

Rural Toolkit Devised to
Help High-Crash-Rate Areas
Improve Transportation Safety

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Draws upon PRC Studies

TTI Traffic Safety Conference
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Safety Plan for Texas

TEXAS TRANSPORTATION

VOL. 53 | NO. 2 | 2017

Researcher

Work in Progress
Building TTI's New Home

 Texas A&M
Transportation
Institute

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TEXAS TRANSPORTATION Researcher

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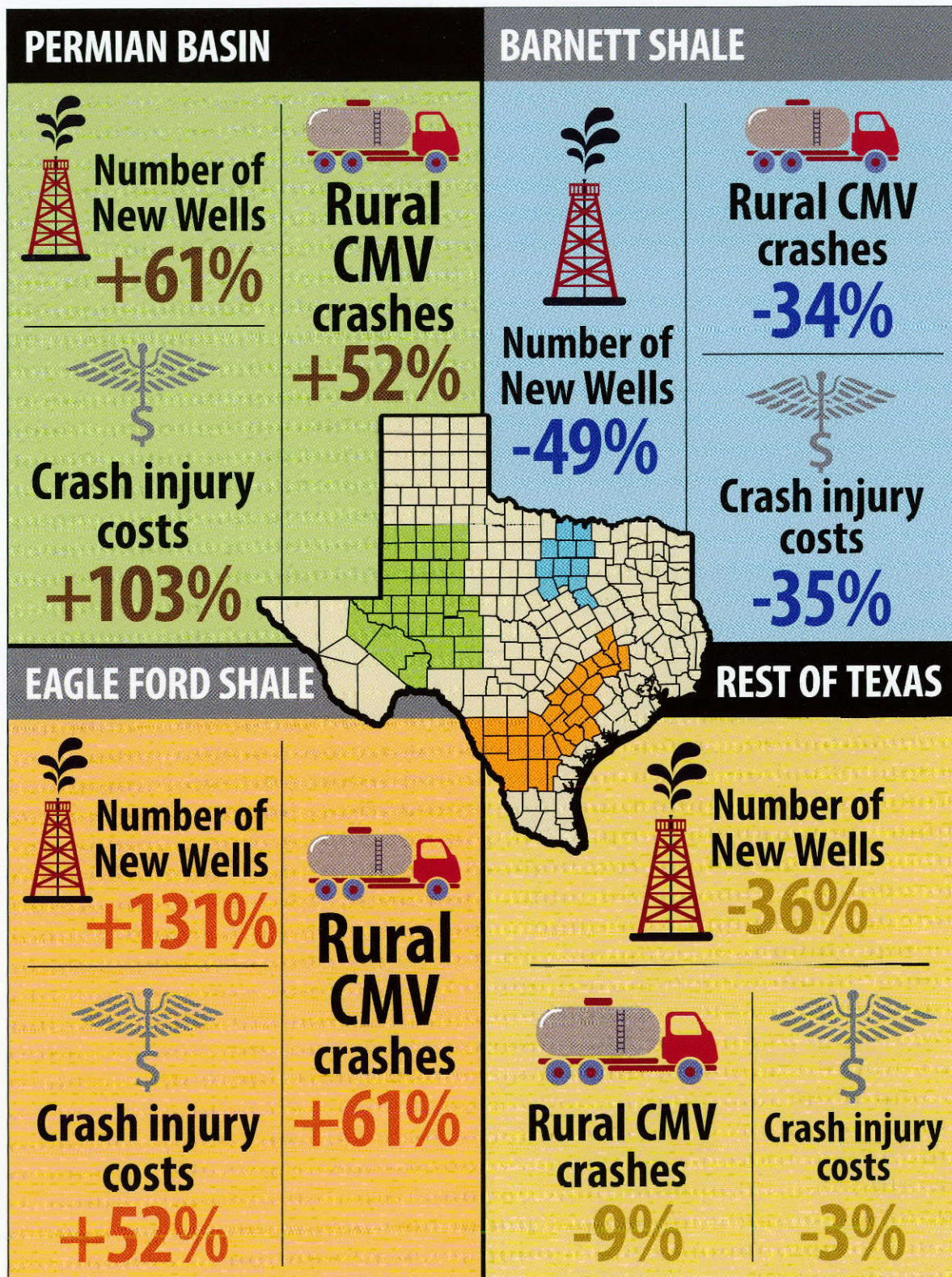
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The Amount of Drilling Activity in a Region Affects Vehicle Crashes and Crash Costs.*

AT A GLANCE

See related story on page 8.

Comparison based on statewide data in Texas from 2006–2009 and 2010–2013.



*SOURCES: Texas Railroad Commission, Texas Department of Transportation and Texas A&M Transportation Institute

KNOW BEFORE YOU GO

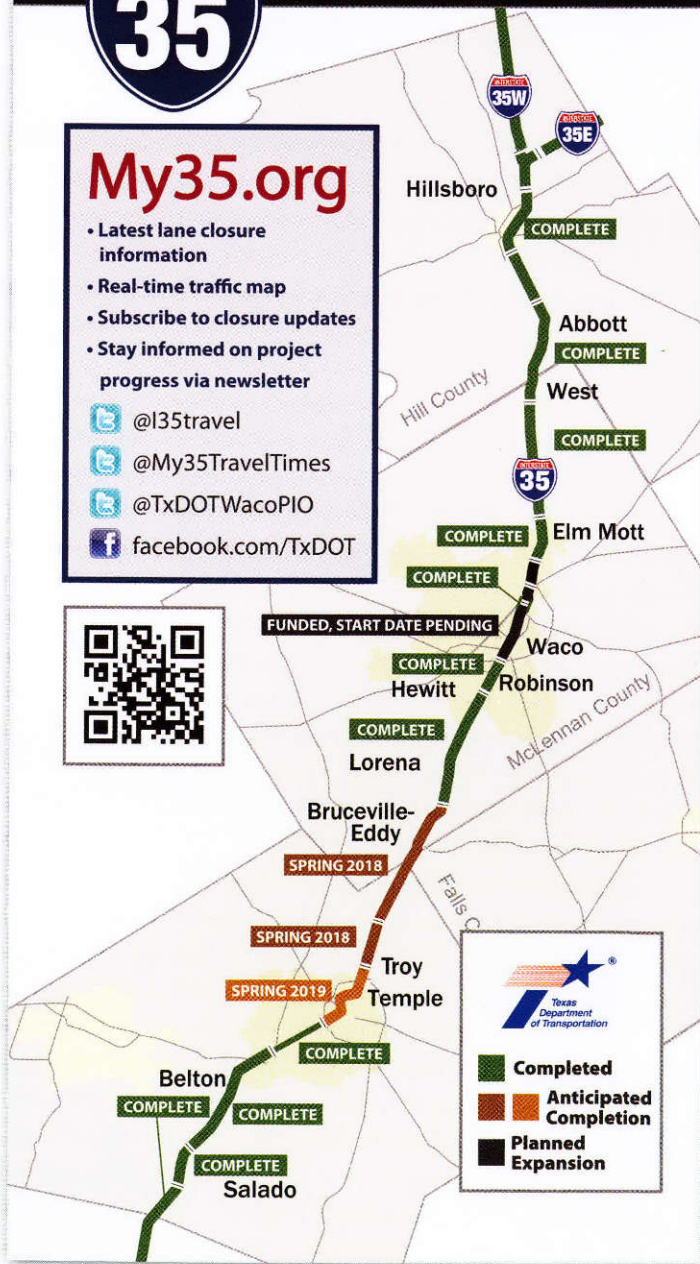


Lane Closures
 Mon. – Thurs. nights, 7 p.m. – 7 a.m.
 Sun. nights, 10 p.m. – 7 a.m.

