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Disaster Zone Declared; 32 killed
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Twenty-three Pittsburg County road workers (and others) have completed the Roads Scholar program. And, 22 of the 23 are in District 3. District 3’s Safety Director Neil Johnson described the situation a week after the storms: “We have had no power for more than a week, and of course, that affects everything else that happens—any other kind of emergency. And, with 289 roads just in this district, it’s hard to get to all of them even in good weather. On some of those roads, every single power pole is broken off, down near the ground. The destruction of trees and power lines, it’s just unbelievable. I’ve never seen anything like it.” Johnson continued, “LTAP’s Roads Scholar training has helped immensely. We have four crews, running three chippers, seven or eight chainsaws, and four pole saws running all the time, so all that training has paid off too. We use it everyday.” Another benefit of the Roads Scholar courses Johnson pointed out is the reality that “in work zones, traffic does not stop, so the flagging and traffic control training was really helpful. Not only does it protect our workers, but FEMA won’t pay unless we’re following those standard procedures: vests, flags, signs, and so on. So the LTAP training has helped in more ways than one.”

A little more than a week after the storm, McAlester and surrounding Pittsburg County had about 54% of its power restored. “PSO has done amazing work. They’ve got convoys, literally, from North Carolina, Kansas, Kentucky, Tennessee, and they are working all the time, just doing an amazing job,” Johnson said. “This kind of weather just complicates anything else that happens. For instance, right after the storm hit, a big chicken plant caught on fire. That might not have been so bad, but there were several thousand pounds of anhydrous ammonia in there. We evacuated people for a mile round the plant, and lot of those people had trouble getting out. There were still trees in the road, not to mention ice covering everything.” Johnson recalled one example of the hardships endured by people in the county. “We had a couple in their 90s up on Greasy Mountain, and their house is about 100 yards off the road. They were up there for five days with no heat before we realized they were in there. There were so many broken trees, we had to cut them a new road. Their propane line had broken, so we went to town, got the parts and fixed it, relit their pilots. That man was just crying. He was grateful.”

When all is said and done, this will be one of the most expensive disasters in state history,” Oklahoma Gov. Brad Henry said about the severe ice storms that struck the state this winter. In addition to federal disaster relief funds, Henry has requested the state legislature set aside $15 million to help communities rebuild and recover. FEMA approved 42 counties for public disaster assistance in the aftermath of the storms. That means the federal government will pay 75 percent of the costs of debris removal, infrastructure repairs, emergency protective measures, and restoration of utilities.

After the storm passed, the Oklahoma Department of Emergency Management, Oklahoma Highway Patrol, and the Oklahoma Office of the Chief Medical Examiner reported 32 storm-related deaths: 19 motor vehicle accidents, 8 hypothermia deaths, 2 from smoke inhalation and 3 falls. At the height of the ice and storms, more than 125,000 Oklahomans were without power, according to the governor’s office. Power problems occurred when ice accumulated on power lines, snapping power poles and nearby trees. Several roofs collapsed in the state.

Some of the most severe damage in the state was in the areas in and around McAlester and Muskogee.
Special Thanks to Neil Johnson, Safety Director, and Randy Crone, County Commissioner, Pittsburg County District #3, for providing photographs for this story.
Since its creation in 1999, National Work Zone Awareness Week (NWZAW) has brought attention to the need for improved safety in work zones and presented ways to reduce the number of accidents, injuries, and fatalities in work zones. And, since 1999, several trends have been recognized that are likely to increase the risks present in work zones.

The purpose of National Work Zone Awareness Week is to educate the nation—motorists, road workers, and others affected by road construction—about work-zone related injuries and fatalities and safety issues.

The Federal Highway Administration is actively pursuing improved work zone safety through a multi-faceted approach in the fields of engineering, education, enforcement, and coordination with public safety agencies. LTAP courses relevant to this initiative include the MUTCD Flagger Training, Roads Scholar Course 4 - Traffic Control, and Comprehensive MUTCD Training. The LTAP courses follow the Manual on Uniform Traffic Control (MUTCD) standards.

