

Researcher

TRANSPORTATION ISSUES IN **Public Safety**

**TTI takes a second look
at motorcycle safety**

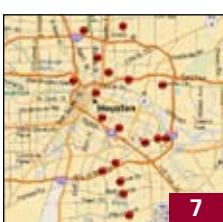




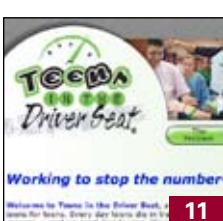
ON THE COVER: To address an alarming upward trend in motorcycling fatalities, the Texas Transportation Institute teamed with the Texas Department of Transportation and the Texas Department of Public Safety to develop a new statewide motorcycle safety awareness campaign.



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A PUBLICATION OF

**Texas
Transportation
Institute**
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Texas Transportation Researcher is published by the Texas Transportation Institute to inform readers about its research, professional and service activities. Opinions expressed in this publication by the editors/writers or the mention of brand names does not necessarily imply endorsement by the Texas Transportation Institute or The Texas A&M University System Board of Regents.

Texas Transportation Researcher (ISSN 00404748) is a quarterly publication of TTI Communications, Texas Transportation Institute, The Texas A&M University System, 3135 TAMU, College Station, Texas 77843-3135. For more information or to be added to the mailing list, contact the address below, call (979) 458-8834 or e-mail Nancy Pippin at n-pippin@ttimail.tamu.edu. Periodicals postage paid at College Station.

TTI.RESR0704.1007.3700

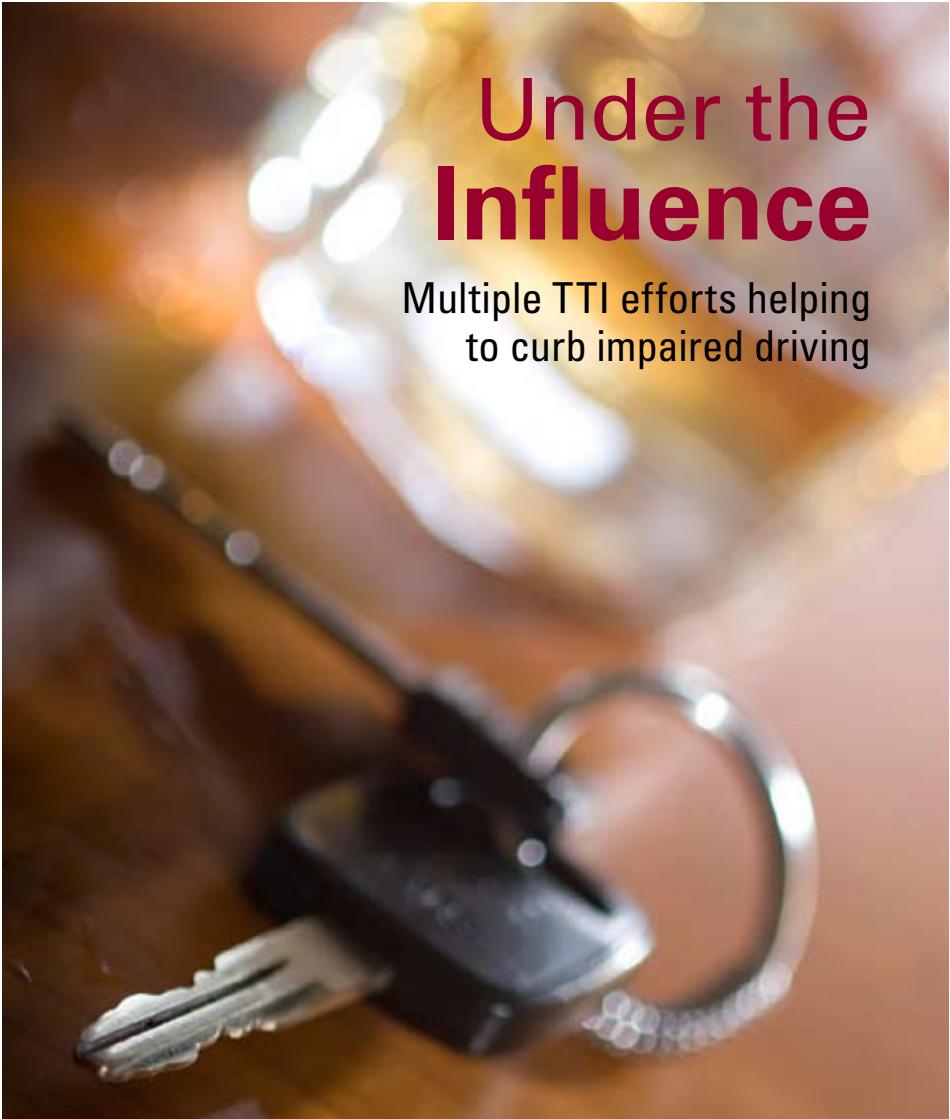
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Under the Influence

Multiple TTI efforts helping to curb impaired driving

The statistics are sobering: According to the National Highway Traffic Safety Administration (NHTSA), in 2005 there were 1,569 alcohol-related traffic deaths in Texas. Nearly half of all total traffic deaths in the state were alcohol-related. If eleven 737 passenger jets filled to capacity crashed with no survivors, the number of casualties would still not come close to those killed in alcohol-related vehicle crashes.

Though alcohol-related deaths in Texas and across the country are not a new problem, the need to act is more urgent than ever. Researchers at the Texas Transportation Institute (TTI) are working with staff from the Texas Department of Transportation (TxDOT) and other agencies on several projects to address the problem of driving under the influence.

"A significant TxDOT project is establishing the Texas Statewide Impaired Driving Working Group (TSIDWG)," says TTI Research Scientist Melissa Walden.

The TSIDWG is a multi-disciplinary working group that acts as a strategic planning body in the area of impaired driving program development. As subject matter experts, group members provide input and recommend changes to the Texas Impaired Driving Program. In order to ensure the products of the group are beneficial, TTI coordinates the TSIDWG and develops policy statements along with data analysis.

"The most important thing about this group is that we take a holistic ap-

proach toward looking at impaired driving. We include the entire process from enforcement, prosecution, adjudication, licensing, community involvement as well as state law," says Walden.

