BETTER ROADS
SAFER ROADS

CREATING A SAFETY CULTURE IN YOUR ORGANIZATION

ESTABLISHING A PERSONAL PROTECTIVE EQUIPMENT PROGRAM

MANAGING WORK ZONES AND WORK ZONE TRAFFIC

THE IMPORTANCE OF OBTAINING AND ANALYZING CRASH DATA

- TxLTAP -

Texas Department of Transportation   UNIVERSITY OF TEXAS ARLINGTON

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LETTER FROM TxLTAP ADMINISTRATION

Everybody, Every Night

One of our TxLTAP instructors, a former TxDOT maintenance director, often tells the story of how, at the end of each workday, he would peek through the blinds of his office window and give a sigh of relief to see his car was the only one left in the parking lot. This simple sight meant every one of his crew left the workplace safe and sound that day. Probably like you, he felt an obligation to do everything he could to make sure his colleagues and employees returned to their families each night.

Those who work in the transportation field often perform tasks in an environment which is fraught with safety hazards. Whether it's operating a piece of heavy equipment, working along the side of a busy street or carrying out duties during inclement weather, individuals who chose to design, build and maintain our roadways put themselves at jeopardy. Fortunately, many of these safety risks can be mitigated if relatively simple safety precautions are implemented.

While no one can control the actions of the driving public, nor can every potential accident be eliminated, roadway workers and supervisors can make a significant impact if they each uphold their end of the safety bargain:

▌ Roadway Supervisors should...

   Provide workers appropriate personal protective equipment (PPE) to get the job done safely

   Listen to workers' safety concerns and take action when needed

   Model the safe behavior and positive safety attitude you want to see in employees

   Provide clear safety procedures/instructions and encourage questions

▌ Roadway Workers should...

   Wear the appropriate PPE (hardhat, vest, ear and eye protection, etc.)

   Follow organization's safety procedures and ask questions when things are unclear

   Watch out for your coworkers and encourage them to be safe too

   Change your attitude about safety if you believe it's a "burden" or "just costs time"

   Alert supervisor if you have safety concerns

Not sure what the right safety practice is for any given function? Please reach out to TxLTAP. We are here to help provide guidance.

Work safely,

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CREATING A SAFETY CULTURE IN YOUR ORGANIZATION

On April 21, 2016, the Bureau of Labor Statistics released Revisions to the 2014 Census of Fatal Occupational Injuries. The 2014 final count of fatal work injuries in the US was 4,821, the highest annual total since 2008. Eleven (11) percent or 530 of the fatal injuries occurred in the state of Texas. The number of non-fatal occupational injuries and illnesses in Texas totaled 248,600 in 2014. Sobering statistics like this emphasize the importance of cultivating a culture of safety in the workplace.

Source: Bureau of Labor Statistics, 2014.
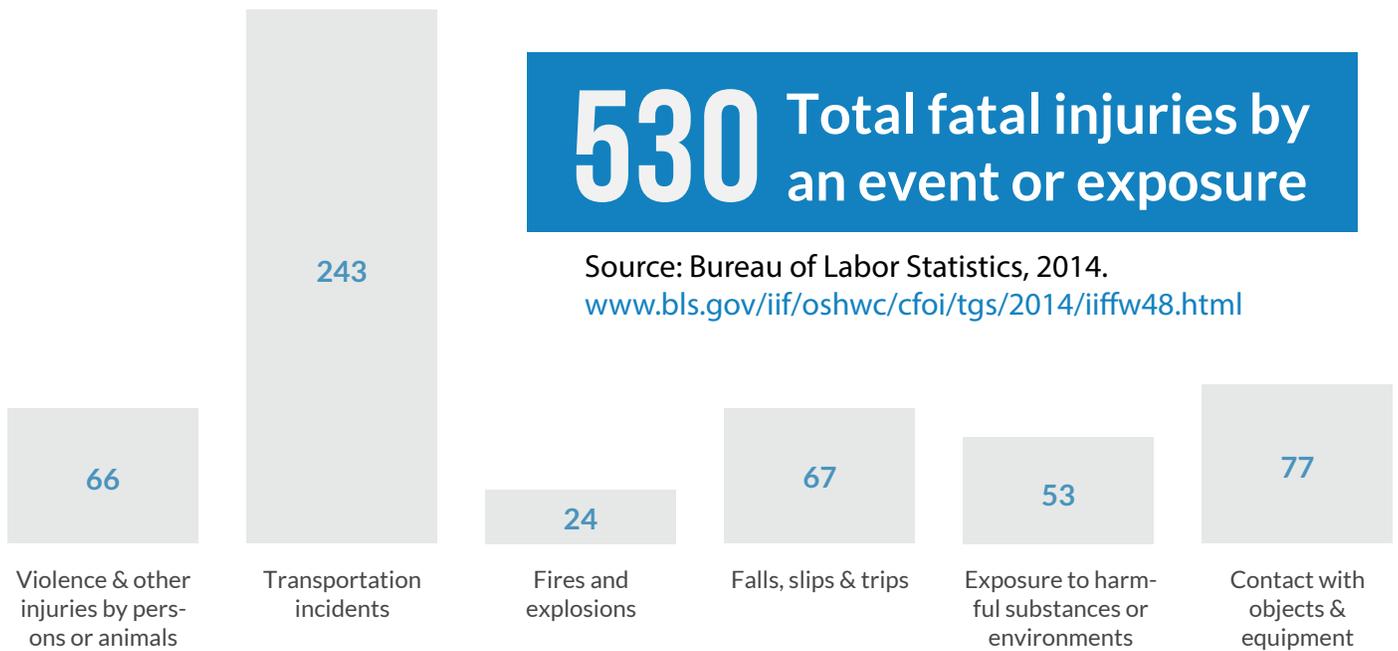www.bls.gov/iif/oshwc/cfoi/tgs/2014/iiffw48.html.

