

# BETTER ROADS SAFER ROADS

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The U.S. Department of Transportation (DOT) recently announced a new interactive map highlighting federal investment in major infrastructure projects located in and around Opportunity Zones.

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Register for free TxLTAP workshops and events occurring in 2020.

# TIPS TO BE A SAFE PEDESTRIAN

Learning how to be a safer pedestrian may not have been at the top of your New Year's resolution list, but with a rise in pedestrian deaths, it's time to consider adding it. In 2018, there were 621 pedestrian fatalities in Texas, a 0.98% increase from 2017.

Below are some tips to help you be a safer pedestrian.

- **Don't drink and walk.** Just as you wouldn't drink and drive, don't drink and walk. Alcohol is a significant contributor to statewide pedestrian fatality rates. If you plan on drinking, plan to get home safely via a designated driver or taxi/ridesharing service.
- **Cross only at designated locations or intersections.** These designated locations often offer more protection along with visibility for pedestrians and higher expectations for drivers that a pedestrian might be present.
- **Increase your visibility.** While walking at night, wear reflective or bright clothing, use a flashlight, or even put bike lights on your clothes. [Watch this video](#) to learn how to be safe when your car breaks down and you become an unintended pedestrian.
- **Obey all traffic laws.** Cross roadways only when permitted by a signal or when it's safe.

Being safe while walking or biking is not 100 percent on the pedestrian; drivers have to stay alert, too. However, these tips should help you proactively plan to be safe when you walk or bike.

## TXDOT AWARDED \$14 MILLION FOR RURAL TRANSIT

Rural transit riders across the state will see several upgrades as the Texas Department of Transportation (TxDOT) received millions in federal funding in December 2019.

The Federal Transit Administration (FTA) awarded TxDOT \$14 million through its Buses and Bus Facilities Program. In total, the FTA awarded \$423 million across the nation.

This money will help transit riders in rural areas of our state by providing new buses and improving facilities. Combined with currently available federal and state money, it will replace more than 250 worn rural transit vehicles and help replace and improve outdated rural transit facilities.

Projects awarded FTA funds will be in the areas of Amarillo, Livingston, San Angelo, Alice, Crowell, Terrell and El Paso County. TxDOT provides support to transit programs serving 41% of the state's population and over 97% of the state's land area.



# NO REALLY, WHAT SEASON IS IT? SAFETY TIPS FOR DRIVING ON TX ROADS FROM FOG TO WINTER WEATHER

Whether you're in the Texas Panhandle, the coastal region, or any region in between, Texas weather this winter has left many people asking, "No really, what season is this?" So far this winter, weather conditions throughout Texas have been all over the place. The state has seen everything from severe storms, hail, high winds, flash floods, dense fog, sleet, and snow. In 2018, 63,525 crashes or nearly 12% of the 543,537 total crashes on Texas roadways occurred during these types of adverse weather conditions.

Whether operating a motor vehicle under ideal weather conditions or during adverse weather conditions, here are a few tips to follow when navigating a vehicle on Texas roadways in winter, spring, summer or fall.



## Weather Conditions for Crashes

2018

### RURAL CRASHES

Weather Condition	Fatal Crashes	Suspected Serious Crashes	Non-Incapacitating Crashes	Possible Injury Crashes	Non-Injury Crashes	Unknown Severity Crashes	Total Crashes
BLOWING SAND/SNOW	2	2	15	8	70	0	97
CLEAR/CLOUDY	1,535	4,144	12,401	16,340	79,420	3,682	117,522
FOG	39	80	154	176	937	51	1,437
RAIN	165	373	1,545	2,170	12,229	477	16,959
SEVERE CROSSWINDS	3	14	22	8	99	3	149
SLEET/HAIL	5	10	46	66	561	21	709
SNOW	1	6	21	21	224	6	279
OTHER	1	8	17	12	75	6	119
UNKNOWN	3	6	7	12	110	207	345
<b>Total</b>	<b>1,754</b>	<b>4,643</b>	<b>14,228</b>	<b>18,813</b>	<b>93,725</b>	<b>4,453</b>	<b>137,616</b>

## Tips for Driving in Ice or Snow

- **Stay home.** Only go out if necessary. Even if you can drive well in bad weather, it's better to avoid taking unnecessary risks by venturing out.
- **Keep windows clear.** Visibility is crucial, especially in bad weather. Turn on the lights and wipers and crank up the defroster, if necessary. Scrape the ice off your windows before you leave to ensure proper visibility. Also make sure that all items are removed from the back window area. If you're still having trouble seeing, carefully pull over to a safe location well off the roadway.
- **Slow down.** Always adjust your speed down to account for lower traction when driving on snow or ice. Also remember that bridges and overpasses freeze first, so take it slow and avoid sudden changes in speed or direction.
- **Increase your following distance to five to six seconds.** This increased margin of safety will provide the longer distance needed if you have to stop.
- **Accelerate and decelerate slowly.** Apply the gas slowly to regain traction and avoid skids. Don't try to get moving in a hurry and take time to slow down for a stoplight. Remember: It takes longer to slow down on icy roads.
- **Know your brakes and brake cautiously.** Whether you have antilock brakes or not, keep the heel of your foot on the floor and use the ball of your foot to apply firm, steady pressure on the brake pedal. Abrupt braking can cause lock-up and loss of steering control.
- **Don't stop if you can avoid it.** There's a big difference in the amount of inertia it takes to start moving from a full stop versus how much it takes to get moving while still rolling. If you can slow down enough to keep rolling until a traffic light changes, do it.
- **Don't power up hills.** Applying extra gas on snow-covered roads will just make your wheels spin. Try to get a little inertia going before you reach the hill and let that inertia carry you to the top. As you reach the crest of the hill, reduce your speed and proceed downhill slowly.
- **Don't stop going up a hill.** There's nothing worse than trying to get moving up a hill on an icy road. Get some inertia going on a flat roadway before you take on the hill.
- **Resist the urge to "floor it."** If you get stuck in snow, straighten the wheels and accelerate slowly. Avoid spinning the tires. Use sand or blocks under the drive wheels.

