Fall 2022 | TxLTAP.org

BETTER ROADS SAFER ROADS

SAFER STREETS FOR DRIVERS AND VULNERABLE ROAD USERS

UTA Division for Enterprise Development
TxLTAP

Sponsored by the Texas Department of Transportation and the Federal Highway Administration

Operated by the University of Texas at Arlington

Texas Department of Transportation

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PUBLIC WORKS INSTITUTE

BETTER ROADS
SAFER ROADS

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TxLTAP

The Local Technical Assistance Program (LTAP) is a nationwide effort financed by the Federal Highway Administration and individual state departments of transportation. Its purpose is to translate into understandable terms the best available technology for roadways, bridges, bicycle and pedestrian facilities, and public transportation for city and county roadway and transportation personnel. The TxLTAP, operated by the University of Texas at Arlington, is sponsored by the Texas Department of Transportation (TxDOT) and the Federal Highway Administration. This newsletter is designed to keep you informed about new publications, techniques, and training opportunities that may be helpful to you and your community.

DRIVERS, PEDESTRIANS, BICYCLISTS MUST FOLLOW TRAFFIC LAWS AND STAY FOCUSED

PEDESTRIANS AND BICYCLISTS ACCOUNT FOR 1 IN 5 TRAFFIC DEATHS

It's a simple and undisputed fact: Following traffic laws and staying focused can prevent unthinkable tragedy on the road. Yet, in Texas, pedestrian and bicyclist fatalities continue to rise.

In 2021 in Texas, 841 people died in pedestrian-related traffic crashes, an increase of 15% from 2020. Crashes involving bicyclists claimed the lives of 92 people. Pedestrian and bicyclist deaths accounted for 20% of the 4,490 fatalities on Texas roadways last year.

"Year after year, we're seeing fatalities from traffic crashes involving pedestrians and bicyclists climb," said TxDOT Executive Director Marc Williams. "Each of us has a shared responsibility to help reverse this trend. Whether you're behind the wheel, on foot or riding a bicycle, we're asking all Texans to be safe and smart, and that starts with obeying traffic laws."

TxDOT's "Be Safe. Drive Smart." campaign urges all Texans to know and follow the laws for safe driving, walking and biking. Those life-saving laws include the Lisa Torry Smith Act, which went into effect in 2021. Named after a Texas mom who was struck and killed in a crosswalk while walking her six-year-old son to school, the law requires that drivers stop and yield the right of way to people in crosswalks. Motorists who fail to stop and yield and cause serious injury to someone in a crosswalk can face criminal penalties.

TEXAS LAW STATES IF YOU'RE DRIVING:

- Stop and yield for pedestrians, bicyclists and other vulnerable road users in crosswalks.
- When turning, yield the right of way to pedestrians and bicyclists.
- Pass bikes at a safe distance and give bicyclists room to ride.

"Year after year, we're seeing fatalities from traffic crashes involving pedestrians and bicyclists climb..."

If you're walking:

- Cross the street only at intersections and crosswalks.
- Obey all traffic and crosswalk signals.
- Use sidewalks. If there's no sidewalk, walk on the left side of the road, facing oncoming traffic.

If you're riding a bike:

- Always stop at red lights and stop signs.
- Ride in the same direction as traffic and use bike lanes or ride as near as possible to the right-hand curb.
- Use hand signals when turning or stopping.
- At night, make sure your bike has a white light on the front and a red light or reflector on the back.

Raising awareness of these rules of the road is an important part of TxDOT's efforts to encourage Texans to do their part to prevent pedestrian and bicyclist fatalities and injuries.

TxDOT's "Be Safe. Drive Smart." campaign and pedestrian and bicycle safety initiative are key components of #EndTheStreakTX, a broader social media and word-of-mouth effort that encourages drivers to make safer choices while behind the wheel to help end the streak of daily deaths. Nov. 7, 2000, was the last deathless day on Texas roadways. For media inquiries, contact TxDOT Media Relations at MediaRelations@TxDOT.gov or (512) 463-8700.

TRAFFIC SIGNAL TECHNOLOGIES IMPROVE PEDESTRIAN, BICYCLIST SAFETY IN TEXAS

Reprinted from The Texas Researcher, Volume 58, Number 2.

The Lone Star State has experienced an increase in the number of pedestrians and bicyclists who have lost their lives in roadway crashes. Within the last decade, pedestrian and bicyclist fatalities rose by 69 percent in Texas. These statistics — but, even more so, the real people behind the numbers — present a safety concern for reducing crashes, especially in urban areas.

The Texas A&M Transportation Institute (TTI) conducted the innovative research project Automated and Connected Vehicle (AV/CV) Test Bed to Improve Transit, Bicycle and Pedestrian Safety. Texas Department of Transportation (TxDOT) Project 0-6875-03 was a multi-year, three-phase cooperative effort by TTI, with Texas A&M University, the City of College Station, and the Brazos Transit District providing support.

The project focused on ways to improve safety involving buses, bicyclists and pedestrians using AV/CV technologies. Providing alerts to pedestrians and bicyclists that buses are turning at signalized intersections is one approach tested in the project.

TTI Executive Associate Director Katie Turnbull notes, "The first phase of the project looked at defining the issues, and we held 25 meetings throughout the state, a variety of workshops, and roundtable forums to really help define the issue, the problems, and where conflicts among buses, bicyclists and pedestrians are occurring."

Phase I also allowed for research on AV/CV technologies to help address the issues. In Phase II, researchers developed and piloted a smart intersection at the Texas A&M-RELLIS campus. The team performed a proof of concept with the Brazos Transit District's buses to evaluate visual and audio alerts to pedestrians and bicyclists that a bus was turning.

The Mobileye/Rosco Shield+™ collision-avoidance system has four different cameras that are essentially aimed at the blind spots on the bus and where pedestrians and bicyclists are most likely to show up and be in harm's way.

