

# BETTER ROADS SAFER ROADS



**BETTER AND SAFER  
ROADS WITH TRAFFIC  
INCIDENT MANAGEMENT**

## 02 2021 TRB ANNUAL MEETING: A VIRTUAL EVENT

The Transportation Research Board (TRB) 100th Annual Meeting will be conducted as a virtual event over a series of dates throughout January 2021.

## 02 U.S. DEPARTMENT OF TRANSPORTATION DEVELOPS APPLICANT TOOLKIT TO SUPPORT RURAL PROJECT SPONSORS

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Register for free TxLTAP workshops and events occurring in 2020.

# 2021 TRB ANNUAL MEETING - A VIRTUAL EVENT

The Transportation Research Board (TRB) 100th Annual Meeting will be conducted as a virtual event over a series of dates throughout January 2021. The decision to go virtual was made out of concern for the health and safety of all meeting attendees, in light of the coronavirus disease (COVID-19). Following the schedule outlined below in the month of January 2021, through an interactive virtual platform, the annual event will feature presentations and poster sessions, workshops, exhibits, and committee meetings along with opportunities to connect with other attendees!



TRANSPORTATION RESEARCH BOARD

Committee meetings. January 5–8 and January 11–15, between 10 a.m. and 5 p.m., Eastern Standard Time.

Sessions (of various types): January 21–22, between 10 a.m. and 5 p.m., Eastern Standard Time, and January 25–29, between 10 a.m. and 5:30 p.m., Eastern Standard Time.

Exhibits: January 21-22 and January 25-29, between 11 a.m. and 3 p.m., Eastern Standard Time.

For more information on the virtual 2021 TRB Annual Meeting visit [www.trb.org/AnnualMeeting/AnnualMeeting.aspx](http://www.trb.org/AnnualMeeting/AnnualMeeting.aspx)



## R.O.U.T.E.S.

RURAL OPPORTUNITIES TO USE  
TRANSPORTATION FOR ECONOMIC SUCCESS

# U.S. DEPARTMENT OF TRANSPORTATION DEVELOPS APPLICANT TOOLKIT TO SUPPORT RURAL PROJECT SPONSORS

The USDOT recently developed an applicant toolkit as part of the Rural Opportunities to Use Transportation for Economic Success (ROUTES) initiative. This initiative aims to address rural transportation infrastructure disparities. The ROUTES applicant toolkit helps rural communities better identify and navigate USDOT discretionary grant funding opportunities. The toolkit provides user-friendly information to build understanding of various discretionary grant programs and application processes, including a matrix of funding opportunities, key applicant activities during the funding life cycle, featured rural transportation projects, and other resources to maximize award success.

For more information, please contact Robert Hyman at [Robert.hyman@dot.gov](mailto:Robert.hyman@dot.gov).



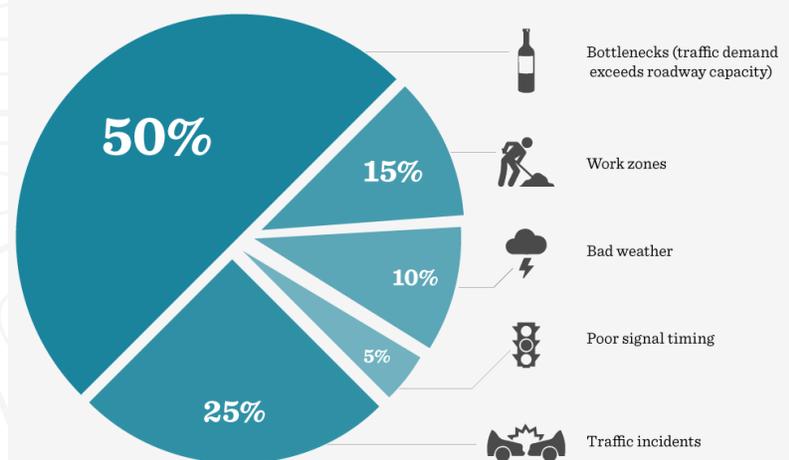
# TRAFFIC INCIDENT MANAGEMENT “THE NO-COST SOLUTION TO REDUCING CONGESTION AND SECONDARY CRASHES”

by David McDonald, TxDOT Traffic Incident Management Coordinator

Texas is one of the fastest growing states in the United States, and anyone who drives our roadways can attest to the congestion that results from the increase in the number of new residents. In addition to population growth, on-going construction on our highways adds to the congestion problem. With the number of vehicles on our roadways increasing every year, one may ask how can we reduce congestion? Once rush hour is over, why am I still sitting on the highway as though I am trying to exit a large sporting event or concert? I think most of us have asked ourselves these questions at one time or another. Often, the reason for congestion on our roadways after rush hour has passed is due to traffic incidents. The incident could be a disabled vehicle in a lane of traffic or on the shoulder, an obstruction of debris in a lane of traffic, or a traffic crash. As the chart to the right shows, traffic incidents impact our roadways, as well as many other factors.

Traffic incidents are listed as causing 25 percent of congestion, but one study from the Texas A&M Transportation Institute (TTI) estimates that between 53 percent and 58 percent of delay in urban areas is attributed to incidents. Research has shown that a minor crash moved to the shoulder can reduce the roadway capacity by 17 percent.

## MAJOR CAUSES OF TRAFFIC CONGESTION IN THE US



Source: highways.org

Infographic by the zebra

Texas is aware of this trend and has passed laws over the years to address this issue, however, there seems to be a lack of knowledge and enforcement of the laws. Texas Transportation Code (TTC) 550.022, often referred to the “Steer it, Clear it Law”,

*Texas is aware of this trend and has passed laws over the years to address this issue, however, there seems to be a lack of knowledge and enforcement of the laws.*

advises motorists in a metropolitan area, if vehicles are drivable and no injuries, that the crash should be moved to a crash investigation site. If one is not available, then vehicles should be moved completely off the highway to a side street or parking lot. Failure to do so could result in a citation for the driver, but, often, that does not happen. Most times, drivers move to the closest shoulder and wait for law enforcement to arrive, which adds to congestion. Other laws that have been passed over the years to assist in removing hazards including debris, spilled cargo, hazardous materials and vehicles are underutilized. The Texas Authority Removal Law TTC 545.3051 gives police officers and towers working at the direction of police, the authority to remove items from the roadway without fear of repercussion if items are damaged, as long as, it is not done in a reckless or grossly negligent manner.

The consequences of failing to enforce the laws available to responders is an increase in congestion, an increase in secondary crashes, an increase in the cost of goods and services, and an increase in hours lost each year sitting in traffic. Studies have also shown that for each minute a roadway is shutdown the likelihood of a secondary crash increases by 10 percent. A report from the Federal Highway Administration indicated that 18 percent of fatal crashes are secondary crashes. In addition to the chances of secondary crashes, responders are exposed to the dangers of our D drivers (Drunk, Drugged, Drowsy, Distracted or just plain Dangerous) for every second they are working an incident on our highways. This results in fatalities and career-ending injuries every year. In 2019 in Texas, 11 first responders were killed while working incidents on our highways. Of those who lost their lives, seven were due to secondary crashes. We had many others that suffered severe injuries, but since they are not actively tracked as first responders, we do not have concrete numbers for those.

Have you ever heard the saying “We can’t build our way out of congestion?” New roads take years to plan and fund, and years to build. There is a better low- to no-cost alternative, Traffic Incident Management (TIM). What is a traffic incident? The Manual on Uniform Traffic Control Devices (MUTCD) defines a traffic incident as “an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic”. How we manage these traffic incidents has a direct impact on our roadways, as well as our quality of life. The main goals of TIM are safe, quick clearance, responder safety, and prompt reliable interoperable communication. When a crash occurs on our roadways, most can be moved off the roadway either by driving, pushing or pulling the vehicle(s), and the incident can be investigated in a safer location away from traffic. This

reduces congestion and responder exposure to dangerous drivers. Responder vehicles that are equipped with push bumpers, chains and/or tow straps enhance the ability to move crashed vehicles off the roadway safely. As mentioned earlier, the Texas Authority Removal Law not only gives law enforcement this authority, but also protects their agencies from claims due to damage, as long as the removal was not done in a reckless or grossly negligent manner.

Have you ever been stuck in traffic assuming something has happened up ahead only to find that the incident or crash is on the opposite side? All the distracting flashing lights on emergency vehicles capture the attention of those traveling ahead of you causing unnecessary delays.

