

KUTC Newsletter

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An issue on roadway safety

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Country roads...take me home...safely

... by Collin Koranda

Driving in rural communities sounds peaceful and pastoral, but all too often, it is not. The fatality rate for rural road crashes is more than double that of crashes in an urban environment¹. There are many contributing factors as to why the fatality rate of crashes in rural areas is so much higher than that of urban areas. This article will address the unique dangers of driving on rural roads and suggest some ways to help rural drivers stay safer.

J.R. McMahon is the Director of Public Services for Miami County, KS, and has been working on county road issues for over 23 years. We asked him about crash trends that are not only found nationwide, but also in rural Kansas. McMahon said the majority of accidents in his (rural and developing) county occurred on paved roads as opposed to dirt or gravel roads. According to McMahon, the paved road system in most counties has been built piecemeal over the past 60 years, with some designs dating as far back as the 1920's. As each road section was built, it was done to the prevailing design standards of the day. Due to limited funding, it is rare that counties will improve paved roads that were designed in the past to bring them up to modern safety standards.

¹The fatality rate in rural areas in 2003 was 2.3 fatalities per 100 million vehicle miles traveled (VMT) compared to only 1.0 fatality per 100 million VMT in urban areas. (Source: FARS, NCSA, NHTSA).



Characteristics of rural roads make seat belt use especially important.

A leading cause of vehicle crashes on rural roads is running off of road, said McMahon, often the result of either inattention to driving or the need to swerve to avoid hitting an animal. "When a vehicle does leave the road, injuries are common, as a vehicle will strike an object such as a tree or culvert, which can also cause a vehicle to roll over," he said.

In the case of a rollover, it is extremely important that occupants are wearing their seat belts, McMahon said. If a seat belt is used, the result is usually only injury as opposed to fatality; occupants not wearing

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Country roads,

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seat belts face the risk of being ejected from the vehicle. Deaths from ejections from vehicles occur more in rural crashes than in urban crashes.

Drivers must be aware of several factors when traveling on rural roads, said McMahan. Many of the roadways are narrow in the state and may have little to no shoulder space. If a driver runs off of the road, many of the slopes on the side of rural roads are “unrecoverable,” and in conjunction with a narrow right of way can lead to either running into an object such as a tree, or rolling a vehicle. Because of these inherent dangers, the driver must be paying attention at all times, McMahan said.

In some areas, roadways may not have pavement markings for the driver to follow. To add to this, many rural roads are used mainly by local vehicles such as farm trucks or buses loading and unloading students, and residents. Because of the various types of vehicles on the roadway, a driver may encounter many different actual traffic speeds—and even vehicles stopped in the roadway. There may be multiple and/or unexpected entry points to the road, such as driveways, as well.

Finally, a driver may encounter a wide variety of animals on the roadway, such as deer, coyotes, and turkeys, domesticated animals such as dogs, cats and horses, and livestock.

Not only are there some unique safety challenges driving on rural roads, but when crashes do occur, they are often in locations that are isolated, which leads to longer discovery times as well as increased emergency response time. Because of the higher potential for a crash, as well as delayed response time, the importance of seat belt use in rural environments must be constantly stressed to all drivers.

All this makes a compelling case for wearing seat belts. Nationally, seat

Why rural roads are particularly dangerous

- Narrow right-of-way puts driver closer to roadside objects (trees, etc.)
- High speeds
- Variety of road types; no standard to create consistent driver expectancy
- Lack of pavement markings on some roads
- Increased likelihood for encountering animals in the roadway
- Vehicles traveling at different speeds
- Build-up pavements create unrecoverable drop-offs

belt use is rising, but use in rural areas remains below the national average. Use among pick-up drivers is even lower, with slightly more than half of such drivers in 2003 using seat belts.

Buckling up is the law in Kansas, with the requirement set out in K.S.A. 8-2503. However, consequences of violating the law are lenient; fines are low (\$10 or less). Communities are going to have to go the extra mile to get the word out about the importance of buckling up.

What can you do to help make rural roads safer?

As a road and bridge official, you can:

—**Educate the public.** Volunteer to speak at schools and before civic groups on the importance of wearing seat belts and keeping property free of roadside hazards. Post information on your city’s Web site. Run public service announcements.

An example of information posted for the general public on the “homeowner’s role in roadway safety” can be found at [https://www.nysdot.](https://www.nysdot.gov/portal/page/portal/divisions/engineering/design/dqab/hdm/chapter-10/roadside-safety)

[gov/portal/page/portal/divisions/engineering/design/dqab/hdm/chapter-10/roadside-safety](https://www.nysdot.gov/portal/page/portal/divisions/engineering/design/dqab/hdm/chapter-10/roadside-safety)

—**Limit access.** Some counties are adopting access management regulations to limit the number and spacing of driveways along roadways. This is a good safety tool in reducing the number of potential vehicle conflicts. See an article on this topic in our Summer 2006 issue.

—**Conduct a roadway safety assessment.** This tool, also described in our Summer 2006 issue, can help you identify improvements you can make to signage and the roadside to improve safety. The KUTC has been conducting some training on roadway safety assessments.

—**Use a safety edge.** This is a way to finish the edges of an asphalt overlay to help make the edge recoverable. You can download a brochure on this technique at www.ksltap.kutc.ku.edu or order a printed copy on page 15.

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Sources:

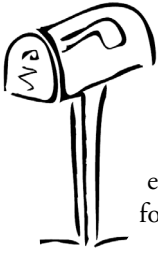
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Example of a mailbox policy for homeowners



Washtenaw County, Michigan, has a busy college town (Ann Arbor), busy roads, and problems with vehicles hitting mailboxes. So they developed a policy for the placement and design of mailboxes, and consequences if the policies are not followed. Their policy appears below.

Mailboxes and Newspaper Delivery Boxes Along County Roads

Most rural mailboxes are located immediately adjacent to the road to allow for efficient delivery of mail. Placement adjacent to a road, however, can be a hazard to the motorist. Accordingly, the Washtenaw County Road Commission has adopted standards for the placement of mailboxes and newspaper delivery boxes along county roads. These standards conform to the rules and regulations of the U.S. Postal Service and are based on *A Guide for Erecting Mailboxes on Highways* published by the American Association of State Highway & Transportation Officials 1994.