During Phase I, the Rosco MobileEye® Shield+™ collision-warning system was piloted on one Texas A&M bus. The system uses cameras and sensors to detect if a pedestrian or bicyclist is too close to the bus and a collision might occur. The bus operator is alerted by yellow and red lights and a buzzer to take appropriate action. During Phase III, upgraded MobileEye systems were installed on new Texas A&M buses to continue the pilot.

Phase III included installation of the technology at Penberthy Boulevard and George Bush Drive, an intersection close to busy campus activity. Texas A&M Transportation Services and the City of College Station collaborated with TTI during this phase. Ten Texas A&M buses were equipped with dedicated short-range communications radios, and the City of College Station allowed the use of the traffic signal system.

Supporting projects using AV/CV technologies could make intersections and urban areas safer for buses, pedestrians, bicyclists and other road users across Texas.

"Anytime we can reduce the risk of a crash — especially between a large vehicle and a vulnerable roadway user — it's a success," says Bonnie Sherman, bicycle and pedestrian program supervisor in TxDOT's Public Transportation Division. "We have an opportunity to use technology to avoid some almost certainly fatal crashes, so it's our responsibility to advance and share that technology."

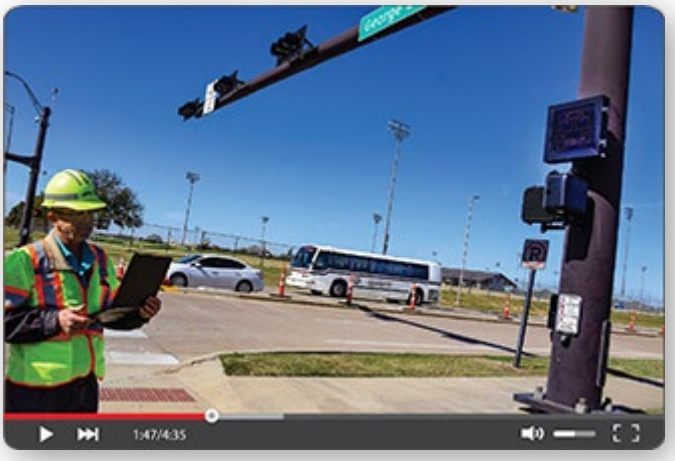
Sharing INNOVATION

Video Summary Report

TxDOT PROJECT NO. 0-6875-03

Watch TTI's Video Summary Report

TTI produced a video summary report for the Automated and Connected Vehicle Test Bed to Improve Transit, Bicycle and Pedestrian Safety project. View the video on TxDOT's YouTube channel: https://youtu.be/3eYwOuQETSI.



PROPER FRICTION EQUALS SAFER ROADS

THE CORRECT AMOUNT OF PAVEMENT FRICTION IS CRITICAL FOR MOTORIST SAFETY, ESPECIALLY DURING WET WEATHER

Reprinted from The Texas Researcher, Volume 58, Number 2.

The Wet Surface Crash Reduction Program guidelines from the Texas Department of Transportation (TxDOT) Traffic Safety Division provide engineers with a framework for identifying existing pavement friction and the tools for specifying new pavement surfaces that will meet project-specific friction demand. During the past few years, there have been issues with some flexible pavements having lower-than-expected friction skid values. These concerns were for newly constructed pavements; normally, friction skid values decrease only several years after construction.

Researchers with the Texas A&M Transportation Institute (TTI) recently completed a synthesis study to evaluate Form 2088, the Surface Aggregate Selection Form, which is used to provide guidance on selecting proper roadway friction treatments.

"In TxDOT, we have a program called the Wet Surface Crash Reduction Program," says Robert Trevino Flores, director of the TxDOT Soils and Aggregate Section. "This program provides the framework for identifying existing pavement friction. Form 2088 is one of those tools used in the program to determine the friction availability and demand. This project tried to evaluate those criteria and make sure that the form is really helping us make the best decisions for our pavements."

This synthesis study searched available information pertinent to the criteria used for Form 2088 to find the surface aggregate classification and determine the criteria used by other states and governing agencies to determine the friction availability and demand.

"What we wanted to look at was the criteria on the form to see if there had been research since the form was created in the late 1990s," says Darlene Goehl, head of the TTI Pavements and Materials Division. "Our goal was to update those criteria based on the latest research."

The project found improvements in the program that triggered two research statements. The first statement was the evaluation of surface types, pavement friction and wet weather accidents. The other project was incorporation of the findings in a different type of form.

"We also recommended that they look at the safety spreadsheet that TTI developed and the districts are starting to use," says Goehl. "A lot of the criteria that are on the form are also captured in that safety spreadsheet, so we think it's an efficient use of resources to just have that one form. We also made recommendations on the aggregate being used to include some friction values."

With the proper guidelines in place for the Wet Surface Crash Reduction Program, the traveling public will benefit from safer roadways.

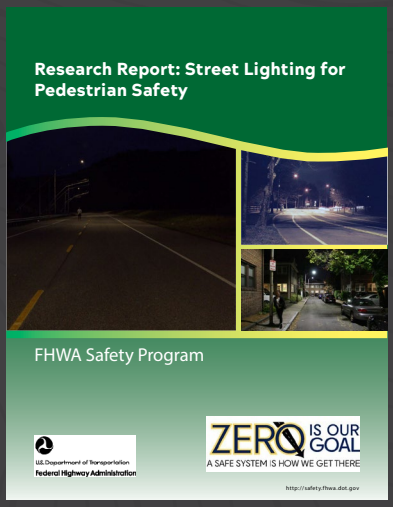
"Safety is our priority here at TxDOT," notes Flores. "It is critical to address the safety of the traveling public, and it is important that we are using the correct criteria on the form to make the pavement surface optimized for correct friction values."

For more information, contact Darlene Goehl at d-goehl@tti.tamu.edu.