More information and additional resources are available through the United States Department of Labor, Occupational Safety and Health Administration, www.osha.gov/SLTC/etools/safetyhealth/mod4_factsheets_culture.html.

2014 TEXAS FATAL OCCUPATIONAL INJURIES

530 **Total fatal injuries by an event or exposure**

Source: Bureau of Labor Statistics, 2014.
www.bls.gov/iif/oshwc/cfoi/tgs/2014/iiffw48.html

66	243	24	67	53	77
Violence & other injuries by persons or animals	Transportation incidents	Fires and explosions	Falls, slips & trips	Exposure to harmful substances or environments	Contact with objects & equipment

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WHAT CAN BE DONE TO REDUCE AND ELIMINATE THESE OFTEN TIMES PREVENTABLE INJURIES AND DEATHS IN THE WORKPLACE?

An important step is to create a Safety Culture in your organization. Safety cultures consist of shared beliefs, practices, and attitudes that exist throughout an organization. Culture is the atmosphere created by those beliefs, attitudes, etc., which shape our behavior.

An organization's safety culture is the result of a number of factors such as:

Management and employee norms, assumptions and beliefs;

Management and employee attitudes;

Values, myths, and stories;

Policies and procedures;

Supervisor priorities, responsibilities and accountability;

Production and bottom line pressures vs. quality issues;

Actions or lack of action to correct unsafe behaviors;

Employee training and motivation;

Employee involvement or "buy-in."

In a strong safety culture, everyone feels responsible for safety and pursues it on a daily basis; employees go beyond "the call of duty" to identify unsafe conditions and behaviors, and intervene to correct them. For instance, in a strong safety culture any worker would feel comfortable walking up to a manager or high-level executive and reminding him or her to wear the appropriate safety equipment. This type of behavior would not be viewed as forward or over-zealous but would be valued by the organization and rewarded. Likewise coworkers routinely look out for one another and point out unsafe behaviors to each other.

A company with a strong safety culture typically experiences few at-risk behaviors, consequently they also experience low incident rates, low turn-over, low absenteeism, and high productivity. They are usually companies who are extremely successful by excelling in all aspects of business and excellence.

Creating a safety culture takes time. It is frequently a multi-year process. A series of continuous process improvement steps

can be followed to create a safety culture. Employer and employee commitment are hallmarks of a true safety culture where safety is an integral part of daily operations.

1

Obtain Top Management "Buy-in"
This is the very first step that needs to be accomplished. Top managers must be on board. If they are not, safety and health will compete against core business issues such as production and profitability, a battle that will almost always be lost.

2

Continue Building "Buy-in"
Build an alliance or partnership between management and employees.

3

Build Trust
A critical part of accepting change and management needs to know that this is the bigger picture, outside of all the details.

4

Conduct Self Assessments/ Bench Marking
To get where you want to go, you must know where you are starting from.

5

Initial Training
Managers, supervisory staff, safety and health committee members, and representatives from the workforce.

6

Establish a Steering Committee
Comprised of management, employees, and safety staff to facilitate, support, and direct the change process.

7

Develop Site Safety Vision
Key policies, goals, measures, and strategic and operational plans.

8

Align the Organization
Establish a shared vision of safety and health goals and objectives vs. production.

9

Define Specific Roles
Define responsibilities for safety and health at all levels of the organization. Safety and health must be viewed as everyone's responsibility.

10

Develop a System of Accountability
Everyone, at all levels of the organization, must play by the same rules and be held accountable for their areas of responsibility. Signs of a strong culture are evident when individuals hold themselves accountable.

11

Develop Measures
Create an ongoing measurement and feedback system. Drive the system with upstream activity measures that encourages positive change.

12

Develop Recognition Policies
Recognize and reward employees for doing the right things with incentives and ceremonies, and encourage participation in the upstream activities.

13

Awareness Training and Kick-off
It's not enough for a part of the organization to be involved and know about the change effort - the entire organization needs to know and be involved in some manner.

14

Implement Process Changes
Via the involvement of management and employees.

15

Continually Measure Performance, Communicate Results and Celebrate Successes
Publicizing results is very important to sustaining efforts and keeping everyone motivated.

16

On-going Support
Reinforcement, feedback, reassessment, mid-course corrections, and on-going training are vital to sustaining continuous improvement.

More information and additional resources are available through the United States Department of Labor, Occupational Safety and Health Administration, www.osha.gov/SLTC/etools/safetyhealth/mod4_factsheets_culture.html.