No mailbox or newspaper delivery box (hereafter referred to as mailbox) will be allowed to exist within the County's rights-of-way if it interferes with the traveling public or the function, maintenance, or operation of the county roadway system. A mailbox installation that does not conform to the provisions of this regulation is prohibited.

Location

The roadside face of the box shall be offset the following distances:

Paved road—the width of the shoulder plus one foot.

Gravel road—one foot from the edge of the traveled portion of the roadway.

Curbed street—one foot from the face of the curb.

Where a mailbox is located at an intersecting road it shall be placed a minimum of 100 feet beyond the center of the intersecting road in the direction of the delivery route. This distance should be increased to 200 feet when the average daily traffic on the intersecting road exceeds 400 vehicles per day.

Where a mailbox is installed in the vicinity of an existing guardrail, whenever practical, it shall be placed behind the guardrail.

Structure

Mailboxes shall be constructed from sheet metal, plastic, or similar weight materials and shall not exceed 11 lb.

No more than two mailboxes shall be mounted on a support structure unless the support structure and mailbox arrangement have been shown to be safe by crash testing, approved by the U. S. Department of Transportation. Newspaper boxes may be mounted below the mailbox on the side of the mailbox support.

Multiple mailbox installations must meet the same criteria as do single mailbox installations. This requirement precludes the use of a heavy horizontal support member. It is recommended that mailbox supports be separated a distance at least equal to three-fourths of their heights and preferably their full heights above ground. It is also preferred that multiple mailbox installations be located outside the highway clear zone, if feasible, such as on a service road or minor intersecting road.

A single 4 inch by 4 inch square or 4 inch diameter wooden post, or a metal post with a strength no greater than a 2 inch diameter standard steel pipe and embedded no more than 24 inches into the ground will be acceptable as a mailbox support. A metal post shall not be fitted with an anchor plate, but may have an anti-twist device that extends no more than 10 inches below the ground surface. Larger wooden posts may be used provided the posts have drilled holes and the support design has been shown to be safe by crash testing, approved by the U. S. Department of Transportation.

The post-to-box attachment details should be of sufficient strength to prevent the box from separating from the post top if the installation is struck by a vehicle.

Exceptions to the above listed supports shall not be used unless previously approved in writing by the Washtenaw County Road Commission

Removal of non-conforming or unsafe mailboxes

Any mailbox that is in violation of these regulations shall be immediately removed by the owner upon notification by the Road Commission. If the owner has not removed the mailbox, the owner will be issued an Encroachment Removal Order by the Road Commission in accordance with M. S. A. 9.251, whereupon the owner will be granted 30 (thirty) days to remove the unacceptable mailbox. Thereafter, the mailbox will be removed by the Road Commission at the owner's expense.

Source:

<http://www.wcroads.org/permits/mailboxinstall.htm>.

Mailbox image from www.kidprintables.com. ■

Orange or Yellow-Green?



... by Lisa Harris

We've heard there's some confusion out there about what color safety vests are required to be worn in work zones on local roads.

The answer is: Either color is OK—orange or yellow-green—as long as the vests meet ANSI “Class 2” standards for daytime work. However, as you buy new vests, consider switching to yellow-green. Traditional orange construction clothing can blend in with orange machinery and signs in the construction zone. The new yellow-green clothing differentiates workers from the work site. Motorists are more likely to slow down once they recognize an object as a human being, creating a safer environment for road workers. (Source: TechNews, July/August 2000, CTRE.) In fact, the highest rated safety clothing by the American National Standard Institute (ANSI) has short sleeves, so they are easily recognized as clothing. ANSI standards are becoming recognized by most agencies as the national standard for high visibility garments.

Part 6 of the *Manual on Uniform Traffic Control Devices* (MUTCD) (<http://mutcd.fhwa.dot.gov>) contains several provisions for worker protection in work zones. These provisions refer to ANSI standards.

Section 6E.02 requires persons flagging traffic in a work zone to wear

More about ANSI Standards: In simple, practical terms, **Class I garments** are lightweight vests intended for exposure to slow moving traffic—less than 25 mph. Parking lot workers, delivery personnel and warehouse personnel are examples. **Class II garments** are intended for exposure to medium traffic speeds, typically under 50 mph. This should enable the worker to be seen in reduced visibility. The worker should be able to accomplish his or her work without paying excessive attention to traffic. **Class III garments** meet the most stringent requirements. You need these when workers are exposed to traffic exceeding 50 mph.

Source: www.safetyandsupply.com

a high visibility garment meeting the “Class 2” ANSI 107-1999 Standard and specifies details regarding the colors, visibility, and retroreflectivity of the garment.

Section 6E.02 also recommends that for nighttime activity, flaggers should wear a Class 3 high visibility garment.

Section 6D.03(B) recommends

that all workers [not just flaggers] exposed to the risks of moving roadway traffic or construction equipment should wear Class 1, 2, or 3 high-visibility safety apparel, with the specific class being selected by a competent person designated by the employer to be responsible for the worker safety plan within the activity area of the job site. ■

Country roads, *continued from page 2*

—**Cut trees.** Cutting carefully selected trees can put fewer hazards in the way of motorists, yet sometimes the decision to cut trees is very controversial. A thoughtful look at this subject is found in the DVD entitled “Highway Safety and Trees: The Delicate Balance.” Order a copy on page 15.

—**Limit use of the right of way.** On the next page is an example of this—a policy on mailbox placement.