The group is also working to develop a training course curriculum to update police officers about methods of conducting standardized field sobriety tests. A newly enacted state requirement mandates that law enforcement officers must undergo training every two years to maintain their certification as a Standardized Field Sobriety Testing (SFST) instructor, but currently there is no standardized training course available for officers. Working with TxDOT, TTI will bring together experts to develop a training course that can be used by law enforcement agencies throughout the state.

TTI is also assessing the operation of the current alcohol ignition interlock program in Texas. An ignition interlock is a system that tests for alcohol on a driver's breath. It requires a vehicle operator to blow into a small, handheld alcohol sensor that is attached to a vehicle's dashboard. The car cannot be started if the driver's blood alcohol content is above the legal limit. Although ignition interlocks have been in use in Texas for many years, a comprehensive evaluation of the program has not been conducted.

TTI is also working with Sam Houston State University to deploy and evaluate a new program called the Advanced Roadside Impaired Driving Enforcement Program (ARIDE). "This program is a step beyond the SFST program and helps officers recognize signs and symptoms associated with drug impairment that they may be observing in the field," says Walden. "This knowledge will allow the officer to make an informed decision as to what type of test (breath or blood) should be administered. All of these initiatives are deployed to help reduce the number of impaired driving crashes in the state each year."



MORE INFORMATION
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Legislature Clarifies Reporting Requirements for Fatal Crashes

In 1948, the Texas Legislature recognized the need to keep records of motor vehicle fatalities when it passed a law requiring Texas coroners to report all traffic fatalities to the Texas Department of Public Safety (DPS). But when Becky Davies, research scientist with the Texas Transportation Institute (TTI), began investigating alcohol-involved traffic fatalities in 1995, finding reliable data on blood alcohol concentrations (BACs) proved difficult. The records from the Texas Accident Database, established in 1975, contained only minimal identifying information for attempting to obtain missing BACs. With only the county where the crash occurred, the age and gender of the deceased and the date of death to use in the search, Davies' role as an investigator took on a new dimension.

"I felt like Sherlock Holmes at times," admits Davies. "I had to track down data from hard-copy files in medical examiner (ME) offices around the state. I reconciled the state's minimal data with

Improved reporting means better data that can then be used in developing better countermeasures to discourage driving after drinking. Moreover, the means of evaluating reliable data will improve the effectiveness.



ME records to find out whether alcohol was a factor when those people perished in the crashes."

There are several reasons why it's so hard to find data regarding alcohol-related deaths. First, the original 1948 law was vague, failing to require what data elements to capture. Second, the law was never updated when, in 1955, the new system replaced the outdated coroner system in Texas. And third, many of those officials who were required to report the data were entirely unaware of the law.

To help increase awareness of the BAC-reporting problem, TTI's Center for Transportation Safety held workshops in 2002 and 2003 that brought stakeholders in the process together. The center's efforts helped BAC reporting increase by 66 percent—from 33 percent in 2002 to 55 percent in 2004. Still, that means that nearly 50 percent of reports of fatalities involving alcohol fail to include BAC levels in the data collected.

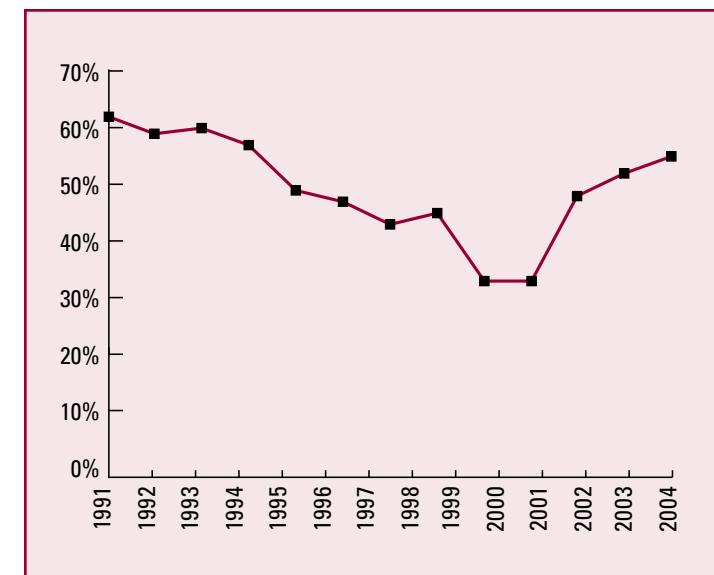
"This is why TTI's Center for Transportation Safety exists," explains Dave Willis, then center director. "By bringing together different agencies sometimes isolated by bureaucracy, as these workshops did, safety can be significantly improved."

The network for reporting traffic fatalities in Texas is complex. Law enforcement officers at the scene gather information about the crash, but often fail to report the BAC results. There are 13 ME offices in 15 counties; 900 justices of the peace (JPs) in the remaining 239 counties; and one DPS Crash Records Bureau. For the 36 percent of fatalities that occur in a county with an ME office, the body is transported for autopsy and toxicology screening. The other 64 percent of crashes occur under a JP's jurisdiction, and often the JP does double duty as county coroner. Whether or not a body is autopsied and screened for a BAC level often depends on the county funds available.

In 2006, Davies was awarded an interagency contract from the Texas Department of Transportation (TxDOT) to study this issue. A survey revealed that 53 percent of JPs were unfamiliar with the reporting requirement, and 28 percent didn't even know such laws existed. Additionally, some 62 percent of ME offices failed to comply with the law. Davies enlisted a number of allies from around the state, including Sarah Kerrigan, forensic toxicologist, and Kim Frazier, lead coder for NHTSA's Fatality Analysis Reporting System (FARS) at DPS. The study's results helped inform concerned lawmakers, and House Bill 423—which clarifies reporting responsibilities and requirements—passed the Texas Legislature in June 2007.

"The purpose of HB 423 is to ensure that policy-makers have the necessary data to implement measures to save lives," says Texas State Representative Frank Corte.

Why all this concern over BACs and data collection? Improved reporting means better data. And better data



The Rate of Reporting the Blood Alcohol Concentration (BAC) Test Results for Fatally Injured Drivers in Texas (1991-2004)

can be used to develop better countermeasures to discourage driving after drinking. Moreover, the means to evaluate the effectiveness of those countermeasures will also be improved with reliable data. Though the left side of the equation is complicated, the right side is fairly simple: lives can be saved if people can be deterred from drinking and driving.