**Why is NWZAW important?**

“With nearly a 50% increase in work zone fatalities between 1997 and 2004, work zone safety is a growing roadway safety concern. To put this in perspective, one work zone fatality occurs every 8.2 hours, and one work zone injury occurs every 9 minutes,” according to the Federal Highway Administration.

In 2005, motor vehicle crashes in U.S. work zones produced 1,074 fatalities. This has grown from 1028 in 2003 (a 4% increase in two years) and 693 in 1997 (a 55% increase in 8 years), according to the National Highway Traffic Safety Administration. More than 41,000 people were injured in work zones. This has grown from 36,000 in 1996, an increase of 14% in 7 years.

As shown in the table above, the number of collisions in Oklahoma increased 17% between 2003 and 2004, and more than 8% from 2004 to 2005. The number of injuries sustained by drivers in Oklahoma rose by 3% between 2003 and 2004, and by nearly 20% more recently—from 2004 to 2005.

**Why things are likely to get worse?**

**More Congestion**

Vehicle miles of travel are growing at a greater rate than miles of roadway, according to the Federal Highway Administration. Between
1982 and 2002, vehicle miles traveled increased by 79 percent. During the same time period, highway lane miles only increased 3 percent. Further, a large majority of roadwork takes place on existing roads already carrying traffic. In 2000, more than 81 percent of highway capital expenditures were allocated to system preservation (52%), expansion (21.2%), and enhancement (7.9%)—all improvements that involve active work zones on existing roads with traffic present. Work zones cause additional delay on already congested roadways.

Motorists encountered an active work zone in one of every 100 miles driven on the National Highway System. That computes to more than 12 billion hours of vehicle exposure to works zones, and a lane closure every 200 miles, during 2001. Highway workers spent 246.4 million hours working on the national highway system during 2001.

**More Cars + Aging Highways = More Roadwork**

Much of the interstate highway system is more than 30 years old. Capital spending on highways increased 112% and maintenance spending increased by 14% between 1980 and 2000, after adjusting for inflation.

An average of 23,745 miles of roadway had federal aid roadway improvement projects underway per year from 1997 to 2001. In 2001, an estimated 3,110 work zones were operating on the National Highway System, according to the Federal Highway Administration.

In 2001, of the 24,606 miles of federal aid roadway projects underway, 85 percent of the miles were for system preservation projects, 12 percent for capacity additions, and only 3 percent for new routes, according to Federal Highway Administration statistics.

**More Roadwork = More Frustration = More Accidents**

Nearly one in three people indicated dissatisfaction with work zones. The top three transportation improvements cited by the public to overcome travel delay problems all relate to how roadwork is done: 1) use more durable paving materials; 2) do repairs during non-rush hours; and 3) reduce repair time—usually meaning more road workers.

**Options**

Night work is being used more frequently—about 40 percent of all work zones were active at night as reported by the Federal Highway Administration in 2002. “Working at the Speed of Night” was the NWZAW theme in 2006. The campaign was designed to bring attention to the fact that more projects are being conducted at night to reduce the exposure of workers to high volumes of traffic and reduce the exposure of peak hour traffic to the hazards and dangers of work zones.
Public Information and Outreach Strategies

Updated rules on work zone safety and mobility contain a provision that requires public information and outreach strategies be included in Transportation Management Plans (TMPs) for significant projects. This is for good reason: Communicating with the general public, frequent road users, area residences and businesses, and appropriate public entities about a road construction project and the safety and mobility effects of the work zone has several positive benefits.

Benefits

Effective use of public information and outreach strategies can lead to improved driver and worker safety, less traffic delay, and reduced driver frustration. Providing information about what to expect in and around the work zone, such as lane and shoulder closings, new traffic patterns, and traffic delay and available travel alternatives may be provided to various audiences both before the project starts and during the project.

Use of portable signs to give real-time information, coupled with newspapers and other printed matter and websites that provide (either real time or static information, or both) traffic information, maps, alternate routes, project status information, points of contact, and electronic copies of print materials such as brochures or fact sheets is an effective use of public information systems.

The following tips can be included in public outreach strategies—when informing the media of a road closure, include these general guidelines for motorists.