NEW FHWA RESOURCES FOR CRASH REDUCTION

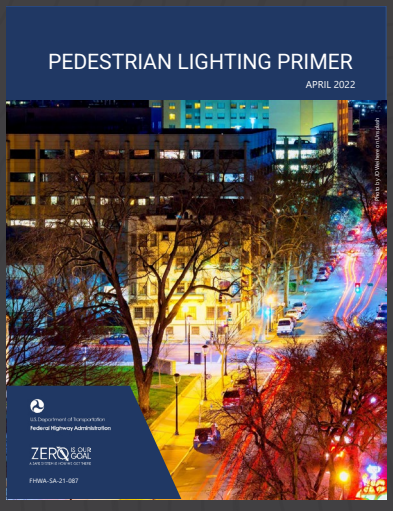
by Joseph Cheung
P.E., FHWA Office of Safety

IMPROVING PEDESTRIAN SAFETY DURING NIGHTTIME TRAVEL



Cover of Research Report: Street Lighting for Pedestrian Safety. (Source: FHWA)

The Federal Highway Administration (FHWA) created Research Report: Street Lighting for Pedestrian Safety to provide lighting recommendations for pedestrian safety. In developing the lighting recommendations, FHWA considered the ability of pedestrians to detect hazards on walkways and crosswalks, visibility of pedestrians to motorists, and impacts of lighting on pedestrian decisions about whether or not to cross a roadway.



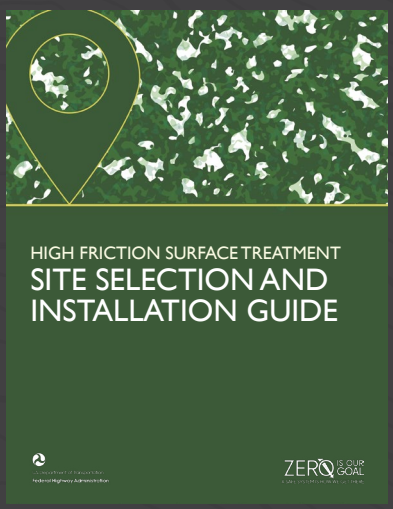
Cover of Pedestrian Lighting Primer. (Source: FHWA)

FHWA also recently published the user-friendly companion document *Pedestrian Lighting Primer* as a resource for transportation practitioners interested in lighting. The primer provides information for the safety and security of pedestrians. The primer highlights how the results from *Street Lighting for Pedestrian Safety* can complement commonly used lighting design guides. The primer presents an overview of a four-step process that involves selecting design criteria, selecting equipment, determining the control strategy, and conducting lighting design and verification. As the primer illustrates, lighting of pedestrian facilities is key to increasing the safety performance of the roadway network for all users. Effective pedestrian lighting is a means of addressing the vulnerability of pedestrians during dark conditions and improving the safety and security of all road users spanning different ages and abilities. The *Pedestrian Lighting Primer*, along with *Street Lighting for Pedestrian Safety*, can help transportation practitioners realize the benefits of lighting designs and provide safer facilities for pedestrians at night.

An additional resource related to the primer is *Lighting for Pedestrian Safety*. This two-pager summarizes key elements from the primer and brings to the forefront all other impacts on providing a well-lit street environment.

NEW RESOURCES FOR KEEPING VEHICLES IN LANES

High Friction Surface Treatment (HFST) is a proven safety countermeasure for reducing friction-related crashes at curves, ramps, intersections, and locations with high friction demand. Over the past 15 years, more than 44 States have deployed HFST for the first time, with many states currently implementing HFST systemically on a large scale. The state of the practice for HFST site selection, materials, installation, and performance monitoring has changed significantly since HFST first became an Every Day Counts safety initiative.



Cover of High Friction Surface Treatment Site Selection and Installation Guide. (Source: FHWA)

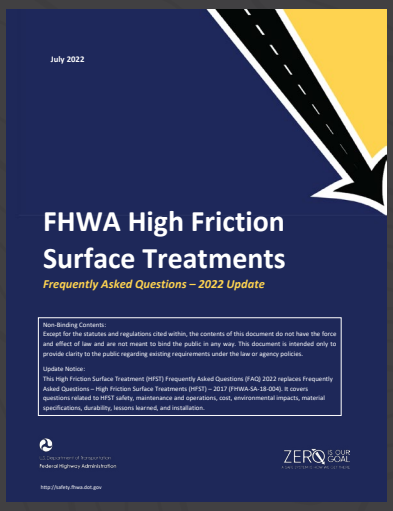
The *High Friction Surface Treatment Site Selection and Installation Guide* is a new resource that reflects these changes. This guide assists agencies implementing HFST for the first time that may be limited in their ability to expand and improve their programs, and that may have mature programs they would like to further refine. The guide highlights key practices from agencies that have

realized the greatest benefit from HFST deployment (including data-driven approaches for site selection); addresses testing requirements; and provides recommendations on contracting practices, installation methods, and performance monitoring.

Cover of HFST Installation and Inspection Pocket Guide. (Source: FHWA)

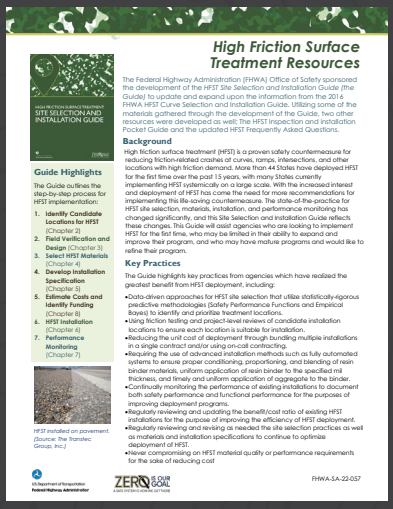
The *HFST Installation and Inspection Pocket Guide* summarizes chapter 6 of the High Friction Surface Treatment Site Selection and Installation Guide. This pocket guide may be downloaded, printed, or viewed on mobile devices in the field. The pocket guide includes an inspection checklist that steps through preconstruction, materials, surface preparation, pre-application, resin binder application, aggregate application, aggregate removal, traffic and testing acceptance opening, and post-installation items.

The FHWA's *High Friction Surface Treatments: Frequently Asked Questions – 2022 Update* has been updated from the 2017



Cover of High Friction Surface Treatments: Frequently Asked Questions – 2022 Update. (Source: FHWA)

HFST FAQs. It provides concise answers to the more commonly asked questions related to HFST. This includes questions about safety, maintenance and operations, cost, environmental impacts, material specifications/durability, lessons learned, and installation.



