

KUTC Newsletter

Spring 2004

A Local Technical Assistance Program (LTAP) of The University of Kansas Transportation Center
In cooperation with Kansas Department of Transportation and Federal Highway Administration

An issue on soil and dust and keeping it where it belongs

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Stormwater Construction Permits in Kansas: An Update

... by Lisa Harris

Phase II of the National Pollutant Discharge Elimination System (NPDES) has three components, each with its own permit program. These programs, along with Phase I programs for larger projects, regulate **industrial** stormwater runoff, **municipal** stormwater runoff, and **construction** stormwater runoff. Under Phase II, the construction stormwater runoff program requires a permit application for construction that disturbs an acre or more. Phase II went into effect January 9, 2003.

The Kansas Department of Health and Environment (KDHE) has issued over 1700 construction stormwater permits to date under Phase I and Phase II. Recently, I spoke with KDHE's Alan Brooks about his experiences with the construction stormwater permit program over the last few years.

What conditions must be in place before KDHE terminates a project? Basically, the soil-disturbing phase of the construction project needs to be completed and the area must be re-vegetated. If there is other work to be done on the site-for example interior work on a building-but the soil is stabilized,

KDHE will terminate the permit.

The official permit guidelines say that the contractor must restore 70 percent of the background vegetation over 100 percent of the exposed soil area. Even with that, it's a judgment call about whether the vegetation methods chosen will be effective.



Does KDHE require certain kinds of vegetation for given situations? KDHE doesn't have any specific requirements, and because of the program's

flexibility, interpretations may vary significantly between different parties.

First of all, to terminate a project, we need to see something growing. Scattering grass seed on the ground and calling it done just won't cut it. The permit holder needs to be sure the grass has taken, and it is doing its job of holding the soil in place to ensure compliance.

Grass alone is not appropriate in certain situations. If the contractor removed trees, brush and weeds to work on a slope in a riparian area, for example, they may need to replace that vegetation with a similar mix of plants to stabilize the slope.

Some applicants have had the idea that KDHE requires them to replace grass with
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Construction permit update, *continued from page 1*

trees or weeds with sod. That's not the case. The vegetation needs to be capable of holding the soil in place.

In some cases, gravel would be a good choice for long-term soil stabilization. Is that allowed? Yes, gravel qualifies, when appropriate.

Phase II construction projects for local governments are usually done by contractors. What is the local government's responsibility in complying with the permit? First, the local government is typically the permit holder since the permit must often be obtained before the project is put out for bid. The permit application is typically signed by the city or county engineer, not the consultant or contractor. There are exceptions; for example, when a county does not have its own engineer and contracts with a consultant to act as their county engineer. In such cases, KDHE accepts applications signed by that contract engineer.

KDHE expects the permit holder to choose and implement erosion and sediment control measures which will substantially reduce the amount of sediment leaving the project site, given typical expected weather conditions for the time(s) of year the soil will be disturbed and re-vegetated.

In addition, the local government must visit the site regularly and inspect the erosion control measures for damage and ensure they are immediately repaired.

I understand KDHE will investigate complaints and visit a site. How often have you done that since the permit program took effect? KDHE has conducted 50 or so complaint investigations since January 2002. This doesn't include sites that were investigated by municipalities or other local government entities.

How do you hear about problems with erosion control? KDHE hears about most of the problems from municipal employees in the field. They do this kind of work themselves, they know the right and wrong way to do things, and they know what is a legitimate problem. KDHE also hears from surrounding neighbors, although often their concerns with the site are not construction stormwater related, per se, and need to be referred elsewhere.

What are some examples of problems you have seen? Poor maintenance is a common problem. For example, when sediment fence becomes full of sediment, the contractor will run another

sed-fence on top of the deposit instead of removing the sediment. This type of poor maintenance incites complaints from the public because it doesn't look good.

