areas are increasing seat belt use, reducing impaired driving, and improving the design and operations of highway intersections.

The results are very different, however, when data from outstate districts are separated from metro data. Outstate local roads have much higher fatality rates “all across the board,” he said. “This is more proof to focus safety programs on rural districts and to engage local units of government,” he said.

For rural local roads, the top emphasis area is reducing single-vehicle lane departure. Strategies involve a three-step approach: (1) Keep vehicles on the road using techniques such as beveled lane edges, edge line rumble strips, enhanced pavement markings, and advanced warning of curves; (2) provide adequate clear zones by removing or relocating objects such as trees or utility poles; and (3) upgrade highway hardware such as sign supports and guardrails.

The SHSP also suggests a number of low-cost solutions. Some top options include:

- Roundabouts: \$800,000 to \$1 million. Studies indicate they reduce crashes by 38 percent, injury

crashes by 76 percent, and fatal and serious injury crashes by 90 percent. “The biggest challenge is deciding where you aren’t going to put them,” Preston said.

- Indirect turns and partial T-interchange: \$500,000. At a Maryland site, the J-turn reduced total crashes by 90 percent.
- Red-light-running enforcement: \$50,000 per intersection. The FHWA estimates a 15 percent reduction in crashes.
- Streetlights: \$5,000 to \$30,000. A recent Minnesota study of rural intersections found a 27 percent reduction in nighttime collisions and a 20 percent reduction in crash severity.
- Edge treatments: from no cost to several thousand dollars per mile for rumble strips/strips. Shoulder rumble strips reduce single-vehicle run-off-the-road crashes by 20 to 50 percent on freeways.

Preston advised attendees to dedicate a part of their capital improvement plans to low-cost safety strategies. “Focus your infrastructure-based safety investments on a limited number of strategies that are proven effective, are relatively inexpensive, can be widely deployed, and address high-frequency crashes,” he said. “In greater Minnesota, focus on proactive measures because of the very low crash densities. In the metro, with higher densities and more crash data, focus on reactive strategies.”

“Focus your infrastructure-based safety investments on...strategies that are proven effective, are relatively inexpensive... and address high-frequency crashes,”

– Howard Preston

The Fountain of Youth

Amy Roggenbuck, Safe Communities and TZD

Joe Leveille, **Lauren Verhel**, and **Megan Flesvig**, Proctor High School

The statistics about teen drivers may be familiar to parents everywhere, but how do teen drivers view themselves? In this session, three teenage drivers candidly responded to questions from moderator Amy Roggenbuck and the audience about driving skills and behaviors, safety messages, and ways to reach this high-risk group.

Panelists Joe Leveille, Lauren Verhel, and Megan Flesvig, all seniors at Proctor (Minn.) High School outside Duluth, have been driving for two years or less. Roggenbuck asked them why they thought some teens engage in risky driving behaviors such as speeding, street racing, and drinking while driving. While peer pressure may play a role, drinking and driving behaviors could be reduced if parents told their kids they would always pick them up if needed, Leveille said. Teens sometimes feel pressured to ride with someone they might not want to ride with because they don’t want to be stranded, are afraid of missing curfew, or are simply uncomfortable telling a friend the truth.

Text messaging, they reported, is probably the biggest distraction for teenage drivers, especially for those who need to look at their phone to type in

information. Conversely, they didn’t think talking on cell phones was as distracting.

Among the teen panelists, wearing a seat belt is considered more acceptable than not wearing one. One reason some teens might not buckle up is the belief that it’s not necessary for driving a short distance, they said.

Although these teens hadn’t been involved with any programs aimed at changing teen driving behaviors, they said such programs might be effective if they were held in school to make it easy to attend and if presentations were graphic enough to make an impression.

“You’ve got to gross us out,” one reported. “Don’t candy-coat it.” The shock factor is important in driver’s education as well as for presentations.

Leveille said he and his father went to the Twin Cities and looked at cars that had been in crashes, “and that really freaked me out, seeing what could happen.”