Cover of HFST Training Materials. (Source: FHWA)

A new version of *HFST Training Materials* have also been updated using the above new resources. They are available with scripted speaker notes, designed for up to 4 hours of training. To schedule the delivery of this training module, please contact Victoria Brinkly at Victoria.brinkly@dot.gov.

For more information about these resources, please contact Joseph Cheung at joseph.cheung@dot.gov.

MORE THAN 79,000 DEAD ON TEXAS ROADS. IT'S TIME TO CARE.

The cell phone video from Easter Sunday shows the convertible Chevy Corvette going 110 mph on Dumas Highway in Amarillo.

"Joey! Chill, bro!" is what the passenger, Dyego Mendoza, shouted over the roaring engine. But it was too late. The car flipped and rolled for several hundred feet before it flew across a highway below, slammed into the side of an overpass and slid down the embankment.

In the video just before the horrific crash, David Elizalde's 17-year-old daughter, Andrea, can be seen sitting on the center console between the two front seats. She was not wearing a seatbelt.

The crash scene along Dumas Highway was gruesome. Andrea's Corvette was in pieces, scattered everywhere. The only part of the car that remained intact was flattened.

"We pulled up to a car that was unrecognizable," said Amarillo Firefighter Brenton Goerend. "You couldn't tell what it was. It was horrible. We couldn't find the third person, so we started looking underneath the car."

Mendoza and the driver survived. Andrea died at the scene, making her one of more than 79,000 people who have died on Texas roads since Nov. 7, 2000.

"It's not OK to drink and drive," Elizalde said. "It's not OK as a father to go through the death of your daughter at the hands of people who are drinking and driving."

The wreckage of Andrea's car provided the backdrop for Elizalde who was a guest speaker during an #EndTheStreakTX press event in Amarillo on Nov. 16.

BACKGROUND

This Nov. 7, Texas marked 22 years of daily deaths on our roadways with more than 79,000 innocent lives lost to preventable fatal crashes. For the past several years, about 10 people have died every day in crashes across the state.

For the first time in the agency's history of analyzing fatal crashes, experts spoke with a psychology professor to dig deeper into the driver behavior. In an interview, Dr. Art Markman from the University of Texas, alluded to an erosion of community that can be a cause for an increase in traffic fatalities.

"We have to remind people that they are part of a community," Markman said. "We have to start considering everyone as part of our community. If we don't do that, there are going to be all sorts of negative consequences, and those are going to include negative consequences on the road."

Texas Transportation Commissioner Laura Ryan, a champion for road safety and TxDOT's #EndTheStreakTX campaign, said every Texan must do their part. And while the goal of ending the deadly

The wreckage of Andrea's car. (Source: TxDOT)

streak is ambitious, Ryan said, it is far from impossible, but we must start to care about others around us.

"With the knowledge that, since the pandemic, people don't seem to view others around them as part of a community, and, that they care less about those around them, we are starting to identify the problem," said Ryan. "If we know there is a problem and we can identify that a big part of the problem is a lack of caring or apathy, then we also know the solution - we must care more about those around us."

SOLUTIONS

Drivers have the power to protect themselves, their passengers and fellow community members because most crashes and fatalities are preventable and caused by things such as speeding, drunk driving and distracted driving. That's why the approach to reaching zero deaths must be through what TxDOT calls the 3 E's: engineering, education and enforcement. We all have a responsibility to keep our roads and fellow drivers safe.

TxDOT is asking all Texans to do any or all the following to raise awareness:

- Make the best and safest decisions behind the wheel, don't drive under the influence of alcohol and/or drugs; always obey traffic laws; always wear your seatbelt.
- Post pictures on social media with this downloadable sign displaying the hashtag #EndTheStreakTX.
- Share personal stories on social media of loved ones who have been lost in a crash and use the hashtag #EndTheStreakTX.
- Follow @txdot social media pages and share the content we post.

The Texas Department of Transportation is responsible for maintaining 80,000 miles of road and for supporting aviation, maritime, rail, and public transportation across the state. Through collaboration and leadership, we deliver a safe, reliable, and integrated transportation system that enables the movement of people and goods.

NEW CABLE BARRIER SAVING LIVES

A recent review of four TxDOT districts shows the success of more than 130 miles of new cable barriers. The cable barriers were installed in Lufkin, Pharr, Waco and Fort Worth using part of the $600 million Road to Zero funds allocated by the Texas Transportation Commission in 2019. Since being installed, the barriers have been hit and repaired 242 times.

"I'm going to assume that each of those 242 strikes was a potential fatality had that cable barrier not been there," Commissioner Laura Ryan said.

As part of its Road to Zero safety initiative, TxDOT has completed 88 projects throughout the state, and more than 120 additional projects are currently under construction.

The work includes widening some roads and adding rumble strips that alert drivers if they are veering out of their lane or off the road. In addition, TxDOT is adding reinforced shoulders and select turn lanes, and deploying new technology that will increase safety on the entire system of roads.

State transportation departments received encouraging news earlier this month, when the National Highway Traffic Safety Administration released projections showing the first quarterly decline in crash deaths since the earliest days of the pandemic.

In Texas, from January to August of this year there were 84 fewer fatalities compared to the same time in 2021. The state saw a 9-percent drop in distracted driving deaths and an 18-percent decrease in work zone fatalities.

The new numbers offer a glimmer of hope after record increases in the number of people killed on roads in recent years. But still, officials say, the picture remains alarming.

"The numbers are hopeful news," Ryan said. "But we have seen a record number of loved ones killed on our roads in recent years, and so the picture remains grim, and we must continue to be diligent in what we're doing."

Of the fatal crash categories TxDOT measures, the agency saw reductions in all but two—people killed not wearing a seat belt and bicyclist deaths.