Sometimes contractors don't adequately protect storm sewer inlets. When this happens, the storm sewer becomes a sediment control device, setting the stage for an expensive clean-out. One solution is to block the inlet. This is OK sometimes, but it may be better to collect sediment along the gutter and allow the runoff to flow around the gutter and into the inlet.

KDHE has observed instances where crews threw a hay bale into a ditch as sediment control. Crews can

Typical steps in the construction permit process

—A consultant is hired to construct a local government facility that will disturb an acre or more of soil. These include sites for new buildings and linear projects, such as sewer lines.

—The consultant goes to KDHE's web page (www.kdhe.state.ks.us) to read and understand the requirements of the permit, and download the NOI, or Notice of Intent [the permit application].

—The consultant prepares the NOI for the local government, along with: 1) a simple site plan showing erosion and sediment controls, 2) a storm water pollution prevention plan, and 3) a topographic map showing the project location. The topographic map shows the site in relation to water features, and it also provides a cross-check for the site's physical location. Occasionally, the location has been incorrectly identified in the cover page of the application.

—As the project's owner, the local government typically reviews the NOI to understand the program and assure the plan makes sense. The local government signs the NOI and submits it to KDHE along with a \$60 permit fee. In many cases, the general contractor may represent the local government as the permit holder.

—The project gets underway and measures identified in the SWPPP are implemented. The local government frequently inspects the site and addresses any problems.

—Once the soil-disturbing phase is done, and new vegetation is growing in such a way to effectively retain the soil, KDHE will accept a signed Notice of Termination and the permit process is complete.

get a bad rap for things like that, but in many cases they just don't know how to set up sediment control measures properly. They need to be given instructions.

Another problem KDHE has observed is when further construction is required on a job, and even though the soil is not supposed to be disturbed, it is. For example, a utility company may drive trucks into areas that have been seeded and mulched, making deep ruts. Despite these problems, contractors need to seed and mulch exposed soils to prevent erosion after establishing the site's final grade even though additional expenses may be incurred if some party unintentionally damages the landscaping.

When new sewer lines are being constructed in a riparian area next to a creek, KDHE has found no allowance made for armoring the exposed stream crossing after construction. Exposed stream crossing may erode rapidly during turbulent flood flows, and the sewer pipe might become exposed.

What advice do you have for local governments and their consultants for ensuring a smooth flowing erosion control process? Consultants can help the process by writing a storm water pollution prevention plan in a simple and straightforward way so that workers on the construction site can read and understand it. It's also a good idea to put all narrative about the project in the plan itself, rather than in the permit cover letter. That way all the pertinent information will be in the foreman's truck.

Make sure the contractor's crew knows how to construct and maintain the erosion control measures specified for the construction site. There are many readily accessible resources for this information. [See page 5 for a list of handbooks, CDs, web sites, and training courses on the subject.]

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Six of the 11 individuals of the first graduating class of the Kansas County Road Scholar Program attended the Spring 2004 Kansas County Highway Association (KCHA) meeting in Garden City and received their certificates in person. From left: **Ron Sitts**, Edwards County; **Dennis Elias**, Rush County; **Sandy Krider**, Labette County; **Charles Arensdorf**, Kingman County; **Larry Dillinger**, Neosho County; **John Weseloh**, Woodson County.

News from the field

... by Lisa Harris

MINK 2004. The annual MINK meeting on county road issues in Missouri, Iowa, Nebraska and Kansas will be held October 26-27 in St. Joseph, MO. These dates are different than those announced at the Spring KCHA meeting, so please take note. Mark your calendar.

NACE officer. Jerry Fowler, Saline County Director of Public Works, has been elected Vice President for the South Central Region of the National Association of County Engineers for 2004-2005. Congratulations!

New KCHA and APWA-Kansas leaders. Kudos to Mike Graf, Ellis County, and Suzanne Loomis, City of Newton for being elected president of their respective organizations—the Kansas County Highway Association

and the Kansas Chapter of the American Public Works Association.