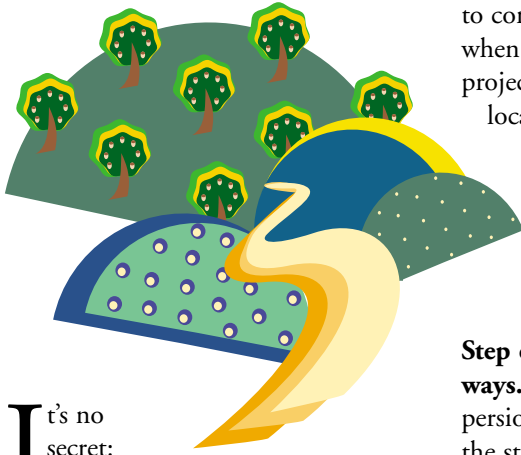
The above are just a few ideas for improving safety on rural roads. More ideas can be found in a new report released by FHWA called *Good Practices: Incorporating Safety into Resurfacing and Restoration Projects*. See a description of this report on

page 14 and order a copy on page 15. Or you can download the report from FHWA's Office of Safety's road department page: http://safety.fhwa.dot.gov/roadway_dept/index.htm

Seventy percent of fatal crashes on roadways with posted speeds of 55 miles per hour or higher happen on rural roads. There are many things you can do to make a difference. But first, start with something simple: buckle up. ■

High Risk Rural Roads: How Kansas is responding

... by Kelly Heavey



It's no secret:

rural roads are dangerous. With approximately 60 percent of fatalities in the United States occurring on rural roads each year, the Federal Highway Administration (FHWA) established the High Risk Rural Roads Program (HRRR), a nationwide improvement program developed exclusively for making rural roads safer. Established in 2005, HRRR is a provision of the U.S. Transportation Legislation's SAFETEA-LU and a component of the Highway Safety Improvement Program (HSIP).

HRRR has a national budget of \$90 million at the beginning of each fiscal year. The money is split up among states in numbers proportionate to their HSIP shares. That formula is based upon factors such as the total lane miles on certain highways and the number of fatalities.

Use of the funds

How the money is used is up to each individual state's DOT, within federal guidelines. The funds must be used for construction and operational improvements on the roads identified in HRRR applications submitted by counties and selected by the states. DOTs each develop their own selec-

tion systems, but FHWA's HRRR guidance document encourages states to consider all public rural roads when determining eligibility for a project—including those owned by local governments.

FHWA's guidance document also strongly recommends a two-step process for states to use when deciding how to appropriate the money:

Step one—Identify eligible roadways.

In a process similar to the dispersion of the original \$90 million to the states, each state considers variables like crash data and fatality rates to determine which roads in their state need improvements most and how much money those improvements will cost. Exposure data is also be considered, such as vehicle miles traveled (VMT), average daily traffic (ADT) and lane miles. Injury rates can be determined by considering the relationship between the population and the accident rates in a "per capita" manner. Roads that expect higher traffic volume in the future—which could result in an accident rate higher than the state average—can be presented by projected growth models.

If a state doesn't already have a crash and roadway data system, it is encouraged to compile one with the information found in its research for HRRR. The document suggests involving Regional Councils of Governments and Metropolitan Planning Organizations (MPOs) for assistance in collecting the data.

Step two—Analyze the highway safety problems with available tools and information.

A crash and roadway data system, mentioned above, would be helpful in this step to locate potential improvement locations. After locations are identified, specific problems

can be looked at with more attention to safety concerns and solutions.

If a state does not have a comprehensive crash and roadway data system (and Kansas currently does not), it is encouraged to consider information that could be gathered with a "road safety assessment" (If this is a new term to you, check out our Summer 2006 issue.)

Ben Gribbon, program manager for FHWA's Roadway Safety Professional Capacity Program, says the states aren't required to follow the two recommended steps, but it is strongly recommended. "It would be very difficult to comply with regulations any other way," he says.

"Five percent" requirement

Also, as required under the HRRR Program, KDOT is compiling a list of no less than five percent of the locations in Kansas that exhibit the most severe safety needs on all public roads (including local). The report must include potential remedies, costs, and any impediments to making the suggested improvements. Federal guidance for that effort is at <http://safety.fhwa.dot.gov/safetealu/fiveguidance.htm>

HRRR administration in Kansas

Kansas was allocated about \$1.6 million for federal fiscal year (FFY) 2007 for HRRR. Applications were received from counties for 18 locations. Lynn Berges, of KDOT's Bureau of Local Projects, does not anticipate all the 2007 funds being expended on those projects; some will roll over to FFY 2008.

KDOT is now in the process of funding the Phase I selected projects. [The process was delayed with KDOT needing to respond to the recent flooding around the state, but Berges anticipates the funding process

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National incident management starts at home, with local training

... by Jacob Bustad

As a public works manager or supervisor, the ability to respond quickly and efficiently to unplanned events can potentially save lives. A traffic accident on a major roadway endangers lives; if that accident involves a truck carrying gasoline, the situation becomes even more unsafe for the vehicles involved and traffic headed towards the accident. If you are the first responder on the scene, what should you do to temporarily manage that traffic? And what about those involved in the accident? How can you make sure they get the help they need without increasing the danger?

Local-level training required

The need for training to respond to the above situations is behind the

For tips on how to respond to major, intermediate, and minor incidents, check out Chapter 6I in the MUTCD.

executive order by Governor Sebelius to designate the National Incident Management System (NIMS) as the standard to be used by all in Kansas who respond to an emergency. Part of this order included the completion of a NIMS awareness course by local-level responders, with local discretion as to who should take the course.

The NIMS course explains the purpose, principles, key components and benefits of NIMS. All emergency personnel with a direct role in emergency preparedness, incident management or response must take the NIMS awareness course.

NIMS has additional training

that targets different kinds of job positions. Department heads and senior administrators are included, as well as field supervisors and others at the managerial level. For those at the responder level, including public works and utility personnel, firefighters, and police officers, training can be critical for immediate public safety.

NIMS courses are available online and are offered free-of-charge through the Emergency Management Institute at <http://training.fema.gov/EMIWeb/IS/crslst.asp>.

NIMS compliance

Full NIMS compliance was previously required by October 1, 2007, but this deadline has been revised, according to Teri Smith, Acting Director for Emergency Management in Douglas County. Smith said that the completion of the NIMS 300 and 400 level courses is now strongly encouraged by that date, but agencies will not be considered non-compliant if they do not meet the deadline.

Federal preparedness funding assistance is expected to be withheld from jurisdictions considered noncompliant.