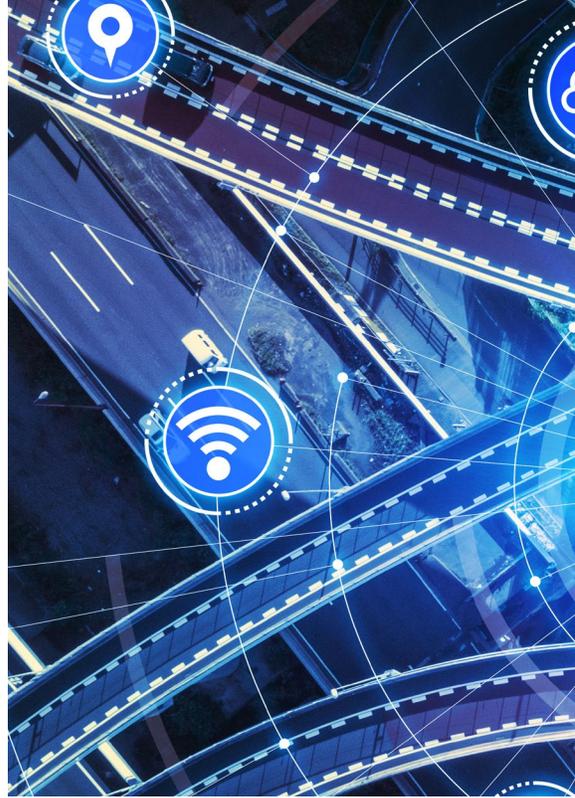
So how is TIM a no-cost, or little cost solution to reducing congestion? Imagine doing something so simple as moving a crash and all responder vehicles off of the highway/roadway. Think of no flashing lights catching the eyes of motorists driving in the opposite direction. Think of all responders prioritizing moving all crashes out of lanes of traffic, and when possible, completely off the roadway. These activities have no cost associated with them, and the benefits to all those involved, including the responders and the traveling public, are significant. Our roadways would have no obstructions, keeping our travel lanes at full capacity. Between 2015 and 2017, the Arizona Department of Public safety reduced Roadway Clearance Time by 20 percent, and Incident Clearance Time by 4 percent. Again in Arizona, efforts to clear incidents using TIM have resulted in a 3 percent increase in unobligated patrol time for 44,565 hours, or about 25 full time employees. Imagine having all lanes returned to travelers resulting in 20 percent faster travel times and making more officers available for other duties without any additional funding, all as a result of using TIM concepts.

In another study, the Oro Valley, Arizona Police Department implemented TIM practices and tracked the time to clear crashes. The department achieved a 32 percent reduction in clearance times.

There are many more studies that have shown very similar results. When TIM is utilized, congestion decreases, system reliability increases, secondary crashes are reduced, and responders stay safer. The greatest benefit to using TIM is “Everybody Goes Home”!

For more information on TxDOT’s statewide Traffic Incident Management efforts, feel free to contact David McDonald at [David.McDonald@txdot.gov](mailto:David.McDonald@txdot.gov) or 512-506-5105.

# FHWA ANNOUNCES SUPPORT FOR SEVEN INNOVATIONS FOR A NATION ON THE MOVE



The U.S. Department of Transportation's Federal Highway Administration (FHWA) recently announced seven innovations it will support in the sixth round of its "Every Day Counts" (EDC-6) collaboration with state, local and tribal transportation agencies. The EDC program promotes the accelerated use of tools, technologies and methods nationwide to improve road and bridge projects, reduce cost and shorten their time to completion.

*"This round of innovations has incredible potential to help agencies with limited resources deliver projects more effectively, improve safety, and support the nation's economic recovery"*

"Every Day Counts is a key Department initiative that provides state, local, and Tribal transportation leaders with opportunities to learn about ready-to-deploy innovations that best fit their individual needs," said U.S. Transportation Secretary Elaine L. Chao.

Since the creation of "Every Day Counts" in 2010, FHWA has worked with state, local and Tribal governments, as well as federal agencies to widen the use of dozens of

innovations that lead to better roads, bridges and highways, reduced project delivery times and more cost-effective transportation improvements. Later this year, FHWA will hold three virtual summit meetings, focused on "People," "Products," and "Process," to discuss the EDC-6 innovations in more detail.

"This round of innovations has incredible potential to help agencies with limited resources deliver projects more effectively, improve safety, and support the nation's economic recovery," said Federal Highway Administrator Nicole R. Nason.

The solicitation for EDC-6 ideas this year generated more than 100 suggestions and comments from stakeholders across the country. The seven innovations selected are:

## **CROWDSOURCING TO ADVANCE OPERATIONS**

Transportation agencies are increasing their situational awareness using crowdsourcing, which enables them to cost-effectively improve the real-time management of traveler information, traffic incidents, work zones, traffic signals and more. With crowdsourced data, agencies can capture in real time travel information from a wider array of sources than currently possible. The benefits of crowdsourced data include improved travel reliability, fewer crashes and other safety improvements, and a

reduction in costs associated with installing and maintaining additional data-gathering road sensors.

## **E-TICKETING AND DIGITAL AS-BUILTS**

State departments of transportation (DOTs) and other agencies use these methods to more efficiently gather, share and manage the massive amounts of data generated by a typical highway construction project. Converting paper-based systems for project materials tickets into electronic ones, known as "e-Ticketing," improves the tracking, exchange and archiving of construction materials information. e-Ticketing also improves safety by reducing inspector and work crew interaction with traffic and construction equipment. More than a dozen state DOTs, including Minnesota, Missouri, and Pennsylvania, currently use e-Ticketing for construction contracts. Digital "as-builts" are modern project information models that capture data about utilities and other valuable construction information to support future operations, maintenance and asset management, and create a digital twin of an agency's transportation system. State DOTs in Michigan and Colorado use digital as-builts to improve worker safety by identifying the exact locations of potentially dangerous underground utilities.



### **VIRTUAL PUBLIC INVOLVEMENT (VPI)**

Soliciting public input during the transportation decision-making process helps to identify issues and concerns that can be addressed or modified early in the process. VPI allows state DOTs to do so more effectively by using technology platforms to increase the number and variety of methods for engaging the public, obtaining feedback and considering comments. For reasons related to the nation's current health crisis, several states have begun to use VPI, and the Iowa Department of Transportation has gone further in developing a web-based tool to compile public comments throughout all phases of project delivery.

### **NEXT-GENERATION TRAFFIC INCIDENT MANAGEMENT (NEXTGEN TIM)**

While crashes and other traffic incidents increase risk to first responders and the traveling public, they also contribute to most traffic delays. NextGen TIM helps state DOTs and other responder agencies improve their use of public safety computer-aided dispatch systems, unmanned aircraft systems, crowdsourced data and virtual TIM responder training. Leveraging NextGen TIM, law enforcement agencies such as the sheriff's offices in Maricopa County, Arizona, and Tippecanoe County, Indiana, as well as state DOTs in Oregon and Maryland, have reduced incident detection, road closures and overall incident clearance times by more

than 30 percent. With this impressive new technology, local officials are improving responder and traveler safety.

### **STRATEGIC WORKFORCE DEVELOPMENT**

Demand is high for highway workers who are adept at using technologies to transform design, construction and maintenance of transportation projects. FHWA supports the use of innovative new efforts to strategically develop the workforce new innovative strategies that help identify, train, and place individuals who make up a vital element in the nation's essential workforce. From 2016-2018, FHWA partnered with the U.S. Labor Department's Employment and Training Administration and others to conduct a 12-city pilot that explored how various industries can collaborate to improve recruitment, training and retention of highway workers. The effort led to "Identify, Train, Place," a highway construction workforce development playbook that can help expand the highway contractor workforce. Similar efforts, like the Alabama Road Construction Training Course, the Denver WORKNOW Navigator Program and the Future Road Builders Gaming App, reflect the growing awareness of a need to expand a skilled highway workforce to meet the needs of the future.

### **TARGETED OVERLAY PAVEMENT SOLUTIONS**

Agencies are getting the most out of operations in which new material is placed over an existing pavement structure by using data to target areas where limited maintenance resources can be used for maximum gain. Coupled with innovative materials and performance-enhancing methods that reduce the impact on traffic by construction, targeted overlay pavement solutions help state DOTs maximize their highway investments. For example, the Utah Department of Transportation applies stone-matrix asphalt as an overlay because of its proven durability and performance.