My35.org

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TTI'S TRAVELER INFORMATION SYSTEM HELPS KEEP I-35 DRIVERS SAFER, BETTER INFORMED

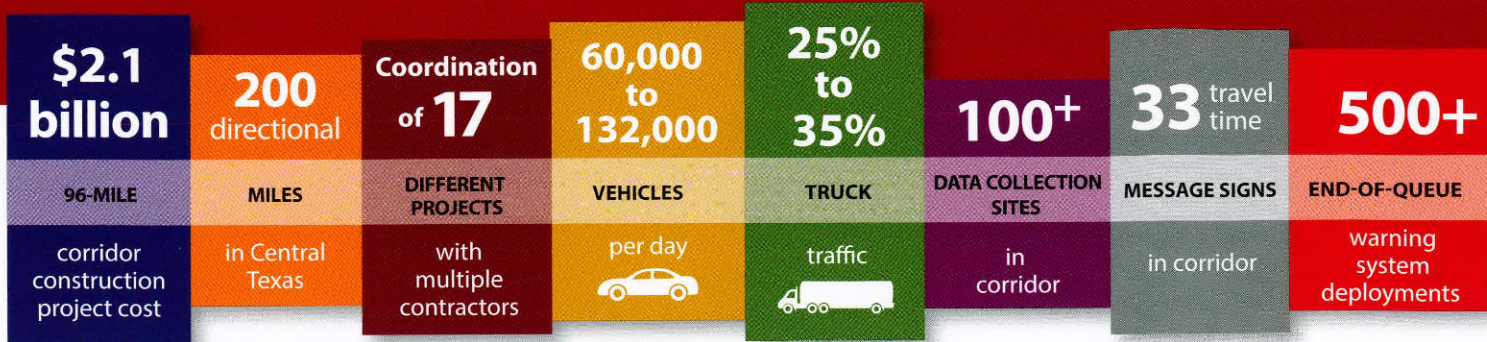
In Texas, I-35 stretches some 500 miles, from the Rio Grande to the Red River. Much of I-35 was once known as the Chisholm Trail, and 50 percent of the state's population — that's nearly 14 million people — live within 50 miles of I-35 today. No wonder Texans refer to the interstate as Main Street Texas.

In 2008, the Texas Department of Transportation (TxDOT) began its My35 project to improve mobility and safety along the corridor. The focus to date has been to expand and enhance the 96-mile stretch between Hillsboro and Salado, a vital section of the corridor north of Austin traveled daily by 100,000 to 130,000 motorists. For the last seven years, the Texas A&M Transportation Institute (TTI) has provided logistical and technical support to TxDOT in the corridor, including developing a first-of-its-kind traveler information system.

“Our mission was to help TxDOT keep drivers informed during the construction process,” explains Bob Brydia, TTI’s principal investigator on the project. “To accomplish it, we asked three questions: Where are work-zone lane closures, where will travelers be delayed, and what are the current traffic conditions?”

To find the answers, TTI installed Bluetooth® readers, Wavetronix sensors, and end-of-queue warning systems along I-35 and then formulated algorithms to integrate and mine the massive amounts of data gathered. The results are reliable traffic forecasts and regular construction incident reports passed along as driver alerts delivered via various media.

“A real success story of this project is how effectively we’ve been able to interface with TxDOT’s LoneStar traffic



management system,” Brydia explains. “We feed our information to TxDOT, and that helps drive the messages you see along the roadway.”



Brydia is referring to the permanent dynamic message signs now installed in the corridor that provide real-time travel estimates for (and the distance to) upcoming towns, and that warn

drivers of slowdowns and accidents ahead. Travelers, local residents and business owners can also receive construction updates via text message, Twitter, web and email. Whether it’s parents looking for the best route to take their children to school or EMS personnel racing to the scene of a traffic incident, the alerts can help them make the best routing decision needed — and sometimes that makes the difference between life and death.

“Understanding that different audiences need the same information for different reasons was vitally important to us,” says John Habermann, TTI’s lead mobility coordinator on the project. “Anyone who uses the corridor — whether they’re just passing through, reside in the area, or operate one of the 1,000 businesses along that stretch of I-35 — can benefit from the system.”

Brydia and his team have actively sought user input via surveys conducted throughout the life of the project. Respondents helped to shape the kind of information travelers receive and how they get it. For example, in 2012, the TTI team used feedback from more than 900 respondents to create the initial version of what Brydia calls the “most advanced, robust construction lane-closure database in the nation.” Regular updates continue refining messages and how they’re communicated. And underlying the system’s

usefulness is all that data gathered daily as hundreds of thousands of drivers travel along I-35.

Using data parsed by TTI’s algorithms, the map generates, in real time, reports specifically requested by survey respondents, such as expected points of delay during construction, current travel times, incident locations and detour options. In April 2017 alone, more than 21,000 travelers used the map to plan their trips. And when reliable routes matter most — say, during a natural disaster — having mapped alternate routes can help keep travelers safe.

Once construction in TxDOT’s Waco District is finished, the equipment generating the traveler information will stay online as a permanent enhancement to the *smart corridor* I-35 is becoming. The Austin District recently embarked on the Mobility 35 project, a \$4.1 billion effort to extend the benefits of expansion to another section of I-35.

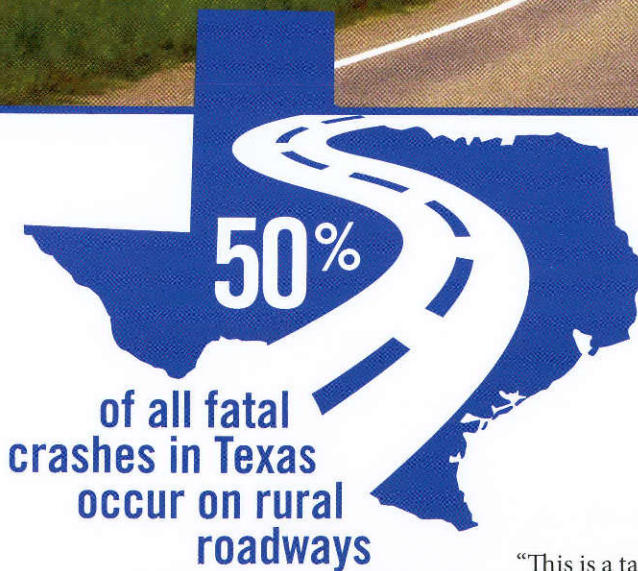
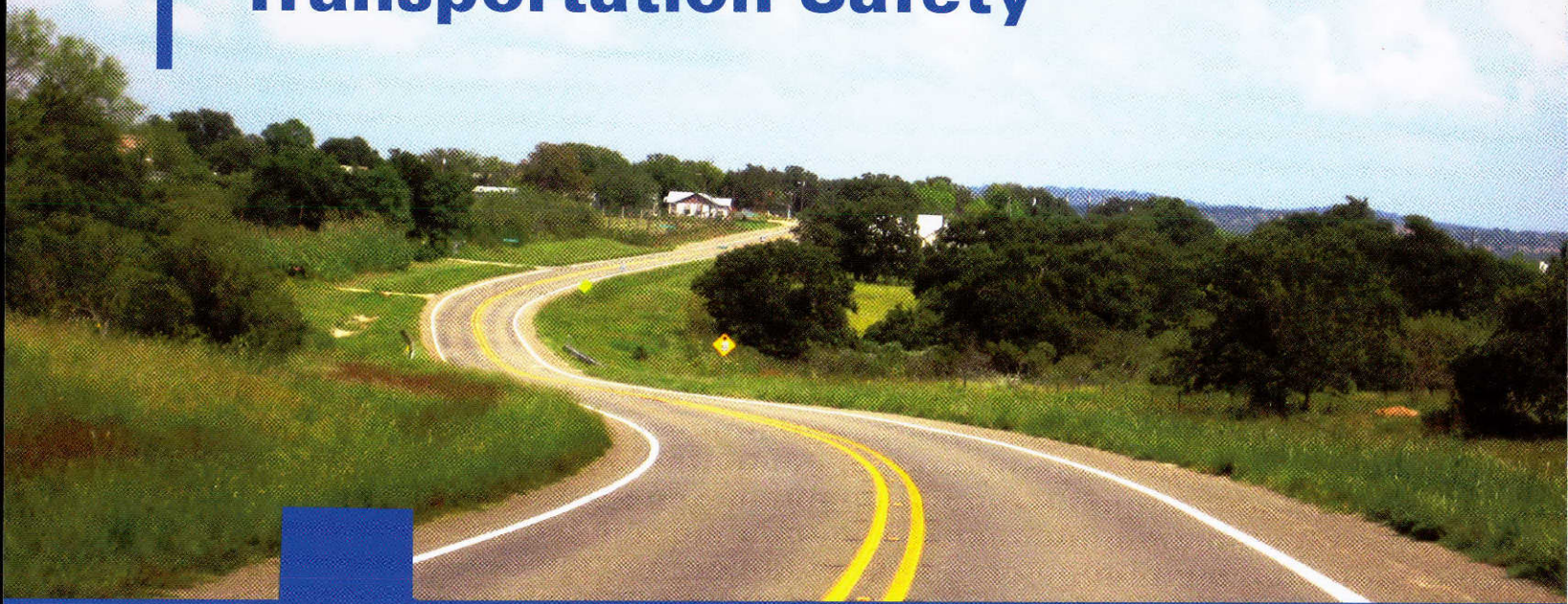
“TxDOT wants to be as responsive and helpful as we can to our fellow Texans during the reconstruction process,” says Jodi Wheatley, TxDOT’s I-35 public information officer. “That would be much more difficult without TTI’s Traveler Information System. The Institute’s expertise has made I-35 construction in the Waco District safer, easier to negotiate, and more predictable for travelers.” ■