National database of trainees is under way

Local agencies are responsible for assigning the training courses and making sure they are completed, and county emergency management officials like Smith rely on individual departments to report this information "to the next level." This creates the possibility of missed reporting due to human error. Therefore, a primary goal of NIMS is to improve data

accuracy by developing a nationwide database to track which person has which credentials.

According to the Federal Emergency Management Administration (FEMA) Web site (<http://www.fema.gov/emergency/nims/faq/rm.shtm>), "The development of a nationwide credentialing system is a fundamental component of NIMS. A national credentialing system can document minimum professional qualifications, certifications, training and education requirements that define baseline criteria expected of emergency response professionals and volunteers for deployment as mutual aid to disasters. To support this credentialing initiative, the [National Integration] Center will use working groups to identify positions that should be credentialed and the minimum qualification, certification, training and education requirements for each position."

While this database is currently under development, no date has been set for when it will be available for use.

Note: Public Works Credentialing job titles have recently been revised. See www.fema.gov/pdf/emergency/nims/pw_job_title_060107.pdf.

NIMS suggestions for local-level actions

In working towards NIMS compliance in Kansas, NIMS suggests several actions at the local level:

1) NIMS should be incorporated into all existing emergency management training programs and exercises. This includes the completion of the NIMS course discussed above by all personnel who have a role in Local Emergency Operations Plans (LEOP), which can be taken either online or in a classroom setting.

2) NIMS issues and terminology should be written into emergency response exercise scenarios and used by personnel. This will help local

Responding to a traffic incident

The *Manual on Uniform Traffic Control Devices* (MUTCD) identifies a traffic incident as “an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic.” Incidents are divided into three general classes: major (2 hours +), intermediate (30 minutes - 2 hours), and minor (30 minutes or less).

When an incident happens, whether it be flooding on an unpaved road or a major traffic accident involving a truck carrying hazardous materials, a management area must be designated. This area is the portion of roadway where temporary traffic controls will be imposed to move traffic safely past or around the incident.

First responders must also accomplish several tasks—and in the first 15 minutes, according to the MUTCD. First, estimate the magnitude of the traffic incident, as well as the time duration, and then estimate the expected vehicle queue length. Paula Phillips explained that “magnitude” refers to the process that any first responder goes through upon arriving at the incident.

“We are talking about when the first responder sizes up the incident, and the first thing to ask is “Do I have the resources to handle this, or do I need help?” Phillips said. “Then when support arrives, that question becomes “Can we handle this at our level of authority, and with our resources, or do we need to ask for assistance from a different jurisdiction?” This means that city employees decide whether or not to call the county, the county whether or not to call the state, and so forth.”

For tips on how to respond to each specific type of incident (major, intermediate, and minor), check out Chapter 6I in the MUTCD (<http://mutcd.fhwa.dot.gov/pdfs2003/Ch6I.pdf>). This chapter details the necessary actions recommended for each incident type, as well as a description of the different signs and lighting that can be used to properly accomplish “incident management.”

responders increase their understanding and familiarity with the national response system.

3) Each county board of commissioners should pass a resolution to use NIMS. And, According to Paula Phillips, Training Officer for the Kansas Division of Emergency Management, all 105 counties in Kansas have adopted NIMS.

The importance of incident management training cannot be overstated, because these situations often are truly a matter of “life or death.” Whether developing planning that could be used in a potential situation, or arriving first on the scene of an emergency, the correct knowledge and training are critical.

More information about NIMS in Kansas is available at <http://accesskansas.org/kdem/nims>. Included at this site are the Kansas NIMS Implementation Plan, NIMS training guidance for personnel, and a list of available courses. There is also a template for mutual aid agreements between different agencies.

Sources:

<http://mutcd.fhwa.dot.gov/pdfs/2003/Ch6I.pdf>

<http://www.accesskansas.org/ksadjutantgeneral/News%20Releases/2006/Gov%2004-13-06.htm>

<http://www.accesskansas.org/kdem/pdf/news/newsletter%202.pdf> ■

High risk rural roads, *continued from page 5*

will get back on track soon.]

Another aspect of HRRR is improving collection of data on rural road crashes. “The research I’ve conducted has shown that most of the local accidents are random [i.e., no predictable causal factors], and we are currently working on finding those locations where they happen to occur most,” said Berges.

In Round II, KDOT will be considering corridor improvements, applications for road safety assessments (RSAs), and improvements identified by RSAs, such as signing, rumble strips, and removal of vegetation and roadside objects.

Applying for HRRR funds

If you have rural roads in your county in need major safety improvements, get ready to apply for Round II, for FY 2008 funds. Berges said KDOT expects to send memos to counties this Fall encouraging them to apply. The process will be competitive, and the maximum amount to be spent per location will be \$300,000.

The application for HRRR improvements requests specific information about the site(s) in question. That information includes:

- the location’s crash rate and crash history for at least three years,
- any improvements or additional development that has happened in the area,
- the average traffic volume and
- any previous study on the area in relation to improving crash rates.

Funding for the improvement or construction will be split 90/10, with

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A Leg Up

Safe Routes to School

... by Libby Ross

Across Kansas, communities are making plans for safer and healthier school-children thanks to the Safe Routes to School Program. This article will describe how the program works, a few lessons learned, and how the program is being implemented in two cities in Kansas.

The Federal Highway Administration gives three primary purposes of its Safe Routes to School (SRTS) program, created in the last federal transportation bill:

1) To enable and encourage children, including those with disabilities, to walk and bicycle to school.

2) To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age.

3) To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

FHWA's Program Guidance document for SRTS also suggests that communities interested in establishing the SRTS program address five factors called the "5 E's"—engineering, education, enforcement, encouragement, and evaluation. As you can see, projects go beyond standard engineering solutions.

In Kansas, SRTS projects are administered and awarded by the Kansas Department of Transportation (KDOT). Lisa Koch, KDOT SRTS



Coordinator, says that school districts, cities, counties and MPOs are eligible to apply for the SRTS program for projects that enable students grades K-8 to walk or bike to school.

SRTS programs can occur at three jurisdictional levels:

1) individual school based, 2) multi-school, and 3) state-wide. An example of a state-wide program would be safety training made available to all schools in the state.