Ten Tips for Driving Safely in Work Zones

from the Federal Highway Administration

- **EXPECT THE UNEXPECTED!** Normal speed limits may be reduced, traffic lanes may be changed, and people may be working on or near the road.

- **SLOW DOWN!** Speeding is one of the major causes of work zone crashes.

- **DON’T TAILGATE! KEEP A SAFE DISTANCE BETWEEN YOU AND THE CAR AHEAD OF YOU.** The most common crash in a highway work zone is the rear-end collision. So, don’t tailgate.

- **KEEP A SAFE DISTANCE BETWEEN YOUR VEHICLE AND THE CONSTRUCTION WORKERS AND THEIR EQUIPMENT.**

- **PAY ATTENTION TO THE SIGNS!** The warning signs are there to help you and other drivers move safely through the work zone. Observe the posted signs until you see the one that says you’ve left the work zone.

- **OBEY ROAD CREW FLAGGERS!** The flagger knows what is best for moving traffic safely in the work zone. A flagger has the same authority as a regulatory sign, so you can be cited for disobeying his or her directions.

- **STAY ALERT AND MINIMIZE DISTRACTIONS!** Dedicate your full attention to the roadway and avoid changing radio stations or using cell phones while driving in a work zone.

- **KEEP UP WITH THE TRAFFIC FLOW.** Motorists can help maintain traffic flow and posted speeds by merging as soon as possible. Don’t drive right up to the lane closure and then try to barge in.

- **SCHEDULE ENOUGH TIME TO DRIVE SAFELY AND CHECK RADIO, TV, AND WEBSITES FOR TRAFFIC INFORMATION.** Expect delays and leave early so you can reach your destination on time. Check the National Work Zone Safety Information Clearinghouse—http://wzsafety.tamu.edu—for information on work zone delays throughout the country.

- **BE PATIENT AND STAY CALM.** Work zones aren’t there to personally inconvenience you. Remember, the work zone crew members are working to improve the road and make your future drive better.

Continued training on the standards and methods of temporary traffic control is a central part of the effort to save lives in work zones. LTAP training is based on standards and guidelines presented in the Manual on Uniform Traffic Control Devices (MUTCD). For information about LTAP classes relevant to work zone safety, including flagger training and traffic control courses, call 405-744-6049, or go to: http://ltap.okstate.edu/
National Work Zone Awareness Week — April 2-6, 2007

LTAP Training in MUTCD Standards
Nearly everyone has an example of how important it is for people to be trained in basic first aid and CPR. “Knowing the correct techniques can be essential in saving the life of a loved one or even a total stranger,” according to the American Red Cross. This health and safety education is designed to give individuals “the confidence to respond in an emergency situation with skills that can help save a life,” the Red Cross adds.

LTAP is offering CPR and basic first aid training free to county employees—so far more than 100 county workers have received the training. Leon Osburn, former Safety Coordinator for Oklahoma County, conducts the half-day sessions. Osburn’s years of experience in county government pays off: according to several people who have had his course, “Leon knows exactly what we need.”

During CPR training, these county workers have been taught to quickly recognize cardiac arrest and other emergencies, to administer CPR right away and to continue care until emergency medical personnel arrive. Students also get an introduction to the use of an automated external defibrillator (AED). Basic first aid is also covered, including ways to stop bleeding, stabilize a limb, and so on.

“We want to teach the proper method of CPR to as many people as possible. It’s that simple. You never know when you’ll have the need for it. And, there’s no reason to have to stand by and not be able to help somebody who’s in trouble. You sure don’t want to watch someone die,” Osburn said.

Seminole County Dist. #1 Commissioner Ted Eberle stressed the value of the training for workers in his district. “It may be necessary for our employees to administer CPR to one of their fellow workers. Our guys work out in the countryside, miles from any first aid or medical help,” Eberle said, adding, “I think every county road crew should have the course.”

LTAP is planning to offer the training several times this year. “We can offer the training to 20 people at a time, two times per day,” according to Doug Wright, LTAP Manager. “It’s a priority for us. But there’s a limited amount of funding. So, it’s first come, first served.” Go to http://ltap.okstate.edu for information about the course schedule.