### **ULTRA-HIGH PERFORMANCE CONCRETE (UHPC) FOR BRIDGE PRESERVATION AND REPAIR**

Agencies have used UHPC for bridge construction for years, especially when connecting prefabricated bridge elements. Now, more state DOTs than ever are using UHPC on bridge preservation and repair projects because it offers superior strength and durability. It also provides innovative cost-effective solutions for improving and preserving bridge conditions. Between 2016-2019, state DOTs in Delaware and Florida repaired or strengthened more than 20 bridges using UHPC.

More information on EDC can be found at <https://www.fhwa.dot.gov/innovation/>

# NEXT GENERATION TRAFFIC INCIDENT MANAGEMENT

*New methods for improving Traffic Incident Management programs to increase traveler and responder safety and improve trip reliability and commerce movement.*

by Paul Jodoin, FHWA Traffic Incident Management Program Manager

## INNOVATION IN TRAFFIC INCIDENT MANAGEMENT

An estimated 6 million police-reported collisions, 32 million motorist assists, and 174,000 vehicle fires occur every year in the United States.<sup>1</sup> Millions of smaller, unrecorded incidents occur every year, making these disruptions commonplace. A total of 36,560 people died in motor vehicle crashes in 2018. The U.S. Department of Transportation's most recent estimate of the annual economic cost of crashes is \$242 billion dollars.<sup>2</sup> Contributing to the death toll are alcohol, speeding, lack of safety belt use and other problematic driver behaviors. Each incident places responders and motorists at high risk of secondary collisions (collisions that occur at the scene or in the queue of a prior incident). These roadway incidents also cause congestion and negatively impact the economy and the public's quality of life. Traffic incident management (TIM) has become the state of the practice to effectively reduce the dangers created by incidents and to mitigate their impacts.

## NEXT-GENERATION TRAFFIC INCIDENT MANAGEMENT

Next-Generation Traffic Incident Management (NextGen TIM) focuses on working with State, local and Tribal partners to improve TIM on all roadways by integrating proven, yet underutilized, innovative technology, data, and training strategies. State, local, and Tribal entities are poised to take TIM to the "next level" using innovative TIM approaches that will continue to improve safety and travel reliability, and save lives, time, and money.

## LOCAL TRAFFIC INCIDENT MANAGEMENT PROGRAM ELEMENTS

While TIM efforts have assumed focus on high-speed roadways, the concepts of TIM are applicable to all roads, not just urban freeways. Most roadway incidents occur on local roads and NextGen TIM seeks to apply TIM to those roadways by encouraging the application of low-cost TIM solutions like stakeholder meetings, development of policies/procedures, and participation in TIM training.

When officers from the Oro Valley Police Department in Arizona became focused on TIM practices, and began tracking time in computer-aided dispatch, roadway and incident clearance times were reduced by 32 percent during the first six months of 2018.

## TRAINING

TIM Training is a cross-cutting and foundational TIM element. NextGen TIM continues to promote training through innovative delivery approaches and new content. In addition, NextGen TIM strives to institutionalize training through policies, and other mechanisms. Institutionalizing TIM training means the training will continue even after TIM training champions move on.

After receiving TIM training, the Houston, TX Fire Department reported a 40 percent reduction in scene time and a 25 percent reduction in fire apparatus struck at incident scenes. The Arizona Highway Patrol estimates that by using TIM they save 44,000 hours of patrol time, or about 25 full time officers.

## DATA

Like training, TIM data is viewed as a foundational piece for successful TIM programs. TIM data focuses on advancing the collection, analysis, and use of incident data. Time is a critical element in reducing exposure and congestion, which makes roadway clearance and incident clearance key metrics. Secondary collisions and responder struck-by incidents are critical safety measures. With better data and analytics, agencies can quantify program performance, demonstrate program effectiveness, and improve TIM planning and resource management.

TIM data can come from public safety computer-aided dispatch system time stamps, police traffic crash reports, traffic management centers, or other sources. Providing stakeholders with information about response time, roadway clearance time, and overall scene clearance times has proven effective in focusing attention on incident clearance objectives. Monthly, quarterly, and annual reports can feed into performance reviews within organizations that help managers assess the effectiveness of policy and strategies. Real-time data dashboards are proving to be an effective way to analyze and present data to promote organizational goals.

To exemplify this point, the Maryland Department of Transportation used TIM data to identify a 31 percent reduction in incident clearance time when their service patrols were on the scene. Similarly, Georgia reduced clearance times by 82 percent for commercial vehicle crashes with data from their Towing Recovery Incentive Program (TRIP). Puerto Rico provides a more technically



advanced example, as they deployed a mobile app for safety service patrols to augment the exchange of incident data and accurate reporting.

Crowdsourced data, which are obtained whenever and wherever people travel, is another type of data that is improving TIM. With crowdsourced data, agencies can detect and verify incidents and manage incident-related queues.

### TECHNOLOGY

A key NextGen TIM technology is computer-aided dispatch (CAD) integration, which facilitates the timely sharing of information between public safety and transportation agencies. CAD integration improves coordination of resources, traveler information, and safety. More than half of State Departments of Transportation (DOT) have indicated that they have some form of access to real-time public safety CAD data ranging from manual incident notifications via phone or email, to filtered views of public safety CAD event lists, to fully integrated data exchanges.

CAD integration increases officer and responder safety during incident response, streamlines and improves analysis and reporting for TIM performance measures, and reduces time for law enforcement agencies to notify other agencies and travelers. Agencies can mobilize DOT resources faster and improve traffic management center (TMC) accuracy and efficiency.

Minnesota and Florida were two early adopters of CAD integration and their TMC receive 70 percent of events and 42 percent of new incidents respectively because of the sharing of data.

Another “next level” TIM technology involves the use of unmanned aircraft systems (UAS). Small UAS are remotely controlled by a pilot and can be easily flown over a traffic crash scene to capture images using high-definition digital cameras. Individual pictures are stitched together to create a single high-resolution image called an orthomosaic. The real power of UAS image processing lies in a well-established principle called photogrammetry, where measurements can be taken from photographs. Using known measurements placed in the UAS photographs, computer software can produce the measurement between any two points in that photograph. UAS reduces responder time on scene, accelerates crash investigations, creates better situational awareness for

responders, and is a cost-effective measuring and mapping alternative.

In North Carolina, the Highway Patrol and DOT found that UAS mapped a two-car crash in 25 minutes, while 3D laser mapping required 1 hour and 51 minutes. Based on 125 actual crash investigations, the Washington State Patrol estimates an 80 percent reduction in road closure at serious crashes, because of the implementation of UAS for scene mapping. The Puerto Rico Police Academy uses UAS in TIM training to bring a different perspective to the TIM training practicum that is held on a closed parking lot with actual response vehicles.

Video sharing technologies allow cameras mounted on service patrol vehicles to stream images from incident scenes to traffic management centers, as well as TMC camera images back to responder vehicle computers. Sharing video between the field and TMCs has proven to be an effective enhancement to TIM.

Finally, when responder vehicles are stopped along roadways, approaching drivers can be warned through navigation providers who receive alerts from hardware or software that is integrated with the responder vehicle emergency lighting. Responder vehicle to motorist alert technologies are quickly catching on to improve safety by increasing advance warning of incident in a targeted way.

### STATE OF THE PRACTICE

NextGen TIM training, data, and technologies have already helped State and local agencies achieve meaningful and measurable results. Innovative TIM approaches are poised to take TIM to the next level by implementing underutilized, yet proven, TIM methods to save more lives, time, and money.

For more information on FHWA’s Next Generation TIM efforts, feel free to contact Paul Jodoin at [paul.jodoin@dot.gov](mailto:paul.jodoin@dot.gov) or Jim Austrich at [James.Austrich@dot.gov](mailto:James.Austrich@dot.gov).

### RESOURCES

- [FHWA EDC-6 Next-Generation TIM](#)
- [FHWA Traffic Incident Management Resource Site](#)

<sup>1</sup> FHWA. National TIM Responder Training Program. 2017.

<sup>2</sup> Source: Insurance Institute for Highway Safety (IIHS)

# NACTO RELEASES CITY LIMITS, AN INNOVATIVE FRAMEWORK TO SET SAFE SPEED LIMITS ON CITY STREETS

The National Association of City Transportation Officials (NACTO), recently released an innovative, tested, and proven framework for setting safe speed limits for city streets. Developed by a steering committee of NACTO's 86 member cities and transit agencies, City Limits outlines how to use a safe systems approach to set speed limits in urban environments, in contrast to legacy methods (e.g. the 85th percentile) that often result in speeds that are inappropriately fast for urban environments.