Koch explains that KDOT is using their funding to award SRTS projects in a phased program approach. Phase 1 is funding for creating a Safe Routes to School (SRTS) Plan that includes all "5 E's." Phase 2 is funding to implement all or portions of the Plan.

Koch says if a community does not already have an SRTS program or something similar, they are asked to apply for Phase 1 first unless the community can pay for the creation of the Plan internally.

Koch says a frequently-asked question is, "Can a community just apply

for funding for engineering improvements?" She says yes, if the community can fund programming for the other 4 E's through other resources.

Kansas Safe Routes to School Program Application Guidance 2007 provides an application checklist for both phases. The checklists are available at the SRTS Web site: <http://www.ksdot.org/burTrafficEng/sztoolbox/default.asp>.

Funding

Complete federal reimbursement is given for all approved SRTS projects. KDOT highly recommends that an applicant receive Phase 1 funding before applying for Phase 2 funding. This "does not guarantee that an applicant will be awarded Phase 2 funding," but it will make the application higher priority.

Koch said that, in the first year of the program, there were 62 applicants

Complete federal reimbursement is given for all approved SRTS projects.

of various sizes and locations. Twenty-four communities were awarded SRTS funding, twenty-two of which were Phase 1. Koch expects that fewer Phase I projects will be approved this year, so that more funds will be available for implementation of Phase II projects.

Kansas receives about \$1 million each year for Safe Routes to School projects. Funds are apportioned by FHWA to the states based on the number of students in grades K-8.

Local experience with SRTS

Minneapolis, KS is one of the 22 communities awarded Phase 1 funding in the first year. Mark Freel, Economic Development Director for the City of Minneapolis, said the

SRTS application process was very easy to follow and understand. He estimates it took between 16 and 20 hours to complete the application, between paperwork and meetings, and it was a couple months before the application was processed and funding was rewarded by KDOT.

Freel explained that the SRTS has opened the door for parents and educators to share their concerns about children walking to school. There was more concern in Minneapolis than he had anticipated. He expected that worries about the safety of students walking to school would have been minimal in a small town, but the implementation of the SRTS Program has opened their eyes. He highly recommends that communities, including small towns like Minneapolis, to look into applying for the SRTS Program. It has allowed his city to address safety and health concerns that had barely been broached before.

Satanta, KS was one of the few communities approved for Phase 2 funding in the first year. Enrique Limon, mayor, said it took a couple of months for KDOT to process their application and award funding.

Suzy Koelzer, who completed the application process for Satanta, thought the application process was very easy to follow. She explained that their community was able to bypass Phase 1 because they had already developed Phase 1 activities, such as a bicycle rodeo, on their own. Satanta's Phase II project includes the construction of sidewalks between the elementary school and the middle school (which are on opposite sides of Satanta).

Koelzer advises communities to seek the assistance of other organizations with similar goals. Sponsorship and community involvement are key to making the SRTS Program a success, she said. Satanta did this by working with the health department, the schools, and other community groups.

KDOT is currently completing its applications process for fiscal year

2007. Announcements for funded Phase I projects are expected to be released in late August. Announcements for Phase II funded projects are expected to be released in late October/early November.

Future of SRTS

KDOT will solicit applications for FY 2008 funding early next year. Applications will be available in February. Phase I applications will be due in early May, and Phase II applications in late July. A similar applications cycle is expected the following year, for FY 2009 funds, which will be the last year of the program under SAFETEA-LU.

"Of course, we hope the program will be so successful that it will be funded in the next—and future—transportation bills," said Koch.

Has the program been successful?

Koch said yes, the program has already been successful in increasing awareness about the importance of walking and biking for health and to ease traffic congestion at peak times.

When asked if she learned anything she did not expect while implementing Safe Routes to Schools, Koch said "It has given me a greater understanding of the amount of work and dedication it takes in smaller communities to get these kinds of projects off the ground. There are often very few people on staff to do the work, and these communities rely on citizens who serve on committees to help get things done. Fortunately, in such communities, people seem more willing to serve their fellow citizens and get involved. I am impressed with the commitment I've seen by both citizens and city staff."

For more information on Safe Routes to Schools in Kansas, and how YOU can get involved, contact Lisa Koch at 785-296-8593 or at lisak@ksdot.org ■

High risk rural roads, *continued from page 7*

the local government paying 10 percent. Projects in Kansas will be on a five-year plan.

In Round II, KDOT will be considering corridor improvements, applications for road safety assessments (RSAs), and improvements identified by RSAs, such as signing, rumble strips, and removal of vegetation and roadside objects.

When asked what one piece of advice he would give to counties to complete a favorable application, Berges said one word: "**Data.**" He said that while the HRRR Program is directed towards locations with severe injuries and fatalities, KDOT is interested in knowing about all the crashes at a given site. "We want to know about even minor crashes," Berges said. "It tells us something is going on at that location. After all, sometimes just by luck or the skill of a driver, a minor accident is a major accident that easily could have happened. We want to see the whole picture."

What's next for HRRR

HRRR will be funding safety improvements on rural roads in counties throughout the United States through 2009. Counties will continue to benefit beyond 2009 if this program is part of the next transportation bill. Agencies and associations whose major responsibilities are transportation are beginning to put together recommendations for the transportation bill of 2010. The National Association of County Engineers is one such entity, and is recommending the HRRR program continue.

For more information on the High Risk Rural Roads Program in Kansas, contact Lynn Berges at (785) 296-0410.

High Risk Rural Roads Program:
<http://safety.fhwa.dot.gov/safetealu/factsheet1401hrrr.pdf> ■

Sign retroreflectivity: New federal regulations



... by Greg Schertz, FHWA

In 2004 (with a Notice of Proposed Amendment), and again in 2006 (Supplemental Notice of Proposed Amendment), the Federal Highway Administration published proposed changes to the *Manual on Uniform Traffic Control Devices* (MUTCD) that would establish minimum retroreflectivity values for maintaining signs. This is different from specifications we now use for purchase of new signs. The proposed regulations tell us when the signs have deteriorated to the point where they no longer meet the needs of drivers at night, and therefore, when they need to be replaced.