I-35 Traveler Information Stats



For more information, contact **Bob Brydia** at (979) 845-8140 or r-brydia@tti.tamu.edu.

Rural Toolkit Devised to Help High-Crash-Rate Areas Improve Transportation Safety



Half of all fatal crashes in Texas occur on rural roadways. Researchers with the Texas A&M Transportation Institute (TTI) have identified those areas of the state with the highest crash rates and devised a plan that focuses on solving their specific issues, despite limited resources.

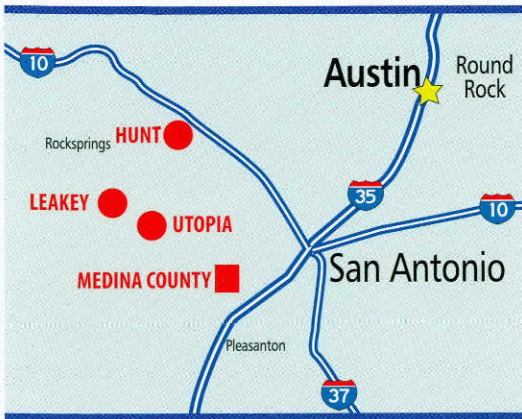
“It is exciting to see the data collected by our program used to inform public health and prevention efforts to improve the lives of Texans.”

*Dan Dao
Texas Department of State Health
Services Team Leader*

“This is a targeted, evidence-based, systematic approach that not only provides a detailed analysis of a community’s crash problem, but also helps residents overcome their biggest obstacles when it comes to making their roadways safer,” says Senior Research Scientist Michael Manser, leader of TTI’s Human Factors Team in the Center for Transportation Safety (CTS). “Most rural areas simply don’t have the funding or the staff to address traffic safety issues and may not have the time to understand the steps required to address their issues.”

With project funding from the Texas Department of State Health Services (DSHS), CTS researchers created a simple, understandable and easy-to-use Rural Toolkit for Transportation Safety that provides a framework for the steps that a community can work through to address its transportation safety issues.

The toolkit combines the successful elements of the National Highway Transportation Safety Administration Safe Communities and the Federal Highway Administration Local Road Safety Plan approaches. Communities interested in addressing their



The greatest risk for severe crashes occurs in four rural areas northwest of San Antonio

30%
of all crashes involved motorcycles



56%
of all injuries were classified as severe



10
minutes longer emergency response time than in other rural school district regions



“The analysis of the linked data from Texas’ Crash Record Information System, emergency medical services and local hospitals gave us a detailed picture of the crash characteristics, roadway features, causes of the crashes — including whether alcohol or distraction was involved — and injury severity.”

*Eva Shipp
TTI Program Manager and Research Scientist
Crash Analysis Group Team Leader*

transportation safety needs can now work through the toolkit stages to identify their safety issues, develop goals and associated strategies, implement the strategies, and conduct an evaluation.

The toolkit provides simplified information from previous approaches, including the steps that require input from outside sources. An area that is critically important — but many times beyond the reach of a community — is the need to obtain and analyze transportation safety data and to understand local transportation safety needs. The toolkit accounts for this by allowing project team members to serve as a source for much-needed data and statistical analyses.

For example, TTI first analyzed crash data across rural Texas according to geographic areas defined by Texas independent school districts. A four-district area clustered in the Texas Hill Country was found to have a disturbing problem — motorcycles

were involved in a large percentage of its crashes, with a high number of serious upper-body injuries.

“The analysis of the linked data from Texas’ Crash Record Information System, emergency medical services and local hospitals gave us a detailed picture of the crash characteristics, roadway features, causes of the crashes — including whether alcohol or distraction was involved — and injury severity,” says TTI Crash Analysis Group Team Leader Eva Shipp. “Of the top 10 rural areas examined, four are in an area northwest of San Antonio with the greatest risk for severe crashes.”

The areas with the higher frequencies of severe crashes include roadways in Medina, Leahey, Hunt and Utopia, Texas. The analysis conducted by Shipp showed that 30 percent of all the crashes involved motorcycles, 56 percent of all the injuries were classified as severe, and emergency response time was 10 minutes longer

than in other rural school district regions (likely due to the long distances EMS must travel).

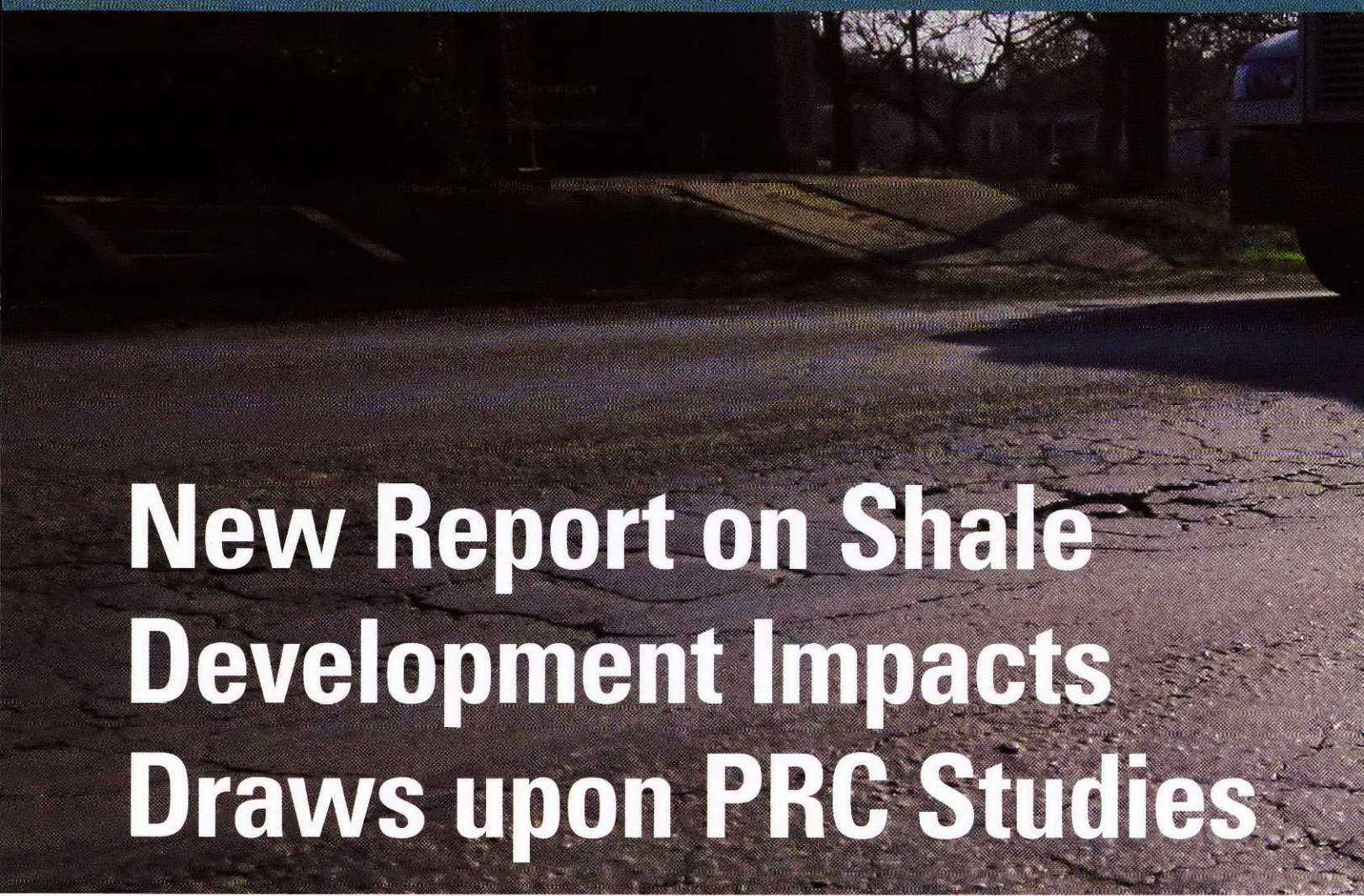
Manser is now working with stakeholders in the four-district region as part of a pilot project that use the newly designed toolkit. Ideally, a stakeholder group will be formed to examine specific transportation safety issues in their region. The stakeholder group can then follow the multi-stage process outlined in the toolkit to address those problems identified from the statistics.

