An issue on worker safety

(Another) new work zone safety rule for federal aid projects

by Lisa Harris

Last October, the national Work Zone Safety and Mobility Rule took effect requiring work zone safety policies to specifically address safety and mobility of the traveling public. Special requirements apply to “significant” (high impact) road construction or repair projects, but FHWA recommends they be considered for all work zone projects. Now another new rule is adding some more requirements and guidance for work zone policies—specifically targeted toward worker safety. The rule, officially known as the Temporary Traffic Control Devices Final Rule—Subpart K to 23 CFR Part 630, or the Positive Protection Rule for short, will take effect December 4, 2008—coming right up! The Rule is applicable to all federal-aid projects.

This article will outline the main contents of the Positive Protection Rule— as a heads-up to the local governments in Kansas that need to comply with it (cities that do their own letting on federal-aid projects) and as information for the other local agencies that may want to improve their work zone procedures.

“Basically the Positive Protection Rule is about planning ahead to protect workers” said David LaRoche, safety engineer for FHWA’s Kansas Division. It requires or recommends measures that are just good common sense. Probably a lot of local agencies are doing most of them already,” he said.

The Rule requires agencies to anticipate the potential worker safety impacts in advance, and design the layout of the work zone traffic control to minimize risk. It was crafted around these goals:

• Avoid or minimize worker exposure to motorized traffic through strategies such as full road closures; detours; and rolling road blocks during work zone setup and removal;
• Where exposure cannot be adequately managed, reduce risk to workers from being struck by motorized traffic through the use of appropriate positive protective devices (such as concrete barriers);
• Where exposure and risk reduction is not adequate, possible, or practical, manage risk with appropriate intrusion countermeasures including, but not limited to, the use of uniformed law enforcement officers;
• Assure that the quality of temporary traffic control devices is maintained for the project duration; and
• Provide for the safe entry/exit of work vehicles onto/from the travel lanes.

The Rule also contains some language about payment for positive protection devices.

LaRoche said that KDOT has started looking at how to incorporate the new Rule into their work zone safety policy and operations. Below is an outline of the Rule, adapted from a Q&A document from FHWA.
Who does this Rule apply to? All federal-aid highway projects, including highway construction, maintenance, and utility projects that are funded in whole or in part with federal-aid funds. However, agencies are encouraged to apply the good practices that the Rule fosters to all highway projects.

What are the key components of the new Rule?
• Positive protection devices shall be based on an engineering study:
  —Strategies and devices to be used may be determined by a project-specific engineering study, or determined from agency guidelines that define strategies and approaches to be used, based on project and highway characteristics and factors.
  —Use of positive protection shall be considered in work zone situations that place workers at increased risk from motorized traffic and where positive protection devices offer the highest potential for increased safety for workers and road users.
• Exposure control measures should be considered to avoid or minimize exposure for workers and road users.
• Other traffic control measures should be considered to reduce work zone crashes, and risks and consequences of intrusions into the work space.
• Law enforcement. [The agency] shall develop a policy addressing the use of uniformed law enforcement on Federal-aid highway projects.
• Safe entry/exit for work vehicles should be addressed by the agency processes, procedures, and/or guidance.
• Payment for traffic control features and operations:
  —Payment shall not be incidental to the contract, or included in payment for other items of work not related to traffic control and safety.
  —Separate pay items shall be provided for major categories of traffic control devices, safety features, and work zone safety activities.

What kind of documentation of procedures is needed? “The rule is flexible concerning the form of the policy. It may take the form of processes, procedures, and/or guidance, and may vary based on the characteristics and expected work zone impacts of individual projects or classes of projects,” said LaRoche.

Does FHWA recommend any particular resources or guidance for designing work zone traffic control, other than the MUTCD? We recommend the use of multi-disciplinary teams in designing work zones,” said LaRoche. “All devices within the clear zone should be NCHRP 350 compliant.”

LaRoche said that FHWA has a number of guides and Web pages to help agencies implement the 2006 WZ Safety and Mobility Rule and the 2008 Positive Protection Rule, and these resources contain information on work zone protection. He also noted that everyone involved with work zones needs to be trained commensurate with their individual responsibilities.

How will this new rule affect our agency’s liability? LaRoche said that if your agency is required to follow the rule, and you don’t, you will be at risk. Most local agencies in Kansas (those that do not let federal-aid projects) are not required to comply, but are encouraged to follow principles outlined in the rule. For those agencies, not following the Rule should not increase risk, unless the procedures in the Rule become standard of practice over time.

More information about the “Positive Protection” Rule, including a link to a recorded Webinar explaining the Final Rule can all be accessed on the FHWA Operations Web site: http://ops.fhwa.dot.gov/wz/resources/policy.htm.

Or you can call David LaRoche, at FHWA’s Kansas Division at (785) 271-2448, ext. 210.
Worker safety at Riley County Public Works

When it comes to worker safety, Riley County Public Works is really “on the ball” – Dave Ball, that is. Dave is safety training coordinator/technical assistant for the department. This is a dedicated position, with about 60 percent of the position devoted to safety. This article will describe what Ball does, and how Riley County has created a culture of safety that helps keep safety incidents few and far between.

Ball’s position

Why created. The county’s safety training coordinator position was created at first to give safety-related job responsibilities to an employee who injured his back and could not perform his normal duties. That employee has since moved on, and the position is now permanent, with Ball in charge (since 2006). Ball used to work on the county’s asphalt crew and ran the asphalt distributor, so he knows first-hand some of the dangers on the job in public works.

Major duties. Ball coordinates the development of the department’s safety programs and policies outlined below. He also regularly checks the department’s safety equipment to see that it meets current ANSI standards and is in good repair.

Other duties. In addition to safety work, Ball helps with county with other risk management activities, such as taking photographs of accident sites to document the county had proper signs and markings in place.