Another suggestion was to bring in a person who had actually been in a severe crash. They mentioned a time that a teen, paralyzed as a result of being thrown from her car in a crash, gave a presentation in their school



Teen panelists Joe Leveille, Lauren Verhel, and Megan Flesvig with moderator Amy Roggenbuck

and the emotional impact it made on them.

The teens reported that they listened to the radio primarily on their drive to and from school and that they rarely watched television. So reaching them with a traffic safety message might be better accomplished through iTunes or MySpace or with a text message—as long as it didn't cost anything. One teen reported that she had heard some ads on the radio, but generally the awareness of such messages or campaigns was low or non-existent.

The teen panel said safety messages and programs need to reach a broader cross-section of teen drivers—the risk takers, the “skateboard and snowboard”

crowd—not just those who are already wearing their seat belts, for instance. Incentives, they all agreed, are important. “Maybe food, getting out of school,” Verhel said. “And once you get them there, make sure you show them what actually happens. Drill it in their minds that they won't get in trouble or else they'll hold back.” Additional suggestions include raffling off skateboards and snowboards and making presentations interactive.

Finally, these teens would welcome hearing safety messages from their parents, in a way in which they can “sit down and talk seriously without distractions—and not yelling,” Leveille added.

All You Have to Do Is Ask

Sergeant Brent Richter, Minnesota State Patrol Crash Reconstruction Program

Trooper Matt Nelson, Minnesota State Patrol Flight Section

Sergeant Paul Davis, Minnesota State Patrol Commercial Vehicle Enforcement

Sergeant Don Marose, Minnesota State Patrol Drug Recognition and Classification Program

The Minnesota State Patrol offers a variety of traffic and public safety services to assist other law enforcement agencies. Sergeant Brent Richter first explained the assistance available from the State Patrol's Major Crash Reconstruction Team (MCRT). The MCRT is made up of trained accident reconstruction specialists, or “recons,” available to various law enforcement agencies to investigate serious traffic crashes.

Traffic crash reconstruction is a multidisciplinary field, Richter explained; it may involve the disciplines of criminology, human factors, and engineering as well as various divisions of the State Patrol such as the commercial motor vehicle and flight sections. The team focuses on fatal or imminently life-threatening crashes, crashes that involve felony crimes, high-

profile crashes, and crashes for which a governmental agency is likely to be sued.

The goal of a crash investigation is to determine the cause of the crash as well as any contributing factors. One tool the recons use is called a Total Mapping Station. These systems include mapping equipment, software, CAD programs, data collection software, and surveying equipment used to make graphical representations of a crash scene.

The State Patrol does not charge for crash reconstruction services and doesn't “come in and take over your investigation,” Richter added. “Rather, we will partner with your investigators to get the legwork done.”

Next, Trooper Matt Nelson discussed the State

Patrol's Flight Section, which provides a large amount of the airborne law enforcement services across the state. This unit is staffed with seven pilots in the metro area and three pilots in the Brainerd area, operating four helicopters, five Cessna 182 single-engine airplanes, and one Beechcraft Queen Air twin-engine plane.

Helicopters are the unit's most adaptable aircraft and the one typically called in for assistance. These aircraft are outfitted with equipment to facilitate operations in nearly all situations, day or night. For example, a rescue basket can be lowered into an area to rescue a victim where it is not possible to land the helicopter. A powerful searchlight and a forward-looking infrared (FLIR) system can assist in nighttime operations. Helicopters also carry photography equipment to take photos at crash and crime scenes and help with tactical reconnaissance, Nelson said.

While these flight crews do not transport injured or sick patients to hospitals, the unit does have two paramedics available to help in rescue operations. In addition, the unit can provide non-emergency transport, such as blood runs for the Red Cross, or speed enforcement.

Sergeant Paul Davis, with the Commercial Vehicle Division (CVD), discussed the various services this unit offers, including staffing and support services for weight enforcement through fixed and mobile weight programs, civil weight investigations, commercial vehicle inspections, and school bus inspections. In addition, CVD provides commercial vehicle training in both classroom settings and online. "[These classes] won't train you to be a commercial vehicle inspector, but they will give you some basic knowledge so that when you make a traffic stop [of a commercial vehicle], you know what you are looking for."