## Winter Weather Driving Kit Ideas

- Bag of abrasive material (sand, salt, or cat litter) or traction mats
- Ice scraper, small snow shovel or snow brush
- Flashlight, warning flares, or triangles
- Window-washing solvent, cloth or paper towels
- Blankets, gloves or mittens
- Booster cables

## Tips for Driving in Rain

- **Turn on wipers.** Yes, it's obvious, but remember to keep them maintained. A beam wiper blade will provide more uniform contact with the glass in the rain. Wipers should be replaced every six to twelve months for optimal performance.
- **Keep windows clear and clean.** Remember to clean the inside of your windows at least once a week and more often if you smoke. To prevent moisture from collecting on the inside of the glass on a cold day, move the heat control to "hot" and let the engine warm up before turning on the defroster and blowers. If the glass get foggy, open a window slightly and turn the defroster fan to a higher speed. You can also use your air conditioner to reduce humidity inside the vehicle.
- **Use headlights.** Check to make sure that your headlights are clean before starting a trip. Remember that when you drive on wet streets, mud and dirt splash on your headlights reducing illumination by up to 90 percent. If your vehicle is not equipped with daytime running lights, then drive with your low-beam headlights on at all times.
- **Be patient.** Take it slower than normal. Leave more room when stopping. Wet pavement may cause loss of traction and lead to sliding or hydroplaning.
- **Turn around.** Never cross a flooded roadway, because it's tough to tell how deep the water is. Take the time to find an alternate route. The last thing you want is to get caught in a flash flood. **TURN AROUND, DON'T DROWN!**
- **Turn off cruise control.** When roads are wet it is best to allow the driver to control speed and react to conditions.
- **Give other vehicles more space.** Increase your following speed to at least four or five seconds in the rain, which gives you, and the cars behind you, more time to react to traffic.

## Tips for Navigating in the Fog

If you must drive in foggy conditions, keep the following safety tips in mind:

- **Park in a closed garage.** This reduces condensation and moisture on vehicle windows when you head out for your trip.
- **Defrost first.** Before turning on the defroster, allow the engine to warm up. Turn the heat control on and if the vehicle's windshield begins to get cloudy, open the side window slightly and turn the defroster to a higher speed. If you have an air conditioner, use it briefly to help clear the windows.
- **Drive with lights on low beam.** Never use your high-beam lights. Using high beam lights causes glare, making it more difficult for you to see what's ahead of you on the road. If your car has fog lights (amber lens or bulb), now is the time to use them with low beams (clear lens or bulb).
- **Reduce speed.** Fog creates visual conditions that fool the driver into driving faster or slower, so slow down to a reasonable and legal speed and use your speedometer to gauge it. Multi-vehicle collisions occur because drivers are going too fast.

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- **Partially open the driver's side window.** Listen for traffic you can't see and anticipate problems.
- **Keep a safe distance.** In fog, increase braking distance between you and the vehicle in front of you to account for sudden stops or changes in the traffic pattern.
- **Drive cautiously.** Don't use cruise control and avoid passing other vehicles and changing lanes, if possible. To ensure you are staying in the proper lane, follow the lines or roadside reflectors on the road with your eyes.
- **Stay informed.** Check local weather reports to know where traffic congestion or crashes might be located. If possible, avoid these areas.
- **If stalled, or a crash occurs, attempt to exit the freeway or pull well onto the shoulder and turn off lights** so another motorist doesn't mistakenly drive into you.
- **Wait it out.** If you're having trouble seeing, safely pull over to the right side - well out of the traffic lane - and turn on your emergency flashers. Wait until visibility improves before continuing. In extremely dense fog where visibility is near zero, the best course of action is to first turn on your hazard lights, then simply pull into a safe location such as a parking lot of a local business and stop. If there is no parking lot or driveway to pull into, pull your vehicle off to the side of the road as far as possible. Once you come to a stop, turn off all lights except your hazard flashing lights, set the emergency brake, and take your foot off of the brake pedal to be sure the tail lights are not illuminated so that other drivers don't mistakenly run into you.

### Tips for Handling Your Vehicle in High Winds

- **Anticipate gusts.** Take special care when driving through areas prone to strong winds or when weather reports predict severe weather.
- **Notice larger vehicles.** Be aware of large vehicles on the road such as tractor-trailers, recreational vehicles, or vehicles carrying lightweight cargo. They are more susceptible to high winds and drivers may have difficulties staying in their lanes.
- **Keep a firm grip on the wheel.** Keep both hands on the wheel in case the wind begins to move your vehicle, especially if you are driving a large vehicle or towing a trailer.
- **Look out.** Keep an eye out for flying debris.
- **Some cars shouldn't be driven.** It's best not to drive a trailer, van, or other "high-profile" vehicle (autos with high centers of gravity like SUVs and trucks) in high winds.

### Driving in All Types of Weather

- **Use your seatbelt** every time you get into a vehicle.
- **Focus on your destination and avoid ALL distractions.**
- **Stay alert and pay attention.** While driving, pay attention to your actions and to the actions of the drivers near you.
- **Don't assume.** Don't assume that other drivers are going to do what you think they should do.
- **Use turn signals.**
- **Respect and obey traffic control device.** Pay close attention

to and obey stop signs and traffic lights, including yellow lights. The intent of a yellow light is to inform drivers to slow down and prepare to stop, not to speed up. Bring your vehicle to a complete stop when you see a stop sign or a red light, even if you think no other vehicles are coming.