Riley County’s approach to safety

Get the employees involved. First of all, Riley County’s approach to safety is “bottom-up.” Crew members who have the most safety risk on their jobs share the responsibility for creating safety programs for themselves and their co-workers.

Safety committee. The department maintains a five-person committee composed of one supervisor and four crew members from the department’s various teams (asphalt, bridge maintenance, gravel, fleet and parks). The committee elects one of the crew members as its chair each month. Team members rotate off every three months, so it’s not a lengthy commitment. The team plans content for the department’s monthly safety meetings.

Monthly safety meetings. These meetings are usually 30-60 minutes long. Topics vary, depending on the season and needs identified by the safety committee. Three topics that Ball considers must-have annual refreshers are: identifying hazardous materials in the event of a traffic incident, heat stress, and snow removal/safety.

Ball often shows videos during the monthly meetings—many available from Kansas LTAP and also from the National Safety Council (for topics that are not road and bridge specific). Sometimes the meetings feature instructor-led training, such as when a new chiropractor in town taught a session on lower back pain causes and cures.

Special crew-specific training. The supervisor on the safety committee during any 3-month “term” is responsible for planning a special training segment for his or her own crew at the end of one of the regular safety meetings. That way crews get general training and also some training that is tailored to their specific jobs.

Walk-arounds. The chair of the safety committee is also responsible for doing a walk-around of the crew sheds and a select number of vehicles, looking for any safety problems the crews themselves may have missed.

PPE allowances. Riley County gives each full time employee an $150 per year allowance for personal protective equipment (PPE) not already provided by the county. These may include safety jackets, shirts, hats, steel-toed boots or shoes, etc. This is in addition to protective equipment already provided by the county including safety glasses, gloves, earplugs, hard hats, safety vests and safety harnesses. Ball maintains an inventory of these. Seasonal employees do not receive the PPE allowance but are issued four safety-orange T-shirts.

Equipment checklists on work tickets. The county has an “operator daily checklist” on the back of each trip ticket for each vehicle used on the job. Employees note the condition of over 25 different components before, during and after use of the vehicle. Condition is noted as “no condition on next page”.

Dave Ball, Riley County’s safety training coordinator, holds the two ends of a 6 ft safety line used for fall protection. Ball recommends examining your agency’s fall protection equipment to see if it meets the new revised ANSI Z359 standard.
Worker safety at Riley County, continued from page 3

complaint, “adjustment required,” or “repairs required,” along with comments. This helps address problems with vehicles before they become safety hazards.

New employee safety orientations. Before an employee starts working for the department, they are required to watch about an hour’s worth of videos on key safety topics. These include:

- use of a fire extinguisher
- identifying poisonous plants like poison ivy and oak
- use of personal protective equipment
- flagging basics.

Training for the safety coordinator. Ball tries to stay up on new developments and concerns in worker safety. Recently he attended the annual conference of the Safety and Health Council of Western Missouri and Kansas, held in Kansas City, MO. Most attendees were from manufacturing companies that also comply with ANSI standards for safety. See sidebar for some issues brought up at the conference.

Problems encountered and addressed in Riley County

Ball related a few of the county’s policies that have gotten special attention due to safety concerns. One such policy concerns grading roads against traffic. This used to be done by county motorgrader operators—it saved time—but now the county policy is to always grade in the direction of traffic.

Riley County added a safety procedure about how a backhoe arm should be positioned before being towed on a tilt-top trailer. This was after a backhoe with its arm in the up-position was carried on such a trailer and tore down power lines as it was being towed. The employee did not realize how tall the load was. The new policy specifies that the backhoe arm should be extended out when being towed on a tilt-top trailer.

Another procedure that is not new but the asphalt crew is careful to observe is: Completely clean out the oil distributor before adding new product. Ball noted that new product does not always mix well with old product, which can result in a steam explosion. One time the crew almost made this mistake, but someone caught it in time. Simple mistakes like this can carry dire consequences.

Hot topics in worker safety

At a recent Safety and Health Council of Western Missouri and Kansas annual conference in Kansas City, safety officers from various professions met to share ideas, practices, and questions. Here are a few of the hot topics discussed at sessions Ball attended:

Fall protection. Last year ANSI released revisions to its standard Z359 that includes emphasis on proper planning, training and procedures for fall protection. It also includes a new recommendation for the gate face strength for snap hooks, significantly raising the former recommendation of 220 pounds to 3600 pounds. The recommendation for gate side strength was similarly increased. (For a complete list of changes to Z359, Ball recommends visiting http://www.millerfallprotection.com/ansi-z359/compliance/z359-compliance-beyond-ansi-z359).

Another fall protection related topic was the problem of circulation being cut off to the lower extremities if an employee falls and is supported solely by a harness. Participants were urged to train their employees on how to release a co-worker from a harness in such a circumstance. Timing is critical.

The session also stressed the importance of inspecting fall protection equipment and documenting the inspections. Participants were reminded to destroy defective equipment rather than leave it in a dumpster for someone to take and possibly use at home. If it’s unsafe, it should be destroyed.

Seat belt use. The question arose: If safety policies require employees to use seat belts when driving vehicles, and an employee does not and is in an accident, what is the agency’s liability? Ball noted that it can sometimes be difficult to determine whether injuries sustained could be avoided if a seat belt had been worn. An idea discussed at the conference was for employers to require employees to sign a policy agreeing to certain driving practices, including using a seat belt.

ANSI Z15, on safe operation of motor vehicles. Ball said participants were encouraged to have a plan for reviewing accidents with an eye toward preventing future accidents; in other words, identifying if the accident was preventable and any corrective actions that can be taken.

Training improvement. Ball attended a session on presenting safety programs. He said “A good take-away from that session is this: If you plug in a tape for the crews to watch and walk away, that’s a disservice to your employees. Your co-workers will wonder what’s in it for them if the tape is so boring that you can’t stay and watch it.”