The TTI/DSHS team will provide guidance and resources, including information about specific safety countermeasures (e.g., increased law enforcement presence on high-crash roadways, guardrail extensions, and implementation of lower speed limits).

“The collaboration between the DSHS Injury Epidemiology and Surveillance Branch and TTI to produce the Rural Toolkit for Transportation Safety exemplifies the public health advances that can be achieved by working together to benefit local communities,” says Dan Dao, team leader with DSHS. “It is exciting to see the data collected by our program used to inform public health and prevention efforts to improve the lives of Texans.” ■



*For more information, contact **Eva Shipp** at (979) 458-4398 or e-shipp@tti.tamu.edu.*



New Report on Shale Development Impacts Draws upon PRC Studies

A new, comprehensive review of the impacts of shale oil and gas development in Texas by a cross-disciplinary task force — organized by the Academy of Medicine, Engineering and Science of Texas (TAMEST) — finds a wide range of both benefits and consequences for the state’s infrastructure, environment and communities. These impacts are detailed in the new report by the TAMEST Shale Task Force, *Environmental and Community Impacts of Shale Development in Texas*.

The TAMEST report draws extensively from two studies conducted by the Texas A&M Transportation Institute’s (TTI’s) Transportation Policy Research Center (PRC) in 2015: *Oil and Gas Energy Developments and Changes in Pavement Conditions in Texas*, and *Oil and Gas Energy Developments and Changes in Crash Trends in Texas*. TTI Senior Research Engineer Cesar Quiroga led the work on both PRC efforts and also served on the TAMEST Shale Task Force.

In both studies, researchers examined activity in the state’s three major energy-producing regions in the four years before and after production accelerated in late 2009: the Barnett Shale in North Texas, the Eagle Ford Shale in South Texas, and the Permian Basin in West Texas. Researchers then drew comparisons with areas where there was no significant energy production activity.

The team found that pavement conditions didn’t change significantly in the areas with limited production activity, but those conditions worsened in the more active regions, despite increased spending on maintenance in those areas. Similarly, researchers found a correlation between increased production activity and increases in both the frequency and costs of crashes involving commercial motor vehicles. In areas with reduced energy activity, however, the frequency and costs of those crashes also declined. The infographic on page 3 in this issue summarizes their findings.

Both studies contributed to the Task Force’s findings, which include: “Most existing road and bridge infrastructure in Texas was not designed to carry and accommodate the current high numbers and weights of truckloads” associated with drilling activity. “Traffic increases — especially truck traffic — associated with the development and production of oil and gas from shale formations in Texas have resulted in increases in the frequency and severity of traffic crash incidents.”

“The task force met several times over the past year,” explains Quiroga. “My task was to summarize the lessons learned from all the reports that we had already written and reference that material in Chapter 7, “Transportation,” of the report. The experience and support we’ve had from other agencies



“Transportation needs for both travelers and business activity continue to grow, and those needs create challenges for our state’s policy makers.”

*Ginger Goodin
TTI Transportation Policy Research Center Director*

such as the Texas Department of Transportation, the Texas Legislature, the Railroad Commission and counties since the beginning of the energy boom were fundamental in helping us develop this content for the TAMEST report.”

In addition to transportation impacts, the TAMEST report also focuses on seismicity, as well as the land, air, water, economic and social impacts of expanded energy development in Texas.

“Transportation needs for both travelers and business activity continue to grow, and those needs create challenges for our state’s policy makers,” says Ginger Goodin, PRC director. “Our work seeks to inform their discussions as much as possible.”

Other task force members who contributed to the TAMEST report and are affiliated with The Texas A&M University System include John Barton, executive director of the RELLIS Campus, and Urs Kreuter, professor in Texas A&M’s Department of Ecosystem Science and Management.

The report identifies what still needs to be learned and the steps to take to fill in those gaps in knowledge. It proposes consideration of policies to help address impacts, offers recommendations for future research, and identifies opportunities for greater collaboration among public- and private-sector stakeholders.

“The TAMEST task force did an excellent job of providing the framework for the development and release of the report,” says Quiroga. “I hope this report will help to bring attention and focus to the need for strategies and solutions that look at shale energy developments and how these developments interact in a holistic manner with infrastructure systems, communities and the environment in the state.” ■



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Institute Employees, Dignitaries Celebrate New TTI Headquarters Construction

On June 15, some 200 Texas A&M Transportation Institute (TTI) employees and local, state and Texas A&M University System dignitaries gathered to celebrate the beginning of construction of the new TTI Headquarters Building at the newly renovated A&M System RELLIS Campus.

The \$70 million building is slated to be occupied by March 2019. TTI will be the first A&M System institution to have its headquarters located at the campus.

“Sixty-seven years ago this month, TTI was formed to aid the Texas Highway Department (now the Texas Department of Transportation) with research on pavements, bridges and roadway safety,” Agency Director Greg Winfree said, opening the ceremony. “Today, the Institute is well known in these legacy areas, but TTI is also significantly invested in forward-thinking transportation technologies and connected and automated vehicle [CAV] research.”

A&M System Chancellor John Sharp, who announced plans for the RELLIS Campus last year, envisions a state-of-the-art, high-tech campus for the Texas A&M Engineering Program. At the ceremony, Sharp addressed the

TTI personnel in attendance, saying, “My main purpose here today is to thank you for what you are going to add to RELLIS. The plans and the number of people that are talking about coming here boggle the mind.”

The Texas A&M RELLIS Campus will include seven engineering facilities and two education centers. In part, Sharp wants RELLIS to become the canvas for CAV testing, CAV research projects, interactions with CAV industry representatives, and modern laboratories to train the next-generation transportation workforce.

Sharp’s vision was endorsed by A&M System Vice Chancellor and Dean of Engineering M. Katherine Banks at the celebration: “I am confident that the RELLIS Campus will be known worldwide as a transportation incubator. The impact of the work performed by TTI researchers and staff in this building will touch the lives of mil-

lions of people across the country and around the world.”

Other speakers at the ceremony included Bill Mahomes, A&M System Regent; John Barton, executive director of the RELLIS Campus; Marc Williams, deputy executive director of the Texas Department of Transportation; and David Cain, chair of the TTI Advisory Council and president of David Cain Consulting.