- **Obey speed limits and make adjustments for weather conditions.**
- **Know When to Brake and When to Steer.**
  - » **Some driving situations require abrupt action to avoid a crash or collision and the decision to steer or brake can have very different outcomes.** When traveling more than 25 mph, AAA Texas recommends steering over braking to avoid a collision in winter-like conditions, as less distance is required to steer around an object than to brake to a stop. In slick conditions, sudden braking can lead to loss of vehicle control.
  - » **However, sometimes steering is not an option.** Braking on slippery surfaces requires you to look further ahead and increase following and stopping distances. Plan stopping distances as early as possible and always look 20-30 seconds ahead of your vehicle to ensure you have time and space to stop safely.
- **Stay in Control Through a Skid.** When a vehicle begins to skid, it's important not to panic and follow these basic steps:
  - » **Continue to look and steer in the direction you want the car to go.**
  - » **Avoid slamming on the brakes as this will further upset the vehicle's balance and make it harder to control.**

### Prepare Your Vehicle

Vehicle maintenance is part of safe driving in general; it ensures everything is running smoothly. Be sure to check the following components; that way, you have less to worry about when you need to drive in the rain:

- **Windshield Wipers:** Keep your vision as clear as possible by replacing your wipers every six to 12 months. Streaking or chattering are signs that it's time to put on a new set.
- **Lights:** Ensure your headlights, tail lights, brake lights, and turn signals are functioning properly so other drivers will see you more clearly. Clean haziness from your headlight covers.
- **Tires:** Check them at least once a month; maintain your car's recommended tire pressure. If you see uneven or excess tread wear, consider a suspension repair or wheel alignment. Drive responsibly to help keep yourself, and others, safe.
- **Batteries:** Recharge or replace weak batteries. Check fluid levels, battery posts, and charging system.
- **Brake System:** Check brakes for proper operation. Pulling to one side, a taut pedal or an unusual squealing or grinding could indicate the need for brake repair.
- **Recalls:** Check to be sure there are no [safety recalls](#) on your vehicle.

*Tips provided courtesy of AAA Driver Training Programs, State Farm Insurance, Progressive Insurance and the National Weather Service.*

# AAA WARNS PEDESTRIAN DETECTION SYSTEMS DON'T WORK WHEN NEEDED MOST

By Daniel Armbruster

*Study finds safety systems fail at night when the majority of pedestrian vehicle fatalities occur.*

New research from AAA reveals that automatic emergency braking systems with pedestrian detection perform inconsistently and proved to be completely ineffective at night. An alarming result, considering 75% of pedestrian fatalities occur after dark. The systems were also challenged by real-world situations, like a vehicle turning right into the path of an adult. AAA's testing found that in this simulated scenario, the systems did not react at all, colliding with the adult pedestrian target every time. For the safety of everyone on the road, AAA supports the continued development of pedestrian detection systems, specifically when it comes to improving functionality at night and in circumstances where drivers are most likely to encounter pedestrians.

On average, nearly 6,000 pedestrians lose their lives each year, accounting for 16% of all traffic deaths, a percentage that has steadily grown since 2010.

"Pedestrian fatalities are on the rise, proving how important the safety impact of these systems could be when further developed," said Greg Brannon, AAA's director of Automotive Engineering and Industry Relations. "But, our research found that current systems are far from perfect and still require an engaged driver behind the wheel."

While time of day and location are contributing factors to pedestrian fatalities, vehicle speed also plays a major role. Previous research from the AAA Foundation for Traffic Safety found that pedestrians are at greater risk for severe injury or death the faster a car is traveling at the time of impact. For example, a pedestrian hit by a vehicle traveling at 20 mph has an 18% risk of severe injury or death. Increase that by just 10 mph to 30 mph and the risk more than doubles to 47%. AAA's latest study found that speed impacted system performance as well, with results varying between testing performed at 20 mph and 30 mph.

In partnership with the Automobile Club of Southern California's Automotive Research Center, AAA evaluated the performance of four midsize sedans equipped with automatic emergency braking with pedestrian detection to determine the effectiveness of these systems. Testing was conducted on a closed course using simulated pedestrian targets for the following scenarios:

- An adult crossing in front of a vehicle traveling at 20 mph and 30 mph during the day and at 25 mph at night.
- A child darting out from between two parked cars in front of a vehicle traveling at 20 mph and 30 mph.
- A vehicle turning right onto an adjacent road with an adult crossing at the same time.
- Two adults standing along the side of the road with their backs to traffic, with a vehicle approaching at 20 mph and 30 mph.

Overall, the systems performed best in the instance of the adult crossing in front of a vehicle traveling at 20 mph during the day.

In this case, the systems avoided a collision 40% of the time. But, at the higher speed of 30 mph, most systems failed to avoid a collision with the simulated pedestrian target. The other scenarios proved to be more challenging for the systems:

- When encountering a child darting from between two cars, with the vehicle traveling at 20 mph, a collision occurred 89% of the time.
- Immediately following a right hand turn, all of the test vehicles collided with the adult pedestrian.
- When approaching two adults standing alongside the road, with the vehicle traveling at 20 mph, a collision occurred 80% of the time.
- In general, the systems were ineffective in all scenarios where the vehicle was traveling at 30 mph.
- At night, none of the systems detected or reacted to the adult pedestrian.

"The rise in pedestrian deaths is a major concern and automakers are on the right path with the intent of these systems," continued Brannon. "Our goal with this testing is to identify where the gaps exist to help educate consumers and share these findings with manufacturers to work to improve their functionality."