The session also covered new-employee orientations and suggested polling employees about the orientation process and what could be improved.

Another procedure that is not new but the asphalt crew is careful to observe is: Completely clean out the oil distributor before adding new product. Ball noted that new product does not always mix well with old product, which can result in a steam explosion. One time the crew almost made this mistake, but someone caught it in time. Simple mistakes like this can carry dire consequences.

Safety off the job

Ball noted an article he read in the March 2008 issue of Safety & Health magazine that some employers are encouraging their employees to take
safety awareness with them when they go home each day. The idea is this: An employee who is injured off the job will be equally unable to perform their duties at work. The article related a story about a utility worker who was accustomed to doing a safety walk around his truck before entering his truck at work. He started doing walk-abouts at home, and one day he found his young son and two friends hiding under the truck, playing hide and seek. “He felt like he saved three lives that day with that one simple act,” said Ball.

**Safety pays**

Paying attention to safety, and dedicating staff time to make that happen costs money. But it’s worth it. Aside from the obvious benefit of creating better quality of life for the agency’s most important assets—its employees—safety saves the agency money in the long run in helping avoid costly claims from accidents, and loss of work time. Ball said that in Riley County “major safety claims are few and far between.” That certainly speaks well for Riley County’s safety approach.

For more information about Riley County’s safety program, contact Dave Ball at (785) 539-2981 or at dball@rileycountyks.gov.

**Good source for training resource ideas**

The National Workzone Safety Clearinghouse has great information about videos and DVDs on worker safety subjects and links to where you can purchase them. Visit http://wzsafety.tamu.edu/. This Clearinghouse also offers software that reviews basic safety points to consider at workzones. You can download Roadway Safety Version 8.0 at the above Web site. But before you press the download button, be aware that the file is a big one: 192 MB!!

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**What’s your safety IQ?**

... by Lisa Harris .................

H ow good is your knowledge of worker safety tips? Take this test and find out.

1. What is the minimum recommended clearance between stored items and sprinklers in a shop?
   a) 2 inches
   b) 2 ft.
   c) 18 inches

2. Who should launder your clothes if you spill chemicals on them?
   a) you
   b) your mom
   c) professional laundry

3. Paint sprayed at a pressure of ____ can become embedded in your skin.
   a) 30 pounds per square inch
   b) 10 pounds per square inch
   c) 50 pounds per square inch

4. If hot asphalt becomes embedded in your skin, when should you remove it?
   a) immediately
   b) after it dries
   c) you shouldn’t. Let a doctor do it.

5. How far should the public be kept back from an open trench?
   a) 50 ft.
   b) the next county
   c) 2 inches

6. When can you assume a downed power line is safe to touch?
   a) when it’s not sparking
   b) when it’s been down for at least two days
   c) when the utility company is present on site and says so

7. What is the flash point of hot asphalt?
   a) 100 to 150 degrees
   b) 375 to 400 degrees
   c) 450 to 700 degrees

8. Dead poison ivy plants remain active for:
   a) 6 months
   b) 2 years
   c) as long as you are near them

9. When grading near a railroad crossing, you should:
   a) turn off the radio
   b) turn off the air conditioning
   c) open the cab door slightly
   d) all of the above

10. You should not wear loose-fitting clothing when operating a chipper because:
    a) it’s not fashionable
    b) you could get overheated
    c) the clothing could become entangled in the chipper

11. ANSI Type 2 safety vests are easy to identify by:
    a) two stripes on the front of the vest
    b) the orange color
    c) the tag inside the vest that says Type 2

12. What is the treatment for Lyme disease?
    a) surgery
    b) common antibiotics
    c) fasting
    d) acupuncture

13. When is it OK to hit the ground with a machete?
    a) when your favorite team loses a game
    b) when you forgot to bring your lunch
    c) never

Answers on page 15.

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KUTC revises worker safety guidebook

by Kristin Kelly

In 2004, Kansas LTAP published its guidebook Workplace and Equipment Safety. Materials produced by the Pennsylvania LTAP were the backbone of this resource, along with input from Kansas county road and bridge staff. We are now revising the guidebook to bring it up to date and to make it more convenient to use.

The guidebook provides a list of suggestions for local public works agencies and their employees on specific safety issues and practices in the office or at a jobsite. It also serves as a resource for conversations on safety between workers and supervisors and supervisors and managers.

The guidebook covers:
- hard hat use
- how to properly lift and carry items;
- shop safety;
- special considerations for seasons/weather/time of day;
- safe flagging techniques;
- road and sign maintenance safety
- safe vehicle maintenance;
- snow and ice operation safety;
- safe trenching;
- safe forestry operations;
- safe motor grader operations; and solid waste collection safety.

We’ve changed the look and convenience of the guidebook by making it smaller and more durable so it can be stored in your truck or work area.

As part of the update, the following topics were added:
- In the seasonal section: Detection and treatment of poison ivy, West Nile Virus, and Lyme Disease.
- In the the flagging section, new regulations for safety vests (23 CFR Part 634).
- In the solid waste collection section: meth lab waste detection.

Finally, KCAMP’s Risk Manager’s perspective on the do’s and don’ts of property liability has been added to the sections on sign installation, safe motor grader operations, and mower safety.

We have also changed the look and convenience of the guidebook by providing eye protection for those who wear contact lenses.

Eye safety for those who wear contact lenses

When handling and working around hazardous chemicals, you may think contact lens wearers should take out their contacts and wear glasses instead. But that’s not always true. Unless banned by regulation, employees can wear contact lenses when handling hazardous chemicals provided that certain safety guidelines are followed.

Protect everyone. First and foremost, provide eye protection for all workers exposed to eye injury hazards, whether they wear contact lenses or not. For chemical vapor, liquid, or caustic dust hazards, minimum protection consists of well-fitting, non-vented or indirectly vented goggles or full-face piece respirators.