To address the issue of retroreflective deterioration, the national MUTCD currently states, "Regulatory, warning, and guide signs shall be retroreflective or illuminated to show the same shape and similar color by both day and night..." That standard has remained essentially unchanged for 45 years. The current MUTCD also states, "To assure adequate maintenance, a schedule for inspecting (both day and night), cleaning, and replacing signs should be established." These are important recommendations but they have always lacked the information needed to decide WHEN the retroreflectivity no longer meets driver's needs and therefore WHEN to replace a sign.

The two FHWA proposals were published in the *Federal Register* so that interested parties could review and comment. Many responses were received, including those from NACE, APWA, and a few local agencies and individuals. Unfortunately, I am not allowed to discuss the comments received, or the plans for the Final Rule, at this time because FHWA is still in the rulemaking process. However, I can assure you that all comments received on the proposals have been reviewed, considered, and changes made if deemed appropriate. Actually, the second proposal was a result of the changes made because of comments to the first proposal.

The FHWA is currently developing the Final Rule for the MUTCD revisions on sign retroreflectivity, which is currently expected to be published in the Fall of 2007. That's just around the corner.

Based on the current requirements in the MUTCD, and the expectation that standards will be published soon, some agencies have initiated nighttime inspection processes to evaluate the visibility of their traffic control devices. A systematic process to replace worn out devices can then be implemented to ensure that limited budgets are used efficiently to meet the needs of the nighttime driver.

For additional information on this rulemaking and sign retroreflectivity, please visit the FHWA retroreflectivity web site at: www.fhwa.dot.gov/retro.

Greg Schertz, Retroreflectivity Team Leader, Federal Highway Administration, can be reached at Greg.Schertz@fhwa.dot.gov ■

Pavement marking retroreflectivity: What's happening?

... by Lisa Harris

The Federal Highway Administration is developing proposed standards for pavement marking retroreflectivity. This summer they plan to conduct two focus groups with representatives from county public works departments, DOTs and industry to discuss issues and concerns and to take the first step in drafting language for the standards.

Keith Browning, Douglas County public works director and chair of the Kansas County Highway Association (KCHA), has been invited to participate in one of these focus groups. The groups will be led by Greg Schertz, author of the above article on sign retroreflectivity, and Paul Carlson, a national expert on retroreflectivity. [You may remember Paul Carlson speaking at the Spring KCHA meeting this year in Great Bend, and before that, at a MINK meeting.]

In an upcoming issue, we will report about Keith's experience and his thoughts about the process and where it's going.

“Dead end” and “no outlet” signs: What’s the difference?

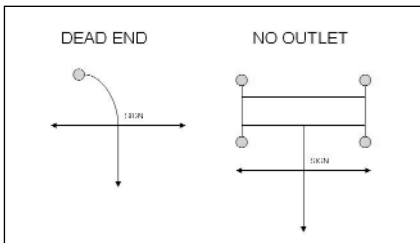
... by Collin Koranda and Lisa Harris

Some residents like living on a “dead end” street, but don’t like how it sounds. They’d rather live on a street that has “no outlet.” Can these two signs be used interchangeably? The answer is sometimes yes, sometimes no. This article will tell you which sign to use where.

The *Manual on Uniform Traffic Control Devices* (MUTCD) Millennium edition, which is the current version for the State of Kansas, defines the use of dead end and no outlet signs. The MUTCD codes for the signs are W 14-1 and W 14-2 respectively.

Definition of “dead end”

According to the MUTCD, the dead end sign “may be used at the entrance of a **single** road or street that terminates in a dead end or cul-de-sac.” A dead end refers to an entranceway where there are no options for turning onto another street or system within a network. The sign is placed on the street that dead-ends.



Definition of “no outlet”

On the other hand, a no outlet sign “may be used at the entrance to a **road or road network** from which there is no other exit.” Once you turn into the network, there can be a series of other turns onto roads. However, the way you came in is the

only way to exit out of the network. Oftentimes, an entranceway into a subdivision is the only option for entering and exiting the area. But once inside the subdivision, there can be a system of streets interconnecting with each other.

So... the answer to the question about whether these signs are interchangeable is this: A “no outlet” sign can be used instead of a “dead end”

sign, but not the other way around. If you have a road network with no outlet, you must use a “no outlet” sign.

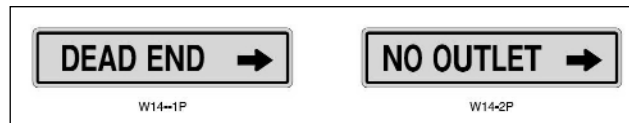
Source:
<http://mutcd.fhwa.dot.gov/pdfs/millennium/06.14.01/2cndi.pdf> ■

Sign placement

The MUTCD has established the standard that when either a “dead end” or “no outlet” sign is used, “the sign shall be posted at the entry point or at a sufficient advance distance to permit the road user to avoid the dead end or no outlet condition by turning off, if possible, at the nearest intersecting street.” “Shall” in the MUTCD language indicates that the instructions are a requirement that must be followed.

In other words, you should place the sign on the dead end or no outlet street as close as possible to its intersection with the through-street, so a driver will readily see the sign when they are considering entering the road.

A “dead end” plaque (W 14-1P) and a “no outlet” plaque (W 14-2P) may, according to the MUTCD, “be used in combination with Street Name (D3) signs at intersections instead of or in addition to the W 14-1 or W 14-2 signs.” The standard for using the plaques is defined as being used “where traffic can proceed straight through the intersection to the dead end or no outlet street.”



KDOT Korner



... by Jacob Bustad

Despite past attempts to curb the annual number of fatalities and injuries on Kansas roadways, the numbers remain high. In 2005, 428 fatalities and 22,723 nonfatal injuries occurred throughout the state. These crashes take a monetary toll, as well, with the 2004 total cost equaling nearly \$3 billion—that's right, billion—an average of \$1,015 per Kansan per year. These problems are being addressed by The Driving Force, a task force with representatives from across the state.