ESTABLISHING A
PERSONAL PROTECTIVE EQUIPMENT PROGRAM

By Jack Pettyjohn, UTA Public Works Institute Instructor

Personal protective equipment (PPE) is a critical element of an effective safety program, but one which must be managed properly to achieve maximum benefit. Fortunately, it's an element that is easily managed, and one that lends itself to helping employers create effective programs by offering easy successes with relatively small investments of time and money. Your employees need to understand that the PPE Program is driven by a genuine concern for their health and wellbeing. PPE is first and foremost about "Persons"; in this case your fellow workers who make up your working family. The PPE Program is a component of the larger safety program that helps ensure all members of your working family finish each day without injury or illness resulting from a job related exposure. Simply stated, their lives matter. Equipment, pavement and pipe can all be replaced. Lives cannot

To that end, creating a team of employees to initiate the "comfort phase" of the PPE Program is essential. A good team will include a sample of workers who will actually use the equipment; a management representative whose participation reinforces the commitment to the program; and someone with procurement skills who can help with the details of gathering different kinds of PPE for the team to consider for their use. A safety professional or consultant along with

reputable vendors of safety equipment should be included as resources for the PPE Program. A knowledgeable vendor can provide the team with multiple choices of equipment, as well as help them identify the equipment best suited for their exposures and provide the training they need to use, clean and maintain their equipment properly.

> Occupational Safety and Health Administration (OSHA) guidelines for PPE state that employees must know at least the following:
>
> When PPE is necessary
>
> What PPE is necessary
>
> How to properly put on, take off, adjust and wear the PPE (this is an area of great deficiency in most programs)
>
> The limitations of the PPE
>
> Proper care, maintenance, useful life and disposal of PPE

A team approach allows for the most comprehensive coverage of these concerns. From the outset, the team should recognize first that PPE was never intended to be the first line of defense against harmful exposures; it is the last. Engineering and administrative controls should always be employed first, if possible, to eliminate the harmful exposure. For example, if a welding area can be relocated to a low traffic area of the shop where ventilation and the use of barrier/shield panels can adequately address the exposures to burns, radiation and toxic fumes and can eliminate the exposure to all employees not engaged in welding, that would be the preferred first line of defense. Similarly, the use of guardrails to prevent falls and friction surface materials to prevent slips, trips and falls in the first place, or purchasing equipment with reduced noise levels to prevent hearing damage are preferable first lines of defense. These matters would be considered by the team as they identified the areas where PPE might be necessary. The mantra becomes "Eliminate the hazard from the outset; use PPE when it cannot be eliminated".

As the team begins the process of selecting PPE, they should recognize that personal protective equipment is PERSONAL. While a few situations such as a face shield stored in close proximity to shop grinding wheel for use by anyone needing to use it while grinding, or a rubber vest in a battery servicing area for anyone performing battery maintenance, PPE, as a general rule, should be assigned to the individual to ensure proper fit and function, as well as accountability for the care of the equipment.

Examples of PPE commonly used by city or county governments include safety

glasses, goggles, face shields, hard hats, safety shoes, gloves, vests, ear plugs, and earmuffs. Here we briefly illustrate how the PPE selection process can work, and highlight some specific points for extra consideration. Working from head to toe, we'll begin with...

HEAD PROTECTION

Most city/county governments now require the use of hardhats in field operations. Hardhats have several different classes that address different kinds of exposure such as impacts and electrical contacts. A vendor can be very helpful by identifying the model best suited to your needs. The hardhat can be a billboard for your county or city logo, which helps communicate the worker's identification. This helps identify the wearer as a city/county employee to the citizens they may come in contact with during their duties. It can be a reassuring feature for the citizenry to be able to immediately identify your employees as government employees when they encounter them on the streets or in their yards during the course of a maintenance or public safety event. The hardhat can also act as a billboard for status distinction by using safety message or designation stickers. A safety team decal or any other decal that affords the employee a status distinction is always well received. The use of the team to make the selection and a vendor who can supply all the options provides the opportunity to maximize the benefits of PPE, both direct and indirect, as well as the likelihood it will be used to greatest effect.

EYE PROTECTION

Safety glasses are required by most city/county governments, but the process often begins and ends with a quick selection of safety glasses without consideration to other exposures where eye protection might be needed. This is where

the team can discuss the "when, where and what" queries OSHA suggests. It is also a place where the vendors can have a group of ready-made solutions. The use of the team approach allows for discussion of other activities where eye and face protection should be worn.

EAR PROTECTION

WThere's simply not a PPE topic where OSHA's point about how to properly use PPE and understanding its limitations is more important than with hearing protection. Unfortunately many organizations do not conduct an assessment of the noise levels in their working environments to see what level of protection is necessary to reduce the noise to safe levels. Standard earplugs may not be sufficient in some environments. The common practice for most organizations is to buy a box of whatever the cheapest earplugs available are and put them in a place where the employees can access them if they so choose to do in whatever environment they many encounter. Vendors can help identify alternatives to the standard foam plugs. Like faces, hands, feet and body shapes, ear canals vary widely from person to person. Custom plugs, created from a mold and cast kit vendors can provide a far more comfortable and effective earplug than the standard issue plugs.

Finally, the vendors can show and explain the benefits of earphone (earmuff) style protection. Noise cancelling earphone technology has been incorporated into the design of current equipment, and can be mounted to the hard hats. For the use of two stroke engine powered equipment like chain saws, leaf blowers, etc., where the decibel rating is excessive, a hard hat equipped with a screen style face shield and ear muffs used along with safety glasses, represents a perfect solution to all the head area exposures.

BODY PROTECTION

Vests, which have become commonplace for city/county workers, particularly those working alongside the roadways, come in a wide variety of styles and options. The Texas Manual of Uniform Traffic Control Devices specifies certain ANSI class vests. Class II, with sleeves, have become the standard, but Class III with leggings are required for night work. If the city or county has personnel who work from elevated platform bucket trucks

or aerial lifts, vests with a body harness built into them are available which allow the employee to put the vest on over jackets or coats in cold weather and also position the D-ring in the correct position on the back, reducing the likelihood of injury should the employee fall from the bucket. A capable vendor will have these vests, which meet the ANSI requirements for fall protection, along with adjustable lanyards and self-retracting lifelines as an alternative to standard lanyards to keep the employees from striking the ground from a fall from lower elevations.