Take note of lens wearers. Supervisors should know who wears contact lenses to ensure that the proper eye protection and first aid equipment are available.

Provide medical attention. Train first aid personnel in the removal of contact lenses. In the event of chemical exposure, begin eye irrigation immediately and remove contact lenses as soon as practical. It is not necessary to delay irrigation while waiting for contact lens removal.

Watch for trouble. Instruct employees to remove their contact lenses at the first signs of eye redness or irritation. Contact lenses should be removed only in a clean environment after the wearer has washed his or her hands. Evaluate continued continued contact-lens use with the worker and the prescribing ophthalmologist or optometrist. Encourage workers to routinely inspect their contact lenses for damage.

Safety tips for operating heavy equipment

High visibility clothing or a vest should be worn by ground level workers. A swing radius and a limited access zone should be set.

Use barricades to separate pedestrians and vehicles from the moving equipment, where possible.

Always use a spotter when backing up. Do not depend solely on the backup alarm.

A standard set of hands signals agreed on by both the operator and a trained spotter should be used.

Wear all personal protective equipment when needed when working with heavy equipment.

Three points of contact should always be used when entering or exiting the cab. Never jump onto or off equipment.

Keep grease and other fluids from the walking and working surfaces of the equipment to prevent slips and falls.

Always put the transmission in park, shut the engine off, set the brakes, lower any attachments fully, and follow the lockout/tagout procedures before working on or around equipment.

More operator safety tips

I recently spoke with Ron Karn with Berry Tractor in Topeka about heavy equipment operator safety. He mentioned the following, some of which echo Larry McClain’s advice above:

Mounting and dismounting equipment. Injuries are common in getting on and off equipment, and workers should be trained on using three points of contact. Karn said some of the equipment manufacturers are responding to this safety concern by providing ways to check levels on their new vehicles without having to climb on the vehicle.

Digging dangers. Operators should be aware of the location of high voltage underground lines (not to mention television cable...) before digging.

Grading at railroad crossings. Motorgrader operators have been killed in Kansas at railroad crossings. The crossings are sometimes difficult to see in rural areas due to overgrown vegetation and trees. Keep the area trimmed and stay alert.

Common sense. “You’d think you wouldn’t have to tell someone not to stick their hand into a fan when the blades are turning, but you’d be surprised...,” said Karn. [Enough said!]

Where to get operator safety training? Here are a few ideas: Karn said that most insurance agencies have a loss prevention agent who can provide basic occupational safety training. KCAMP, which insures many Kansas counties, offers such training. Equipment manufacturers sometimes have training available online or on DVD, or training can be provided when the equipment is delivered. Ask your sales rep. Kansas LTAP is another source for video-based and hands-on training. Page 14 of this newsletter lists upcoming training courses, and videos can be searched-for and borrowed at LTAP’s Web site, www.ksltap.org, through the lending library. Kansas LTAP has nearly 100 videos on heavy equipment operation and safety.
Tips for tire life and worker safety

Editor's note: This article was adapted, with permission, from an article in the Spring 2005 issue of Crossroads, the Wisconsin LTAP newsletter.

Air pressure
There's a direct relationship between proper air pressure and tire life. It's the most basic—and the most overlooked—factor in tire life.

Under-inflation costs money. Operating on soft tires means they wear faster and the vehicle burns more fuel. At normal speeds, running tires at 20 percent under recommended pressure will reduce tire life by 16 percent and increase fuel use by two percent.

Know the proper pressure. Tires are designed to run with specific pressures based on the total load. Gather information on each truck's actual axle load, then use standard load charts to calculate the correct tire pressure. Ask your tire supplier for help and training. (For load charts, see www.goodyear.com/truck.)

Expect tires to lose air. Rubber tires are made of a porous material; they lose air continuously. A truck tire is expected to lose up to two pounds a month according to industry standards. In addition, air can leak through valve caps or small punctures.

Think about outside temperature. A tire will gain or lose a pound of pressure with every 10-degree F change in outdoor temperature. Tires with 100 pounds of pressure in August can lose several pounds of air by November or December. You could be plowing with under-inflated tires, even though they may not be due for regular preventive maintenance.

Check pressure every season or before use. At a minimum, you should check tire pressure every season—more often is better. For infrequently used or seasonal equipment like motor graders, check tire pressure before operating the equipment. To get an accurate reading, be sure the tire is cold, at least three hours after last use.

Calibrate gauges monthly. Even with regular checking, tires could be at the wrong pressure due to faulty gauges. Invest in a master gauge (about $100) and regularly calibrate all the gauges in the shop. When reinflating tires, explosion is possible. Any radial tire that has been driven at less than 80 percent of its recommended pressure has the potential to "zipper rupture" when it is inflated. That is, the side of the tire could explode. You can learn to recognize hazardous tires and how to re-inflate them safely from videos or training programs provided by tire suppliers.

Tire wear
"Read" tires regularly. Check for signs of wear before tires sustain serious damage. Regularly look at tire walls for signs of zippering; inspect for cuts, cracks, blisters, or bulges.

Measure tread depth. It should be no less than 4/32-inch on the steer axle and no less than 2/32-inch on all others.

Run your hand over the tread and feel for abnormalities like rib edge feathering or cupping. Feathering is an early sign of misalignment or could be caused by improper pressure.

Take the tire/wheel assembly off and look at the face of the tire for any type of irregular wear pattern. For example, drive tires may develop heel and toe wear.

Rotate tire position for longer life. Any rotation schedule is better than no rotation at all. How often it’s needed depends on truck usage.

Tire repair
The only proper way to fix a tire is to put a patch on the inside and a plug through the injured area. Any repair from the outside will void the tire warranty, even if it is properly fixed later.