"Texas is very fortunate to have the strong partnership between TxDOT and TTI," observes Judy Allen, TxDOT's alcohol programs manager. "This effort provides another example of how our teamwork can improve safety for Texans."



MORE INFORMATION

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The Next Step

"Getting the law passed was a big step in the right direction, explains Becky Davies, research scientist with the Texas Transportation Institute (TTI). "The challenge ahead is informing agencies of the new law and their responsibility for reporting BAC information to the Texas Department of Public Safety (DPS)."

Reducing the costly and time-consuming practice of sending hundreds of requests for BACs missing from the DPS database each year is a primary goal. A 2008 contract between TTI and the Texas Department of Transportation (TxDOT) will ensure the new law is included in the JP curriculum taught by the Texas Justice Court Training Center. In addition, ME offices will receive specific instructions for sending toxicology results to DPS as required.

"Understanding the data, and having a complete picture of the role of alcohol in fatal crashes is key to implementing new policies and procedures that will improve traffic safety," states Dr. Sarah Kerrigan, director of Sam Houston State University's Forensic Science Program and a member of Davies' team.

The PEMS device, shown in the three photos to the right, allows researchers to gather emissions data during real driving conditions. (below) An 18-wheeler speeds around the nine-mile test track at the Pecos Research and Testing Facility.



High-Speed Testing

TTI's research yields new models for vehicle emission rates

Air pollution is a serious problem in the state of Texas. Children, the elderly, those with respiratory illness and those who work and exercise outdoors are at highest risk of developing medical complications — coughing, throat irritation and pain when breathing — often exacerbated by air pollution. An important source of air pollution is vehicle emissions, so accurate data about those pollutants is critical in understanding their impact and developing control strategies.

Researchers at the Texas Transportation Institute (TTI) recently completed a project aimed at measuring vehicle emissions from light-duty passenger cars, medium-duty trucks and 18-wheelers traveling upwards of 80 miles per hour. The project was sponsored by the Houston Advanced Research Center (HARC), Texas State Legislature and the Mid-Atlantic University Transportation Center (MAUTC).

"Current modeling provides emissions estimates for vehicles representing travel at only up to 65 miles per hour," says TTI Director of the Center for Air Quality Studies Joe Zietsman. "Because of the trend of higher speed limits on Interstates in rural areas and the anticipated higher speed limits for proposed highways like the Trans-Texas Corridor, there was a need to better

understand emissions at higher speeds."

TTI's Pecos Research and Testing Center was used the first week of March for the vehicle emissions testing phase of the project. The nine-mile, three-lane circular track that surrounds the facility was an ideal location for conducting the tests. A research team from TTI's Center for Air Quality Studies equipped the vehicles with its recently acquired Portable Emissions Measurement System (PEMS) device to gather data during real driving conditions.

"The PEMS unit has allowed us to conduct cutting-edge research by testing emissions during real driving conditions at higher speeds and has been used on six projects to date," says Zietsman.

Using the data gathered from the vehicle testing, the research team was able to create reliable estimations of emissions

"Because of the anticipated higher speed limits for proposed highways like the Trans-Texas Corridor, there was a need to better understand emissions at higher speeds."

TTI Director of the Center for Air Quality Studies Joe Zietsman

for vehicles traveling at a high rate of speed. The findings from the study will enable transportation and air quality planners to more reliably assess impacts associated with high-speed operation already existing on freeways and tollways, as well as future facilities that will begin to appear in metropolitan transportation plans in the near future. □



MORE INFORMATION

For more information, please contact Joe Zietsman at (979) 458-3476 or zietsman@tamu.edu.

Other key members of the TTI research team include Assistant Research Scientists Mohamadreza Farzaneh, Doh-Won Lee and Edward Brackin.

Minimizing Train Delays Can Improve Mobility, Safety at Rail Grade Crossings

Everyone's been delayed by a train at a roadway crossing. Usually, you're in your car, tapping your fingers. But if you were standing at the crossing and the train was actually stopped, wouldn't you be tempted to step between the cars and be on your way?

If you said yes, you would not be alone. Stories have circulated around Houston for years about people—particularly children—crawling between train cars to get through a blocked intersection. The situation presents an obvious safety hazard, not to mention potential liability issues for the railroad and agencies responsible for managing the crossing. Preventing individuals from walking between the cars is a tall order, so Texas Transportation Institute (TTI) Associate Research Scientist Darryl Puckett took a different course to address the problem.

"We decided to focus on the situation that enables the behavior rather than the behavior itself," explains Puckett. "The problem occurs when the train is stationary, so we looked at how to minimize train stoppages at rail grade crossings."

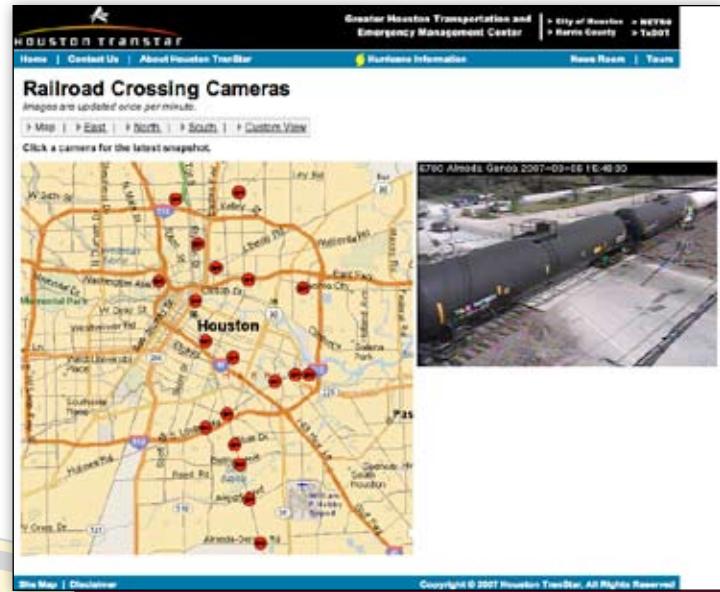
With the help of the City of Houston and Houston TranStar, TTI researchers monitored 19 crossings around the Houston area identified by the public as being problematic for stopped trains. Since many of these crossings are near schools, safety is compromised when children crawl through the cars to or from school. And, if a crossing is blocked, fire, police and emergency medical services (EMS) personnel must either wait for it to clear or find an alternate route. Actively monitoring these sites and im-

plementing long-term improvements that minimize delays could enhance response time for first responders as well.