HAND/ARM PROTECTION

No ANSI standards are available for gloves but, there is a wealth of material and product available. OSHA and glove manufacturers provide charts for matching gloves to exposures. If the team's process has evolved sufficiently, they will determine what chemicals exist in their workplace and what gloves or other PPE will be required for the employees to handle those products. The vendor can supply samples for consideration, and assist with the training on the products.

A consideration of all available PPE is beyond the scope of this article. Our focus here is to encourage employers to organize safety teams to develop a process by which exposures can be identified and assessed and to determine the correct PPE to help protect the employees. Once the team has identified the exposures and the appropriate PPE solutions determined, the team can roll out the program and product options in safety meetings for input from the employees. Tryouts of options may be appropriate to make a final determination of the selection, and revisiting the issue to determine if the solution was effective and if the products are performing as intended become part of the follow up. Team members can be rotated or substituted, as desired, to give a larger number of employees the opportunity to participate and feel as though they are playing their part in making their operation safer for all.

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For more resources on PPE and to access a checklist for establishing a PPE Program, visit www.osha.gov/dte/library/ ppe_assessment/ppe_assessment.html.

WHERE DOES MY SAFETY PROGRAM STAND?
HOW CAN I FIND OUT? ------------------------------

Experts with the National Safety Council (NSC) say that a strong safety culture positively impacts safety and business outcomes. Yet organizations sometimes struggle to measure it efficiently. Excuses range from, "We can't pull that many employees away from their work," to "We can't really change the culture here" and everything in between. But what if there was a quick, efficient, and more importantly, effective way to take a snapshot of your company's culture?

The NSC Employee Safety Perception Survey, offered as part of the Journey to Safety Excellence® at the National Safety Council is a free online tool that can assist organizations in evaluating an existing safety program. The NSC Employee Safety Perception Survey is a 10-item survey that provides the information and insight needed to gauge and improve an organization's safety performance. Unlike injury rates, which are lagging indicators of past experience, the NSC Employee Safety Perception Survey can help predict safety outcomes. With the information it provides, you can evaluate your program, establish priorities, motivate improvement, and monitor performance at multiple sites and locations.

NSC researchers have developed this short survey to enable your organization to take a quick snapshot of your safety program from the perspective of your employees. Your organization's responses will be benchmarked with more than 700 organizations in the NSC database to give you a comparison to other organizations' safety cultures.

For additional information on the Employee Safety Perception Survey, visit www.nsc.org/journey.

UNSIGNALIZED INTERSECTION IMPROVEMENT GUIDE:

PRACTICAL GUIDANCE FOR IMPROVING THE SAFETY, MOBILITY, AND ACCESSIBILITY AT UNSIGNALIZED INTERSECTIONS

According to the Texas Strategic Highway Safety Plan, in 2013 there were 5,624 fatal and incapacitating injury crashes that resulted in 772 deaths and 6,217 incapacitating injuries related to intersection crashes. Although 74% of the intersection crashes occurred in urban areas, the percentage of fatal crashes in rural areas is considerably higher than the percentage of fatal crashes in urban areas. The majority of these rural intersections are unsignalized intersections.

The Unsignalized Intersection Improvement Guide (UIIG) is a free web-based resource developed primarily to aid local agency practitioners in selecting design, operational, maintenance, enforcement, and other types of treatments to improve the safety, mobility, and accessibility of all users at unsignalized intersections. It was designed under the assumption that an unsignalized intersection (or group of unsignalized intersections) has been identified as having a problem related to traffic safety, operations, or access. The UIIG assists the user in confirming there is indeed a problem and identifying the type and potential cause of the problem, plus it offers possible countermeasures or strategies that address the problem.

There are many problems that can occur at an unsignalized intersection. Problems could be specific to an individual intersection, occur along a section of road with successive unsignalized intersections, or be a systemic problem throughout a jurisdiction.

Common problems experienced at unsignalized intersections that are addressed in the UIIG include:

Inappropriate intersection traffic control

Inadequate visibility of the intersection or regulatory traffic control devices

Inadequate intersection sight distance

Inadequate guidance for motorists

Excessive intersection conflicts within or near the intersection

Vehicle conflicts with non-motorists

Poor operational performance

Misjudgment of gaps in traffic

Speeding

Non-compliance with intersection traffic control devices

The first four problem types comprise issues concerning the perception of the intersection or its traffic control; the next three relate to safety or operational deficiencies; and the last three entail issues of user decision-making and behavior. The existence of one or more of these problems can contribute to crashes at unsignalized intersections and the injuries and fatalities that result.

The identification of the intersection problem and implementation of the most cost-effective treatment should follow an improvement process regardless of the size and capabilities of the agency, from the smallest village or town to the largest city or county.

That improvement process should be iterative and continuous and include the following steps:

1

Identify the problem location(s)

2

Analyze the location(s) to quantify and characterize the problem

3

Identify potential treatments that may address the problem

4

Select and implement the most affordable cost-effective treatment(s)

5

Monitor over time and evaluate the effectiveness of the implemented treatment(s)

Additional activities may be required within each of these five steps, depending on the type of improvements being considered. The selection of the desirable countermeasure for implementation is to be determined by the agency with input from and review by the affected stakeholders within the community. More information on the UIIG and the UIIG Toolkit, can be found at www.ite.org/uiig/.