Once occupied, the new TTI Headquarters Building and other facilities at RELLIS will provide one home for TTI’s Bryan/College Station staff now located in several different geographic locations around town — the first time that has happened since the early days of the Institute. ■

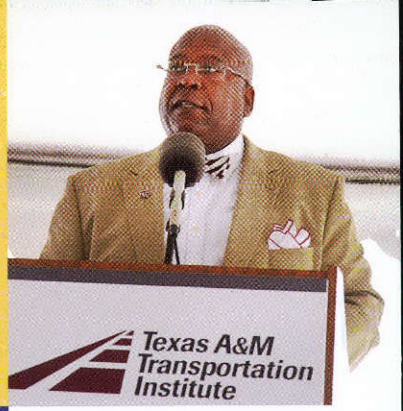


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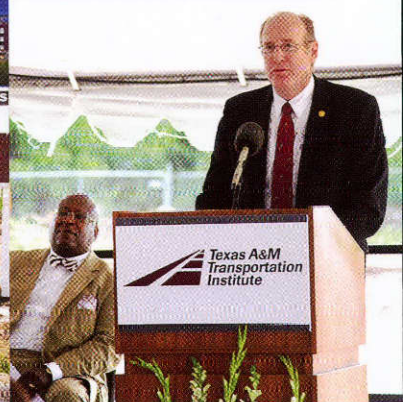
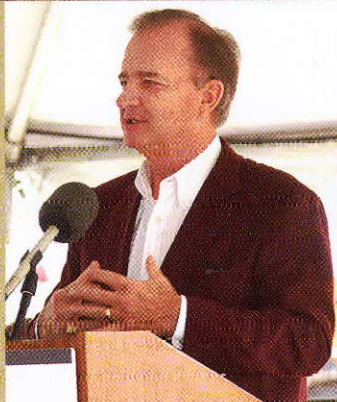
"TTI is indeed fortunate to have the support of everyone here today at this particular time in history, when transportation has never been more important to our state and our country."

— Greg Winfree,
TTI Agency Director



"I don't know how many tens of thousands of lives that have been saved by the innovative ways that you folks design highways."

— John Sharp,
Texas A&M System Chancellor



"The new headquarters building will be a facility where transportation and engineering experts join with partners from government, industry and academia to study, develop and solve the transportation challenges of the 21st century."

— M. Katherine Banks,
Texas A&M System Vice Chancellor
and Dean of Engineering



"The support that TTI provides in my backyard [of Dallas-Fort Worth] is multiplied many times over throughout Texas and the nation."

— Bill Mahomes,
Texas A&M System Regent



— ★ —
★ ★ ★
**SECOND
ANNUAL**

*Experts Gather from
Around the World for the*
**Texas A&M Transportation
Technology Conference**



It's a foregone conclusion among many transportation experts that connected and automated vehicles (CAVs) will be commonplace within the next decade. CAV technologies promise not only to make our transportation system more efficient, but also to save lives and reduce the systemwide costs associated with transportation.

To grapple with the complexities associated with CAV adoption, more than 200 transportation technology leaders from academia, the private sector and public agencies gathered in College Station, Texas, May 4–5 for the Second Annual Texas A&M Transportation Technology Conference hosted by the Texas A&M Transportation Institute (TTI), and also sponsored by The Texas A&M University System, Texas A&M University and the Texas A&M Engineering Experiment Station. The conference highlighted the role of infrastructure and identified research

needs and partnership opportunities to advance the study, testing and deployment of CAV technologies. Attendees discussed the opportunities and challenges for all three sectors as transportation faces its most revolutionary period since the advent of the horseless carriage.

A&M System Vice Chancellor and Dean of Engineering M. Katherine Banks and TTI Agency Director Greg Winfree welcomed a standing-room-only crowd to the conference. Over the course of two days, industry experts addressed how innovation

and transforming systems must intersect, the role research plays in a technological revolution, and how investment in infrastructure will be key to safely transitioning yesterday's roadways to tomorrow's connected network. Speakers from 3M, Cisco, DENSO, Ericsson, GM, IBM, Mobis, Nissan, Toyota, Lyft and Uber, and leaders from federal, state and local transportation agencies also looked at topics such as automation safety, cybersecurity and human/vehicle interaction.

“No other transportation innovation in modern history has generated more fascination than the prospect of self-driving cars, but this is about more than just personal travel — it’s also about meeting consumer needs,” said A&M System Chancellor John Sharp. “Autonomous travel will drastically transform how we move both people and products, and we’re conducting research and testing at the A&M System’s RELLIS Campus to carefully manage that transformation.”

The Texas A&M Transportation Technology Advisory Council met on the second day of the conference. Comprised of leaders from both the private and public sectors, the council will provide cross-cutting guidance to TTI and the A&M System in conducting CAV research, including

“Increased trade and freight movement continue to place ever-greater demand on our roadway system. By reducing both fuel consumption and driver fatigue and by increasing roadway capacity, truck platooning will help to make our use of that system safer and more efficient.”

TTI Agency Director Greg Winfree

“Autonomous travel will drastically transform how we move both people and products, and we’re conducting research and testing at the A&M System’s RELLIS Campus to carefully manage that transformation.”

*Chancellor John Sharp
The Texas A&M University System*

projects at Texas A&M’s new flagship RELLIS Campus.

“The council is a unique group that transcends sectors, interests and areas of expertise,” explains TTI Assistant Director Christopher Poe, who helped organized the conference. Poe is TTI’s connected and automated transportation strategy lead. “Its leadership will prove essential in helping guide The Texas A&M University System on the RELLIS Campus development, Texas A&M University on technology deployment, and TTI on connected and automated transportation research.”

To cap off the conference, TTI conducted the first public demonstration of truck platooning in Texas, which involves electronically linking two big-rig trucks. Truck platooning applies self-driving vehicle technology to enable one manually driven truck to lead other trucks in a tight formation, allowing drivers of the platoon trucks to disengage from the driving task. The demonstration was based on research sponsored by the Texas Department of Transportation (TxDOT).

“Increased trade and freight movement continue to place ever-greater demand on our roadway system,” says Winfree. “By reducing both fuel consumption and driver fatigue and by increasing roadway capacity, truck platooning will help to make our use of that system safer and more efficient.”

In the very near future, officials expect a growing level of autonomous-vehicle testing and development in Texas, which earlier this year was designated a national Automated Vehicle Proving Ground. The Texas AV Proving Ground Partnership involves TTI, TxDOT, The University of Texas Center for Transportation Research and the Southwest Research Institute. The RELLIS Campus will be the center of the A&M System’s contributions in the partnership. ■



*For more information, contact **Chris Poe** at (972) 994-2206 or c-poe@tti.tamu.edu.*

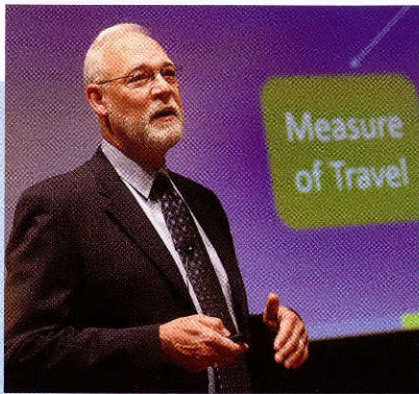
TTI researchers presented the first public demonstration of truck platooning in Texas, one application of autonomous-vehicle research sponsored by TxDOT.





TTI Traffic Safety Conference Plays Major Role in Developing Safety Plan for Texas

Traffic Safety Conference



Robert Wunderlich, director of TTI's Center for Transportation Safety, leads the opening session of the 2017 Traffic Safety Conference.

"We're bringing people together from lots of different walks of life and lots of different disciplines, and we're putting them together in this safety conference to see if we can't save lives and reduce injuries."

*Robert Wunderlich
Director of TTI's Center for Transportation Safety*



Vice Chairman T. Bella Dinh-Zarr of the National Transportation Safety Board was the keynote speaker for the Traffic Safety Conference.

The Texas A&M Transportation Institute's (TTI's) 10th Traffic Safety Conference was historic in that it was the first time attendees helped shape the state's latest Strategic Highway Safety Plan.

It's a federal requirement that all the nation's state departments of transportation renew their plans every five years. Texas must submit its newest version of the state's plan by Aug. 1.

First responders, traffic safety researchers, educators, engineers and other transportation safety professionals spent the entire conference, held June 7–9 in Irving, prioritizing lifesaving countermeasures for Texas roadways.

The unique conference format comes at a time when traffic deaths in Texas reached a 13-year high in 2016. In 2010 (when the fewest fatalities occurred during that time period), 3,060 people died on our roadways. In 2016, 3,775 fatalities were reported — a 23 percent increase.

"I would call this a public health epidemic," T. Bella Dinh-Zarr, vice chairman of the National Transportation Safety Board, told conference goers during her keynote speech. "Why has there been an increase? What is causing these deaths, and what can we do about it?"