"We are adapting the traffic management system model implemented on Houston's freeways," explains Jack Whaley, director of Houston TranStar, the region's transportation and emergency management center. "As with the freeways, we believe that monitoring railroad crossings can improve mobility, as well as safety."

In its initial stages, the project developed a Web site where images of the crossings could be monitored by the Union Pacific dispatcher in Spring, Texas. It was envisioned that knowledge of the blockages could be used to bring resources to bear in clearing problem locations.

A prototype Web site was created to notify Houston Police Department (HPD) dispatchers of crossing blockages. When a crossing is blocked, the symbol on the site for that intersection changes from green to red, signifying that the crossing arms are down. After 10 minutes of continuous delay, the HPD dispatcher receives notification of the problem, and an officer can be sent to the location to investigate. The railroad involved is also notified. With that data, traffic management personnel can immediately contact the proper authorities to clear the cross-



Railroad Crossing Cameras are updated once every minute at <http://traffic.houstontranstar.org/cctv/railroad/>

ing in the short term, while railroad personnel can assess it for long-term improvements. And, as with the freeway system already in place, the public is granted access to the Web site to use in facilitating their commute.

Puckett and his team recommended an expanded field test of the prototype Web site to eight locations to gather more data and further assess the effectiveness of the notification system in reducing the number of delayed trains. Other data, such as the extent of delays for emergency response personnel and the number of individuals walking through stopped trains, could also be gathered.

"TTI's research can help us prioritize rail grade crossings that are particularly troublesome," says Whaley. "With this data and through future expansion of the monitoring program, we have the potential for improving safety near schools, reducing EMS response time and improving mobility for commuters in one fell swoop."



MORE INFORMATION

For more information, please contact Darryl Puckett at (713) 686-2971 or d-puckett@tamu.edu.

Other key members of the TTI research team include Senior Systems Analyst Mike Vickich and Research Scientist Leonard Ruback.

Now Look Again...

TTI takes a second look at motorcycle safety



In 1969, a man and his motorcycle went in search of America. The classic film Easy Rider featured actor Peter Fonda, his "Captain America" chopper and more than a sprinkling of alternative culture. Years later, riders inspired by the film are facing challenges that neither cinema nor celebrities talked about much back then. Motorcycling has never been more popular than it is today—and it's never faced tougher times.

Nationally, motorcycle deaths are up for the ninth year in a row, totaling more than 4,810 in 2006. While they only comprise a small fraction of road users, motorcyclists now account for 11 percent

"With the growing popularity of motorcycling, it is more important than ever for drivers to share the road with motorcyclists.

Educating both motorcycle riders and vehicle drivers is essential to improving motorcycle safety and saving lives."

Carlos Lopez, director of TxDOT's Traffic Operations Division

of all traffic fatalities. Preliminary 2006 data from the National Highway Traffic Safety Administration shows that every category of driving fatalities has decreased compared to last year—except for one: motorcycles.

Texas has one of the largest motorcycling populations in the United States and more than its share of fatal motorcycle crashes. According to Fatality Analysis Reporting System (FARS) data, 360 motorcyclists were killed in Texas in 2005, a 24 percent increase in fatalities over the previous year.

To address an alarming upward trend in motorcycling fatalities, the Texas Department of Transportation (TxDOT) teamed with the Texas Department of Public Safety (DPS) and the Texas Transportation Institute (TTI) to de-

velop a new statewide motorcycle safety awareness campaign.

"We are pleased to be working with TTI in their efforts to create messages to inform both riders and car drivers on ways to improve motorcycle safety and ultimately lower rider deaths and injuries," says Clif Burdette, coordinator for DPS Motorcycle Safety Unit. "The materials will address the importance of getting riders properly trained, driver awareness of motorcycles, as well as the dangers of riding impaired. It was in the early 1990s that the existing materials were produced, so we look forward to having updated brochures and billboards to get the word out about motorcycle safety and help reduce motorcycle-related crashes, injuries and fatalities in Texas."

TTI Associate Research Scientist Patricia Turner leads TTI's project to develop the new motorcycle safety public awareness campaign.

"Because no motorcycle safety materials have been developed in Texas since the early 1990s, we knew we needed a comprehensive motorcycle safety public awareness program," says Turner.

Take a look at the problem

Texas in 2005*:

- The state has one of the largest motorcycle populations in the country.
- Motorcycle-related deaths jump 25 percent over the previous year.
- Registrations grow by 15 percent (a measure of riding popularity).
- Forty-two percent of riders killed in crashes test positive for alcohol.
- Nearly 60 percent of riders involved in fatal crashes were riding without a helmet.

* NHTSA preliminary Fatality Analysis Reporting System data

Nationally in 2006**:

- Total traffic deaths drop to their lowest level in five years; motorcycle rider deaths are up for the ninth consecutive year. They now account for 11 percent of all traffic fatalities, exceeding even pedestrian deaths for the first time in more than 30 years.

** NHTSA July 2006 "Traffic Safety Annual Assessment—a preview"

Take a look at the Texas solution

Research conducted at TTI and elsewhere shows that rider inexperience, alcohol and drugs, speeding and driver and rider inattention are key factors in crashes that result in fatalities for motorcyclists. New safety campaign materials have been tailored to address these factors.

Structured around a new "Look. Learn. Live." logo, the campaign includes a new Web site and several brochures. Each brochure focuses on a different topic, including safe driving practices necessary for avoiding injuries to motorcyclists (Look), general tips about safe motorcycling (Learn) and information about riding impaired (Live). The goal of the motorist awareness brochure is to let drivers know how hard it can be to see a motorcycle and to detail some of the special challenges motorcyclists face, like bad weather and road conditions. A simple puddle can spell disaster for a motorcycle.