Road Scholar graduates. The Kansas County Road Scholar Program graduated its first class of Level 1 scholars this spring. Eleven individuals completed 45 hours of training to earn their certificates. Six of the graduates are pictured above. The other graduates are:

Dave Aldridge, Saline County; **Randy Blehm**, Meade County; **Dallas McCoy**, Neosho County; **Mark Painter**, Meade County; and **Robert Straight**, Saline County.

This is a terrific achievement not only for these first graduates but for the Kansas County Highway Association which sponsors the program and the dedicated members of its Road Scholar Committee who developed the program.

Congratulations to all! ■

Construction permit update, continued from page 3

Finally, pay attention to coordination on the job site. When you have several contractors and subs—including the main contractor, a clearing-and-grubbing contractor, a landscaping contractor, and in some cases, an erosion control contractor (as in the Kansas City area)—you have a lot of opportunity for miscommunication and timing glitches. The big picture—keeping the soil on the site—can get lost in the details.

Has KDHE seen any positive results from the construction stormwater program? While KDHE has not been able to quantify any improvement in the environment directly attributable to the construction stormwater program, there has been a substantial increase in the number of consultants, contractors and municipalities participating in the program. Like any pollution prevention program, the results depend on the enthusiasm and support of the stakeholder community. By far, most permit holders are eager to comply with the program to protect the local environment in the vicinity of the project.

Overwhelmingly, the quality of the applications, the thoroughness of the erosion control plans and the amount of real-world implementation has steadily improved. KDHE appreciates the community's efforts and looks forward to seeing everyone discover the benefits of this program.

For more information about Phase II construction runoff permits, call Alan Brooks at KDHE at (785) 296-5549 or send an email message to abrooks@kdhe.state.ks.us. ■

Where to learn about erosion control

... by Lisa Harris

Books. Two good sources are *Erosion Control Handbook for Local Roads* (see page 13 of this newsletter) and *KDOT Temporary Erosion-Control Manual* (see page 10). Kansas LTAP also has books for free distribution in its lending library. An example is *Erosion, Sediment and Runoff Control for Roads and Highways*, a six-page brochure by the US EPA.

The National Association of County Engineers publishes a guide entitled *Stormwater Management and Drainage*. You can purchase a copy by calling NACE at (202) 393-5041. The cost is \$7 each for NACE members and \$10 for nonmembers.

CDs. *Erosion Control Handbook for Local Roads* is also available on CD (as well as an internet download). See page 15.

Local experts. Alan Brooks of KDHE would be happy to answer any questions you have about containing sediment and preventing erosion at road work sites. Call Alan at (785) 296-5549.

Resources on the internet.

The EPA's site at <http://cfpub2.epa.gov/npdes/stormwater/cgp.cfm> contains information and links regarding construction permits under the NPDES stormwater program. The links entitled "Factsheet" and "Stormwater Pollution Prevention Plans and other Helpful Information," located near the bottom of the first page of the site, are particularly useful.

Information on the following Forest Service site was forwarded to us by Gary Rosewicz, Assistant County Engineer for Riley County: The US Forest Service has many publications on erosion control and unpaved roads, now available on the internet at www.fs.fed.us/eng/t-d.php. Follow the three steps at that page: You send a message asking for a password, the password is sent to your email address, and then you go back to the web site and enter the password. After that, you're good to go. Once you are in there, look for the Water Roads Interaction Series. To get there, click on "Resource Topics," "Watershed," and the "T&D Publications." That will bring up a long menu of publications, including the Water Roads series. Just scroll down and open up individual publications.

The Missouri Department of Natural Resources has offered courses in erosion control and co-developed a comprehensive manual on erosion at work sites. *Protecting Water Quality: A Construction Site Water Quality Field Guide* can be downloaded at www.dnr.state.mo.us/wpscd/wpcp/wpcp-guide.htm. It's a large document and can be downloaded in sections.

Manufacturers of erosion control products often have their own web sites. We found several product sites by typing "erosion control products" doing a google search (www.google.com).