The UIIG is hosted by the Institute of Transportation Engineers (ITE) under the sponsorship of the Federal Highway Administration (FHWA) Office of Safety. It was developed under a contract with the National Cooperative Highway Research Program (NCHRP) of the National Academy of Sciences, Project 03-104. For a complete list of authors and acknowledgments, visit www.ite.org/uiig/acknowledgment.

SAFETY TREATMENTS: GUARDRAIL, GUIDERAIL...AND SOMETIMES A BEAM GUARD - PROTECTING YOUR DRIVING COMMUNITY

Whether you call them guardrails, guiderails or beam guards, these safety barriers are intended to shield a motorist who has left the roadway from striking something else or going down steep embankments. We'll use the term "guiderail" for the remainder of this article, as it has become the more prevalent terminology in recent years, in part due to the legal interpretation the word "guard" is thought to imply in some jurisdictions.

Guiderail is used in rural areas where there is a possibility that a vehicle that has run off the roadway will not be able to come to rest without crashing into a fixed object or a precarious roadside feature. The roadway may be bordered by side slopes, trees, retaining walls, or utility poles that pose a greater threat of danger when struck than that of the guiderail. Guiderails are often installed to lessen the potential severity of crashes, and can function to deflect a vehicle back to the roadway, slow the vehicle to a stop, or slow the vehicle and let it proceed past the guiderail.

So, how do engineers know how to place the guiderail? The guiderail has two primary functioning components- the end terminal, which is the starting point of the guiderail or "end treatment", and the guiderail face, which is the length extending from the end terminal alongside of the road. The function of the guiderail face is to redirect vehicles back to the roadway. Guiderails function as a system, which means that all of the guiderail itself, including the posts, the soil the posts are in, the connection of the guiderail to the posts, the end terminal, and the anchoring system at the end terminal, play a role in the function of the system. The system is placed in an optimal position where it will work for most drivers in most conditions. This data driven decision making process is not taken lightly.

Transportation engineers select guiderail based on system performance that has been evaluated through crash tests in controlled environments and noted in crash test criteria. A barrier is deemed "crash worthy" if it meets the crash test criteria in effect at the time of the testing established for that type of roadway device- both the guiderail face and the end treatment are tested. The desired effect is for the system to redirect vehicles back to the roadway.

Most state departments of transportation have their own guidelines for installing guiderail. There are many considerations to be made, and suitable research should be conducted before any selection of placement or system type is made, since factors such as size, speed, and orientation of vehicles can affect performance.

There are guidelines available from the National Cooperative Highway Research Program (NCHRP) that detail crash worthiness: NCHRP Report 350 and the Manual for Assessing Safety Hardware (MASH) published by the American Association of State Highway and Transportation Officials (AASHTO). The Federal Highway Administration (FHWA) also maintains a Frequently Asked Questions page about barriers and other roadway departure related structures.

MANAGING WORK ZONES & WORK ZONE TRAFFIC

WITH SMARTER WORK ZONES

Work zone crashes are those crashes that occur in a construction or maintenance zone, regardless of whether or not the crash was construction related. In 2013, there were 108 fatal and 511 incapacitating crashes that occurred in work zones throughout Texas.

Effective traffic management during construction is necessary to ensure motorist and worker safety, minimize travel delays, maintain access to local businesses and residences, and complete road work on time. These operational and safety benefits can be significant, especially in high-impact areas such as metropolitan regions and corridors and during special events.

While several options are available to establish efficient work zones, the Every Day Counts (EDC)-3 Smarter Work Zones effort focuses on two strategies: road project coordination and technology applications, especially queue management and speed management. EDC, a State-based initiative of FHWA's Center for Accelerating Innovation, works with State, local and private sector partners to encourage the adoption of proven technologies and innovations aimed at shortening and enhancing project delivery.

Road project coordination involves coordination within a single project and/or among multiple projects within a corridor, network, or region, and possibly across agency jurisdictions, to minimize work zone impacts and produce time and cost savings. Cities and regions around the country are efficiently synchronizing projects at various levels, combining multiple projects in a corridor or network, correlating right-of-way acquisition and utility work, and coordinating work between different transportation agencies.

This internal and external agency road project coordination results in reduced numbers of street cuts, earlier identification of project impacts, greater ability to reduce and manage traffic disruptions from road work, cost savings, better quality road surfaces, and more satisfied customers.

Technology applications such as queue management and speed management involve deployment of Intelligent Transportation Systems (ITS) for dynamic management of work zone traffic impacts to improve motorist and worker safety and mitigate work zone-related congestion.

Queue management systems, especially when coupled with traffic information strategies, can alert drivers to a line of vehicles ahead caused by a work zone so they can slow down safely.

Speed management solutions, especially variable speed limit (VSL) systems, dynamically manage work zone traffic based on real-time conditions such as congestion and weather. Combining VSL with automated enforcement can increase driver compliance with displayed speed limits. Both queue and speed management use a range of technologies for detection, including Bluetooth® sensors and probe vehicles.

Take a further look into the benefits of smarter work zones on the next page.

BENEFITS

Minimize Travel Delays

Project coordination among different agencies allows them to be proactive in reducing construction time and the resulting traffic congestion. Technology applications can reduce travel delays by dynamically managing traffic according to real- time conditions.