The brochure series accompanies a comprehensive new Web site that will cover a host of related themes and serve as a central clearinghouse in Texas for



information motorcycle enthusiasts need, like information about *The Course for Motorcycle Riders* and where to take it, safety tips and links to other resources.

As the statewide motorcycle safety campaign rolls out in the fall of 2007. Texans will see new brochures, a Web site with a little "motorcycle attitude" mixed in with safety messages and public service announcements (PSA). They may even hear a radio PSA as they pass a billboard that displays a motorcycle safety message.

Research conducted at TTI and elsewhere shows that rider inexperience, alcohol and drugs, speeding and driver and rider inattention are key factors in crashes that result in fatalities for motorcyclists. New safety campaign materials have been tailored to address these factors.

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for Motorcycles

Save a Life

LookLearnLive.org

TOLL FREE (800) 292-5787

Drink. Ride. Lose.

Save a Life

LookLearnLive.org

TOLL FREE (800) 292-5787

Take the Time
Take The Course
Take the Road

Save a Life

LookLearnLive.org

Campaign billboards

"Someone dies nearly every day riding a motorcycle in Texas," says Carlos Lopez, director of TxDOT's Traffic Operations Division. "More than 90 percent of crashes involving motorcycles results in death, or some level of injury, to the motorcyclist. We are reminding drivers to be on the lookout for motorcyclists, especially at intersections where many crashes occur. With the growing popularity of motorcycling, it is more important than ever for drivers to share the road with motorcyclists. Educating both motorcycle riders and vehicle drivers is essential to improving motorcycle safety and saving lives."

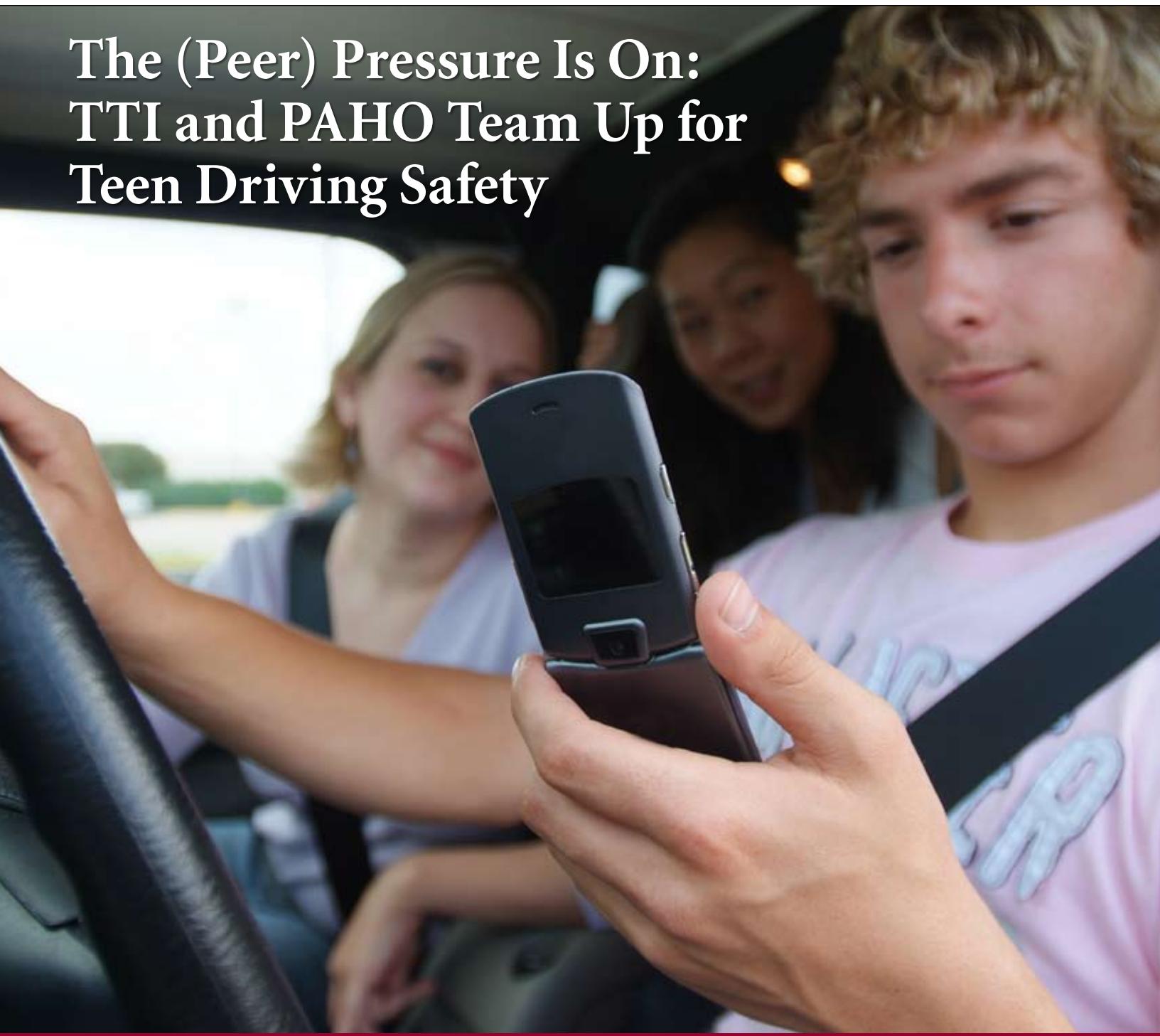


MORE INFORMATION

For more information, please contact Patricia Turner at (979) 458-2619 or p-turner@tamu.edu.

To visit the new, statewide motorcycle safety Web site, see: www.looklearnlive.org/.

The (Peer) Pressure Is On: TTI and PAHO Team Up for Teen Driving Safety



Cell phones are the latest threat to safe teen driving.

New international initiatives are focusing on the need to improve teen driving safety. Three months after the April 2007 WHO conference, 11 mayors of cities from Mexico, Texas and New Mexico signed a declaration committing themselves to improving traffic safety.

Week after week, the headlines read something like this: Four Teens Die after Collision with SUV, Nighttime Crash Kills Three Teenagers or Text Messaging Blamed for Deadly Crash. Despite the epidemic of teen deaths on the world's roadways, a global approach to addressing the tragedy has not been pursued—until now.