City Limits outlines a three-method approach to speed limit setting that provides an alternative to percentile-based speed limit setting:

1. **Setting default speed** limits on many streets at once (such as 25 mph on all major streets and 20 mph on all minor streets),
2. **Designating slow zones** in sensitive areas, and
3. **Setting corridor speed limits** on high priority major streets, using a **safe speed study**, which uses conflict density and activity level to set context-appropriate speed limits.

The methods outlined in City Limits can be combined, and, unlike percentile-based approaches, each is context-sensitive, allowing cities to holistically evaluate who is using streets and how people are using them, from people walking and biking, to those taking transit or visiting a school. The guidance ranges from step-by-step checklists for conducting activity level & conflict density analyses, to nuanced metrics for documenting speeds that go beyond percentile-based speed setting practices.

Over 35,000 people die on US roads every year, a traffic safety crisis unmatched in severity by the US' industrialized peers. Speed is what most often turns a crash deadly. A person hit by a car traveling at 35 miles per hour is five times more likely to die than a person hit at 20 miles per hour. Yet, speed limits in the US are often set in a process that largely ignores anyone outside of a car.

"Most speeds limits are set using an oversimplified and outdated method: measure 100 drivers traveling without any traffic and set the speed limit based on the 15th-fastest driver," said **Jenny O'Connell, NACTO Program Manager**. "If this sounds like a system that would create dangerous outcomes, that's because it does. Even worse, in many cases, speeds ramp up over time as drivers respond to speed limit signs and speed a few miles per hour over the posted limit, creating a negative feedback loop of faster, less safe streets."

In many areas, cities rely on police enforcement to compensate for a lack of flexibility in engineering and speed limit setting policies, a practice that is not proven to reduce traffic injuries or fatalities and often increases risk for Black people and other people of color on city streets. A growing body of evidence shows that speed limit changes alone can lead to measurable declines in speeds and crashes, even absent enforcement or engineering changes.

The importance of safe speed limit setting has been underscored in recent months by effects from the coronavirus pandemic. As people traveled less during stay-at-home orders, speeds increased to even more unsafe levels. In May, traffic across the U.S. was [41% lower than pre-pandemic volumes](#), yet crashes only dropped 21%, meaning [each trip was riskier](#).

"Context-sensitive speed limit setting means that safe speeds are chosen based on how a street is used, and the important functions it plays in a community," said **Corinne Kisner, NACTO Executive Director**. "An increasing number of cities are moving beyond the flawed assumptions in the 85th percentile approach and have developed new ways to set speed limits. We're proud to have worked with these cities to document and codify these groundbreaking approaches, which have already saved many lives, and have the potential to save thousands more every year."

"ITE congratulates NACTO on the development and publication of this important new speed management resource," said **Jeff Paniati, Executive Director and CEO of ITE**. "Determining and achieving context-appropriate target speeds on urban streets is essential to the vision of zero fatalities and serious injuries."

"The top priority in our nation's transportation policy and program is to let vehicles go fast. It has filtered into every level of implementation, down to the way we set speed limits. We raise the speed limit to suit the speeders, as long as there are enough of them (and it doesn't take that many)," said **Beth Osborne, Director of Transportation for America**. "NACTO once again provides excellent guidance to practitioners who recognize the problem and who want to put safety ahead of speed."

"The soaring number of pedestrian deaths we've seen in recent years is a wake-up call for a new approach to vehicle speeds in urban areas," said **Jessica Cicchino, Vice President for Research at the Insurance Institute for Highway Safety (IIHS)**. "IIHS research demonstrates that lowering city speed limits curbs the most dangerous speeding and can make the roads safer for everyone who drives, walks, or bikes."

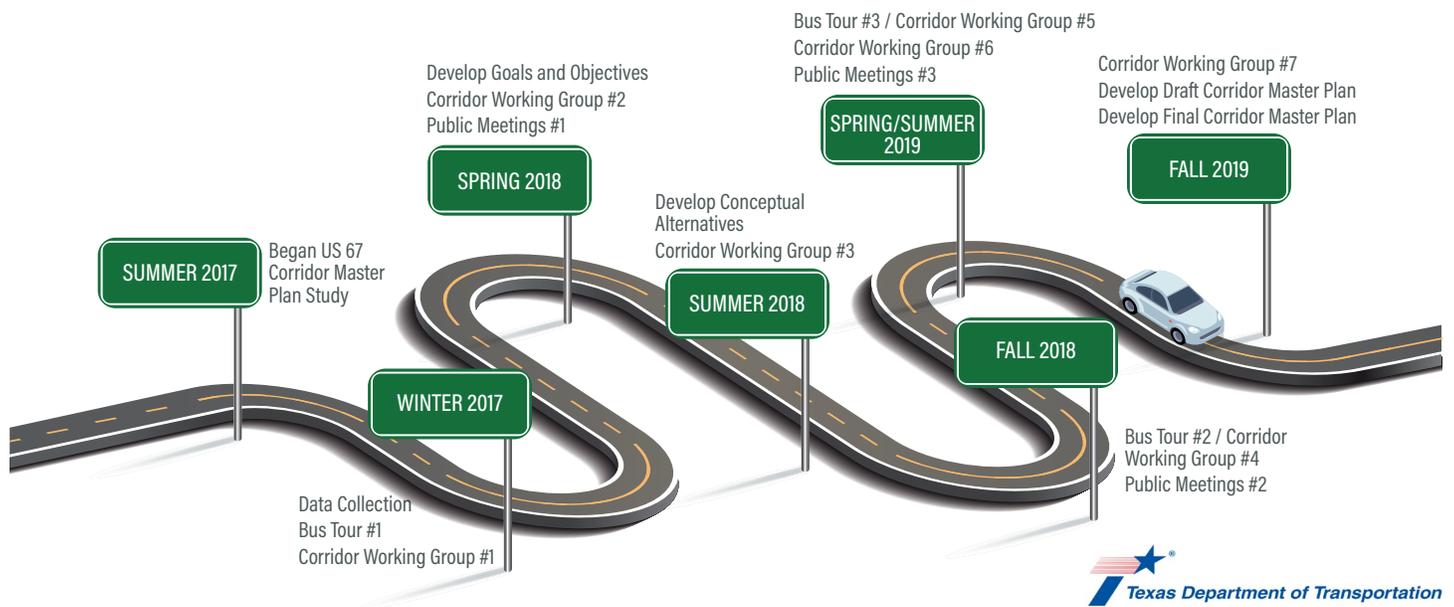
"To advance Vision Zero, nothing is more important than managing speeds," said **Leah Shahum, Founder & Director, Vision Zero Network**. "For too long, cities have been hindered from setting speeds to promote safe mobility for all. This resource will help usher in a new day of safety on our streets, especially our most vulnerable—children, seniors, and people walking and biking."

For more information On NACTO's City Limits framework, contact Alex Engel at [alex@nacto.org](mailto:alex@nacto.org). *City Limits* is available as a free resource at [nacto.org/safespeeds](https://nacto.org/safespeeds).

## About the National Association of City Transportation Officials (NACTO)

NACTO is an association of 86 major North American cities and transit agencies formed to exchange transportation ideas, insights, and practices and cooperatively approach national transportation issues. The organization's mission is to build cities as places for people, with safe, sustainable, accessible, and equitable transportation choices that support a strong economy and vibrant quality of life. To learn more, visit [nacto.org](https://nacto.org) or follow us on Twitter at [@NACTO](https://twitter.com/NACTO).

# TXDOT'S US 67 STUDY EARNS INDUSTRY RECOGNITION



TxDOT's US 67 Corridor Master Plan has been selected as a recipient of the American Planning Association's Texas Chapter's 2020 Transportation Achievement Award – Gold. The formal announcement was made today to kick off National Community Planning Month. The awards program allows the Texas Chapter to promote the work of planners, planning officials and students in the state.

The US 67 Corridor Master Plan encompassed 142 miles of the corridor from I-10 west of Fort Stockton to the Presidio/Ojinaga Port of Entry on the U.S./Mexico border. The roadway provides access to the towns of Marfa, Alpine, Presidio and surrounding communities, as well as Big Bend National Park, Sul Ross State University, the Marfa Lights, Big Bend Ranch State Park, Fort Leaton State Park, and Fort Davis attractions.