Enhance Safety of Motorists and Workers

Combining queue and speed management technologies can raise driver awareness as they approach work zones, provide delay and routing information, and increase their compliance with displayed speed limits.

Maintain Business and Resident Access

Communication and coordination between agencies helps lessen the extended impacts of work zones and minimize effects on local access.

CURRENT STATE OF PRACTICE

Road project coordination is being used successfully from coast to coast in metropolitan areas and along interstate corridors. Examples include inter-agency coordination along a 1,000-mile corridor in the Great Lakes region between Minnesota and Ontario; a software-based system to coordinate right-of-way activities and reduce impacts in Baltimore, Maryland; the Oregon Department of Transportation's (DOT) corridor-level Transportation Management Plans; Ohio's permitted lane closure spreadsheet; and the Pennsylvania DOT's coordination with Pittsburgh municipalities and utility companies.

According to FHWA's Work Zone Management Program Web-based compendium of resources, VSLs or advisories have been used on at least 30 interstate corridors in 14 states. States such as Minnesota, Oregon, Washington and Wyoming use VSL on certain corridors continuously as a standard practice, increasing the exposure of the motoring public to this concept. In addition, at least 10 states, including Michigan, Minnesota, Oregon and Washington, have mature queue management systems that generate accurate and dependable results.

For additional information on Smarter Work Zones, please contact: Paul Pisano, FHWA Office of Operations, at 202-366-1301 / Paul.Pisano@dot.gov or Jawad Paracha, FHWA Office of Operations, at 202-366-4628 / Jawad.Paracha@dot.gov or visit the EDC-3 Smarter Work Zones webpage at www.fhwa.dot.gov/innovation/everydaycounts/edc-3/swz.cfm.

OBTAINING & ANALYZING CRASH DATA

By Debra Vermillion, UTA Public Works Institute Instructor

Many people believe that the only reason law enforcement completes a crash report is for insurance purposes. No one else uses the information. This could not be further from the truth. Texas has one of the most robust, accurate and current crash data systems in the country. The data collected from Texas crash reports is used by transportation safety professionals, engineers, planners, and researchers at all levels of government – federal, state, and local. It is also used by safety advocates, the heath care, insurance, trucking, and auto industries as well as transportation product manufacturers.

The Crash Records Information System (CRIS) is the State of Texas' depository for crash records. The Texas Department of Transportation (TxDOT), specifically the Traffic Operations Division (TRF), serves as the state custodian of crash records and oversees the CRIS. Texas law requires a law enforcement officer who investigates a motor vehicle crash to make a written report of the crash if the crash resulted in injury to or the death of a person or damage to the property of any one person to the apparent extent of $1,000 or more. They are required to submit the report to TxDOT no later than the 10th day after the date of the crash and on the form prescribed by TxDOT. The Texas Peace Officer's Crash Report (CR-3), is the required form. Current versions of the CR-3, CR-3 Code Sheet, and the Instructions to Police for Reporting Crashes (CR-100) can be obtained at www.txdot.gov/inside-txdot/division/traffic/law-enforcement/crash-records.html.

Crash reports for all roadways in Texas including county roads, city streets, and highways are submitted to TxDOT. All the data fields reported on the CR-3 as well as interpreted data fields, GIS data for all located crashes, and roadway attributes for crashes occurring on the state highway system are collected. The current retention period for crash data is five years plus the current year. However, TxDOT is working towards a ten year plus current year retention period beginning with calendar year 2010 data.

Why do we need to analyze crash data? In order to improve and enhance safety on the roadways, you have to understand what the problem is. Ongoing analysis should be done to be aware of any existing or potential problems. Before and after analysis should also be done to evaluate the effectiveness of implemented countermeasures and programs.

Crash data is used by TxDOT and other agencies to make millions of dollars in funding decisions annually. The federally funded Highway Safety Improvement Program (HSIP) uses a cost/benefit analysis to determine which safety construction projects will be funded. The main component of this analysis, known as the Safety Improvement Index (SII), is crash data. TxDOT funds hundreds of millions of dollars' worth of projects annually through the HSIP. The TxDOT Traffic Safety Program also uses crash data in determining how and where to spend the millions of dollars it makes available annually for behavioral and enforcement safety programs.

HOW CAN YOUR ORGANIZATION OBTAIN CRASH DATA?

Texas Transportation Code (TTC) §550.065(b) identifies who can have access to the data including the confidential data collected. There are multiple options available to obtain the data. Which option you choose, will depend on your data needs, timeline, and internal analysis abilities. Below are the current options.

Annual Summary Reports

TxDOT publishes annual summary reports of various data collected. The reports are available from 2003 to the most recent complete calendar year at www.txdot.gov/inside-txdot/forms-publications/drivers-vehicles/publications/annual-summary.html. The previous year's data is published by June of the following year.

Online Data Request

You may submit a data request for location specific data or data not available in the published annual reports by completing the online data request form available at www.txdot.gov/inside-txdot/division/traffic/crash-statistics.html. You need to plan ahead for these requests since it may take up to thirty (30) working days to receive a response.

Automated Crash Data Interface File

You may also request an automated crash data interface file. As a governmental en-

tity of the State of Texas, you are entitled to the Standard Interface file. This file contains all the crash data collected from the Texas Peace Officer's Crash Report, interpreted data fields, and roadway attributes for crashes occurring on the state highway system. Information on how to obtain this file and the file specifications are available at www.txdot.gov/inside-txdot/division/traffic/data-access.html. This is a raw crash data file. Your organization will need to have the ability to process and analyze the data.