In April 2007, the World Health Organization (WHO) held the First United Nations Global Road Safety Week and issued a report called Youth and Road Safety. The report was staggering: 400,000 young people under the age of 25 die in road crashes worldwide every year.

Recognizing teen driving safety as a growing problem back in 2001, the Texas Transportation Institute (TTI) developed a driver safety awareness program called Teens in the Driver Seat (TDS), which is run by teens for teens. For example, to more effectively get the message out to their peers, teens themselves direct the content for the program's website (<http://www.tdriver.com/main.htm>). The site emphasizes driving advice and learning, and it provides teens with a forum to use in educating one another about their experiences on the road. For once, peer pressure is a good thing.

The TDS program's efforts are catching on. New international initiatives are focusing on the need to improve teen driving safety. Three months after the April 2007 WHO conference, 11 mayors of cities from Mexico, Texas and New Mexico signed a declaration committing themselves to improving traffic safety. This was a bi-national collaborative effort organized by a team of local government personnel on both sides of the border. They were supported by the Pan American Health Organization (PAHO), especially Maria Teresa Cerqueira, chief of the El Paso Field Office for PAHO, and Piedad Huerta, health promotion office for PAHO. Huerta was directly responsible for obtaining the July 9, 2007, declaration for the Paso del Norte region. This coalition has learned about the TDS Program and has endorsed it as the primary focus of this year's safety outreach efforts in the region.

"Teen driving deaths and disabilities are a worldwide problem that we all need to address," says Cerqueira. "By working together, I think we can be much more effective."

Coordination of public outreach and interaction with the media for TDS is led by TDS Public Affairs Director Bernie Fette. "The students conduct news conferences and school assemblies to let the media and fellow students know about the



Dr. Maria Teresa Cerqueira of the Pan American Health Organization, along with TxDOT Commissioner Hope Andrade, State Rep. Patrick Rose and TDS team members from Hays High School in Buda, Texas.

program. With technical support from TTI, the student leaders produce videos and public service announcements and place posters in their schools."

The program helps develop leadership skills among teens and helps foster a sense of community service. "We work with the students to train them in some basic public speaking skills and interaction with the media as part of the support we provide," says Fette. Items handed out to the students, such as wrist bands, key chains and air fresheners, serve as constant reminders that getting behind the wheel is serious business.

"This peer-to-peer approach has been highly successful in expanding the focus on the primary causes of the 6,000 annual teenage-driving deaths in the United States," explains Russell Henk, TTI's director of the TDS Program and division head for TTI's implementation offices in El Paso and San Antonio, Texas. "A common misconception is that the highest risk is drinking and driving when, in fact, speeding, driving at night and the use of wireless devices by the driver are greater risks for teens. The TDS program is, by design, simple but effective. We provide the teens a variety of tools and materials to help them spread the word among themselves about these avoidable behaviors, and it saves lives."

So far Teens in the Driver Seat has been deployed at over 60 Texas high schools and is now active in Georgia. At least two other states are in discussions about implementing TDS in their schools. And now, with the help of PAHO/WHO, the peer-to-peer driver awareness program is growing internationally, starting with Mexico.

"We are preparing the agreement between PAHO and TTI to implement a bi-national program in the Paso del Norte region based on Teens in the Driver Seat. We'll share the model with other countries at an international conference in Merida, Yucatan, Mexico, in March 2008," says Cerqueira. ■

To more effectively get the message out to their peers, teens themselves direct the content for the program's website, <http://www.tdriver.com/main.htm>.



MORE INFORMATION

For more information, please contact Russell Henk at (210) 979-9411 or r-henk@tamu.edu or Bernie Fette at (979) 845-2623 or b-fette@tamu.edu.



Step Lively

*Award-winning research
means safer ways to cross the street*

Why did the citizen cross the road? And more importantly, did he or she make it to the other side unscathed? Whether we're after a cup of coffee and a croissant or sprinting for the bus, crossing busy streets is an everyday part of urban life.

Researchers at the Texas Transportation Institute (TTI) are studying ways to save the lives of the 5,000 pedestrians we lose nationwide every year. In 2006, TTI completed a project with joint funding from the National Cooperative Highway Research Program (NCHRP) and the Transit Cooperative Research Program (TCRP) to study solutions and make engineering recommendations for pedestrian safety.

"Improving Pedestrian Safety at Unsignalized Crossings – produced through a joint TCRP and NCHRP collaboration – provides considerable information, useful guidance and

tools for those interested in improving pedestrian safety at unsignalized crossings," says Christopher Jenks, director of Cooperative Research Programs, Transportation Research Board. "The report is a testament to the cooperative research process that takes advantage of experts to help develop near-term, practical solutions to problems facing transportation agencies."

The joint funding between NCHRP and TCRP allowed researchers to study pedestrian safety with an eye toward transit. Bus riders trying to get to their bus stops may have to make a difficult decision to cross the street without a



To increase pedestrian safety at school crossing locations, the city of Tucson, Ariz., developed a traffic signal called the HAWK (High-intensity Activated crossWalk). The HAWK (shown above) uses traditional traffic and pedestrian signal heads but in a different configuration. It includes a sign instructing motorists to "stop on red" and a "pedestrians" overhead sign. There is also a sign informing pedestrians on how to cross the street safely.



A pedestrian crossing in Los Angeles, Calif., with overhead yellow flashing beacons.

signal, or walk several blocks in the wrong direction to find a signal—something many pedestrians aren't likely to do.

"We're looking at ways that we can help people get across streets, particularly at locations that don't have traffic signals," says Shawn Turner, TTI associate research engineer. "We studied a variety of different types of signs, pavement markings and traffic and pedestrian control devices."

The research team, lead by Research Engineer Kay Fitzpatrick, studied 42 sites in seven states to determine how cities and municipalities handled pedestrian crossings at unsignalized crossings.

"The innovative research done by TTI helps the traffic engineering profession develop solutions to the nation's pedestrian safety problems."

*Richard B. Nassi
 Transportation Administrator
 City of Tucson, Arizona*

Change for the better

"One of the project's objectives was to look at the pedestrian signal warrant and to develop recommendations for changes," says Fitzpatrick. Warrants are conditions that must be met before an engineer considers installing a traffic signal.