New vehicle technology can alert drivers and assist in lessening the likelihood or severity of a crash – whether with another vehicle or even more importantly, a pedestrian. But, until these systems are proven to perform consistently – especially pedestrian detection systems – during the day and at night and in a range of situations, AAA recommends drivers always:

- Be alert of their immediate surroundings. Do not rely on pedestrian detection systems to prevent a crash. This technology should only serve as a backup and not a replacement for an engaged driver.
- Read the owner's manual to understand what safety systems the vehicle is equipped with. Before leaving the lot, ask the dealer to explain how these systems work, including what safety system alerts sound and look like and what triggers their activation.
- Use extra caution when driving at night since this is the riskiest time for pedestrians and where the systems struggled the most. Previous AAA research found that headlights, even in new condition, do not provide the amount of light needed for drivers to appropriately react to something or someone in the roadway.
- It is a driver's responsibility to yield to pedestrians, but those traveling by foot should be diligent as well. Pedestrians should use caution by staying on sidewalks and using crosswalks as often as possible. Always obey traffic signals, look both ways before crossing the street and do not walk and text.

The complete AAA report can be found at [www.aaa.com/AAA/common/aar/files/Research-Report-Pedestrian-Detection.pdf](http://www.aaa.com/AAA/common/aar/files/Research-Report-Pedestrian-Detection.pdf).

For more information on AAA's findings, contact Daniel Armbruster at 512-564-3141 or [armbruster.daniel@aaa-texas.com](mailto:armbruster.daniel@aaa-texas.com).

# LOW-COST SAFETY COUNTERMEASURES: SMALL CHANGES MAKE A BIG DIFFERENCE ON RURAL ROADS

by Rosemarie Anderson, FHWA Office of Safety, and Jennifer McCabe, ARA

You may think "the road less traveled" is a safer one, but of all people killed in traffic crashes in 2017, about half died from crashes on rural roads.

To combat this deadly problem, the Federal Highway Administration (FHWA) is promoting proven, affordable solutions to agencies nationwide.

Many local transportation practitioners may feel they don't have the money, time, or technical expertise to deploy extensive safety countermeasures on local and rural roads. When applied using a systemic approach, the cost savings can be significant.

FHWA's proposed countermeasures, including enhanced signage, pavement markings, speed management techniques, crosswalk enhancements, sidewalks, and road diets, offer significant safety improvements for relatively low investment.

## SEE THE BIG PICTURE

Thousands of local and Tribal agencies struggle with improving rural road safety. These unique roads widely vary—straight, winding, paved, unpaved—and may travel through any terrain, from mountains to farmland. Crashes in rural areas tend to be widely dispersed, which can delay emergency response.

In these areas, the key to evaluating where and what to invest in is to use data to prioritize locations and countermeasures that will best mitigate risk.

A systemic approach, recommended by FHWA, evaluates risk across an entire roadway system rather than only looking at specific crash locations. This takes a proactive approach to safety rather than a reactive one. This is especially valuable for rural road systems, where risk may be spread over many miles of roadway, painting a misleading picture of safety due to low crash density.

## LOW COST, HIGH IMPACT

Pavement markings are one of the least expensive countermeasures available to improve safety. They can help drivers stay in their lanes, stop at intersections, become aware of approaching curves or pedestrian crossings, and encourage slowing down.

"Pavement markings can be used to create lane narrowing which makes the driver feel more constrained and slow down," said Shaun Hallmark, director of Iowa State University's Institute for Transportation.

The South Carolina Department of Transportation (SCDOT) has demonstrated the benefit and affordability of the systemic approach of these countermeasures. SCDOT identified and targeted more than 2,000 locations across the State to receive improvements, mostly in the form of pavement markings and updated signing. The State wanted to reduce frequency and severity of crashes at stop-controlled intersections by alerting drivers to the presence and type of approaching intersection. "In the past, our typical approach was to treat hot spot locations

which may involve a new signal or a left-turn lane," said Joey Riddle, SCDOT safety program engineer. "The total cost of these projects was roughly half a million dollars. The systemic approach allowed us to treat 80 similar projects for nearly the same price as one."

## A HISTORY OF SUCCESS

The proposed countermeasures FHWA recommends for these roads come with a proven track record. Basic signing improvements—advanced warning signs, speed plaques, and chevrons—alert drivers to upcoming curves and intersections. A simple 3-year before-and-after analysis of the Pennsylvania Department of Transportation's (PennDOT) efforts to enhance delineation and make other corrections at curves showed that overall crashes dropped 17 percent, major injury crashes went down 40 percent, and fatal crashes reduced 44 percent.

Did you know that adding edge lines can reduce total crashes by 15 percent and severe crashes by 19 percent? Adding these, or other longitudinal pavement markings, should be considered, even in locations where due to low traffic volumes they may not be required.

"Edge lines are considered especially effective because that is where a driver will tend to look when they are drowsy or trying to avoid the glare from an oncoming car," said FHWA Transportation Safety Engineer Cathy Satterfield.

Increasing the width of edge lines is another trend that is successfully improving safety on rural roads. In Kansas, Michigan, and Illinois, using 6-inch edge lines in place of standard 4-inch edge lines has reduced non-winter crashes on two-lane rural roads by 15 to 30 percent, and fatal or injury non-winter crashes by 15 to 37 percent.

Low-cost solutions can also combat pedestrian crashes along roadways, where more than 6,000 people are killed each year. Installing sidewalks and paved shoulders can reduce pedestrian-involved crashes by up to 89 percent. Numerous low-cost improvements can also enhance pedestrian safety—crosswalks, [pedestrian hybrid beacons](#), [rectangular flashing beacons](#), medians, [pedestrian refuge islands](#), and [road diets](#).