“Developing a diverse, comprehensive guide for the future of US 67 was vital as it serves multiple communities with diverse needs and priorities,” said TxDOT El Paso District Engineer Tomas Treviño. The area has experienced significant growth in recent years due to factors such as population growth, additional tourism, international commerce and Permian Basin oilfield development. That led to several safety and transportation issues including higher than average crash rates. Considering the length of the corridor, distance between communities, and number of residents who primarily speak Spanish, the use of innovative public outreach techniques was critical to executing a successful public engagement effort.”

Over the course of two years (2017-2019), the planning team conducted extensive bilingual public outreach including focus groups; corridor working groups; steering committee meetings; bus tours; mixed reality activities; online maps and tools; and three rounds of public meetings. More than 1,200 participants provided more than 900 comments for planners to consider.

A key state-of-the-art aspect of the plan that stood out was development of a Health Impact Assessment (HIA) to estimate the likely health impacts of recommended improvements and suggest ways to mitigate any potential negative health outcomes. The HIA identified health indicators based on community and corridor profiles and provided recommendations to maximize positive health impacts and minimize negative ones.

The final plan identified current and future needs along US 67 and provided a set of recommended projects for short-, medium-, and long-term implementation. Some of the suggestions have already been implemented such as signage and striping. Once conceptual improvements are chosen for implementation, they will move through the rest of the project development process, including environmental permitting, design, right of way appraisal and acquisition, utility realignment, letting, and construction.

TxDOT completed the corridor study with the assistance of CDM Smith. [Learn more about the plan.](#)

# U.S. TRANSPORTATION SECRETARY ELAINE L. CHAO ANNOUNCES \$574 MILLION IN EMERGENCY RELIEF FOR ROAD AND BRIDGE REPAIRS

U.S. Secretary of Transportation Elaine L. Chao recently announced that \$574 million in Emergency Relief (ER) funds will be made available to help 39 states and Puerto Rico make repairs to roads and bridges damaged by storms, floods, and other unexpected events.

“This \$574 million in federal funding will help states repair and rebuild roads and bridges damaged from natural disasters,” said U.S. Transportation Secretary Elaine L. Chao.

The U.S. Department of Transportation’s ER program, administered by the Federal Highway Administration, reimburses states, territories, federal land management agencies, and tribal governments for eligible expenses associated with damage from natural disasters or other emergency situations. The funds help to pay for the reconstruction or replacement of damaged highways and bridges along with the arrangement of detours and replacement of guardrails or other damaged safety devices.

“These funds will help reimburse states for needed repairs to vital transportation infrastructure that residents rely upon for daily travel,” said Federal Highway Administrator Nicole R. Nason.

Since January 2017, nearly \$4.9 billion in ER program funds have been provided to repair roads and bridges.

STATE	EVENT	ALLOCATION	STATE TOTALS
Alabama	April 28, 2014 Storms and Flooding	\$127,045	\$27,968,076
	February 1, 2020 Storms and Flooding	\$27,741,031	
	COE, Heavy Rain	\$100,000	
Alaska	November 30, 2018 Anchorage, Southcentral, and Mat-SU Earthquake	\$12,041,034	\$12,041,034
Arizona	July 2017 Fire and Flooding	\$4,546,145	\$23,384,684
	September 2018 Hurricane Rosa Flooding	\$1,915,296	
	September 23, 2019 Tropical Storm Lorena Flooding	\$4,216,498	
	June 13, 2020 Arizona Bush Fire	\$6,080,850	
	September 23, 2019 Tropical Storm Lorena Flooding	\$6,625,895	
Arkansas	June 2019 Severe Flooding of Arkansas River	\$7,926,009	\$16,365,370
	Hurricane Barry Impact to SW AR - Heavy Rain and Landslides	\$3,963,005	
	Heavy Rainfall and Flooding Event June, 2019	\$1,188,901	
	May 2017 Heavy Rains and Flooding	\$665,017	
	COE, May 2019 Arkansas River Flooding	\$1,758,595	
	FWS, February 2019 Flooding	\$163,843	
	FS, April 2020 Catastrophic Failure, Ozark NF	\$700,000	
California	July 19, 2015 Tropical Storm Dolores	\$179,900	\$65,704,114
	March 5, 2016 Storms	\$5,413,333	
	July 22, 2016 Sand Fire	\$443,346	
	August 16, 2016 Blue Cut Fire	\$1,027,205	
	December 2016 Storms	\$1,371,735	
	2017 Winter Storms	\$16,560,665	
	July 2017 Detwiler Fire	\$72,128	
	July 2018 Monsoon Event	\$217,060	
	July 2018 Wildfires	\$791,579	
	November 2018 Fires	\$34,355,713	
	January and February 2019 Atmospheric River Event	\$3,544,516	
	Ridgecrest Earthquake	\$551,326	
	FS, March 2019 Storm and Flash flooding	\$1,175,606	

STATE	EVENT	ALLOCATION	STATE TOTALS
Colorado	FS, March 2019 Avalanches	\$51,575	\$1,180,708
	FS, April 2019 Extreme Runoff	\$1,129,133	
Florida	FL19-1, October 10th, 2018 Hurricane Michael	\$22,080,419	\$22,614,360
	FWS, October 2016 Hurricane Matthew	\$533,941	
Georgia	March 2020 Flooding	\$1,038,307	\$1,289,822
	FS, February 2019 Southeast Floods	\$251,515	
Idaho	FS, March 2017 Rock Fall/ Catastrophic Failure of Stoddard Bridge	\$263,592	\$4,973,791
	FS, March - April 2017 Severe Storms Flooding and Landslides	\$4,710,199	
Illinois	April 23rd Heavy Rains and Flooding	\$237,780	\$237,780
Iowa	March 12, 2019, Missouri River Flooding- Rain and Snow Melt	\$13,978,130	\$14,491,169
	FWS, March 2019 Flooding	\$513,039	
Kansas	Early March Wildfires	\$38,497	\$4,389,592
	April 28, 2019 Severe Spring Flooding	\$3,541,765	
	COE, March 13 - June 24, 2019 Midwest Floods	\$809,330	
Kentucky	February 2018 Severe Storms and Flooding	\$4,557,455	\$21,929,473
	February 2019 Severe Storms and Flooding	\$11,889,014	
	February 2020 Severe Storms and Flooding	\$3,963,005	
	FS, December 2015 Heavy Rains	\$520,000	
Maryland	KY2019-1-FS, February 2019 Southeast Floods	\$1,000,000	\$436,181
	May 2018 Severe Storm/ Flooding Event in Washington/Frederick County	\$436,181	
Michigan	July 20, 2019 Widespread Flooding Across Lake County Michigan	\$1,030,381	\$26,393,610
	May 17, 2020 Severe Flooding in Central Michigan	\$25,363,229	

STATE	EVENT	ALLOCATION	STATE TOTALS
Minnesota	June 16 - July 12, 2018	\$3,947,149	\$5,650,939
	Spring 2019 Nicollet County Basin Flooding	\$876,350	
	April 1, 2019 Heavy Snowmelt and Rainfall	\$431,643	
	FWS, March 2019 Flooding	\$395,796	
Mississippi	February 2019 - Damage due to Flooding	\$1,044,692	\$22,788,195
	February 10, 2020 Heavy Rains and Severe Flooding	\$12,952,530	
	FWS, February 2019 Flooding	\$41,963	
	April 12, 2020 Storms and Flooding	\$749,010	
	NPS, January 11 and February 14, 2020 Heavy Rain	\$8,000,000	
Missouri	April 28, 2017 Severe Storms and Flooding	\$893,898	\$9,477,616
	March 11, 2019, Severe Storm Systems and Riverine Flooding	\$553,083	
	April 29, 2019 Severe Storms and Flooding	\$2,734,473	
	FS, April 28 - May 3, 2017 Spring Flood	\$699,146	
	FWS, March 2019 Flooding	\$1,597,016	
	NPS, May 2020 Ozarks Spring Floods	\$3,000,000	
	Montana	FS, April - June 2018 Rapid Snowmelt and Flooding	
Nebraska	March 2019 Nebraska Severe Winter Storm and Flooding	\$45,970,852	\$46,014,105
	BIA, Spring 2019 Severe Winter Storm, Winds and Flooding	\$43,253	
New Hampshire	FS, October 2017 Flooding	\$1,737,288	\$2,588,203
	FS, April 15, 2019 Flooding	\$850,915	
New Jersey	FWS, November 2018 North East flooding- Winding Waters and Liberty Loop	\$1,042,826	\$1,042,826
New York	September 11, 2001 World Trade Center Attacks	\$6,068,152	\$35,767,673
	October 29, 2012 Hurricane Sandy	\$26,631,390	
	FWS, November 2018 North East flooding- Dagmar Trail	\$3,068,130	
North Carolina	October 10, 2018 Hurricane Michael	\$1,585,202	\$37,463,666
	February 2019 Storms	\$7,688,229	
	July 3, 2019 Widespread Storms and Flooding	\$277,410	
	September 4, 2019 Hurricane Dorian	\$21,479,484	
	February 6, 2020 Severe Weather Event	\$2,298,543	
	FWS, 2017 Midwest/ Southeast Floods	\$177,158	
	FS, May 2018 Southeast Floods	\$838,364	
	BIA, February 2019 Flooding	\$2,732,897	
	NPS, February 2020 Storm and Flooding	\$386,379	