"Our new warrant recommendations were approved for the upcoming edition of the Manual of Uniform Traffic Control Devices (MUTCD)," says Fitzpatrick. "We also recommended a new device for use at pedestrian crossings. Our research found that a pedestrian beacon (similar to a traffic signal, but with a slightly different light sequence and configuration), will cause a high percentage of drivers to yield to pedestrians—as high as 99 percent at some intersections." The pedestrian beacon is modeled on the "High-intensity Activated crossWalk," or "HAWK" device developed by Transportation Administrator Richard Nassi for use in Tucson.

Researchers evaluated an interesting variety of pedestrian crossing devices, from the technologically sophisticated HAWK



In Salt Lake City, Utah, highly visible orange flags are made available for pedestrians to use when crossing certain intersections.

system (see picture) to a simpler system of brightly colored flags pedestrians can use to alert drivers that they are ready to cross the road.

"We looked at nine different devices to improve pedestrian safety," says Turner. "We also created guidelines that engineers could use to identify appropriate devices for a crossing."

And the winner is...

The Institute of Transportation Engineers (ITE) recognized the importance of the "Improving Pedestrian Safety at Unsignalized Crossings" project in August of 2006 by awarding TCRP and NCHRP the Transportation Achievement Award for Pedestrians. ITE deemed the work a valuable tool to aid transportation professionals in selecting pedestrian treatments. ITE also recognized the importance of the recommended guidelines, which included a hierarchy of treatments and provided a logical process for selecting treatment types.

"The value of the report is that it finally provides guidance on which treatments are the most effective and should be considered to improve safety at uncontrolled crossings where there is no stop sign or traffic signal and people are trying to cross," says Nazir Lalani, deputy director of the transportation department for Ventura County, Calif. ▀



MORE INFORMATION

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To access the report referenced in this article, please visit:
http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_562.pdf.

TTI Shines at ITE Annual Meeting

The Texas Transportation Institute's Brian Bochner, Scott Cooner and the Teens in the Driver Seat (TDS) program were recognized with major honors at the Institute of Transportation Engineers (ITE) 2007 Annual Meeting and Exhibit in August in Pittsburgh, Pa.

Bochner, a senior research engineer with the Center for Air Quality Studies and the System Planning Program, was elected as an honorary member of ITE's International Board of Direction, ITE's highest recognition of notable and outstanding career achievement in transportation.



Senior Research Engineer Brian Bochner (r) is awarded his honorary membership plaque at the ITE Annual Meeting.

Bochner becomes one of only 75 honorary members since the program began in 1933. ITE currently has 17,000 members. "This is a great honor of which I am very proud, but my transportation engineering accomplishments have resulted from a labor of love for the profession," he said. "Transportation has been very good to me and extremely enjoyable, too."



Cooner, program manager with System Operation Management, was the recipient of the Traffic Engineering Council Outstanding Paper Award for his work entitled Operational and Safety Guidelines around Schools in Texas. "This is recognition for a subject that hits home with a lot of people, not only in Texas but across the country," Cooner said.

"I am very pleased and honored."

Also receiving national recognition was TTI's TDS program. Director Dennis Christiansen accepted the ITE Transportation Achievement Award in Safety on behalf of the Institute. In recognizing the program, ITE officials said, "It is America's first peer-to-peer safety program for young drivers. Unlike other safety programs, TDS involves the teen audience directly in both the development and the delivery of safety messages, empowering young people to make a difference and save lives."

TTI Senior Research Engineer Kay Fitzpatrick and Bochner helped a consultant and the Massachusetts Highway Department develop the 2006 MassHighway Project Development and Design Guide, which was honored with the All Users Transportation Achievement Award. ■

2nd Annual Texas Transportation Forum Convenes in Austin

Considering the many challenges facing transportation professionals, "Keep Texas Moving" was an apt theme for the second annual Texas Transportation Forum held in Austin on July 18-20.

The conference – hosted by the Texas Department of Transportation (TxDOT) and co-sponsored by the Texas Good Roads/Transportation Association, the Associated General Contractors of Texas and the Texas Transportation Institute – sparked ideas, the sharing of knowledge and the uniting together toward a common goal of improving the transportation system in Texas.

Among the topics that emerged from the two-day conference included the increase in freight movement, the need for creative financing and updates on the proposed Trans-Texas Corridor.

Keynote speaker and expert on commuting issues Alan Pisarski offered insights on America's unique

challenge, calling it the "tyranny of distance." Amtrak Chairman David Laney called for multimodalism to stay ahead of the competition.

In his keynote speech, Governor Rick Perry stressed the importance of teamwork and the need for using innovative financing tools to build and maintain the roadways. "We can get there from here and we are going to do it together," said Perry.

Several of the speakers also praised outgoing TxDOT Executive Director Michael Behrens for his 37 years of service to the state of Texas. Behrens retired at the end of August. ■



Texas Governor Rick Perry delivers the keynote address at the Texas Transportation Forum.

Fighting Traffic Congestion with Teamwork

United States Representative Chet Edwards was in College Station at the Texas Transportation Institute (TTI) August 27, announcing he has secured another \$600,000 for a Transportation Management Center (TMC) that could become a model for other small to mid-size towns facing congestion and other traffic problems.

Edwards made the announcement at TTI's Translink® Laboratory, which might be used as the center's headquarters. Edwards told reporters that such a center would "improve the quality of life and boost economic growth."

The TMC could be used to monitor traffic with cameras set up in key locations in the community. It would also help with the coordination of traffic signals, data collection and special events planning. Bryan-College Station traffic is especially congested during the numerous Texas A&M sporting events throughout the year.

TTI Associate Agency Director Bill Stockton echoed Edwards' comments about teamwork on the project. "The public really doesn't care if they're on a state road or a city of College Station road or a road in Brazos County. We want to make travel in our area seamless, and that can happen if all the entities work together." ■



U.S. Representative Chet Edwards (center) conducts a news conference at TTI's Translink® Laboratory with (from L to R) Brazos County Judge Randy Sims, Bryan Mayor Mark Conlee, College Station Mayor Ben White and TTI Associate Director Bill Stockton.