Helpful Web sites
http://www.tiresafety.com
www.dualport.com/bustech/load_tires.html
www.4crawler.com/Diesel/Tires.shtml
www.retread.org/Inflation/index.cfm/ID/198.htm
www.nebraskatire.com/tires_101/Tires101.htm
Great source for safety plans from other agencies

If you are looking to create or revise your worker safety plan, you don’t need to start from scratch. There are a lot of good examples out there. Norm Bowers of the Kansas Association of Counties recommends http://www.mrsc.org/Subjects/PubWorks/pwsafety.aspx. This Washington State municipal services page has links to safety manuals from around the country. [We are offering one of these manuals in hard copy on page 15.] Norm also suggests you check out the resources at APWA’s online Resource Center, under Public Works Administration & Management–Human Resources, at http://www.apwa.net.

Move over. It’s the law.

In 2006, the Kansas Highway Patrol issued 2,310 citations and 2,283 warnings to motorists in targeted work zones—and those are just the ones that got caught. That’s a whole lot of danger to road crews. In that same year, the Kansas Legislature updated its work zone law to help protect the lives of law enforcement officers and crews working alongside Kansas’ roadways. Known as The Kansas Move Over Law, it requires motorists to slow down and move over if it is safe to do so for all stationary authorized vehicles engaged in work along the highway and displaying flashing lights, including highway maintenance vehicles.

The move-over requirement only applies on four-lane roads or highways. For two-lane roads, the law requires motorists to slow down and proceed with caution.

Violators can be fined $90 for failure to move over. Similar bills passed in other states feature fines as high as $1,000.


Remembering and honoring highway workers

Have you visited the highway work zone memorial at the Paxico rest area on I-70? The memorial was dedicated by then-Governor Bill Graves in 1996. In the dedication ceremony Graves said “This memorial recognizes not only the highway workers killed on the job, but all highway workers who have toiled or will toil in a work zone. ... [it reminds] all Kansans of the dedicated service provided by each and every highway worker.”

The memorial was designed by KDOT’s Bureau of Design. It can be accessed by both eastbound and westbound traffic on I-70. Check it out.

Looking out for YOU

... by Lisa Harris ...

Twenty states and several national associations have programs for increasing public awareness of the dangers of work zones for the people who work in them. Several of the state programs have titles that grab attention, such as:

Pay Attention. Listen to the Signs. Don’t Pay Double Fines ..... Alaska
Slow for the Cone Zone ......................................................... California
Chill: Changing the Way We Drive .................................... Colorado
Slow Down. It Won’t Kill You............................................. Georgia
Work Zones. Pay Attention or Pay the Price...................... Minnesota
The Flagger Moms of Orange Cone Hell......................... Nevada

And of course, there is Kansas’ Give ’em a Brake. This is a national program, and a few other states have a program by the same name.

Several organizations also have work zone awareness programs, including the American Society of Safety Engineers’ North American Occupational Safety and Health Week, the American Traffic Safety Services Association’s National Work Zone Memorial and Work Zone Traffic Violator Awareness Program, and ARTBA’s Work Zone Safety Clearinghouse.

You can learn more about any of these programs at http://www.workzonesafety.org/public_awareness.
Improving pedestrian safety at and near transit stops

... by Jacob Bustad . . . . . . . . . . . .

With rising fuel prices and with baby boomers reaching retirement age, demand for public transit is expected to increase in many Kansas communities. Public works agencies have a role in helping transit riders have a safe experience. A new guide by the Federal Highway Administration (FHWA) focuses on the safety of passengers before they reach the transit vehicle, or after they leave it, when they are still designated as pedestrians. Providing a safe means of access to transit services improves the quality of the overall service and encourages potential riders to choose transit service as their means of transportation.

The Pedestrian Safety Guide for Transit Agencies, available at www.walkinginfo.org and through the FHWA Safety Web site, was developed to address the issues of pedestrian safety and accessibility. While transit agencies can address these issues on their own property, they often lack the authority to address similar issues on the surrounding area not owned by the transit agency. The guide says that a crucial step in providing pedestrian safety and access is building partnerships with the other organizations and government agencies—including those responsible for road design and traffic safety.

Tools for assessing pedestrian safety
Chapter 1 of the Guide provides some basic tools for identifying safety and accessibility issues. This includes a Road Safety Audit (RSA). While an RSA team may not be able to directly make changes to the roadway, it can identify issues of safety and accessibility and suggest measures that can be implemented appropriate to the community's budget. RSAs can be conducted during any phase of a roadway, from pre-construction to after the roadway has been in use for some time.

Another tool mentioned in the guide is a Pedestrian Catchment Area Facility Inventory. This can be used to analyze the larger area surrounding a transit service stop. GIS data and aerial photography can be used to cut down on field labor in completing these inventories. Such an inventory can address issues as gaps in sidewalks, or other areas where safety and accessibility can be improved.

Not all safety tools require special technology, however. A simple method for identifying safety issues is to observe pedestrians as they access the area near transit stops. For instance, observers can view pedestrians using informal pathways where sidewalks do not exist, competing for seating at the stop or station, or crossing the street to a stop mid-block. They can also observe motorist behavior near and around the area. Transit agencies can then use this information to improve the accessibility of the stop, improve the features of the stop itself, and coordinate with other organizations (local law enforcement) to both educate drivers about pedestrian safety and enforce laws.

The guides suggests that transit agencies work with local and state transportation entities as well as law enforcement to analyze pedestrian crash data near transit access points to find the sites with greatest safety priority. The guide noted, however, that pedestrian crash data is not always completely accurate in identifying safety problems: police reports do not always include every pedestrian accident, and there may be relatively few pedestrian accidents in areas of higher pedestrian danger simply because pedestrians recognize these conditions and choose to avoid them. The FHWA recommends compiling three to 10 years of crash data to see clear trends, while taking into account any development changes made in the area during the period.