BIDEN-HARRIS ADMINISTRATION SENDING STATES NEARLY $60 BILLION FROM THE BIPARTISAN INFRASTRUCTURE LAW FOR AMERICA'S ROADS AND BRIDGES

The U.S. Department of Transportation's Federal Highway Administration (FHWA) recently announced that it has released $59.9 billion in Fiscal Year 2023 apportionments for 12 formula programs to support investment in critical infrastructure, including roads, bridges and tunnels, carbon emission reduction, and safety improvements utilizing funding from President Biden's Bipartisan Infrastructure Law. The funds go directly to all 50 States, the District of Columbia and Puerto Rico and help them continue the important work of rebuilding our roads and bridges and making our transportation system more efficient.

"America's roads and bridges are the vital arteries of our transportation system, connecting people and goods across the country," said **U.S. Transportation Secretary Pete Buttigieg**. "Because of President Biden's Bipartisan Infrastructure Law, today we are sending historic levels of funding to every state to help modernize the roads and bridges Americans rely on every day."

The Bipartisan Infrastructure Law contains the single largest dedicated investment in our transportation infrastructure since the construction of the Interstate Highway System in the 1950s and 1960s. In the last year alone, Bipartisan Infrastructure Law funding

New and Significantly Increased Programs Under the Bipartisan Infrastructure Law	FY23 Percent Increase over FY21
Carbon Reduction Program	NEW
Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Formula Program	NEW
National Electric Vehicle Infrastructure Formula Program	NEW
Bridge Formula Program	391%
Appalachian Development Highway System	146%
Highway Safety Improvement Program	26%
Metropolitan Planning Program	25%
National Highway Performance Program	20%
Surface Transportation Block Grant Program	16%

has already been used to help address long overdue needs in every State in the nation, including:

- The **Bridge Formula Program** supported repairs on over 2,400 bridges.
- The **Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Formula Program** has funded over $200 million of projects in 21 States, including resilience improvements to the I-20 Wateree River Bridge in South Carolina to upgrade critical elements of the bridge and raising the elevation of Louisiana Highway 1 (LA 1) to make it more resilient to flooding during extreme weather events across the Gulf of Mexico.
- The **Highway Safety Improvement Program** supported improvements on over 5,300 projects, including a total of 155 roundabout projects throughout the country that will reduce the number of traffic conflict points; over 100 pedestrian and bicyclist safety improvement projects throughout Oregon; the implementation of 30 rectangular rapid flashing beacons in Arlington County, Virginia, to help pedestrians safely cross the street; and road safety audits along rural corridors in Tennessee to identify safety improvements needed to reduce fatalities and serious injuries.
- The **National Highway Performance Program** has funded more than 6,000 projects, including replacing a dangerous intersection on US-50 in Pueblo, Colorado with an interchange that improves safety and connectivity for bikers, pedestrians, motorists, and freight flows; resurfacing 13 miles of I-57 in Illinois and improving a rest area that includes truck parking; and constructs a new bridge, passing lanes and two-way left-turn lanes on California State Route 46.

The $59.9 billion in funding for Fiscal Year 2023 is the second year of funding under the Bipartisan Infrastructure Law and represents an increase of $15.4 billion in formula programs as compared to Fiscal Year 2021, the last fiscal year before the Bipartisan Infrastructure Law was implemented. This Bipartisan Infrastructure Law funding is distributed annually by FHWA based on Congressionally mandated formulas.

"These historic investments in American infrastructure give States the flexibility they need to determine how to allocate funds in order to replace deficient bridges, improve safety for all road users, and reduce carbon emissions by improving transportation infrastructure for communities throughout each state," said **Acting Federal Highway Administrator Stephanie Pollack**. "This funding will allow States to continue the important work of President Biden's Bipartisan Infrastructure Law that will make our infrastructure safer and more efficient for the tens of millions of American families that count on it to get to school, work, and critical medical care every day."

Federal-aid Highway Program funds are authorized periodically by Congress in multi-year laws to assist the States in providing for construction, reconstruction, and improvement of highways and bridges on eligible Federal-aid routes and for other special purpose programs and projects. The Bipartisan Infrastructure Law established or continued FHWA programs and authorized funding for those programs from the Highway Trust Fund and General Fund.

Click here to view the allocation of funding by state and program, which can be viewed at FHWA's Bipartisan Infrastructure Law Funding web page, organized by fiscal year.

FHWA has additional information for transportation agencies and others interested in grants and other discretionary funding opportunities as well as information on new and existing FHWA programs available under the Bipartisan Infrastructure Law web page.

U.S. DEPARTMENT OF TRANSPORTATION ANNOUNCES NEW GUIDANCE TO IMPROVE SAFETY FOR VULNERABLE ROAD USERS UNDER PRESIDENT'S BIPARTISAN INFRASTRUCTURE LAW

As part of its ongoing efforts through the National Roadway Safety Strategy (NRSS) to prioritize safety and meet milestones laid out in the Bipartisan Infrastructure Law, the U.S. Department of Transportation's Federal Highway Administration (FHWA) recently announced new guidance to help states address the crisis of roadway deaths across our nation. Vulnerable road users, such as pedestrians, cyclists, and people who use wheelchairs, accounted for approximately 20% of the 42,915 people who were killed in motor vehicle crashes in 2021, according to the National Highway Safety Administration, an increase of 13% over 2020.

The guidance provides additional clarity for states as they develop their Vulnerable Road User Safety Assessment, a new safety approach established under President Biden's Bipartisan Infrastructure Law to assess the safety performance of individual states, identify areas of high risk to vulnerable road users, and determine what safety improvements will mitigate these safety risks.

"It is up to all of us to keep those who walk, bike or roll safe as they travel," said U.S. Transportation Secretary Pete Buttigieg. "Because of the Bipartisan Infrastructure Law, states have new resources to improve safety for vulnerable travelers, make our roads safer and more accessible for all, and help move us closer to reaching the ultimate vision of zero fatalities."

By law, the Vulnerable Road User Safety Assessments developed by states to identify areas of high risk must be driven by demographic and performance related data developed in consultation with local governments that represent high risk areas as well. In developing these assessments, FHWA is encouraging states to work with institutional, advocacy, and community groups, particularly those that represent populations that are involved in these crashes and reside in the locations where fatalities and serious injuries are occurring.