CVD also offers on-scene post-crash investigation and follow-up investigation services. "We can sit down with individuals involved in a commercial vehicle crash and ask the hard questions," he explained. "We can provide all sorts of background information regarding the driver, the carrier, etc., which can be

helpful should criminal charges be filed," Davis said. The CVD can go back to the carrier to see how the driver was prepared for the road, look at maintenance and training records, conduct visual inspections of the vehicle and collect evidence, and create a report of its findings.

Sergeant Don Marose concluded the session by discussing the State Patrol's Drug Evaluation and Classification (DEC) program. Drug recognition experts (DRE) are highly trained in detecting and recognizing impairment caused by substances other than alcohol. Minnesota currently has 160 officers from 80 different departments trained in these skills.

The DREs follow a standardized systematic method for evaluating a person suspected of driving while impaired. The evaluation process is not a field test, but rather a post-arrest procedure that requires a controlled environment. And although DREs can't identify the exact drug causing impairment, they can identify impairment consistent with one of seven classes of drugs. "When you make a stop and you know a person is impaired but the Breathalyzer result is not consistent with alcohol impairment, we can come in and assess the individual to figure out what the person is under the influence of."

DREs perform various clinical and physical exams and administer a battery of psychomotor exams to identify the drug category or categories based on the observable indicators. As part of the process, DREs also interview the arresting officer and will further interview the suspect. "Suspects may not want to cooperate with [the arresting officer], but it's amazing what they will tell [DREs]," Marose said.

The last step in the process is obtaining blood or urine samples from the suspect under the implied consent statutes, for which a toxicological report will later be issued by the Bureau of Criminal Apprehension laboratory. The DRE will not make any assumptions or draw any conclusions until the evaluation procedure is complete, and then his or her conclusions are based on all of the evidence gathered during the evaluation.

"Suspects may not want to cooperate with [the arresting officer], but it's amazing what they will tell [DREs]."

– Sergeant Don Marose

For information on the State Patrol's Major Crash Reconstruction Team, visit www.dps.state.mn.us/patrol/distindex/investigativesvcs.htm.

For more information on flight services, call the Flight Section office at 651-296-3170, the East Metro Dispatch office at 651-582-1509, or visit www.dps.state.mn.us/patrol/distindex/flight.htm.

For information on commercial vehicle services, call 651-405-6171 or visit www.dps.state.mn.us/patrol/comveh/index.htm.

Information on the DRE program can be found at www.mspta.com/dre. For information on DRE School, Occupant Protection Usage and Enforcement (OPUE), and Standardized Field Sobriety Testing (SFST) training courses, visit www.dps.state.mn.us/patrol/general/sfstClasses.asp.

Crash Course in Safety Improvements

Mark Vizecky, Mn/DOT State Aid for Transportation Division

John Brunkhorst, McLeod County

Sue Miller, Freeborn County



Sue Miller

“We need to create the most forgiving roadways that we can.”

Mark Vizecky led the audience through a demonstration of the Minnesota Crash Mapping Analysis Tool (MnCMAT). The tool enables users to analyze crash data based on a number of attributes such as county, city, and accident case number.

MnCMAT is a GIS-based tool customized with 10 years of Minnesota’s automobile, bicycle, and pedestrian crash data. The software uses data filters to allow users to customize crash data searches to their requirements.

The tool was developed by Iowa State University’s Center for Transportation Research and Education in partnership with the Minnesota Local Road Research Board’s Research Implementation Committee (LRRB RIC). Mn/DOT State Aid also provided funding.

With the software, users can analyze crashes based on a number of crash attributes, including county, city, township, milepost, node, intersection (road-road, road-rail, road-river), DOT case number, and local law enforcement case number. The tool also lets users produce charts or maps to graphically view crash data and crash locations. Charts can be created according to various crash attributes, such as crashes by county, month, day of the month, day of the week, major cause, crash severity, manner of crash, surface conditions, and type of roadway. The software produces a color map with plotted crash sites, a series of charts based on crash attributes, and automated reports based on selected crash attributes.