CRIS Access

Your organization may also request direct access to CRIS. There are limitations on which organizations may have access. There are also training requirements that must be satisfied prior to access being granted. For additional information on this option, contact the TxDOT Traffic Operations Division at 512-416-3200.

Crash data is just one of the tools used in our mission to improve safety on the roadways and save lives, but it's an important one. We should all take advantage of this valuable State.

U.S. DOT ANNOUNCES STEEP INCREASE IN ROADWAY DEATHS BASED ON 2015 EARLY ESTIMATES AND CONVENES FIRST REGIONAL SUMMIT TO DRIVE TRAFFIC SAFETY BEHAVIOR CHANGES

In early February 2016, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced its latest estimate of traffic deaths, which show a steep 9.3 percent increase for the first nine months of 2015. The news came as the agency kicked-off its first in a series of regional summits with a day-long event in Sacramento, Calif., to examine unsafe behaviors and human choices that contribute to increasing traffic deaths on a national scale. Human factors contribute to 94 percent of crashes according to decades of NHTSA research.

The NHTSA Safety Summit for Region 6, which includes Texas, Oklahoma, Louisiana, Mississippi, and New Mexico was held on March 1st in Fort Worth, Texas. The summit addressed drunk, drugged, distracted and drowsy driving; speeding; failure to use safety features such as seat belts and child seats; and new initiatives to protect vulnerable road users such as pedestrians and cyclists.

"For decades, U.S. DOT has been driving safety improvements on our roads, and those efforts have resulted in a steady decline in highway deaths," said U.S. Transportation Secretary Anthony Foxx. "But the apparent increase in 2015 is a signal that we need to do more. The NHTSA

safety summits will provide us with new approaches to add to the tried-and-true tactics that we know save lives."

NHTSA estimates that more than 26,000 people died in traffic crashes in the first nine months of 2015, compared to the 23,796 fatalities in the first nine months of 2014. U.S. regions nationwide showed increases ranging from 2 to 20 percent. The estimated increase in highway deaths follows years of steady, gradual declines. Traffic deaths declined 1.2 percent in 2014 and more than 22 percent from 2000 to 2014.

"We're seeing red flags across the U.S. and we're not waiting for the situation to

develop further," said Dr. Mark Rosekind, NHTSA Administrator. "It's time to drive behavioral changes in traffic safety and that means taking on new initiatives and addressing persistent issues like drunk driving and failure to wear seat belts."

More information on these findings can be found in DOT HS 812 240 - Traffic Safety Facts. http://www-nrd.nhtsa.dot.gov/Cats/ListPublications.aspx?Pubno=812240.

Percentage change in estimated fatalities in 2015 from reported 2014 fatality counts, by NHTSA region, for the first nine months (Jan.-Sept.)

HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

& SAFETY PERFORMANCE MANAGEMENT MEASURES FINAL RULES

The Federal Highway Administration (FHWA) published the Highway Safety Improvement Program (HSIP) and Safety Performance Management Measures (Safety PM) Final Rules in the Federal Register on March 15, 2016, with an effective date of April 14, 2016. The HSIP Final Rule updates the HSIP regulation under 23 CFR Part 924 to be consistent with MAP-21 and the FAST Act, and clarifies existing program requirements. The Safety PM Final Rule adds Part 490 to title 23 of the Code of Federal Regulations to implement the performance management requirements in 23 U.S.C. 150.

The Safety PM rule supports the HSIP, as it establishes safety performance measures to carry out the HSIP and to assess serious injuries and fatalities on all public roads. Together, these regulations will improve data; foster transparency and accountability; and allow safety progress to be tracked at the national level. They will inform State DOT and MPO planning, programming, and decision-making for the greatest possible reduction in fatalities and serious injuries.

Additional information related to the HSIP and Safety PM Final Rules can be found at http://safety.fhwa.dot.gov/hsip/spm/measures_final_rules.cfm.

TEXAS DEPARTMENT OF TRANSPORTATION OPENS THE 2016 HIGHWAY SAFETY IMPROVEMENT PROGRAM CALL FOR PROJECTS

The Texas Department of Transportation (TxDOT) HSIP is for highway safety projects that eliminate or reduce the number and severity of traffic crashes. It is limited to improvements that address the crash types identified in the Texas Strategic Highway Safety Plan (SHSP). Funds are provided for construction and operational improvements both on and off the state highway system. $155 million is anticipated to be available statewide for this program focusing primarily on improving safety and reducing severe accidents. Local governments are encouraged to work closely with their TxDOT area or district offices to submit applications.

Deadline JUNE 3RD

More information on the 2016 HSIP CFP can be accessed at www.txdot.gov/inside-txdot/forms-publications/publications/highway-safety.html. If you have any questions, please contact Darren McDaniel at (512) 416-3331, (512) 484-8508 or Darren.McDaniel@txdot.gov.

CATEGORIES ELIGIBLE FOR THE 2016 HSIP CALL FOR PROJECTS ↓

Barriers and Safety Treat Fixed Object - Add or upgrade barrier or metal beam guard fence to safety treat a fixed object or drainage structures.

Curves - Construct improvements on horizontal curves to prevent run-off the road and head-on crashes.

Grade Separation - Construct a vertical separation of a highway intersection (conventional diamond interchange).

HSIP (Misc. Safety) - Any safety improvement that addresses an emphasis area in the SHSP but is not categorized in one of the other seven categories.