Attendees spent the conference studying the various strategies and potential countermeasures for seven problem, or emphasis, areas:

- distracted driving,
- intersection safety,
- pedestrian safety,
- impaired driving,
- lane and roadway departure,
- speeding, and
- older system users.

Working in groups but basing their recommendations on individual experiences and expertise, attendees selected the countermeasures and programs they felt could have the most impact on safety.



“Probably the most important part of Texas history is keeping people as safe as possible. You really have given yourselves a very challenging task: changing, developing and implementing the Texas Strategic Highway Safety Plan.”

*T. Bella Dinh-Zarr
Vice Chairman of the National Transportation Safety Board*

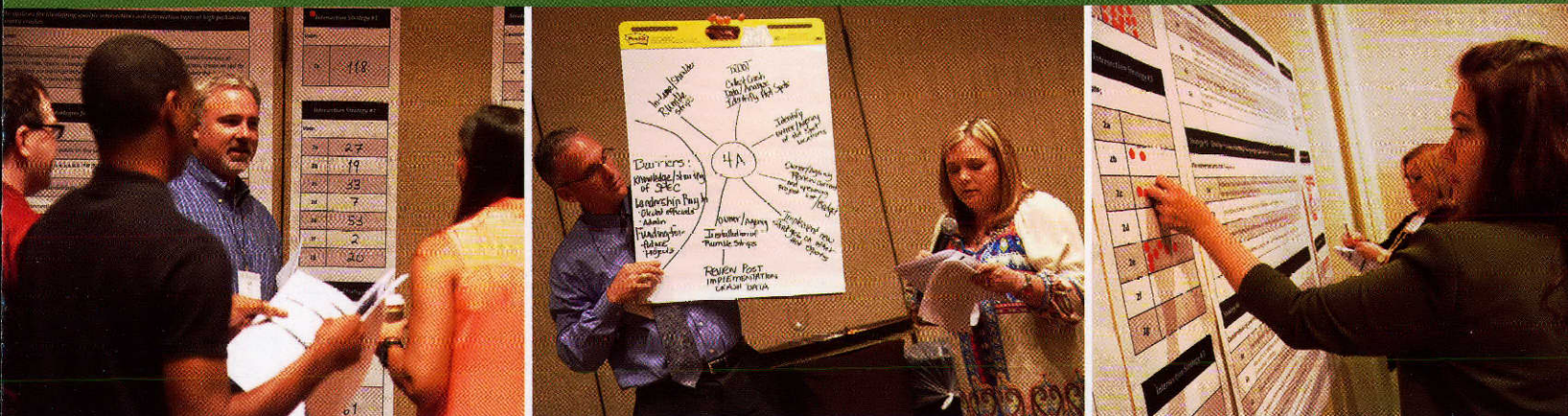
“We’re bringing people together from lots of different walks of life and lots of different disciplines, and we’re putting them together in this safety conference to see if we can’t save lives and reduce injuries,” Robert Wunderlich, director of TTI’s Center for Transportation Safety and host of the conference, told the 275 attendees during the opening session. “This is the first step in the development of an action plan. We want you to be a part of the process and a contributor to it. The goal is to take your input and turn it into action.”

Wunderlich worked with the Texas Department of Transportation (TxDOT) to develop a format for this year’s Traffic Safety Conference. Earlier in the year, TxDOT organized and conducted stakeholder and executive-level team meetings that developed the emphasis areas and potential countermeasures. Conference goers worked in teams to select their countermeasure choices. At the end, participants signed a pledge to help develop action plans in their communities.

“This was a very unique format that gave us some great ideas and a great start for an action plan,” explains Terry Pence, TxDOT traffic safety director. “It was interactive, and people really got involved as they studied the targets, strategies and goals. This is the blueprint of what we are going to do on a local level.”

In order to make an impact on safety in Texas, Pence emphasized that action plans must be developed in communities. “We have to get everyone engaged to make it work,” he says.

“Transportation has been intertwined with Texas history long before we became a state. Now, you will be shaping Texas history,” Dinn-Zarr told conference goers. “Probably the most important part of Texas history is keeping people as safe as possible. You really have given yourselves a very challenging task: changing, developing and implementing the Texas Strategic Highway Safety Plan.” ■



Attendees of the Traffic Safety Conference help develop the latest version of the state’s Strategic Highway Safety Plan.

TTI Compares New Technologies to Collect Data on Travel Patterns

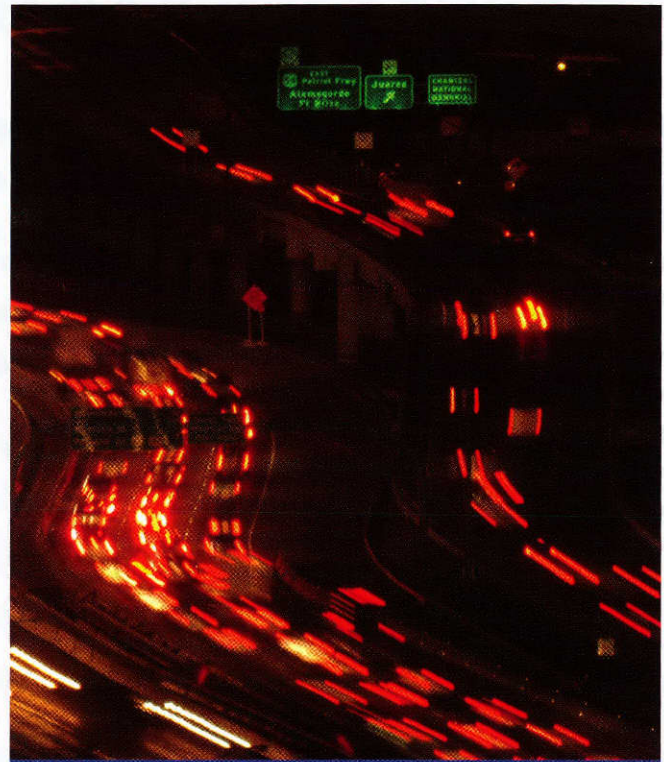
As travel pattern data collection techniques continue to evolve, Texas A&M Transportation Institute (TTI) researchers have completed numerous leading-edge studies over the past several years that compare travel data collected from cellphones, GPS and Bluetooth® sources to determine which technology works best for collecting origin-destination (O-D) data for different types of transportation studies.

An O-D study is used to identify travel patterns and movements of traffic during specified time periods such as on weekdays, weekends or peak travel periods, or even during major events. O-D data provide critical information for routing and alignment studies and long-range transportation planning, especially in areas facing substantial growth.

The methods and practice of collecting and analyzing O-D data using cell, GPS and Bluetooth® are still evolving. While significant strides have been made, uncertainties still remain about the capabilities and limitations of each technology, how they compare, and which technology (or combination of technologies) is best suited for different types of O-D studies.

“The data from these technologies have transformed the way information on O-D and travel patterns is collected and estimated,” says TTI Transportation Planning Program Manager Ed Hard. “In our research, we compared the capabilities and attributes of each technology to determine how well they collect O-D data for different distances, durations and geographic scales such as large metropolitan regions versus smaller urban areas. By doing this, we were able to establish some general guidelines on the suitability of each technology in relation to different types of O-D studies.”

For example, planning studies focus more on O-D matrices of travel between zones in an urban area, so detailed accuracy to determine the routes used isn't necessary. For these types of studies, cell data are generally best. On the other hand, a routing study to determine where traffic on a section of freeway is coming from and going to would probably need GPS data, where positional accuracy is much better than that from cell data.



“The data from these technologies have transformed the way information on O-D and travel patterns is collected and estimated.”

*Ed Hard
Transportation Planning Program Manager
TTI Research Scientist*

The results of the research, which was sponsored by the Texas Department of Transportation and the Federal Highway Administration's Travel Model Improvement Program, yielded a synopsis intended to serve as a quick reference tool outlining which data source to use for each type of O-D study.

“This research is among the first in the country to provide benchmarking and validation for O-D estimates derived from cell, GPS and Bluetooth technologies,” explains Hard. “Within the past few years, state and local transportation agencies have begun to purchase new technology O-D data from private-sector data aggregators, but there hasn't been any guidance on which type of data is best for different applications, and that's what we've been able to provide.” ■



For more information, contact Ed Hard at (979) 845-8539 or e-hard@tti.tamu.edu.