Once completed, FHWA encourages states to use their Vulnerable Road User Safety Assessment findings to adjust project selection and investment strategies. FHWA's guidance on the assessment will help states follow that legal requirement as they work to reduce roadway fatalities and improve the safety of road users who walk, bike, roll and rely on access to transportation systems.

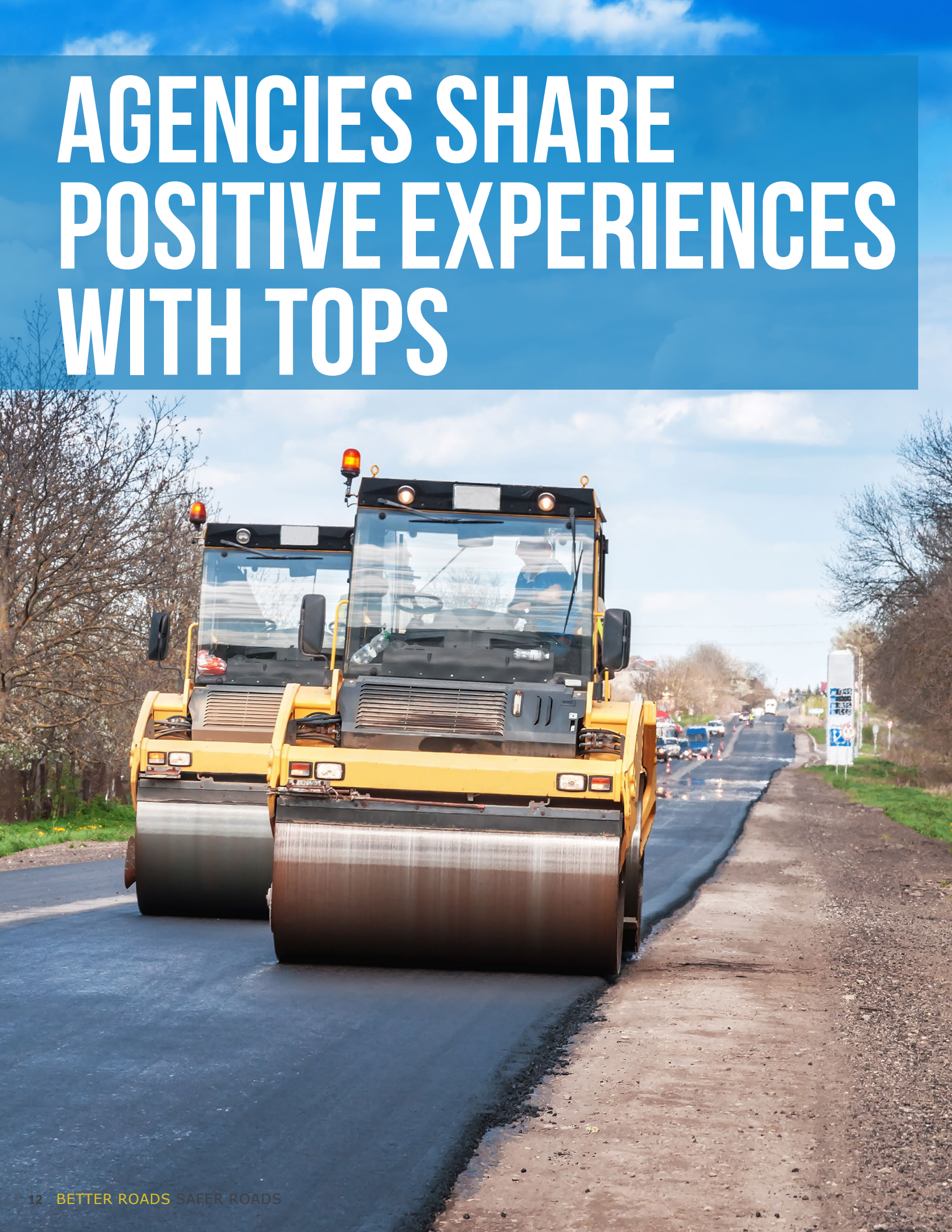
"This guidance can help States identify what safety issues for those outside of a vehicle need to be addressed and where," said Acting Federal Highway Administrator Stephanie Pollack. "States are then positioned to incorporate the results as they make decisions about their safety investments. It also improves transportation equity by making sure extensive dialogue with relevant stakeholders takes place and the concerns of those most at risk in towns, cities and underserved communities are heard through better public engagement at the local level."

The Vulnerable Road User Safety Assessment guidance complements the NRSS, U.S. DOT's comprehensive approach to reach zero fatalities on our nation's roadways through a Safe System Approach. The Department released a new dashboard to provide stakeholders with more transparency about the implementation status of key NRSS programs and activities across U.S. DOT.

The Bipartisan Infrastructure Law provides a historic opportunity for FHWA to work closely with state, local, and Tribal partners to put increased transportation funding to work incorporating safety for all users into every federally funded road project. Safety-related investments, including Complete Streets activities, are eligible through most Federal-aid funding programs. Earlier this year, FHWA issued guidance for the Highway Safety Improvement Program, which received an additional $4 billion in funding under the Bipartisan Infrastructure Law. The Bipartisan Infrastructure Law also created a new $5 billion Safe Streets and Roads for All competitive grant program for local governments.

For more information, please contact Neil Gaffney at (202) 366-0660 or Neil.Gaffney@dot.gov.

AGENCIES SHARE POSITIVE EXPERIENCES WITH TOPS



Pavement overlays represent a significant portion of highway infrastructure dollars. State and local agencies can maximize this investment and help ensure safer, longer-lasting roadways by employing innovative overlay procedures that improve pavement performance, lessen traffic impacts (fewer work zones), and reduce the cost of pavement ownership.