## LEARN MORE

FHWA created a series of six short videos, entitled [Low-Cost Safety Improvements](#), to help practitioners incorporate road safety into their existing responsibilities. In the videos, learn about low-cost safety improvements designed to make stop-controlled intersections, curves, unpaved roads, walking, and biking safer. The videos also highlight the use of pavement markings and speed management techniques to improve safety on a small budget.

To learn more, contact Rosemarie Anderson at [rosemarie.anderson@dot.gov](mailto:rosemarie.anderson@dot.gov).

Article reprinted from the Federal Highway Administration's Winter 2020 issue of *Safety Compass*.



# RURAL OPPORTUNITIES TO USE TRANSPORTATION FOR ECONOMIC SUCCESS (ROUTES)

The Rural Opportunities to Use Transportation for Economic Success (ROUTES) Initiative is a federal program created to address disparities in rural transportation infrastructure. The new ROUTES initiative will work to provide rural project sponsors with pertinent and easy-to-use information about the Department's infrastructure programs, to help overcome resource challenges that can be an impediment to competitive applications. The ROUTES Initiative was established by Secretary of Transportation Elaine L. Chao in [DOT Order 5050.1](#), signed October 28, 2019. The ROUTES Initiative is designed to improve the analysis of rural projects applying for U.S. Department of Transportation (DOT) discretionary grants, including ensuring that project costs, local resources, and the larger benefits to the American people and economy are appropriately considered; and to provide rural communities with technical assistance for meeting the Nation's transportation infrastructure investment need in a financially sustainable manner.

## THE ROUTES INITIATIVE IS NEEDED FOR THE NATION'S ECONOMY

- Rural transportation networks are critically important for domestic production and export of agriculture, mining, and energy commodities, as well as the quality of life for all Americans.
- Two-thirds of rail freight originates in rural areas, and nearly half of all truck vehicle-miles-traveled (VMT) occur on rural roads. These industries require heavy trucks that create significantly more wear-and-tear on roadways.
- Ninety percent of posted (limited weight) bridges are in rural areas and heavy trucks cannot cross posted bridges – to find a safe bridge, heavy trucks hauling in rural areas must traverse three-times the distance as in metro areas.

## THE ROUTES INITIATIVE IS NEEDED FOR SAFETY

- A disproportionate number of roadway fatalities occur in rural areas. While only one-fifth of the nation's population lives in rural areas, 46% of the nation's highway fatalities occur on rural roads, 39% of all highway-rail crossing fatalities occur in rural areas, and the highway fatality rate is more than twice that in urban areas.
- In fact, 44% of personal vehicle miles traveled on rural roadways are actually urban residents traveling to destinations outside their home metro areas, so rural roadway safety matters for our entire country.

## ROUTES COUNCIL

The ROUTES Council will be chaired by the Under Secretary for Transportation, which will oversee the ROUTES Infrastructure Management Team in three primary activities:

- Collecting input from stakeholders on the benefits rural projects offer for safety and economic benefits, as well as the type and degree of assistance rural projects require.
- Providing user-friendly information to rural communities to assist them in understanding and applying for DOT discretionary grants.
- Improving DOT's data-driven approaches to better assess needs and benefits of rural transportation infrastructure projects.

The ROUTES Initiative will be coordinated across key modal administrations, including the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Federal Rail Administration (FRA), and Federal Aviation Administration (FAA).

In January 2020, DOT staff began attending stakeholder conferences to hear from rural communities about their transportation infrastructure challenges and needs. For more information on the ROUTES Initiative, contact the Office of the Under Secretary for Policy at [rural@dot.gov](mailto:rural@dot.gov) or 202-366-4544.



# TEACHING PEDESTRIAN AND BICYCLE CONCEPTS TO THE NEXT GENERATION OF TRANSPORTATION LEADERS

By Kristen Brookshire, University of North Carolina Highway Safety Research Center, and Becky Crowe, FHWA Office of Safety

If you teach them, they will come. That was our motto as we updated the Federal Highway Administration (FHWA) Bicycle and Pedestrian Transportation University Course. Thousands of universities, junior, technical, and community colleges offer foundational coursework for future transportation practitioners. They play a critical role in preparing future professionals to address transportation challenges and building skills they'll need on their first day of work and throughout their careers. There are more than 300 accredited civil engineering programs in the U.S. and nearly 100 accredited graduate or undergraduate degree programs in planning. The new course provides educators with the tools they need to inspire thousands of students to support safe and vibrant multimodal transportation systems.

*"The FHWA Bicycle and Pedestrian Transportation University Course is designed to help students recognize the legitimacy of bicycle and pedestrian modes; understand how policy, planning, and engineering practices can be improved to create a more balanced transportation system; and become familiar with basic policies, practices, tools, and design principles that can be used to create bicycle and pedestrian-friendly communities."*

*– Rebecca Crowe, FHWA Office of Safety*

The FHWA Bicycle and Pedestrian Transportation University Course is designed to help students recognize the legitimacy of bicycle and pedestrian modes; understand how policy, planning, and engineering practices can be improved to create a more balanced transportation system; and become familiar with basic policies, practices, tools, and design principles that can be used to create bicycle and pedestrian-friendly communities. The course content fits concisely within planning and engineering programs, and is relevant for courses in policy, public health, public administration, or landscape architecture.

The FHWA course update includes pedestrian and bicycle course materials broadly applicable to diverse student audiences and learning styles and adaptable to instructor needs and contexts.

The FHWA course offers a solid starting point for someone new to teaching bicycle and pedestrian topics and should provide a quick reference for those who already teach these topics, but want a source for new resources, images, and examples. The materials can also be used for self-directed learning by those who already work in the transportation field.