STATE	EVENT	ALLOCATION	STATE TOTALS
North Dakota	Fall 2019 Statewide Traditional Flooding	\$8,665,379	\$46,191,477
	Fall 2019 Rice Lake Basin Flooding	\$1,826,231	
	Fall 2019 West James River Basin Flooding	\$7,520,650	
	Fall 2019 Salt Lake Basin Flooding	\$1,703,264	
	February 29, 2020 West James River Basin Flood	\$10,506,729	
	March 16, 2020 Sheyenne/James River Basin Flood	\$2,117,442	
	March 16, 2020 Rice Lake Basin Flood	\$5,740,945	
	March 16, 2020 CMC 1529 S. Basin Flood	\$1,628,251	
	March 16, 2020 CMC 1529 N. Basin Flood	\$1,303,210	
	March 16, 2020 CMC 1536 E. Basin Flood	\$1,274,817	
	March 16, 2020 CMC 1536 W. Basin Flood	\$2,172,606	
	March 16, 2020 CMC 1104 Basin Flood	\$1,158,064	
March 16, 2020 Basin Flooding	\$573,890		
Ohio	March - April 2017 - Heavy Rainfall and Flooding	\$156,191	\$3,640,512
	February - March 2018 - Heavy Rainfall and Flooding	\$209,304	
	Feb 2019 Heavy Rainfall & Landslide	\$333,073	
	March 19, 2020 Abnormal Storms and Flooding	\$2,932,623	
	FWS, March 2019 Flooding	\$9,320	
Oklahoma	April 28 - May 2, 2017 Storms and Flooding	\$3,098,854	\$17,637,370
	April 30 - June 29, 2019 Storms and Flooding	\$13,870,516	
	COE, March 13 - June 24, 2019 Midwest Floods	\$200,000	
	FWS, March 13 - June 24, 2019 Midwest Floods	\$468,000	

Continued on page 13

STATE	EVENT	ALLOCATION	STATE TOTALS
Oregon	December 14, 2016 Severe Winter Storm Event	\$640,627	\$25,069,598
	January 11, 2017 Severe Winter Storms	\$1,595,469	
	2017 Oregon Wildfires	\$7,926,009	
	February 2019 Severe Winter Storms	\$3,250,800	
	April 2019 Winter Storms	\$231,409	
	February 2020 Severe Storms and Flooding	\$7,926,009	
	FS, December 2016 - February 2017 Flooding	\$2,999,277	
	BIA, February 2020 Flooding	\$100,000	
	FS, February 2020 Flooding	\$400,000	
Puerto Rico	September 2017 Hurricanes Irma and Maria	\$2,171,729	\$3,158,988
	May 28-29, 2019 Heavy Rains	\$916,280	
	January 2020 Earthquakes and Landslides	\$70,979	
South Carolina	March 9, 2018 S-50/I-26 Truck Crash	\$2,759,934	\$5,315,928
	February 6, 2020 Severe Weather and Flooding	\$1,557,461	
	FWS, September 2018 Hurricane Florence	\$87,167	
	FS, September 2019 Hurricane Dorian	\$911,366	
South Dakota	April 06, 2020 Basin flooding	\$1,365,491	\$1,424,697
	FWS, April 2019 Midwest Floods	\$59,206	
Tennessee	January 1-2020, Statewide Flooding, Severe Storms & Landslides	\$3,954,509	\$4,508,654
	FS, February 2019 Southeast Floods	\$262,345	
	NPS, February 2020 Storm and Flooding	\$291,800	
Texas	April 12, 2019 Severe Weather Event	\$7,926,009	\$13,077,915
	September 17, 2019 Tropical Storm Imelda	\$5,151,906	
Utah	March 18, 2020 Earthquake Damage	\$845,903	\$2,393,402
	FS, April 1 – May 1, 2019 Avalanche	\$1,303,803	
	FS, April 2019 Extreme Runoff	\$243,696	

STATE	EVENT	ALLOCATION	STATE TOTALS
Vermont	April 14, 2019 Snow Melt, Heavy Rain and Severe Flooding	\$237,780	\$10,493,423
	October 31, 2019 Heavy Rain, High Winds, and Severe Flooding	\$9,511,211	
	FS, April 15, 2019 Flooding	\$744,432	
Virginia	May-June 2018 Flooding	\$1,492,529	\$10,394,562
	October 11, 2018 Hurricane Michael	\$3,437,026	
	FS, April - May, 2017 Heavy Rains and Flooding	\$584,007	
	NPS, May 2020 Blue Ridge Parkway Flooding Event	\$4,000,000	
	2020 Division Disaster Assessments	\$200,000	
	MSAR, 2020 MSAR Budget	\$681,000	
Washington	February 2017 Severe Winter Storms	\$673,711	\$22,217,854
	October 5, 2019 I-5 and 13th St. Bridge Hit	\$51,194	
	FS, July 2016 Flooding	\$200,000	
	FS, April - June 2018 Rapid Snowmelt and Flooding	\$988,848	
	December 16, 2019 I-5 and SR 397 Bridge Damage	\$199,231	
	FS, February 2020 Flooding	\$1,000,000	
	NPS, February 2020 Flooding	\$150,000	
January 20, 2020 Severe Storms and Flooding	\$18,954,870		
West Virginia	FS, August 2018 Flooding	\$356,655	\$2,803,771
	FS, June 30, 2019 Flooding	\$2,262,888	
	FWS, June 30, 2019 Flooding	\$184,228	
Wisconsin	FS, July 19-29, 2019 Wind event	\$800,644	\$1,076,313
	FWS, March 2019 Flooding	\$275,669	
Wyoming	FS, June 2017 Flooding and Runoff	\$120,000	\$215,576
	NPS, June 2017 Flooding	\$95,576	
<b>TOTAL</b>	<b>\$574,029,949</b>	<b>\$574,029,949</b>	

An additional listing of reimbursements can be found here:

- [fhwa.dot.gov/specialfunding/er/200929erfafunds.cfm](https://www.fhwa.dot.gov/specialfunding/er/200929erfafunds.cfm)
- [fhwa.dot.gov/specialfunding/er/200929erfofunds.cfm](https://www.fhwa.dot.gov/specialfunding/er/200929erfofunds.cfm)

# STATEWIDE TX DISTRACTED DRIVING CRASHES INCREASE, MOTORISTS URGED NOT TO DRIVE 'INTEXTICATED'

By Daniel Armbruster & Joshua Zuber

Mental distraction can last up to **27 secs** after dialing, texting or changing the radio

AAA.com/Distracted



In Texas, 378 people died in more than 97,000 distracted driving crashes in 2019, according to the latest data from the Texas Department of Transportation. AAA Texas believes no life is worth losing to distraction. Focused drivers save lives. AAA Texas urges all drivers to pay attention and focus on the road during this National Distracted Driving Awareness month and all year long.

"Nearly 380 people lost their lives due to a distracted driving crash in the Lone Star State last year," said AAA Texas Spokesperson Daniel Armbruster. "And 2,500 were reported as seriously injured. There is no text message worth reading or sending when injuring or killing someone is the potential cost."

"Don't Drive Intoxicated. Don't Drive Intexticated." is the tagline for AAA Texas' ongoing initiative to end distracted driving. The campaign reminds drivers that the consequences of alcohol-impaired driving and texting while driving could be the same – deaths and injuries that are entirely preventable.