Many transportation agencies report having positive experiences using an asphalt or concrete overlay promoted as part of the FHWA Targeted Overlay Pavement Solutions (TOPS) Every Day Counts initiative. This article highlights successful applications of four different TOPS overlays.

HIGHLY MODIFIED ASPHALT MIXTURE OVERLAY

Highly modified asphalt (HiMA) mixtures are having a big impact in Florida. The Florida Department of Transportation (FDOT) began researching HiMA 7 years ago and found that it prevents rutting twice as well as the control mix.

FDOT has monitored and evaluated the performance of HiMA overlays on this roadway since 2017. Credit: Gary Fitts

"We get excellent rutting resistance with the HiMA binder," said FDOT State Bituminous Materials Engineer Howie Moseley. Studies also show HiMA significantly improves the performance of FDOT's open-graded friction course mixtures, can increase structural capacity up to 20 percent, and is more cost-effective compared to the conventional mixture.

FDOT uses HiMA to address severe rutting in high-stress locations, such as truck weigh stations, agricultural inspection stations, and high-volume intersections and interchanges. Since 2017, the agency has placed more than 600,000 tons of HiMA mixtures on over 50 projects across the State.

One of the first HiMA projects built by FDOT was on Interstate 10 between two large truck stops where the combination of heavy axle loads and slow-moving traffic had resulted in severe rutting, exceeding 2 inches in some areas. FDOT had planned to reconstruct the highway section using a Portland cement concrete pavement to address these failures, but as an interim measure, FDOT milled the section to a depth of 2.5 inches and replaced it with a dense-graded HiMA mixture. "The project has performed so well that the reconstruction project was canceled," said Moseley. After 6 years of service, rutting remains minimal.

CRACK ATTENUATING MIXTURE OVERLAY

The Texas Department of Transportation (TxDOT) is having success with crack attenuating mixture (CAM). Research has shown that properly designed CAM interlayers may reduce the number of reflective cracks and slow the rate of reflective cracking by up to 50 percent without jeopardizing rutting resistance.

The 18-year-old CAM interlayer on I-69 in Houston, TX is still performing well today. Credit: Map data ©2021 Google

The Houston District's first overlay project with a CAM interlayer was in 2014 on a stretch of Interstate 69. It was designed to support an annual average daily traffic of 300,000 vehicles per day. Cracks were spaced 10 to 20 feet apart on the original continuously reinforced concrete pavement. The Houston District worked with the Texas A&M Transportation Institute to design CAM as a fine-graded mixture with high-binder content applied in thin 0.5- to 1-inch lifts between the existing pavement and a thin asphalt layer.

"The key to a successful project such as this one is proper planning, coordination, and preliminary site investigation."

According to TxDOT Project Manager Ashwaq Mohammed, the CAM overlay system has performed well on I-69. "The Houston District has several hundred lane miles of continuously reinforced concrete pavements at or near the end of their designed service life with varying levels of surface distress," said Mohammed. "Many of these old pavements are heavily trafficked and unsuitable for reconstruction due to lane closures and high costs. These are good candidates for CAM interlays."

CONCRETE ON ASPHALT OVERLAY

More than two decades since it was installed, a concrete overlay added to the asphalt surface of County Highway 9 in Richland County, IL, is performing exceptionally well and has no failures, according to the county engineer.

"This project provided Richland County with competitive bids, rapid construction, minimum inconvenience to residents, and a smooth-riding, long-lasting pavement," said Richland County Engineer Danny Colwell.

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In 2010, Richland County chose to place a thin concrete overlay over a 22-foot-wide asphalt road that serves as a trucking route servicing oil fields and grain elevators. At the time, pavement distress included transverse cracks due to shrinkage of the soil-cement base, with no rutting or ride issues.

Richland County decided to place the overlay for several reasons. The county had previous experience with premature oxidation of asphalt overlays, and unbonded concrete overlays had proven successful in nearby counties. Specifying a concrete overlay also enabled more competition for the work—past projects indicated that only one contractor typically bid on county asphalt projects while multiple concrete contractors were available. Crews milled the existing asphalt/seal coat pavement to a 1-inch depth and constructed a 5.5-inch concrete overlay with macrofibers.

CONCRETE ON CONCRETE OVERLAY

Concrete on concrete-unbonded overlays allow the existing pavement to be retained as a base layer, even when the existing concrete is affected by alkali-silica reactivity (ASR)—a materials-related distress that results in premature concrete deterioration. The Delaware Department of Transportation (DelDOT) used this technique on a 9-mile section of Interstate 495 originally opened to traffic in 1978.

This concrete overlay on I-495 in Delaware was placed more than 30 years ago and still provides a smooth ride today. Credit: Delaware Department of Transportation

In 1990, DelDOT initiated a comprehensive study to evaluate rehabilitation strategies. Major concerns included extensive deterioration due to ASR. The potential for ASR distress was not well known at the time I-495 was constructed. After a review of

several strategies, DelDOT selected an unbonded jointed plain concrete overlay that allowed the use of the existing pavement structure, retained the ASR-affected concrete at the project site, and considerably reduced construction time, resulting in less disruption to traffic.

At different points on the highway, traffic volumes increased 12 to 22 percent over the 2010 projected traffic. But according to DelDOT, the project has maintained the as-constructed smooth ride and has received only minor maintenance repairs in nearly 30 years in service. DelDOT's Director of Transportation Resiliency and Sustainability Jim Pappas said, "The key to a successful project such as this one is proper planning, coordination, and preliminary site investigation."

This concrete overlay was placed on County Highway 9 in Richland County, IL, in 2010. Credit: Illinois Chapter, American Concrete Pavement Association

NEW TOPS RESOURCES

The TOPS team developed case study brochures on the use of HiMA in Florida and CAM in Texas, as well as stone matrix asphalt in Georgia and high-performance thin overlays in New Jersey. Longer, more detailed case studies and how-to documents will be released later this year.

An updated concrete overlay resource is also now available. The fourth edition of the Guide to Concrete Overlays presents the basic principles that a pavement engineer needs to design and construct concrete overlays on existing asphalt, composite, and concrete pavements.