The FHWA course contains 21 presentations with detailed speaker notes and complementary assignments, readings, and videos. Most of the individual lessons fit into one of these six broader topics:

1. Principles of designing for people walking and bicycling.
2. Strategies for safer vehicle speeds.
3. Facility and network evaluation.
4. Data collection, analysis, and interpretation.
5. Transit and emerging modes.
6. Public engagement and leadership.

An example of the breadth and depth of content in a lesson is demonstrated in the module entitled Safety Analysis. This lesson introduces current methods and challenges for measuring safety for pedestrians and bicyclists. The module covers specific topics like crash data analysis and interpretation, tools for countermeasure selection, safety effectiveness evaluation, and the roadway safety management process. Most lessons include at least one case study example. In this lesson, Washington, DC's use of leading pedestrian intervals (LPI) at all eligible locations is an example that illustrates a system-wide approach to improving safety. The recommended assignment for this module is a network screening exercise that includes a data set of roadway segment characteristics from a large U.S. city. Students are asked to sort the data using different measures of safety and discuss the differences.

The course materials and an informational webinar are available for download at [www.pedbikeinfo.org/FHWAcourse](http://www.pedbikeinfo.org/FHWAcourse). If you're already using the materials and equipping our future generations of practitioners, please contact Becky Crowe at [rebecca.crowe@dot.gov](mailto:rebecca.crowe@dot.gov) and share your experiences of how you're bringing the next generation into the transportation field.

*Article reprinted from the Federal Highway Administration's Winter 2020 issue of Safety Compass.*

# SAFETY FEATURES TO BE ADDED TO AREA HIGHWAYS IN TEXAS

Safety features in the form of texturized centerline and edgeline markings will be added to 22 sections of area highways during the coming months, according to plans approved in December 2019 by the Texas Department of Transportation (TxDOT).

"We are looking at installing texturized pavement methods to centerline areas of these highways to help prevent crossover crashes and along the shoulders to prevent run-off-the-road crashes," said Rebecca Wells, Director of Traffic Operations for TxDOT in Atlanta. "The texturized pavement methods make noise when vehicle tires run over them, alerting drivers that they are getting out of their traffic lane."

In addition to the pavement markings, several curves will also receive lighted flashing chevron signs. The signs are erected along the curve and are activated by approaching vehicles, causing them to light up in sequence in order to show motorists the direction they need to travel.

Highways scheduled to receive the improvements are:

County	Highway	Limits	Miles
Bowie	US 259	From: Morris County Line To: FM 992	12.9
Bowie	FM 559	From: 1.1 mile north of FM 2253 To: FM 989	6.9
Bowie	FM 560	From: 4.9 mile north of US 82 To: US 82	4.9
Camp	FM 993	From: Upshur County Line To: Us 271	8.7
Cass	SH 77	From: FM 250 To: FM 2065	5.5
Cass	FM 249	From: FM 785 To: FM 3129	5.8
Cass	FM 161	From: Morris County Line To: SH 11	12.3
Cass	FM 2327	From: US 59 North To: US 59 South	6.1
Harrison	FM 450	From: FM 1968 To: FM 726 West	7.1
Harrison	FM 9	From: 5 miles north of FM 1999 To: FM 1999	5.0
Morris	US 259	From: 1.5 north of SH 338 To: SH 11	7.8
Morris	US 259	From: Bowie County Line To: I-30	1.1
Morris	SH 11	From: Titus County Line To: US 259	5.6
Morris	FM 729	From: Marion County Line To: US 259	3.5
Panola	FM 999	From: FM 10 To: US 59	5.2
Panola	FM 31	From: FM 2517 To: Louisiana State Line	9.8
Panola	FM 1794	From: FM 959 To: FM 2792	6.2
Titus	FM 1734	From: US 67 West To: US 67 East	8.9
Upshur	FM 1404	From: SH 155 To: FM 2685	6.7
Upshur	FM 993	From: Camp County Line To: FM 553	2.8
Upshur	FM 1972	From: FM 1649 To: FM 726	2.8
Upshur	FM 726	From: FM 1650 To: SH 154	1.1
Upshur	FM 2454	From: Camp County Line To: FM 2088	7.0
Upshur	FM 993	From: Camp County Line To: FM 553	2.8
Upshur	FM 1972	From: FM 1649 To: FM 726	2.8
Upshur	FM 726	From: FM 1650 To: SH 154	1.1
Upshur	FM 2454	From: Camp County Line To: FM 2088	7.0

Stripe-a-zone, Inc. of Grand Prairie was awarded the contract for the construction on these projects with a bid of \$2.3 million. "Work on the projects should begin in March 2020 and take about four months to complete," Wells said.

For additional information, contact Marcus Sandifer, TxDOT at 903-799-1306.



# PAVING THE WAY: TTI PAVEMENT RESEARCH PROVIDES ECONOMIC, ENVIRONMENTAL BENEFITS

The Texas A&M Transportation Institute (TTI) has a varied and productive history of applied research for the National Cooperative Highway Research Program. These projects provide excellent value by solving the myriad of problems facing transportation professionals. Two recent projects in the pavement area, Short-Term Laboratory Conditioning of Asphalt Mixtures and The Effects of Recycling Agents on Asphalt Mixtures with High RAS and RAP Binder Ratios, are summarized here.

## SHORT-TERM LABORATORY CONDITIONING OF ASPHALT MIXTURES

As roadway aging occurs, asphalt mixtures stiffen due to oxidation and other chemical processes. This makes them inflexible under vehicle loads; cracks begin to form, causing water to seep in, creating serious damage to the roadway. The ability to simulate aging in asphalt binders and mixtures in the laboratory has been studied extensively, and procedures have been adopted for use in binder specifications and mixture design.