Distractions include more than texting. Anything that diverts attention from driving – eating and drinking, adjusting the navigation, or picking your next podcast, talking to other passengers, or talking or texting on the phone—can result in a fatal injury.

Despite what some drivers may think, hands-free is not risk-free. Even with your eyes on the road and your hands on the wheel, you are not safe unless your mind focuses on the drive.

Looking away from the road for just two seconds doubles the risk of a crash. Here are AAA Texas' Top Tips to Avoid Distractions While Driving:

- **PREPARE FOR YOUR DRIVE.** Set vehicle systems like GPS, seats, mirrors, climate controls and sound systems before hitting the road. Decide on your route and check traffic conditions ahead of time. And finish dressing and personal grooming at home – before you get on the road.

- **DON'T DRIVE INTOXICATED.** Don't Drive Intexticated. The consequences of alcohol-impaired driving and texting while driving could be the same: Put aside electronic distractions and never use text messaging, email, video games or internet functions, including those built into the vehicle, while driving. Stow your smartphone away, turn it to airplane mode, or activate call/text blocking features.
- **STAY FOCUSED.** Do not let anything divert your attention. Be sure to actively scan the road, use your mirrors, and watch out for pedestrians and cyclists. If you have passengers, enlist their help as a "designated texter." Ask them to answer your calls, respond to texts and program the navigation.

In 2017, Texas passed a statewide ban on using a wireless communication device for electronic messaging while operating a motor vehicle. Texting, as well as reading or writing an email, is against the law while driving in Texas. Some local areas have additional ordinances pertaining to cell phone use while driving. It is the driver's responsibility to learn the laws of their local areas.

For more information, visit [AAA.com/dontdrivedistracted](http://AAA.com/dontdrivedistracted).

## TIPS TO HELP YOU PREVENT DRIVING INTEXTICATED

- **PUT IT AWAY** - Place your mobile device out of sight to prevent temptation.
- **KNOW WHERE YOU'RE GOING** - If using a navigation system, program your destination before driving.
- **PULL OVER** - If you have to call or text while driving, pull off the road safely and stop first.
- **Ask Passengers for Help** - If riding with someone, seek their help to navigate, make a call or send a message.
- **BE A GOOD PASSENGER** - Speak out if the driver of your vehicle is distracted.
- **DON'T BE A DISTRACTION** - Avoid calling or texting others when you know they are driving.
- **DO NOT DISTURB WHILE DRIVING**

### For iPhone:

1. Access settings and tap control center.
2. Tap customize controls and add "do not disturb while driving".
3. Swipe to access the control center.
4. Tap the car button to turn on "do not disturb while driving".

### For Android:

1. Open the Play Store.
2. Download an app that enables "do not disturb while driving".
3. Follow app instructions, as settings may vary.

# SAFE SYSTEM: AN APPROACH TOWARD ZERO TRAFFIC DEATHS

By: Mark Doctor, FHWA Resource Center; Chimai Ngo, Norah Ocel, Karen Scurry, and Jeff Shaw, FHWA Office of Safety

Traffic fatalities in the United States have remained fairly constant since 2015. To reach our goal of zero traffic deaths, we need to change the way we think about traffic safety.

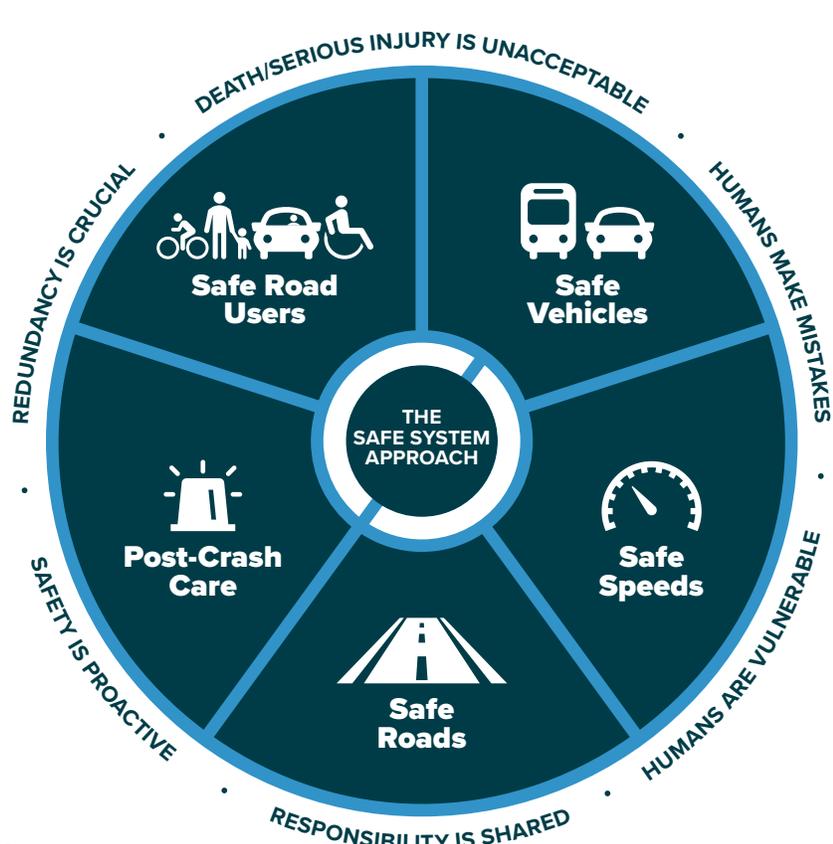
We need to adopt a Safe System approach.

The Safe System approach was founded on the principle that no one should be killed or injured when using the road system. While no roadway crash is desirable, the Safe System approach focuses on crashes that result in deaths and serious injuries.

The approach is gaining momentum through parallel initiatives around the country, including [Vision Zero](#), [Toward Zero Deaths](#), and [Road to Zero](#). Although comprised of different stakeholders, all three efforts share the vision of eliminating fatalities and serious injuries on the Nation's roads, and they are beginning to implement the Safe System approach in different contexts. With Vision Zero, local communities are applying the Safe System approach with a focus on speeds, especially for vulnerable road users. States have adopted zero-deaths goals in their Strategic Highway Safety Plans (SHSP), using the Safe System framework from the report, [Toward Zero Deaths: A National Strategy on Highway Safety](#). Under the leadership of the National Safety Council, the Road to Zero Coalition adopted three strategies; among them is "prioritize safety," which addresses the Safe System approach and safety culture.

At the core of the Safe System approach is acknowledgment that road users will inevitably make mistakes, and those mistakes can lead to crashes. Foundational to the Safe System approach is the expectation that the roadway system is planned, designed, and operated to be forgiving of inevitable human errors so that injury outcomes are unlikely to occur. This requires understanding that the human body has limits on its ability to withstand crash impacts before deaths and serious injuries occur.

Applying the Safe System approach involves anticipating human mistakes by designing and managing the road infrastructure to keep the risk of mistakes low, and to ensure that when mistakes lead to a crash, the impact energy on the human body stays



The Safe System approach. (Source: FHWA)

at tolerable levels. There are six principles of the Safe System approach:

## THE SAFE SYSTEM APPROACH FACT SHEET. (SOURCE: FHWA)

- **Deaths and serious injuries are unacceptable** – No one should be killed or injured when using the road system. The Safe System approach attempts to bring a public health-type focus to road safety, with emphasis on minimizing the harm of crashes. Successfully adopting the Safe System approach requires a safety culture that unequivocally places safety first and foremost in our road system investment decisions.
- **Humans make mistakes** – People will inevitably make mistakes, and those mistakes can lead to crashes. The Safe System approach expects the road system is planned, designed, and operated to be forgiving of inevitable human errors, so that injury outcomes are unlikely to occur.
- **Humans are vulnerable** – People have a limited ability to tolerate crash impacts. Although the exchange of kinetic energy in collisions among vehicles, objects, and people has multiple determinants, applying the Safe System approach largely depends on managing the kinetic energy of crashes to avoid injury outcomes.
- **Responsibility is shared** – Road users, vehicle manufacturers, road designers and operators, law enforcement, and post-crash care providers all share responsibility to ensure that crashes do not lead to fatal or serious injuries. As part of a shared responsibility for safety, road users are expected to comply with traffic laws. Education, enforcement, and vehicle feedback components (e.g., speedometer and automated driving systems) are all critical in enabling and encouraging safe road use.