Intersection - Improvements to an intersection, such as signals, signage, lighting, and pedestrian improvements, other than a grade separation.

Off-System - Any safety improvement to a road off the State highway system, which addresses an emphasis area in the SHSP. Intersections of off-system roads with on-system highways are not considered off-system projects. The local government is responsible for 10 percent of the funding.

Rumble Strips - Add edgeline or centerline rumble strips to a highway to prevent run-off the road and head-on crashes

Widen - Increase paved surface width of rural highways with current pavement width less than 24 feet and ADT greater than or equal to 400 vehicles per day to provide from 26 feet to 28 feet of paved surface width.

TEXAS CHARTERS THE
51ST STATE TRANSPORTATION INNOVATION COUNCIL (STIC)

The state of Texas is the 51st member of the national State Transportation Innovation Councils (STIC). According to the charter signed March 22, 2016, the STIC is to "facilitate the rapid implementation of innovative technology, tactics and techniques among transportation program delivery professionals at all levels of state government and throughout the private and nonprofit sector to ensure smart, efficient investment in Texas highway and transportation infrastructure."

TxDOT and local public agencies statewide own the system and make key decisions on how to deliver projects, as well as what innovative techniques and technologies will be used to ensure the safe operation of the highway system. A State Transportation Innovation Council (STIC) for the State of Texas brings together primary stakeholders that represent all these entities and works to collectively lead innovation in the State of Texas. The STIC serves to act as a catalyst for rapid deployment of nationally and State identified new technologies, strategies, and methods that have already been demonstrated to be successful in "real world" applications, and can offer improved performance and effectiveness of the transportation system within the State of Texas.

The Texas STIC will:

Serve to advise the TxDOT Director of Strategy & Innovation and FHW A Texas Division Administrator

Provide a means of ensuring regular contact and communication between the TxDOT, Local Public Agencies, and other highway sector stakeholders

Report to the TxDOT Director of Strategy & Innovation and FHW A Texas Division Administrator on the status of implementing State and Federal program initiatives

Provide leadership the opportunity to promote and support rapid deployment of selected innovative technologies, strategies, and methods

Provide a forum for discussing and proposing solutions to critical transportation-related problems

Act as a liaison among the stakeholders represented by the membership, and may provide a forum for those stakeholders on current and emerging technology issues in the transportation sector

Develop a process to select innovative technologies, strategies, and methods

on which to focus near-term implementation efforts

Identify and mobilize champions within the State of Texas who are committed to the deployment of selected innovative technologies, strategies, and methods

Assist in the development of deployment plans and strategies regarding new innovative technologies

Monitor performance metrics to ensure priority initiatives are converted into standard practice

Share information with all State of Texas' transportation stakeholders through meetings, workshops, trainings, webinars, and conferences

Co-chairs for the Texas STIC are Darran Anderson, TxDOT Director of Strategy and Innovations and Al Alonzi, FHWA Texas Division Administrator.

Visit **www.fhwa.dot.gov/innovation/stic/** for more information on State Transportation Innovation Council Network.

COMMUNICATING ABOUT LOCAL ROAD SAFETY WITH LOCAL ELECTED OFFICIALS

Local elected officials play a major role in local road safety. They set goals, adopt policies, build coalitions, and approve the budgets for the roads you operate. These officials, however, typically face many demands for their time and many requests for funding. When you work with them, you need to make every minute count.

COMMUNICATE

Keep it Simple
Provide the facts in clear, concise language. Use terms that lay people will understand. Avoid acronyms and engineering jargon–for example, use "federal sign regulations," not "MUTCD."

Tell a Story
Supplement facts and figures with stories of actual crashes. Explain how your plans may reduce these crashes.

Highlight Successful Examples
Share success stories from similar communities to show what has been proven to work. Use statistics about effective countermeasures.

Use Creative Presentation Tools
Utilize visual aids: photos of a problem site or feature; plans, graphics, or other images of your proposed solutions. Consider props: Washington County, MN, for example, created a roundabout "rug" that people can walk on to understand roundabout navigation.

Network
Build and maintain relationships with other safety stakeholders, such as: elected officials' staff; TxDOT staff; law enforcement; and public health officials. These stakeholders can help you gather safety information and reinforce support for safety initiatives when you communicate with your elected officials.

Know the Facts
Have the facts at hand about road safety in your community. You are the roadway expert, and the elected official looks to you for guidance. Know the problem locations, crash data, causes, and citizen concerns. Know State and Federal funding options and relevant safety policies. Know potential safety strategies and countermeasures to address issues.

Inform and Educate
Inform and educate your elected officials. Present your data, proposed solutions, and costs. Scale your proposed solutions to a level your officials are able to address. Educate listeners about proven, effective, low-cost solutions. Anticipate opposing views, and prepare responses to address them. Prepare a one-page summary of your main points.

Involve Officials in Safety
Provide regular updates on safety issues and projects. Include your local elected officials in road safety events to keep them involved and focused on safety. Invite your local elected officials and their staff to open houses and road safety events, and include them in the event planning. Offer public acknowledgment of their support, such as a speaking role at a ribbon-cutting ceremony and safety meetings.

For additional communication resources, visit safety. fhwa.dot.gov/local_rural/ training/fhwasa16019/ or contact Rosemarie Anderson, FHWA Office of Safety, at rosemarie. anderson@dot.gov.

For advertising inquiries please email *ads@mailmmc.com* or call 972.221.1600

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