TTI Welcomes UT and Colombia Visitors

Three professors from Colombia who have an interest in transportation safety were treated to a tour of the Texas Transportation Institute (TTI) on August 20, complete with overview presentations and a cable barrier crash test. The three educators from Pontificia Universidad Javeriana in Bogota, Colombia, were brought to TTI by the director of the Southwest Center for Occupational and Environmental Health (SWCOEH), Sarah Felknor. SWCOEH is affiliated with The University of Texas School of Public Health at Houston.

"The visitors from Colombia are in Texas as part of an international training grant awarded to SWCOEH that emphasizes highway safety and traffic injury prevention, so TTI was

a perfect fit," Felknor said. "The Institute really came through for these visitors, who now have a great understanding of what you are doing in the transportation safety arena. They could not have been treated better."

TTI's Center for Transportation Safety (CTS) organized the visit and planned the agenda. "It was our pleasure getting to know the concerns of transportation professionals from other countries," said CTS Director John Mounce. "This visit could lead to a working relationship with not only the Southwest Center for Occupational and Environmental Health and The University of Texas, but with Colombia as well." ■

Texas Joins Deer-Vehicle Crash Reduction Research

With fall fast approaching, TTI Associate Research Scientist Keith Knapp, director of the Deer-Vehicle Crash Information and Research Center, has new reason for optimism about his work. "Last month, Texas joined the other members of our pooled-fund study that focuses on the information exchange and research needed to curtail the number of deer-vehicle crashes," said Knapp. TxDOT's Environmental

Affairs and Maintenance divisions have representatives participating in the pooled-fund technical advisory committee. Fall is the "rut" or mating season for deer species, when many deer-vehicle crashes occur. There are an estimated one million deer-vehicle crashes each year in the United States, costing an estimated \$1 billion. ■

Zietsman Named Center Director for Air Quality Studies



Joe Zietsman, associate research engineer in the Texas Transportation Institute's (TTI) Center for Air Quality Studies, has been promoted to center director effective immediately. Zietsman takes over the helm from Brian Bochner, who continues as manager of the System Planning Program and who will continue to be heavily involved in TTI's air quality research.

Zietsman has been a TTI employee since 1998, receiving numerous accolades for his research projects covering areas of air quality, sustainable transportation, performance measurement and transportation planning. He is currently principal investigator of several projects including a \$3 million U.S. Environmental Protection Agency project that involves the development of a national deployment strategy for truck stop electrification, emissions testing of 2007 model year trucks and actual deployment of truck stop electrification. ■

TECHNICAL REPORTS

"Establish Guidance for Soils Properties-Based Prediction of Meander Migration Rate," by Jean-Louis Briaud, **0-4378-1**, May 17, 2007.

"System for the Evaluation of Moisture Damage Using Fundamental Material Properties," by Jonathan Howson, **0-4524-1**, May 25, 2007.

"Implementation Plan for Use of Surface Energy Measurements to Select Materials Resistant to Moisture Damage," by Eyd Masad, **0-4524-P3**, June 15, 2007.

"MRADAR," by Wenting Liu, **0-4577-P7**, July 27, 2007.

"The Development of Non-Proprietary Underground Stormwater Quality Structures," by Harlow Landphair, **0-4611-1**, July 6, 2007.

"Polymer Modified Asphalt Durability in Pavements," by Won Jun Woo, **0-4688-1**, August 16, 2007.

"Guidelines for Dual-Advisory Speed Signing on Freeway-to-Freeway Connectors in Texas," by Anthony Voigt, **0-4813-1**, August 20, 2007.

"Perpetual Pavements in Texas: The Fort Worth SH 114 Project in Wise County," by Lubinda Walubita, **0-4822-2**, August 6, 2007.

"Evaluation of Ride Specification Based on Dynamic Load Measurements from Instrumented Truck," by Emmanuel Fernando, **0-4863-2**, May 14, 2007.

"Guidelines on the Use of Fog Seals and Rejuvenator Seals," by Charles Glover, **0-5091-P1**, August 15, 2007.

"Ramp Reversal Projects: Guidelines for Successful Implementation," by Scott Cooner, **0-5105-1**, August 6, 2007.

"Ramp Reversal Projects: Guide to Successful Project Implementation," by Scott Cooner, **0-5105-P2**, August 6, 2007.

"Guidelines for Evaluation of Existing Pavements for HMA Overlay," by Fujie Zhou, **0-5123-2**, May 22, 2007.

"Comparison of the Use of TxDOT Seeding Mixes and Fertilizer Rates to the Use of Native Grass," by Jett McFalls, **0-5212-1**, August 6, 2007.

"Development of Guidelines for Data Access for Texas Traffic Management Centers," by Ed Seymour, **0-5213-1**, June 5, 2007.

"Best Practices for Concrete Pavement Transition Design and Construction," by Youn Su Jung, **0-5320-1**, May 4, 2007.

"Synthesis of New Methods for Sustainable Roadside Landscapes," by Kim Jones, **0-5330-1**, August 28, 2007.

"Regional Transit Coordination," by Laura Higgins, **0-5345-P2**, May 7, 2007.

"Preliminary Results of Repeatability and Sensitivity Study on Overlay Tester for Crack Sealants," by Fujie Zhou, **0-5457-1**, August 28, 2007.

"Case Study Analysis of Mid-Size Urban/Rural Area Toll Road Options – Year 2 Report," by Ginger Goodin, **5-4055-01-3**, June 1, 2007.

"Item 245: Heavy-Duty Aggregate Base," by Tom Scullion, **5-4358-01-P2**, August 3, 2007.

"Implementation of Traffic Responsive Control on TxDOT Closed-Loop Systems," by Geza Pesti, **5-4421-01-2**, August 28, 2007.

"Field Manual for Configuring Traffic-Responsive Control on TxDOT Closed-Loop Systems," by Geza Pesti, **5-4421-01-P1**, August 28, 2007.

"Paving Technology Heats Up: An Overview of PAVE-IR," by Tom Scullion, **5-4577-01-P2**, June 13, 2007.

TTI PUBLICATIONS

A full catalog of TTI publications and other products is online at <http://tti.tamu.edu/publications>. You can find the publications by searching for either the title or publication number listed here. Most of these publications are available as free downloads in portable document format (PDF).

Printed, bound versions of these reports are also available through the URL above. Publication prices vary depending on length. The Texas Transportation Institute accepts checks, money orders and credit cards.