- **Safety is proactive** – Tools can be used to identify and mitigate risks in the road system to proactively prevent crashes, rather than react after crashes occur.
- **Redundancy is crucial** – With shared responsibility comes inter-relationships and opportunities for synergy. Weaknesses in one area of the system may be compensated with enhancements in other areas. For example, intersection geometry design could correlate to occupant-protection features offered in current vehicle design. Timely and effective emergency response when crashes do occur is also a critical element of a Safe System. Redundancy helps ensure that if one part of the system fails, other parts still protect road users from death or serious harm.

A commitment to zero traffic deaths also means addressing all aspects of safety through the following five elements that, together, create a holistic approach with layers of protection for road users:

- **Safe Road Users** – The Safe System approach addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes.
- **Safe Vehicles** – Vehicles are designed and regulated to minimize the frequency and severity of collisions using safety measures that incorporate the latest technology.
- **Safe Speeds** – Humans are unlikely to survive high-speed crashes. Reducing speeds can accommodate human-injury tolerances in three ways: reducing impact forces, providing additional time for drivers to stop, and improving visibility.
- **Safe Roads** – Designing to accommodate human mistakes and injury tolerances can greatly reduce the severity of crashes that do occur. Examples include physically separating people traveling at different speeds, providing dedicated times for different users to move through a space, and alerting users to hazards and other road users.
- **Post-Crash Care** – People who are injured in collisions rely on emergency first responders to quickly locate and stabilize their

injuries and transport them to medical facilities. Post-crash care also includes forensic analysis at the crash site, traffic incident management, and other activities.

We all have a role in implementing the Safe System approach to save lives and reach our shared goal of zero deaths. Consider applying a Safe System lens to upcoming projects and plans in your community. Put safety at the forefront and design to accommodate human mistakes and injury tolerances.

FHWA has several efforts underway to help you on your Safe System journey, including:

- **Developing marketing materials** to help raise awareness of Safe System in the United States. The materials include a [flyer](#), presentation (available Fall 2020), and video (available Winter 2021).
- **Exploring the relationship** between Safe System and the Highway Safety Improvement Program (HSIP). A final report (available Fall 2020) will identify areas of alignment, as well as opportunities and noteworthy practices to help States integrate Safe System with our existing safety programs.
- **Assisting Vision Zero communities and States to coordinate their zero-deaths efforts** through the Safe System approach. A report (available Fall 2020) will present strategies to coordinate zero-deaths efforts among State, regional, and local agencies.
- **Assisting Vision Zero communities to integrate the Safe System approach** in their action-planning process. A report (available Winter 2021) will document the Vision Zero communities' safety planning processes.
- **Establishing a Safe System framework** for intersections. This project, *A Safe System Approach to Intersection Planning and Design in the United States* (to be completed in Winter 2021), will present a methodology that explicitly incorporates Safe System principles to vet different intersection design and control alternatives. The methodology will be sensitive to exposure, severity, and complexity, and it will rely on inputs commonly available during project development. This initial framework will dovetail with stage 1 of [Intersection Control Evaluation \(ICE\)](#) procedures, which is typically the planning or scoping stage of an intersection project.
- **Partnering with the Institute of Transportation Engineers** to develop a *Safe System Strategic Plan for the United States* (to be completed in Winter 2021).
- **FHWA is continuing to advance the Safe System approach**, through these and other efforts, to reach zero deaths. Visit <https://safety.fhwa.dot.gov/zerodeaths/> to keep up to date on current and future Safe System activities.

**THE SAFE SYSTEM APPROACH**

Zero is our goal. A Safe System is how we will get there.

Imagine a world where nobody has to die from vehicle crashes. The Safe System approach aims to eliminate fatal & serious injuries for all road users. It does so through a holistic view of the road system that first anticipates human mistakes and second keeps impact energy on the human body at tolerable levels. Safety is an ethical imperative of the designers and owners of the transportation system. Here's what you need to know to bring the Safe System approach to your community.

**SAFE SYSTEM PRINCIPLES**

- Death/Serious Injury is Unacceptable**  
While no crashes are desirable, the Safe System approach prioritizes crashes that result in death and serious injuries, since no one should die or be seriously injured either when using the transportation system.
- Humans Make Mistakes**  
People will inevitably make mistakes that can lead to crashes, but the transportation system can be designed and operated to accommodate human mistakes and injury tolerances and avoid death and serious injuries.
- Humans Are Vulnerable**  
People have limits for tolerating crash forces before death and serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates human vulnerabilities.
- Responsibility is Shared**  
All stakeholders (transportation system users and managers, vehicle manufacturers, etc.) must ensure that crashes don't lead to fatal or serious injuries.
- Safety is Proactive**  
Proactive tools should be used to identify and mitigate latent risks in the transportation system, rather than waiting for crashes to occur and reacting afterwards.
- Redundancy is Crucial**  
Reducing risks requires that all parts of the transportation system are strengthened, so that if one part fails, the other parts still protect people.

U.S. Department of Transportation  
Federal Highway Administration  
FHWA 03-20-018

Safe Roads for a Safer Future  
Investment in roadway safety saves lives

The Safe System approach fact sheet. (Source: FHWA)

For more information, please contact Chimai Ngo at [chimai.ngo@dot.gov](mailto:chimai.ngo@dot.gov).

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

# HOW SAFE IS YOUR FLEET? REDUCING CRASHES WITH FLEET MANAGEMENT SAFETY



Motor vehicle crashes are the leading cause of workplace fatalities. From 2003-2018, more than 29,000 workers in the U.S. died in work-related motor vehicle crashes. Federal regulations for large trucks and buses are designed to improve safety, but they don't cover every aspect of operations. Few regulations cover cars and other light vehicles driven for work.

To fill these gaps, many companies have adopted a wide range of fleet safety management practices to prevent crashes and related injuries among their workforce, but we don't necessarily know which practices are making a difference.

## DID YOU KNOW?

[New research](#) links specific fleet safety management practices with significantly lower rates of work-related crashes and crash-related injuries.

## BACKGROUND

The study, co-authored by NIOSH and colleagues from Miami University and the Network of Employers for Traffic Safety (NETS), was a first step in helping us identify the individual practices associated with lower rates of crashes and injuries. The analysis combined 2016 crash data for NETS member companies with their responses to a detailed questionnaire about their fleet safety management program and policies. Data covered 70 companies, almost 333,000 vehicles ranging from passenger cars to tractor-trailers, a variety of industries, and almost 5.5 billion vehicle miles driven.

## SEVERAL FLEET SAFETY PRACTICES WERE ASSOCIATED WITH LOWER RATES OF CRASHES AND INJURIES.

To protect workers who drive for your company, consider incorporating these practices into your new or existing fleet safety program:

- **Fatigue risk management for light-vehicle drivers:** Companies with safety practices such as fatigue awareness training, restrictions on night driving, and medical screenings for fatigue did significantly better than those that didn't have them.
- **Strong mobile phone policies:** Companies with policies on checking mobile phone records after all collisions and prohibiting the use of all electronic devices while driving (including the use of hands-free phones) fared better.
- **Managers' commitment to fleet safety:** Companies that reported their top executives were committed to fleet safety and their field managers managed road safety well had greater success.
- **Determining severity as part of collision reviews:** Companies that conducted in-depth reviews of all collisions and determined the severity of the collisions were found to have better results because they were able to identify issues to be remedied across a company's fleet.
- **Use of in-vehicle monitoring system (IVMS):** Companies who used IVMS-equipped vehicles with video cameras, coached drivers, and summarized IVMS results for upper management were most successful.
- **Driver training:** Companies with training programs that: used a range of driver training methods, such as behind-the-wheel and classroom training; trained all employees (not just those classified as motor vehicle operators); and paid special attention to drivers identified as high-risk were more successful.

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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## SAFETY

Making Roads Safer  
for Workers & Drivers

**TRAINING.**  
**TECHNICAL ASSISTANCE.**  
**RESOURCES.**

## ORGANIZATIONAL EXCELLENCE

Striving for  
Overall Quality



TxLTAP serves all local government roadway agencies by providing no charge training, technical assistance and resource access.



## WORKFORCE DEVELOPMENT

Training that  
Makes an Impact

Learn more at [TxLTAP.org](http://TxLTAP.org)

[txltap@uta.edu](mailto:txltap@uta.edu) | 817.272.9678

## INFRASTRUCTURE MANAGEMENT

Building Smart & Using  
Resources Effectively



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