Partnerships for pedestrian safety
The Guide encourages transit agencies to develop partnerships with local, regional and state agencies, community groups, developers, and other transit services in their efforts
to improve the pedestrian experience for their riders. Public works agencies are key partners as well. Pedestrian safety issues, including sidewalk and pathway design and street crossings, are often the responsibility of local and state agencies. Transit operations often occur on roads that are maintained by various entities, and can cross multiple jurisdictions. Working with the appropriate roadway owner in developing route locations, stop locations and pedestrian access can result in the best possible solution for all involved.

Public works organizations can help transit agencies with some of the techniques for identifying safety issues. Assisting with data collection through an RSA, a pedestrian inventory, pedestrian observation or other methods, public works can play a key part in making transit services efficient, reliable and convenient. It is also important to incorporate the first-hand knowledge of transit riders, including disabled riders or representatives of disabled riders, in the identification of safety issues and the design of improvements to address these issues. This cooperation between public works, transit agencies, and the public being served can make roadways safer for the entire community.

**Engineering actions**
The Guide addresses the physical components of the pedestrian experience—sidewalk design, roadway crossing, bicycle traffic, etc. A good pedestrian design should accommodate all potential users, including those with physical and mental limitations. This type of design process is known as “universal design,” and should be the goal of all engineers involved in the pedestrian system.

Public works organizations are usually involved in the roadway design process, so achieving a mutual understanding of the goals of a project are crucial. Below is a brief overview of some of these engineering actions. More information, including sources for further research, are available in the Guide.

**Sidewalk design.** All sidewalks or other pathways must have appropriate width, surface, separation from traffic, lighting, and signage.

**Roadway crossings.** Marked crosswalks are often used to provide pedestrian traffic a pathway across traffic lanes. However, in multi-lane or high traffic areas, a marked crosswalk should be combined with other treatment options. These include median islands, curb extensions, reduced curb radii, narrowed and reduced amount of car lanes, and pedestrian warning signs and signals.

Also, engineers should consider appropriate sight distance, giving the driver more than enough time to see a pedestrian and stop the vehicle.

**Railway crossings.** Pedestrians might also need to cross over railroad or light rail tracks in order to access a transit stop. Most current standards for these crossings are designed for motor vehicle traffic, but the FHWA’s Railroad-Highway Grade Crossing Handbook provides guidelines for pedestrian crossings. Some treatments include: traditional gate/flasher/bell warning systems, active or passive warnings, fencing, and surveillance and education (to keep pedestrians from walking along the tracks).

**Bicycle considerations.** Any off-street facilities provided for both bicycles and pedestrians should not impede pedestrians and provide a safe area for bicyclists as well.

**Transit stop location.** There are many factors in the location of a transit stop that directly impact the safety and accessibility of the stop. When considering location, engineers should account for sight lines between incoming buses and waiting pedestrians, the predominant traffic patterns for pedestrians in and around the stop, the proximity of destinations around the stop, and the ease of transfer to another transit service.

**Transit stop design.** When designing a transit stop, it is important to remember that much more can be done than simply putting up a sign and a bench. Many features can make the stop more comfortable and convenient for transit service customers. The loading zone (where pedestrians enter the service vehicle) and the landing pad (where pedestrians exit), along with the shelter or waiting area, need to be designed with appropriate consideration, including the guidelines of the ADAAG.

**Transit shelter maintenance.** Ensuring both the maintenance and security of a transit shelter can help encourage its use. Some agencies use adopt-a-shelter programs to incorporate community involvement in this maintenance, and others work through partnerships with public works and community groups to achieve this goal.

Transit services provide a means of transportation for many in our communities, but the issues of public safety and accessibility begin when these individuals step on to public sidewalks and streets. Check out the FHWA’s Pedestrian Safety Guide for Transit Agencies, available at www.walkinginfo.org and the FHWA Safety Web site, and see how transit agencies, public works organizations, and the community can work together for better and safer multi-modal transportation.
Worker safety, KDOT style

Safety is a top priority at KDOT, and the agency provides a lot of support for its crews to make sure they are properly trained. Here are some of the ways they do that.

Safety specialists. According to Kelly Gaer, industrial safety coordinator with KDOT in Topeka, each of the six KDOT districts has a safety specialist responsible for the following tasks:

- Annually inspecting buildings in the districts for safety.
- Inspecting hoists, wash bays, harnesses, and personal protective equipment (PPE) at least annually. (Workers are also trained to inspect their PPEs daily).
- Reviewing workers comp claims and accidents to identify any special training needed or ways to change operations to improve safety. KDOT’s most frequent work comp claims have been for back injuries, slips, trips and falls, and pinched fingers. KDOT’s most frequent on-the-job vehicular accidents have been related to backing vehicles and running into things. “You name it, we can do it…,” Gaer said. [Which is why safety awareness is a priority for KDOT and should be for any road crew.]
- Periodically inspecting temporary work zones for compliance with the KDOT Sign Manual—basically that the cones and signs are set up with the proper spacing. The safety specialists inspect sites when they encounter them in their other duties, rather than having a set schedule. “We don’t want them to know we’re coming,” said Gaer. Inspections have resulted in a significant reduction in leaving flagger signs up during lunch and breaks, said Gaer. These signs should only be up when a flagger is present and on duty.

Employee orientations. When new employees are hired they receive training on hazardous material awareness (on video) and use of personal protective equipment and then they are required to attend a district-wide orientation which is held every few months or so.

Ongoing safety training. KDOT districts are divided into areas and subareas. Each subarea has a weekly safety meeting that serve as an opportunity to provide training. Rather than used canned safety training programs that offer a series of topics in a particular order, the subarea supervisor is responsible for choosing the training topics, and is encouraged to have the topic relate to the work the crew is doing at the time. “If the crew is going to be doing crack sealing, they’ll watch a video on that,” said Gaer. The sub-areas have access to a library of videos from which to choose (much like LTAP). Safety meetings usually take place on Monday or Friday during the summer, and can be held any day in the winter.