Any government agency—city, county, or state—has access to the application, Vizecky said. Separate approval forms are required for agencies and their consultants. A disclaimer notes that the tool should be used for engineering judgment, not for absolute use, he added.

County engineer John Brunkhorst described the use of rumble stripes on a stretch of trunk highway in McLeod County. The edge line marking is painted on top of a rumble strip—creating a rumble “stripE.” The vertical face of the stripes provides better reflectivity than ordinary markings in wet weather.

Rumble stripes are one of many tools in the toolbox for engineers, Brunkhorst said, and are a good low-cost strategy. County commissioners are impressed with the stripes.

The stripes have some potential problems with noise, Brunkhorst noted—more so for metro counties. Bike and motorcycle safety could be another issue, but to date he has received no complaints.

A fatal crash in 2004 prompted Freeborn County to examine pavement edge drop-offs, county engineer Sue Miller said. The crash involved a 16-year-old driver who lost control of his vehicle, dropped off the road edge, overcorrected, and went off the opposite edge of the road. A passenger was ejected and killed. Even though the driver was speeding—and the victim had been sitting on the driver’s lap—forensics engineers in an ensuing lawsuit blamed the crash on the pavement edge drop-off. The moral of the story? “We need to create the most forgiving roadways that we can,” she said.

Freeborn County has many agricultural vehicles that need to move along the road edge. As they do so, they break off pavement edges. “It’s a big problem for us,” Miller said. “We have a lot of areas where we see scouring away from the edge of pavements... We fix it in the spring, and it’s back by fall.”

As part of its maintenance plan, the county checks roads prone to edge drop-off problems at least once each year. After the fatality, Miller said, the county looked for more proactive measures.

A Federal Highway Administration safety engineer suggested the safety edge, a tapered transition at the edge of the paved surface. This smooth edge allows drivers to keep from “scrubbing” tires against a vertical edge while regaining control, and instead lets them slide back up onto the road safely. The FHWA arranged a demo for the county of a device that attaches to the paver and carves a 45-degree-angle edge while compacting the asphalt. This downward pressure prevents the typical edge raveling, Miller said.

For more information about MnCMAT, visit Mn/DOT’s State Aid Web site: www.dot.state.mn.us/stateaid.

For more information regarding rumble stripes, download Mn/DOT’s July 2007 Technical Memorandum No. 07-09-T-03, *Edgeline Rumble StripEs Guidance for Rural Trunk Highways*, at www.dot.state.mn.us/tecsup/tmemo/active/tm07/09t03.pdf.

To learn more about the safety edge, see http://safety.fhwa.dot.gov/roadway_dept/docs/sa05004.htm.

2007 Star Award Presentations

Presenters: Bernie Arseneau, Minnesota Department of Transportation, and Cheri Marti, Office of Traffic Safety, Minnesota Department of Public Safety

The Star Awards are given to recognize excellence in child passenger safety, safe communities, law enforcement, and engineering.

2007 Star Award Recipients

Safe Communities

Douglas County Safe Community Coalition
Sherburne County Safe Community Coalition
Sterns County Safe Community Coalition

Child Passenger Safety

Organization: Miller Automotive Center
Professional: Kerry Ward, McLeod County Public Health
Volunteer: Amy Edwards, Monticello Hospital

Engineering

Wayne Fingalson, Wright County Engineer
Howard Preston, CH2M Hill

Special Awards to the Media

Trish Van Pilsum and Jeff Baillon, FOX TV-9 News
Rick Kupchella, KARE-11 TV News

Safe and Sober

Southern Minnesota

Officer: Lt. K.C. Reed, Rochester Police Department
Department: St. Peter Police Department

Northern Minnesota

Officer: Deputy Jon Karger, Otter Tail County Sheriff's Office
Department: Warroad Police Department

Metropolitan Area

Officer: Sgt. Dave Plucinak, St. Paul Police Department
Department: Anoka County Chiefs of Police Association



Bernie Arseneau (left) and Cheri Marti (right) present a Star Award for excellence in engineering to Howard Preston.

New this year: AAA Minnesota-Iowa donated TZD T-shirts for all conference attendees.