The new edition includes current information on continuously reinforced concrete pavement overlays, geotextile separation layers, fiber reinforcement, concrete overlay design procedures, and lessons learned from the experiences of numerous State highway agency engineers.

For more information, contact Tim Aschenbrener (asphalt) at timothy.aschenbrener@dot.gov or Robert Conway (concrete) at Robert.Conway@dot.gov of the FHWA Office of Infrastructure Pavement Materials team.

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BEST PRACTICES FOR INCLUSIVE AND INTENTIONAL PUBLIC ENGAGEMENT INITIATIVE (BPIIPE)

Through extensive research and collaboration, TxDOT's Public Involvement Section of the Transportation Planning and Programming (TPP PI) Division is working to establish guidance and best practices for engaging all members of the public to support the agency's project teams at both the state and district level.

The Best Practices for Inclusive and Intentional Public Engagement Initiative (BPIIPE) honors TxDOT's commitment to involving Texas' many and diverse communities in the planning and implementation of transportation projects and programs, and supports the agency's Public Involvement policy.

BPIIPE APPROACH

TxDOT is using a variety of techniques to develop a suite of best practices for staff, including:

- Forming an internal working group to provide feedback on all components of the research approach.
- Completing desktop research to identify common barriers to public participation and techniques to overcome those barriers.
- Conducting a survey with transportation agencies across the country to understand how other states approach these same issues, in both internal policy and external practices.
- Conducting focus groups and developing an online public survey, in partnership with the Institute for Demographic and Socioeconomic Research (IDSER) at the University of Texas, San Antonio. The focus groups and survey will provide vital insight into how Texans—particularly those in underserved communities—prefer to receive information, share feedback, and participate in engagement events. For the initial effort, TxDOT worked with the IDSER to target Texas' top three largest minority populations based on 2020 census data (Asian, African American/Black, and Hispanic), as well as Limited English Proficiency (LEP), Environmental Justice (EJ) and People with Disabilities populations.

BPIIPE TOOLKIT

This wide range of information collected will be used to create a best practices toolkit to be made available to division and district project teams. Components of this toolkit will range from reports and summaries of what was learned, to fact sheets and checklists to effectively apply that knowledge in public involvement planning and implementation. This will enable TxDOT to better reach all populations and engage them via outreach strategies, materials and events that respect the state's remarkable diversity and that are accessible, appropriate, and convenient to all.

TIMELINE

Research is underway; the TPP PI recently concluded the online community survey and will soon begin conducting focus groups. The goal to finalize the initiative and to develop a best practices toolkit by mid-2023. For more information on this initiative, please contact TPP_PublicEngagement@txdot.gov.

For more information, visit txltap.org

Call 817-272-2581 or email txltap@uta.edu to request training, technical assistance or equipment.

TXLTAP TRAINING & SERVICES

WORKFORCE DEVELOPMENT

Contact TxLTAP to schedule training or request assistance with developing a no-cost training program tailored to the unique needs of your organization. TxLTAP serves all Texas cities and counties, and instructors deliver training in accordance with all local safety guidelines.

EQUIPMENT LENDING LIBRARY

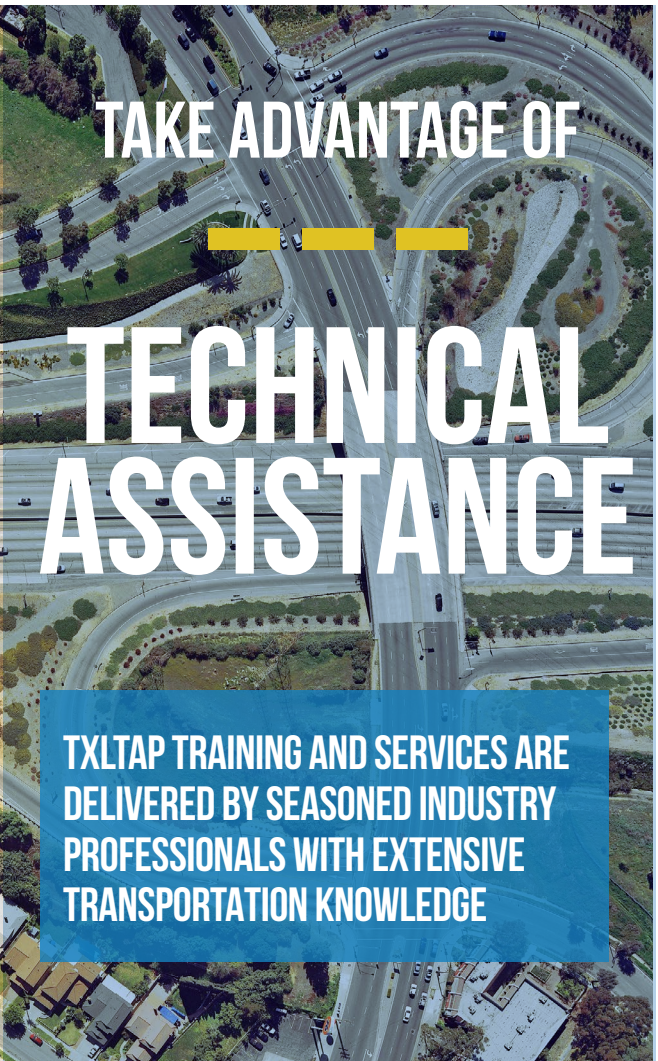
Equipment, such as traffic counters, a portable radar speed sign, handheld retrorefelctometer, digital ball bank indicator, fall protection gear, dynamic cone penetrometer and more, is available for loan at no-cost to local government agencies throughout Texas.

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 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.



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In addition to delivering training classes, publishing Better Roads, Safer Roads, and providing information exchange opportunities at conferences, TxLTAP provides local roadway agencies an opportunity to consult directly with carefully selected subject matter experts to specifically address organizations' unique issues and offer meaningful solutions. Like all resources TxLTAP offers, there is no charge to receive technical assistance.

Do you need information on proper methods 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 and evaluate local roads or develop a no-cost training model specific to the needs of your workforce?

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