The Driving Force is a cross-agency project involving KDOT, the Kansas Highway Patrol, and the Kansas Department of Health and Environment. These agencies hosted six community forums around the state in 2005, bringing city and county officials, professionals and civilians into the discussion. The Driving Force Task Force then developed specific recommendations to reduce injuries and deaths, which had been the goal of earlier attempts as well. But the new effort is different in that it incorporates both agency recommendations and citizen recommendations; this combination has been found to be more effective in making policy changes.

The task force has 20 members, led by Co-Chairs Jeff Boerger, President of the Kansas Speedway, and Darlene Whitlock, Trauma

KDOT's Driving Force: Steering Kansas in the direction of SAFETY

Project Coordinator for Stormont-Vail HealthCare in Topeka. The group identified 11 major topics for which to develop recommendations:

- Occupant protection (including safety belts, child passenger, restraint, motorcycle helmets, etc.)
- Novice drivers
- Impaired driving
- Trauma care
- Emergency medical services
- Older drivers
- Judiciary process
- Roadway
- Commercial motor vehicles
- Distracted driving
- Data (traffic and crash data)

In this article we'll describe three of these topics in greater detail: roadway, commercial vehicles, and data.

Roadway improvements and rumble strips

The Driving Force recommends increased use of rumble strips and other roadway safety improvements.

Driving Force recommends that state law be enhanced to give the Secretary of Transportation the option of withholding 5 percent of special city/county highway funds from entities that are late to report traffic crash information.

Rumble strips are grooves typically on the outside edge of a lane, alerting a driver if his or her car begins to leave the road. Centerline rumble strips have also been used effectively in some situations. Centerline "rumbles" were recently tested on two rural two-lane highways in Kansas, and early results

show a reduction in head-on and side-swipe crashes, in line with national findings. With knowledge of the effectiveness of rumble strips, the task force presented two recommendations for the "Roadway" topic:

—Utilize shoulder and centerline rumble strips where applicable.

—All Kansas governmental jurisdictions should continue to make roadway improvements based on current engineering standards.

Commercial motor vehicles/CDL holders/durg and alcohol testing

According to The Driving Force, truck freight is expected to at least double by 2025. A key aspect of trucking safety is testing drivers who hold commercial drivers licenses (CDLs) for drug and alcohol use. Tests are given when a driver is hired, when there is reasonable suspicion, following a fatal crash or moving violation, as well as on a random basis. Any operator who fails

a test cannot continue his or her duties until an education and/or treatment process is completed. Another drug test must be passed before returning.

A positive drug test is currently only required to be reported to the employee and current employer, meaning future employers are some-

times unaware of previous violations. Driving Force is proposing a change that would mean that all test results would be recorded on the driving record, and new employers would have full information. Their specific recommendation is to *support legislation requiring Medical Review Officers to report a commercial vehicle driver's positive drug test and return-to-duty negative test to the Division of Motor Vehicles to be include on the driver's motor vehicle record.*

Timely and consistent reporting of traffic, roadway and crash data

Data help tell the story of what happened at crashes and help decision makers decide how to address safety problems. Travel on all roads and streets in Kansas totals more than 29 billion vehicle miles annually. There are approximately 74,000 vehicle crashes, 23,000 injuries, and 450 deaths on Kansas roadways each year. More than 18,000 drivers are arrested for alcohol impaired driving, and approximately 700,000 citations are issued annually. Coordination of this diverse and extensive data, in addition to many other data elements, presents numerous difficulties in evaluating traffic safety issues in Kansas. Deficiencies occur in exchanging timely and accurate crash, medical, citation, and adjudication data among agencies.

"Traffic records," as referred to by Driving Force, includes traffic-related data used in a safety model developed by the National Highway Traffic Safety Administration (NHTSA):

- crash information
- driver information
- vehicle information
- roadway data
- citation/adjudication information
- injury surveillance information

In March 2005, KDOT, with the assistance of several state agencies and NHTSA, conducted a Traffic Records Assessment (TRA). Following that assessment, a committee developed a

Traffic Records Strategic Plan (TRSP) for Kansas. The plan was designed to guide the state in developing a statewide traffic records system to achieve timeliness, consistency, completeness, accuracy, and accessibility of traffic-related data throughout Kansas.

Driving Force recommends adoption of the two major recommendations in the TRSP:

1) *Encourage and provide resources for the electronic capture and transmission of data, using GPS devices for on-site data collection.* This will provide accurate crash location data, which is critical in efforts to reduce injuries and fatalities from vehicular crashes, and

2) *Establish a pre-hospital data collection and analysis system and to seek funding opportunities for the data collection system.* The recommendation from Driving Force states: "Collecting EMS activity reports and roadway attributes is the first critical step in identifying a community's injury problems, and in turn, identifying cost-effective countermeasures, which can positively impact the traffic safety and health communities. [Note: Having data on roadway attributes and crashes ties into the High Risk Rural Roads Program, described on page 5. HRRR is a data-driven program.]

The Driving Force recommends implementing the above two recommendations that came out of the Traffic Records Assessment, and pursuing efforts to secure additional funding for implementing the recommendations through grants or an increase in fees for traffic violations.

Driving Force also recommends that there be consequences if crash/citation data are not submitted in a timely manner. Timely, consistent, and accurate data are very important to traffic records management. Driving Forces said that "while the vast majority of law enforcement agencies report crash reports in a timely manner, a few entities are very late in submitting their reports. Delayed reporting can hamper efforts to devel-

op plans, adjudicate offenders, and develop countermeasures. Reducing lag time in reporting will allow timely countermeasures to be implemented, and ultimately lead to reduced injuries and fatalities."

By law (KSA 8-1611), any crash that occurs on a public roadway and results in death or injury to any person, or total property damage of \$1,000 or more, must be reported to KDOT within 10 days of investigating the accident. However, this law also allows reporting agencies to delay reporting with the generic statement, "The investigation is still on-going." To speed the process, *The Driving Force recommends that state law be enhanced to give the Secretary of Transportation the option of withholding 5 percent of special city/county highway funds from entities that are late to report traffic crash information.*

Lastly concerning data, the state's Traffic Records Strategic Plan identified a need for developing a *uniform traffic citation form*. The Plan recommends a Uniform Traffic Citation (UTC) be developed with a standard data set to be collected for all traffic citations issued in Kansas. Developing a UTC is the first step toward creating a statewide traffic citations repository so that meaningful statistical analysis can be conducted. This analysis would allow for better-focused officer deployment and enforcement efforts and provide legislators with a clearer picture of statewide driving issues. Driving Force recommends this effort.