Closing Plenary—The Loss of a Child

David and Loni Kjos

On November 8, 2004, Kelsey Rae Kjos was killed when the car she was riding in rolled after the driver lost control and Kelsey was ejected from the vehicle. In the closing session, Kelsey's parents, David and Loni Kjos, described the devastating impact not wearing a seat belt had on their family, friends, and the community at large. They also discussed their ongoing efforts to get the Minnesota State Legislature to adopt a primary seat belt law.

At the time of her death, Kelsey was 17 and a high school junior. On that "beautiful" November day, as David describes it, Kelsey normally would have driven herself to school, but her car was in the shop being repaired. After school she caught a ride home with a friend, and rather than drive through town, they took a "quicker" county road that bypassed Alexandria. As they approached a curve from west to north, the tires hit the gravel shoulder. "The driver must have overcompensated, and the SUV rolled," David said. Kelsey's friend was wearing her seat belt; Kelsey was not. She was thrown from the vehicle, which landed on top of her.

The two girls were rushed to the Douglas County Hospital emergency room. At the hospital, David recalled, "Kelsey's friend had a broken finger. We didn't know at the time that the vehicle had rolled on top of Kelsey, so in the back of my mind, I really thought everything would be okay. Then we heard [the overhead page] 'Code Blue.' We were numb."

It was determined Kelsey would have to be airlifted to Hennepin County Medical Center in Minneapolis. Loni and David had made that trip before: in 2000, their son Grant, then 18, was injured in a crash on the same road as Kelsey. He had been wearing his seat belt, survived, and made a full recovery.

About 30 minutes into the trip to the Twin Cities to be with Kelsey, Loni and David were notified that she was deteriorating and the helicopter would stop in St. Cloud. When they arrived at the St. Cloud hospital, they were told the worst news they could imagine.

"The impact of one second changed our lives forever," Loni said. "Now we imagine, 'What if?' What if the state of Minnesota would adopt a primary seat belt law? I know that wouldn't bring Kelsey back, but it may help spare another family the anguish we have gone through."

"We are dealing with her death. But we will have a hole in our hearts forever." The four Kjos children, Loni said, had a



David Kjos



Loni Kjos

tight bond. "They were a pack. I miss the full circle at our backyard fire ring."

"Kelsey was mature beyond her years and packed a lot of life into her 17 years...She was known to be the gal with the smile," Loni continued. "Losing her has impacted us immensely. We have to come to grips with what will not be. We will not see her reach her dreams of becoming a film director. We will not meet her first love or walk her down the aisle...we have been robbed of so many family joys."

After their son's crash in 2000, the Kjos family became dedicated seat belt users, Loni explained. "If Kelsey had been wearing her seat belt, she would not have died. She always wore her seat belt, and we will never know why she wasn't wearing it that day."

In response to Kelsey's death, a group of her classmates at Alexandria's Jefferson High School launched the Klick-It-for-Kelsey campaign, selling green wristbands to raise money to educate young people about seat belt use. The group also presented to high schools and spoke with legislators. This campaign is now part of the Douglas County Safe Communities Coalition, which continues to work toward seat belt safety awareness and toward changing current seat belt legislation to a primary offense.

A primary seat belt law would permit a law enforcement officer to stop a vehicle and issue a citation for a seat belt violation when it's the only violation observed. The current seat belt law in Minnesota is a secondary law, meaning officers cannot stop people simply because they are not wearing their seat belt. The seat belt law is the only traffic law in Minnesota that is "secondary" in nature, and some experts say that upgrading the law to standard enforcement could save 55 lives and prevent 1,000 injuries annually in Minnesota.

"I have testified at our state capitol several times," Loni said. "And I will continue to do what I can to get the primary seat belt law passed. We need a strong movement in order to make changes in the current law. Approximately 71 percent of Minnesotans approve of a primary seat belt law, the current seat belt use in Minnesota is 84 percent...those numbers speak volumes. Why aren't the legislators getting the message?"

She speculates that one reason is because legislators receive more calls and letters against the passage of the bill. "The majority needs to unite and have a louder voice than that of the minority...we know that this law will pass someday, but every delay means more lives lost and more people critically injured."

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