*“We found that the laboratory aging did not do very well because the materials in the pavement aged more than they did in the lab”*

“When we perform mix designs on asphalt in the laboratory, we heat the aggregate and asphalt and then blend them together,” explains TTI Senior Research Scientist David Newcomb. “Then we bring them up to temperature so they can be compacted, and then we test it. There’s a lot of uncertainty as to whether or not this accurately mimics what’s placed on the roadway.”

The research question was clear: how do we get our laboratory mix designs to reflect what’s actually being placed in the field? Researchers looked at two stages of aging — the initial aging during the production process and longer-term aging, which occurs as asphalt sits on the roadway.

“We examined a number of different U.S. projects as materials were produced, and we sampled the raw materials so we could test them in the laboratory at different aging phases,” said Newcomb. “Then we took materials produced in the field and brought those back to test them and see how well we were matching.”

The team discovered they could closely simulate short-term aging that occurs in a construction asphalt plant with what was done in a laboratory. They then examined longer-term aging, which for this project was about five years.

“We found that the laboratory aging did not do very well because the materials in the pavement aged more than they did in the lab,” notes Newcomb. “We tried various schemes of long-term aging in the laboratory and were finally able to mimic about 10 years of aging in the field.”

While researchers know there’s more work to be done — particularly involving how to get materials to represent long-term aging beyond 10 years in the field — the results provide better estimates, translating long-term asphalt aging in the lab into actual practice.

## THE EFFECTS OF RECYCLING AGENTS ON ASPHALT MIXTURES WITH HIGH RAS AND RAP BINDER RATIOS

What’s not to like about the increased use of recycled materials in roadways? After all, it’s economically and environmentally beneficial to use higher recycled materials content in new asphalt mixtures — but only if it’s done correctly.

The recycled materials include reclaimed asphalt pavement (RAP) and, to a much lesser degree, recycled asphalt shingles (RAS). RAP is old pavement scraped up and recycled at a rate of 99 percent, making it the most reused product in the United States by far. Right now, most states only allow 20 to 25 percent of new asphalt mixtures to be RAP and 3 to 5 percent to be RAS.

“The reason states limit RAP content is that the material is brittle and aged, which can lead to cracking,” says TTI Research Engineer Amy Epps Martin. “One of the mitigation strategies to maintain engineering performance is to use a softer, virgin binder to try and double the maximum RAP content to 40 to 50 percent. The goal is to realize economic and environmental benefits without sacrificing engineering performance.”



The use of a recycling agent that partially restores the binder blend is a second mitigation strategy to control cracking.

With many types of recycling agents available on the market, TTI researchers developed a set of evaluation tools for the use of recycling agents with high RAS and RAP binder ratios.

“One of the things our research project yielded was a draft American Association of State Highway and Transportation Officials standard practice that includes methods to select appropriate component materials and rejuvenator dose, as well as to evaluate binder blends and mixtures,” explains Epps Martin. “Every combination of virgin asphalt binder, virgin aggregate, RAP, RAS and rejuvenator is unique and must be engineered to provide adequate performance.”

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# TEXAS DRIVERS FACE LONGEST DELAYS ON HOUSTON, AUSTIN FREEWAYS

Fueled by the state's steady growth and healthy economy, Houston's West Loop this year repeats its 2018 rank as the most gridlocked corridor in the state. Interstate 35 in central Austin comes in a close second, with the Southwest and Eastex Freeways in Houston and Dallas' Woodall Rodgers Freeway rounding out the top five.

Researchers from the Texas A&M Transportation Institute use traffic volume and speed data to compile the annual listing of the most crowded roadways in Texas, comparing the time it takes to travel on a congested roadway against the time needed to travel the same corridor in uncongested conditions.

The tally changes little from year to year for the most congested roadways. Only 13 road segments are new to this year's top 100. A total of 92 are concentrated in Texas' four biggest metro areas, but roadway delay is becoming more common in urban areas of varying sizes. This year's complete list of congested road rankings includes 1,854 segments spread across 66 counties, available online at [Texas' Most Congested Roadways 2019](#).

The Texas Department of Transportation — in an initiative known as [Texas Clear Lanes](#) — has increased efforts to address roadway gridlock, largely through two voter-approved funding initiatives directing more resources to the State Highway Fund for non-tolled projects.

"TxDOT's mission is 'Connecting you with Texas', and we are focused on getting people where they need to go efficiently and reliably by paying attention to where improvements are needed most," said Marc Williams, TxDOT's deputy executive director. "Congestion relief is a priority for our top chokepoints as we balance the many demands on our roadways across the state."

The analysis again this year includes a focus on how freight congestion affects highway corridors across Texas. Road segments plagued by the greatest truck congestion are found in Austin, Houston and on the U.S.-Mexico border near Laredo.

# U.S. TRANSPORTATION SECRETARY ELAINE L. CHAO ANNOUNCES NEW INITIATIVES TO IMPROVE SAFETY ON AMERICA'S ROADS

U.S. Department of Transportation (USDOT) Secretary Elaine L. Chao spoke at the 99th Annual Meeting of the Transportation Research Board (TRB) where she announced new transportation initiatives aimed at harnessing new and existing technologies to improve safety for the traveling public and first responders.

"These safety initiatives will make a difference in saving lives and help prevent injuries among first responders and all road users," said U.S. Secretary of Transportation Elaine L. Chao.

Secretary Chao announced the next phase of the Partnership for Analytics Research in Traffic Safety (PARTS) program. PARTS II expands participation in the PARTS program to include almost 70% of the U.S. automobile market and will collect data on additional advanced driver-assistance systems (ADAS) such as Adaptive Cruise Control and Lane Keep Assist. Results derived from analysis of up-to-date-real-world performance data will assist researchers in assessing the safety effectiveness of these systems.