Safe-D, ATLAS Internship Program Under Way at TTI

Nine undergraduate students from various backgrounds with an interest in transportation safety have been selected for a unique, 10-week summer internship with TTI as part of the Advancing Transportation Leadership and Safety (ATLAS) and Safety Through Disruption (Safe-D) University Transportation Centers.

“Safe-D research projects over the next five years will focus on those transportation disruption areas that include automation, connectivity, transportation as a service and big data analytics,” explains Sue Chrysler, TTI senior research scientist and Safe-D associate director.

The undergraduate students, who hail from Texas, Vermont, Virginia and Puerto Rico, are paired with a TTI mentor and will get hands-on experience assisting with a research project. They’ll also be responsible for writing a technical paper and producing a professional poster about the project. TTI Associate Research Scientist Laura Higgins runs the summer internship for both Safe-D and ATLAS.

“I was in a terrible car accident a few years ago and suffered a lot of physical trauma,” says Christian Estela, a senior industrial engineering major at Texas A&M University and one of the summer interns. “Taking a human factors class really opened my eyes to transportation safety. As soon as I saw this internship opportunity, I knew it was right for me.”



Standing, left to right: Quang Le (Texas A&M), Arwah Al-Kahtani (Texas A&M), TTI Senior Research Scientist Sue Chrysler, TTI Agency Director Greg Winfree, Christian Estela (Texas A&M), Luis Sevellano (University of Puerto Rico Mayaguez), Lizzie Clark (Virginia Tech) and Daniel Khuat (Texas A&M).

Sitting, left to right: Rachel Sable (Virginia Tech), Andrew Peretin (Virginia Tech), Ryan Augustine (University of Vermont) and TTI Associate Research Scientist Laura Higgins.

“Transportation safety is a very complicated subject,” Robert Wunderlich, director of TTI’s Center for Transportation Safety and ATLAS associate director, told the students. “It’s going to take different perspectives to really make improvements. The challenge is big. And we are really glad that you are here to help us with that. We hope this experience will inspire you.” ■

TTI’s SEC Lab Receives Prestigious International Recognition



TTI’s Sediment and Erosion Control Laboratory (SEC Lab) was awarded the Environmental Excellence Award during the International Erosion Control Association (IECA) annual conference and expo in Atlanta, Ga., Feb. 22. As IECA’s premiere recognition, the Environmental Excellence Award “recognizes an outstanding stormwater and erosion and/or sediment control

project, program or operation that demonstrates excellence in natural resource conservation and environmental protection.”

“This is a true honor because everyone in our industry is familiar with the award and knows its significance,” says TTI Assistant Research Scientist Jett McFalls, who manages the SEC Lab.

Established in 1990, the SEC Lab covers 19 acres at Texas A&M University’s RELLIS Campus and includes indoor rain simulators, a sediment retention device flume and a variable slope channel flume. Other equipment includes a 2,800-square-foot climate-controlled greenhouse and a small-footprint stormwater quality structure.

McFalls credits the Texas Department of Transportation for its environmental efforts and its ongoing support of the SEC Lab.

“This award for TTI’s SEC Lab is long overdue,” Michael Harding, a well-known and respected environmental scientist and former IECA president, says. He nominated the lab for the award. “The lab is top notch and has set the standard for the industry. It truly is a game changer and needed to be recognized for its leadership in erosion control and its contributions to the environment.” ■

Texas House Recognizes TTI's Teens in the Driver Seat Program



On May 12, the Texas House of Representatives adopted House Resolution 1949, a resolution recognizing the contributions made to teen driving safety by TTI's Teens in the Driver Seat (TDS) program.

Launched in 2002 by TTI and sponsored by the Texas Department of Transportation, State Farm Insurance and others, the program has now reached over 1,000 Texas junior high and high schools and served more than 1.3 million students nationwide, including students in Georgia, Colorado, California and Nebraska.

"We are proud of our program's progress over the past 15 years, but we still lose too many teens (and other

roadway users) to preventable tragedies," says Russell Henk, manager of TTI's Youth Transportation Safety Program and TDS founder. "Our job isn't done."

About 2,800 U.S. teens die each year in car crashes. Since TDS was founded, the program has won more than 20 local, state and national awards and is recognized as a national best practice program for teen driver safety. During that same period, Texas has seen a 70 percent decrease in the frequency of fatal crashes involving 15- to 17-year-old drivers to date.

"TDS is an excellent example of how our researchers put research into practice and make a difference," says TTI Agency Director Greg Winfree. "Started in Texas, the program, which has saved countless teen lives, is now embraced around the country. We couldn't be more proud of Russell, his colleagues in TDS, and all they've accomplished to protect our children." ■

TTI Partners with University of Maryland on Major FHWA Project

TTI will assist in a multi-million dollar Federal Highway Administration (FHWA) project that provides states and regional agencies with data and tools to better manage their roadways. On the project led by the University of Maryland's Center for Advanced Transportation Technology Laboratory and transportation analytics company INRIX, TTI will help integrate INRIX data with road characteristics and traffic counts collected by state departments of transportation. KMJ Consulting, Inc., is also a partner and will provide customer support and aid in project management. Shawn Turner, head of TTI's Mobility Division, leads the project for the Institute.

The project team recently took over management of the National Performance Management Research Data Set, which includes data collected from GPS-enabled mobile devices such as smartphones and navigation devices to highlight high-congestion areas and other transportation information so that state agencies can improve mobility. As part of the five-year project, user-friendly web-based tools will be developed and maintained so state departments of transportation and metropolitan planning organizations can easily access the information. ■



For more information about TTI News, contact **Rick Davenport** at (979) 862-3763 or r-davenport@tti.tamu.edu.

TTI Receives Green Business Award

On May 17, TTI received the Green Business Award from the Keep Brazos Beautiful (KBB) organization during its annual awards luncheon. The Green Business Award "is given to a local business that incorporates green practices, consciously conserves resources or demonstrates environmental stewardship."



KBB pointed to TTI's research project that studies the activity, fuel consumption and emissions of the Texas A&M University bus fleet. A team of researchers from TTI's Environment and Air Quality Division, headed up by TTI Senior Research Engineer Joe Zietsman, is working in collaboration with the U.S. Environmental Protection Agency on the project. The bus study is part of the Campus Transportation Technology Initiative.

"It is an honor for our team to be recognized by the community, especially by Keep Brazos Beautiful," Zietsman said. "Awards like this one let our group know that the work we do is worthy of recognition, and our efforts to improve the environment in which we live are important to all of us." ■

DIGGING ON THE NEW DIGS

On June 15, I had the privilege of hosting my bosses from The Texas A&M University System, other dignitaries from around the state, and more than 200 TTI employees as we kicked off construction on the new TTI Headquarters Building.