LTAP has completed CPR/Basic First Aid Training sessions in Seminole, Grant, Woods, and Ellis counties.

Seminole County District #1 employees show their CPR Certificates.

Max Hess’s Grant County District #1 employees practice their CPR skills.

Leon Osburn asks county employees if they know the signals of a heart attack.

Grant County District #1 employees practice their Basic First Aid skills.
Guardrail is used effectively to protect motorists from hazards, including steep slopes and ditches. However, guardrail itself may become a roadside hazard in some applications. Guardrail is the most commonly struck item right after utility poles and trees.

Researchers at the University of Oklahoma documented attributes associated with accidents in which vehicles struck guardrail ends. The accidents involved a variety of guardrail-end types, but most ends were either exposed or turned down.

The results, published in Transportation Research Record No. 1419, showed that on divided roads in Oklahoma, vehicles struck median guardrail ends about as often as right-side ends. On undivided roadways, right-side ends were struck about 60 percent of the time.

Approximately one-sixth of the accidents in Oklahoma were fatal or produced incapacitating injuries. In most, the vehicle did not vault or roll. The research did indicate turned-down guardrail ends were associated with more vehicles rolling and vaulting than exposed ends.

One-third of all guardrail end accidents involved an inattentive driver.

A majority of these accidents occurred on a small portion of the roadway system—high-volume roadways. Researchers suggested that rumble strips be tested as a means to reduce guardrail-end collisions.

Guardrail must be placed carefully and installed after a thorough review of available options. David P. Orr, Senior Engineer at the Cornell Local Roads Program, suggests this five-step review process:

1. **Is it possible to**
   - Remove the hazard. Cut down and remove dangerous trees with permission. Keep ditches traversable; should not be more than a 3:1 slope.

2. **Relocate the hazard.**
   - A utility pole in a steep-sided ditch is very likely to be struck. Moving utility poles to the inside corners or to the top of slopes reduces the hazard they pose.

3. **Make the feature crash-worthy or traversable.**
   - Signs and light poles cannot be removed many times, but breakaway hardware can make them safer. And if slopes and ditches cannot be made completely traversable, flatten them as much as possible.

4. **Ensure that the location being considered is the most critical location.**
   - Before placing any guardrail, look over the entire roadway inventory and decide if this is the most critical location. A long-term plan of where, when, and how to place guardrail and otherwise improve the overall roadway and roadside safety should be developed.

5. **Delineate the hazard.**
   - Delineation is the last option that should be used. If used, it is especially valuable at night and for potential hazards that drivers cannot readily see, such as culverts. If delineation is chosen, the reasons why other alternatives were not used should be documented.

Cost is always a factor, but as Orr points out, expensive solutions that provide little benefit may not be justified. One question to consider is how might your town, county, or department be affected if an accident occurred? Balance the needs and costs. And, costs include maintaining the guide rail. If the funds to maintain it aren’t available, perhaps it should not be installed. This is especially important from a liability standpoint: You had reason to believe there was a serious hazard or you would not have placed the guardrail. If you do not maintain it, you have failed to adequately protect against a hazard.
Registration is now opening for the following classes:

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<td>Excavation Safety</td>
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<td>&quot;Roads Scholar Course #2&quot;</td>
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<td>Wildland Fire Training Course</td>
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<td>CDL Prep Training</td>
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<td>Mower Safety</td>
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<td>Comprehensive MUTCD Training Course</td>
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<td>Credit for Traffic Control</td>
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<tr>
<td>&quot;Roads Scholar Course #4&quot;</td>
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<td>Basic and Advanced Surveying</td>
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<td>&quot;Roads Scholar Course #5 &amp; #8&quot;</td>
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<td>Basic Welding</td>
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<td>Bridge Welding Certification - (ASSHTO/AWS)</td>
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<td>Testing for Soil Properties</td>
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<td>&quot;Roads Scholar Course #3&quot;</td>
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<td>Chip Seal Class &amp; Demo</td>
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<tr>
<td>Heavy Equipment Tire &amp; Rim Safety</td>
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Please check the website for registration and schedule dates.

http://ltap.okstate.edu