Last year KDOT held 192 training sessions and trained 3,000...
employees during its safety meetings. Topics over the course of a year include:
• trenching and excavation awareness
• confined space awareness
• hazardous material awareness
• meth lab awareness
• bucket truck safety
• defensive driving
• first aid, and
• NIMS 100 and 700.
Subarea supervisors provide handouts and videos on the topics, and sometimes trainers are brought in, such as local EMTs for the first aid training.

OSHA training. KDOT offers 10-hour and 30-hour OSHA construction and general industrial classes. These are held in each district for both the construction and maintenance employees.

KDOT equipment show. Each year in September KDOT hosts an equipment show in Salina, KS. This is open to KDOT employees and local agency employees as well. The show offers safety-related training as well as a chance to see the latest in equipment and personal protective equipment. [See box on page 12.]

Industrial hygienist. KDOT has an industrial hygienist who will investigate employee health concerns and air quality at job sites. One such concern that was addressed was about silicosis from concrete dust on a sandblasting project on a bridge. Operations were changed to help reduce the likelihood of crew members breathing the concrete dust. Workers were limited to two in the area, one wearing a sandblasting hood and the other a respirator. These employees were placed in a new position away from the concrete plume, as well.

Keeping up with safety regulations. One of Gaer’s responsibilities is to keep up with new develop-
ments in safety regulations and inform the districts about any changes. This improves crew safety and reduces agency liability.

PPE reimbursement program. KDOT will reimburse eligible employees up to $250 per fiscal year for approved personal protection equipment (PPE) and associated work apparel. Items eligible for reimbursement include:
• work boots – ankle high or higher, primarily leather material, oil and slip resistant sole
• foul weather boots / overboots – waterproof with slip resistant sole
• non-prescription and prescription safety glasses (applicable ANSI compliance)
• coveralls (insulated or disposable)
• work gloves
• high visibility shirts (ANSI Class II or Class III)
• cold weather jackets (ANSI Class II or Class III)
• rain suits (ANSI Class II or III)
• hard hats (orange and ANSI compliant)
• hearing protection
• gear bag
• other work related items as determined by the KDOT Safety Coordinator.

For more information. Gaer noted that he and his safety specialists in the district offices would be happy to answer any questions you may have about crew safety. Gaer was a safety specialist himself, for almost seven years in District Three. You can contact Kelly Gaer at (785) 296-4256 or at kellyg@ksdot.org.

Osage County PPE program modeled after KDOT

. . . by Lisa Harris . . . . . . . . . . . . . . . . .

Osage County started a new personal protective equipment (PPE) program this year that is a big hit with its employees. The program was modeled after KDOT’s program, described at left, with a few changes to better meet the needs of the county.

Full-time employees can purchase up to $250 in PPE, including many of the items in KDOT’s program. The county also allows purchase of jeans, said Christine Crawford, office manager for Osage County Road and Bridge. (This is in addition to the basic safety equipment the county already provides.)

No money is issued or reimbursed to employees; instead employees are directed to stores or online sources where the county can be billed directly.

The employees are pleased with the new program, said Crawford. “Being able to buy boots was the biggest thing—most boots are $100 or more,” she said.

Employees received their go-ahead to purchase PPEs in February, and were given the latitude to purchase whatever they need. Some spent their money all at once and some planned ahead for what they would need later in the year.

The program has one small downside; employee purchases must be added to the employees’ wages as a taxable benefit. “Unfortunately, this does not work like an allowance for uniforms in the sheriff’s department, which is not taxed,” Crawford said. But the benefits certainly outweigh this annoyance, and the department is anticipating budgeting for PPEs again next year.

Questions? Contact Christine Crawford at (785) 828-4416.
What’s New

City of Ridgefield, WA, Accident Prevention Manual
This is an excellent example of a safety manual from a city public works department. It contains guidelines for what to do in emergency situations, job hazard analyses for different crews, forms and more. 46 pages. Published by the City of Ridgefield, WA, Public Works.

Work Zone Positive Protection Toolbox
Describes various types of positive protection devices, such as concrete barriers, ballast-filled barriers and shadow vehicles, and provides guidance on where and how each is typically used. 15-page brochure. Published by ATSSA.

Good Practices Guide for Bicycle Safety Education
Contains case studies on successful public education programs around the country that promote bicycle safety. The guide includes guidance for setting up your own bicycle safety education program. 66 pages. Published by FHWA in 2002.

High Visibility Safety Apparel in Highway Work Zones
This brochure helps answer the question: When does my high-visibility apparel no longer protect me and need to be replaced? It shows photographs of safety vests in various stages of wear and what would be considered acceptable, marginal and unacceptable condition. 3-panel brochure. Published by ATSSA, May 2008.

Innovative Intersection Safety Improvement Strategies and Management Practices: A Domestic Scan
The documents a U.S. tour by highway professionals of innovative intersection treatments and safety measures. The team visited selected cities in Michigan, Oregon, North Carolina, Texas and Florida. Contains many photographs of intersection treatments and traffic control devices. 81 pages. Published in September 2006 by FHWA.

See our Web site for even more calendar listings. Go to www.ksltap.org and click on “Training Calendar.”

Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>September 3-4</td>
<td>10th Annual Kansas Maintenance Training Expo</td>
<td>in Salina</td>
<td>Call Peter Carttar at 785-296-7184</td>
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<tr>
<td>September 11</td>
<td>APWA Kansas Chapter Board Meeting and Roundtable</td>
<td>in Dodge City, KS</td>
<td>Call Jeff Hunt, City of Topeka, 785-368-3842</td>
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<td>*Public Works I &amp; II ▲ S</td>
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<td>Sept 17-18</td>
<td>Hutchinson</td>
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<td>Sept 24-25</td>
<td>Topeka</td>
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<td>Oct 1-2</td>
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<td>October 2</td>
<td>Click Listen &amp; Learn: Salt Storage</td>
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<td>Call 800-848-APWA</td>
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<tr>
<td>October 6-10</td>
<td>APWA Kansas City Metro Chapter Snow Roadshow</td>
<td>in Gardner, KS</td>
<td>Call Marty Moorehead at 913-782-2640, x58356</td>
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<tr>
<td>October 9</td>
<td>APWA Kansas Chapter Fall Meeting</td>
<td>in Wichita</td>
<td>Call Jeff Hunt, City of Topeka, 785-368-3842</td>
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<tr>
<td>October 14-15</td>
<td>Regional Meeting</td>
<td>in St. Joseph, MO</td>
<td>Call Lisa Harris at 785-864-2590</td>
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<td>*Concrete Road and Street Maintenance ▲ T</td>
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<td>Oct 21</td>
<td>Garden City</td>
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<td>Oct 22</td>
<td>Wichita</td>
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<td>Oct 23</td>
<td>Salina</td>
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<td>October 23</td>
<td>County Government/ City Government 101 Service Excellence in Local Government ▲ T</td>
<td>in Great Bend, KS</td>
<td>Call Sarah Meyer, KAC, 785-272-2585</td>
</tr>
<tr>
<td>November 13</td>
<td>APWA Kansas Chapter Board Meeting and Roundtable</td>
<td>in Topeka</td>
<td>Call Jeff Hunt, City of Topeka, 785-368-3842</td>
</tr>
<tr>
<td>November 16-18</td>
<td>Kansas County Highway Association Fall Meeting</td>
<td>in Wichita</td>
<td>Call Darryl Lutz at 316-322-4101</td>
</tr>
</tbody>
</table>

*For information on calendar items indicated with an * or to suggest a topic for an LTAP workshop, contact: Kristin Kelly, LTAP Training Coordinator, 785/864-2594, kbkelly@ku.edu.
▲ T = KS Road Scholar Program—Level 1 Technical skills required course
▲ S = KS Road Scholar Program—Level 2 Supervisory skills required course
▲ M = KS Road Scholar Program—Level 3 Master Road Scholar required course

Kansas Chapter APWA snow roadeo attendees watch an LTAP training video during a break in the competition this past April.
Free Resources

Check off your selections, fill in the bottom portion, and return this form to:
KUTC Materials Request, 1530 W. 15th St., Room 2160, Lawrence, Kansas 66045
or fax to 785/864-3199

Publications

You are free to keep these unless otherwise noted.
Or you can download at the links provided.

City of Ridgefield, WA, Accident Prevention Manual.
46 pages. See description on page 14. Download at:
http://www.mrsc.org/Subjects/PubWorks/pwsafety.aspx or □ request hard copy

Work Zone Positive Protection Toolbox.
15 pages. See description on page 14. Download at:
http://wzsafety.tamu.edu/research/record/8850 or □ request hard copy

Good Practices Guide for Bicycle Safety Education.
66 pages. See description on page 14. Download at:
http://www.bicyclinginfo.org/education/resource/fhwa.html or □ request hard copy

High Visibility Apparel in Highway Work Zones.
brochure. See description on page 14. Download at:
http://www.asssa.com (search for the title) or □ request hard copy

Innovative Intersection Safety Improvement Strategies and Management Practices: A Domestic Scan
81 pages. See description on page 14. Download at:
http://safety.fhwa.dot.gov/intersections/dscan_issisp/ or □ request hard copy

Equipment

We offer turning movement counter boards for loan to local highway agencies. Call us at (785) 864-5658 to arrange a loan. There could be a waiting list for these items.

□ Turning Movement Counter Board DB-400, Jamar Technologies, Inc.
A basic model for recording turning movements at intersections. The board is lightweight and comes with its own case.

□ Turning Movement Counter Board TDC-8, Jamar Technologies, Inc.
Can be used to do turning movement counts, classification counts, gap studies, stop-delay studies, speed studies, and travel time studies. The board is lightweight and comes with its own case.

Answers to quiz on page 5:
1-c. 2-c. 3-a. 4-c. 5-a. 6-c. 7-b. 8-b. 9-d. 10-c. 11-c. 12-b. 13-c. These topics are covered in Kansas LTAP’s Workplace and Equipment Safety Workbook.
We’re revising the book this year. Turn to page 6 to learn more about the revisions.

Order Form

Name __________________________          Phone number __________________________
Position __________________________          E-mail address __________________________
Agency __________________________
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☐ send materials indicated
☐ address correction
☐ add to newsletter mail list
☐ send 2008 Resource Catalog

Note: Our video and publication Resource Catalog is accessible online, in a searchable format. Visit: www.ksltap.org

*For requests outside the United States: After receiving your request, we will notify you of the postage cost and will send materials after receiving payment for postage.
Let us at the KUTC help you find the answers to your transportation-related questions.

KUTC, 1530 W. 15th St. #2160, Lawrence, KS, 66045
Call 785/864-5658 (fax 785/864-3199)
www.ksltap.org

The Kansas Local Technical Assistance Program (LTAP) is an educational, research and service program of the Kansas University Transportation Center (KUTC), located in the University of Kansas School of Engineering. Its purpose is to provide information to local and county highway agencies and transportation personnel by translating into understandable terms the latest technologies in the areas of roads, highways and bridges.

The KUTC Newsletter is one of the KUTC’s educational activities. Published quarterly, the newsletter is free to counties, cities, townships, tribal governments, road districts and others with transportation responsibilities. Editorial decisions are made by the KUTC. Engineering practices and procedures set forth in this newsletter shall be implemented by or under the supervision of a licensed professional engineer in accordance with Kansas state statutes dealing with the technical professions.

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