For more information about Driving Force recommendations, go to: <http://www.ksdot.org/DrivingForce/default.asp>.

Source:

The Driving Force Recommendations: Recommendations to Decrease Fatalities and Injuries on Kansas Roadways, January 2007. ■

Reviews

... by Collin Koranda

Safe Chain Saw Operation—guidebook

This covers the topic of operator safety in using a chain saw. Some material was taken from the STIHL Chain Saw Workshop and reprinted with permission. The guide also contains general information, chain speed, and safer chain saws. Compiled by Kansas LTAP, 2006.

Good Practices: Incorporating Safety into Resurfacing and Restoration Projects—CD

This report documents the results of a domestic scan of good practices by State DOTs and local agencies to

integrate safety improvements into resurfacing and pavement restoration projects. It is written primarily for Federal, State, and local agency personnel that have a role in establishing direction and priorities within transportation agencies. FHWA, 2006.

Highway Safety and Trees: The Delicate Balance—DVD

The Federal Highway Administration produced this DVD in 2005 to address the issue of the safe placement of trees along highway roadsides. It is intended to initiate dialogue at meetings where policies related to tree planting, removal, or mitigation are established, at public hearings on proposed construction projects that may

include the removal of trees to improve safety, and to encourage cooperation when addressing these issues.

Be Safe, Be Bright, Wear Retro-Reflective Materials at Night—poster

This poster is intended for pedestrians and workers who are going to be near roadways at night. It shows the distances that a driver can see the colors of blue, red, yellow, white. Examples of retro-reflective materials are identified. This poster was prepared by the Federal Highway Administration in 2001 with more information found at: http://safety.fhwa.dot.gov/programs/ped_bike.htm. ■

Calendar

See our Web site for even more calendar listings.
Go to www.kutc.ku.edu and click on "Training Calendar."

... 2007

September 5-6
KDOT Maintenance Expo
in Salina, KS
Call Jaci Vogel, KDOT,
785-296-3576

Fundamentals of Supervision ▲S
Sept 5—Hutchinson
Sept 21—Emporia
Call Sarah at KAC at
785-272-2585

September 6
Basics of Budgeting,
Finance and Reporting
▲S
Wichita, KS
Call Sarah at KAC at
785-272-2585

September 9-12
APWA International
Public Works Congress
and Exposition
San Antonio, TX
Contact: APWA at
Phone: 817-277-7187
Website: www.apwa.net/congress

*Snow and Ice Control Workshop ▲T
Sept 10—Topeka
Sept 11—Hays
Sept 12—Salina
Sept 13—Emporia
Sept 14—Chanute
Contact: Kristin Kelly,
KS LTAP
Phone: 785 864-2594

Coaching and Positive Discipline ▲S
Sept 13—McPherson
Sept 20—Emporia
Call Sarah at KAC at
785-272-2585

*Estimating Materials for Maintenance and Construction Projects: A Short Course for Field Staff
Oct 3—Ottawa
Oct 9—Hays
Oct 10—Hutchinson
Oct 11—Topeka
Contact: Kristin Kelly,
KS LTAP
Phone: 785 864-2594

October 5
14th Annual Bridge Design Workshop
Manhattan, KS
Contact KSU
Continuing Education
(785) 532-5569

October 6-8
League of Kansas Municipalities
Overland Park, KS
785-354-9565

October 23 and 24
MINK County Engineers Meeting
St. Joseph, MO
Contact: MO LTAP
Phone: 573-341-7200
Fax: 573-341-4729

November 6
10th Annual Local Roads Seminar
Hosted by the Missouri/Kansas Chapter-ACPA,
Overland Park, KS.
For more information,
contact Cindy Allen at
913-381-2251

*Fall 2007
Workplace and Job Site Safety ▲T
3 sites

*Fall 2007
Gravel Road Maintenance ▲T
4 sites

*Fall 2007
Project Planning and Management ▲M
2 sites

*Fall 2007
Asset Management and Cost Accounting ▲M
2 sites

*November
Bridge Maintenance Workshop
3 sites

November 18-20
Kansas Association of Counties Conference & Expo
Wichita, KS
Contact: Sarah Meyer,
KAC
Phone: 785-272-2585

*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

December 6, 2007
51st Annual Asphalt Paving Conference
University of Kansas
Union, Lawrence, Kan.
877-404-3777 toll free

MUTCD for Emergency Response Personnel
Jan 10—Topeka
March 20—Garden City
KS TASK Program
1-800-432-8222

... 2008

MUTCD for Technicians
Jan 8—Topeka
March 18—Garden City
May 20—Salina
KS TASK Program
1-800-432-8222

January 9
Geometric Design of Very Low Volume Roads
Topeka, KS
KS TASK Program
1-800-432-8222

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

CDs and DVDs

We offer free copies of non-copyrighted CDs.

- Good Practices: Incorporating Safety into Resurfacing and Restoration Projects—report on CD**
FHWA, 2006. Free copy.
- Highway Safety and Trees: The Delicate Balance—DVD**
FHWA, 2005. Free copy.

Publications

You are free to keep these unless otherwise noted.

- Safe Chain Saw Operation—guidebook**
Kansas LTAP, 2006.
- Be Safe, Be Bright, Wear Retro-Reflective Materials at Night—poster**
FHWA, 2001.
- Guide for Erecting a Mailbox—how-to brochure**
CTRE, 2001.
- The Safety Edge—how-to brochure**
FHWA, 2005.

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 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.

Attention field staff:

Do you need to do some calculations on your job, but math is not your strong suit? Help is on the way. LTAP is offering a course this fall, called Estimating Materials for Maintenance and Construction Projects: A Short Course for Field Staff, that will help you over the learning hump. Norm Bowers will teach this course for LTAP in 4 locations in October. For information about how to register, see page 14.

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*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.

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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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