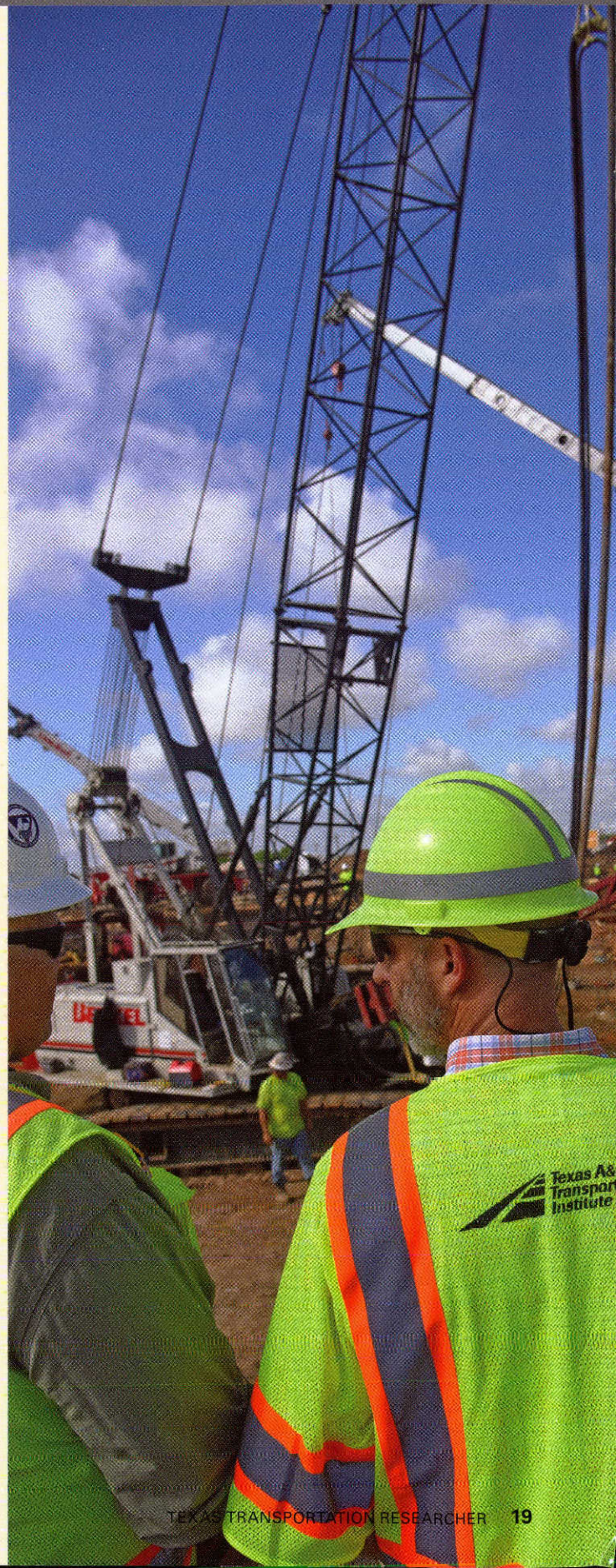
Located at The Texas A&M University System's new RELLIS Campus, our headquarters and other facilities will house all the Institute's employees in College Station, Texas, on one campus for the first time in decades.

Where a person works — the location of an office — may not matter to some. But sometimes physical walls (or physical distance) can, indirectly, discourage collaboration. These days, the walls don't even have to be real. We live much of our lives in a virtual world, where it's more likely you'll email or text someone (even if they're just a few feet away in another office) than actually talk to them. Call me old-fashioned, but I prefer walking down the hall and speaking personally with my colleagues. Once we've moved into our new TTI HQ at RELLIS, making that personal connection will be a whole lot easier. I have no doubt that camaraderie will grow and teamwork will flourish. Better, more innovative research solutions can't help but be the result, right?

And it's not just the headquarters building that will make that happen. Most of TTI's other major research facilities — from our certified Roadside Safety Proving Ground to our award-winning Sediment and Erosion Control Laboratory to our new infrastructure laboratories in the Center for Infrastructure Renewal (CIR) — are also housed at RELLIS, just a short bike ride or vigorous stroll away from HQ. Even CIR itself is a symbol of synergy across Texas A&M agencies since TTI and the Texas A&M Engineering Experiment Station co-manage the facility. The collaborative possibilities are endless.

Like most great ideas, A&M System Chancellor John Sharp's vision for RELLIS is really very simple: the campus will act as a proving ground (pun intended) for creating new partnering opportunities between the Texas A&M System and other academic institutions, government and industry. TTI's role in making that happen will involve — as it always has — evaluating advanced transportation technologies, pioneering first-of-their-kind research methods, and providing professional development opportunities for students and practitioners.

Working more closely together at RELLIS, the folks at TTI will continue discovering smarter solutions for our sponsors and improving safety, mobility and travel reliability for the public. Sometimes we call those folks "the people of our nation" or "our fellow Texans," but really, they're just you and me — just folks trying to get from one place to another and get there safely. The fact is, we're all headed toward the same future. And now, at RELLIS, the TTI family will have one headquarters to call home, where we'll be doing the best work we've ever done, together, for the benefit of all. ■



This year's Transportation Short Course will be the 91st such meeting in the Texas Department of Transportation's history.

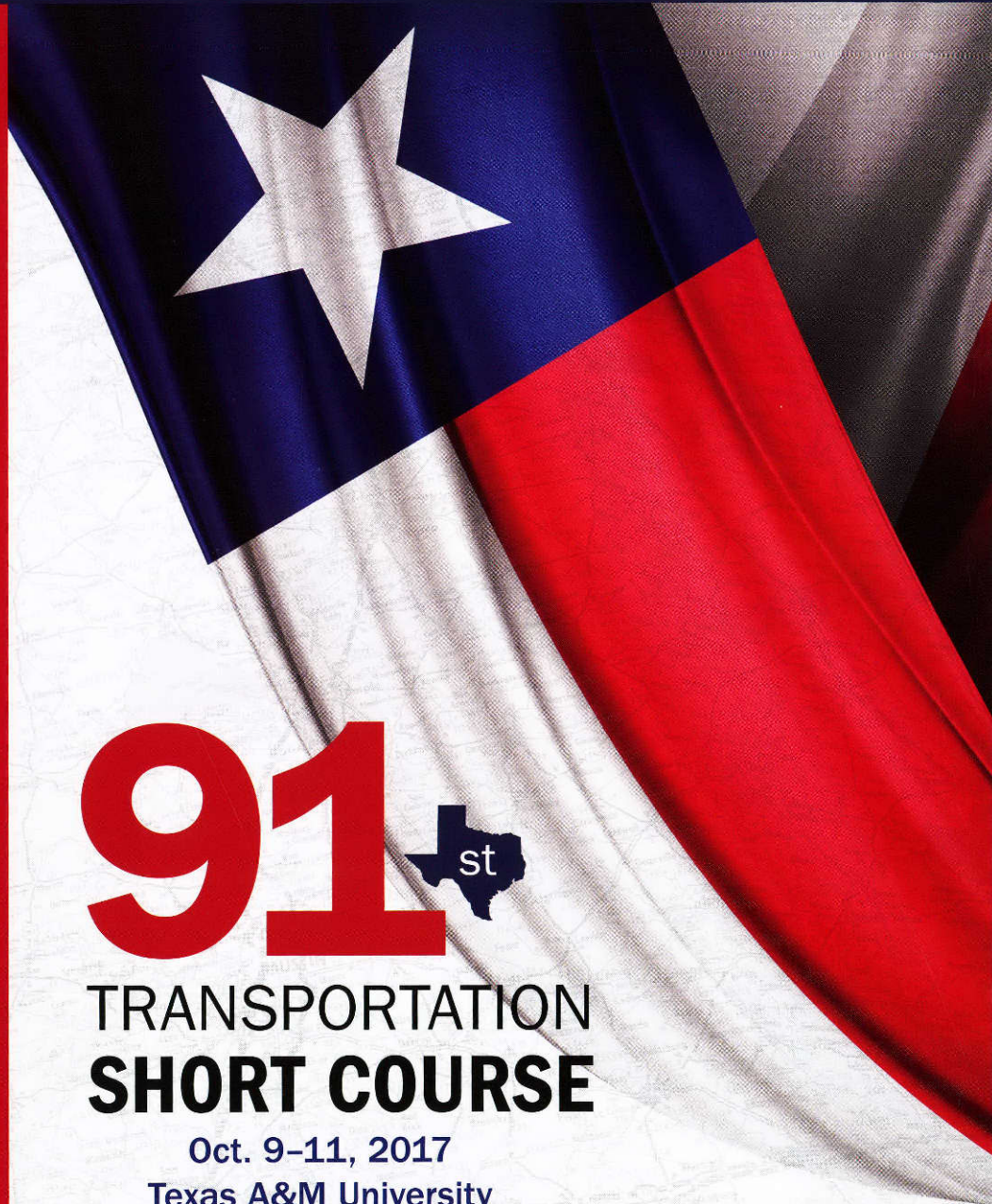
Both the Texas Department of Transportation (TxDOT) and the Texas A&M Transportation Institute (TTI) are proud of this long-standing record of collaboration and cooperation. Over the years, the Short Course has provided a unique opportunity to exchange important technical information that improves transportation in Texas.

TxDOT planners and their TTI colleagues are developing an excellent program, and we are confident the conference will be of value to all who attend.

We look forward to seeing you in October!



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