PARTS is a voluntary, data-driven safety partnership between USDOT's National Highway Traffic Safety Administration and the automobile industry. Earlier in this Administration, six manufacturers participated in this program to gather data on

Automatic Emergency Braking Systems. Vehicles with this technology reported 53% fewer rear-end collisions than vehicles without Automatic Emergency Braking Systems based upon preliminary data from the initial program.

Secretary Chao also announced a new program designed to help avoid traffic crashes and save the lives of first responders rushing to aid in emergencies. The Department intends to invest up to \$38 million for the First Responder Safety Technology Pilot Program that will help equip emergency response vehicles and key infrastructure with vehicle-to-everything (V2X) communication technology. These systems will use the 5.9 Gigahertz Safety Band of spectrum currently allocated by the FCC for use in transportation systems.

Finally, the Department is endorsing a standardized listing of recommended ADAS terminology through an initiative entitled "Clearing the Confusion," spearheaded by the National Safety Council, AAA, Consumer Reports and J.D. Power. The recommended ADAS terminology is based on ADAS system functionality. Currently, there is variance among manufacturers and standard language will ensure drivers are aware that these systems are designed to "assist," not replace an engaged driver.

## U.S. DEPARTMENT OF TRANSPORTATION UNVEILS INTERACTIVE MAP TO ENCOURAGE INVESTMENT IN UNDERSERVED RURAL AND URBAN COMMUNITIES

The U.S. Department of Transportation (DOT) recently announced a new [interactive map](#) highlighting federal investment in major infrastructure projects located in and around Opportunity Zones. The detailed information about vital infrastructure resources located in and near Opportunity Zones is intended to encourage further economic investment.

"Opportunity Zones have the potential to increase job creation in underserved communities, especially in rural areas, and the Department is working to ensure there are transportation links to opportunity zones," said U.S. Secretary of Transportation Elaine L. Chao.

The 2017 Tax Cut and Jobs Act created a new economic development tool called Opportunity Zones. An Opportunity Zone is an economically distressed community designated by the State's Governor and certified by the United States Secretary of the Treasury. Opportunity Zones were created to increase economic development in low-income and distressed communities. Opportunity Zones have been designated in all 50 States, the District of Columbia, and five U.S. territories. There are 628 Opportunity Zones in Texas.

For the past two years, DOT has worked to engage Opportunity Zones by updating the criteria of infrastructure programs to address underserved, low-income rural and urban communities. To date, DOT has issued 13 Notices of Funding Opportunity that contain Opportunity Zones language. These programs awarded more than \$2 billion in FY 2019.

The Department's interactive map illustrates data sets for:

- Major Federal Highway Projects
- Interstate Exits
- National Highway System Bridges
- Intercity Bus Stations
- Commuter/Light Rail Stations
- Amtrak (Stations, Industrial Properties)
- Intermodal Rail Facilities
- Intermodal Marine Facilities
- Major Ports
- Airports
- National Highway System
- Rail Sidings

For more background, [view the map here](#) and see further information on our website.

For more information on upcoming events and workshops, visit [txltap.org](http://txltap.org)

Call the TxLTAP office at 817-272-9678 or email us at [txltap@uta.edu](mailto:txltap@uta.edu) to schedule an event or workshop near you.

## GRAVEL ROADS ACADEMY

Improve upon current knowledge related to gravel road maintenance best practices. Learn how to get more mileage out of your gravel roads budget with the latest tools, techniques, and know-how from road maintenance experts.

## HEAVY EQUIPMENT RODEO

Heavy equipment operators will be given a chance to learn and practice new skills while stressing safety and excellence. Operators will use maintainers, backhoes, dump trucks, loaders, and more to steer through a series of exercises designed to test their abilities.

## HEAVY EQUIPMENT FOR WILDFIRES

Heavy Equipment Operators are sometimes called out to assist fire fighters in wildland fire situations. Learn methods of attacking a fire, techniques of diminishing a fire with a dozer and grader, and dangerous situations to avoid.

## SNOW AND ICE TECHNIQUES

Snow and ice control is a complex process. This workshop will cover personal and operational safety, plowing techniques, salt and abrasive application, and decision making based on the forecast and actual in storm conditions.



# TXLTAP EVENTS & WORKSHOPS

TAKE ADVANTAGE OF

TECHNICAL ASSISTANCE

TXLTAP IS FORTUNATE TO HAVE SOME OF THE MOST EXPERIENCED AND KNOWLEDGEABLE TRANSPORTATION PROFESSIONALS ON STAFF.

This staff includes former maintenance managers, heavy equipment operators, road crew chiefs, civil and transportation engineers, inspectors, and the public works directors who all worked on the state's road system and in a nutshell "have been there, done that." Now Texas' local roadway agencies can directly benefit from their street smarts.

While training and information sharing at conferences or through a newsletter can do a lot of good, TxLTAP recognizes sometimes there is just nothing like rolling up your sleeves, experiencing the problem first hand and then offering a meaningful solution. That's why in addition to hosting classes and publishing Better Roads, Safer Roads, our program offers local roadway agencies an opportunity to consult directly with a TxLTAP subject matter expert to specifically address your organization's unique issue. And like all resources TxLTAP offers, there is no charge to receive our help or expertise.

Do you need information on proper method for repairing your lingering road problem? Would it help if someone came out to watch your road crew perform a repair and offer suggestions on how to save time and money in the future? Could you use the help of a traffic engineer who could assess a problematic intersection? Would it be a benefit to you if a subject matter expert came to ride the roads and developed a training presentation specific to your needs?

Take advantage of our technical assistance service!

Call 817-272-9678 or email us at [txltap@uta.edu](mailto:txltap@uta.edu). We're ready to help!



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