Workshops. We are not aware of many workshops on this topic offered in our geographic area. Visit the web sites of the American Society of Civil Engineers (asce.org) and the American Public Works Association (apwa.net) for training they offer. ■

Unbelievable but true! Low volume road crashes reduced by 42 percent in Mendocino County, CA. Learn how they did it.

... by Gib Peaslee, Coordinator, National LTAP Association Product Demonstration Showcase Program . . .

Mendocino County lies on the coast of California, about one hundred miles north of San Francisco. Mendocino County Department of Transportation (MCDOT) is responsible for just over one thousand centerline miles of roadway and serves a population of 87,000 people inhabiting an area of 3,510 square miles. By implementing a simple, yet thoughtful program they have achieved a 42 percent reduction in low volume road crashes.

While this figure may appear to be beyond the realm of believability to many safety professionals, let's stretch plausibility even further by mentioning this program has been delivering this benefit for more than 10 years; and the program cost is within every county's reach, including even the most sparsely populated farm-to-market county or township.

Learn how they did it

You and your road safety management staff are invited to experience the entire MCDOT process start to finish at the Mendocino County **Road System Traffic Safety Review (RSTSR) Showcase** in Ukiah, CA, on September 28-29, 2004.

At this Showcase, MCDOT staff will share every detail including all the start-up, roadway selection, field review, and deficiency correction processes as well as their subsequent treatment evaluation, treatment selection methodology and cost-benefit measurement process details.

An integral part of this Showcase experience will be guided visits to previously improved field sites. Each field site will be clearly defined showing the

Want to attend the Showcase but can't get travel funds? Travel scholarships are available for two rural agency teams per state (and maybe more). These scholarships will cover air travel, overnight accommodations and motor coach transportation fees directly related to this Showcase.

Priority will be given to agencies meeting the following criteria:

—Serving populations under 50,000.

—Having extensive low volume road miles or high crash rates on low volume roads.

—Having a restricted travel policy.

For more information on the Travel Stipend Program contact Renee Curtis at the Florida LTAP Center, (352) 392-2371 ext. 233. Showcase registration fees are not included in the Travel Stipend Program.

For information about the Showcase in general, call Lisa Harris at Kansas LTAP, (785) 864-2590, or Gary Rosewicz at Riley County, (785) 537-6330.

previous condition factors and the corrective measure implemented.

Participants, as a group, will review and evaluate prior conditions and the applied corrective action. Upon returning to the Showcase auditorium, each team will share reports and their proposed corrective actions, and we will all discuss the potential solutions.

This Showcase is committed to provide all the information and post-showcase support that agency personnel will need in order to return home and immediately begin implementing an RSTSR program. To meet that commitment, these key additional support items will be included:

—a post-Showcase support group;

—an easy to use sign management system (SMS) software package;

—an asset management software package.

Additionally, the Michigan LTAP will explain how local agencies in Michigan banded together to fund and develop a crash analysis and reporting system that is integrated with their local agency road surface, sign, guardrail, and pavement marking management systems.

A grant resource specialist will be available during the Showcase to discuss potential grant sources such as HES Sign Replacement Programs and others. Each participating agency team will be able to schedule a one-on-one meeting with this specialist.

There is even a travel stipend program for agencies serving 50,000 or less in population.

So there are no excuses; now every agency, large or small, has an opportunity to participate in this learning experience *and* have professional support all through their own RSTSR program implementation process.

You should attend if...

—you are responsible for a large number of low volume roadway miles;

—you are responsible for signs and markings of your roadways;

—you think safety is important;

—you are a public official concerned about roadway safety.

Registration information

The Showcase will convene at the Mendocino College in Ukiah, CA.

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If it *looks* like an asphalt road, and it *feels* like an asphalt road, do you need to stripe it like an asphalt road?

... by Lisa Harris

Dust control products containing oil can make a gravel road look very much like a paved asphalt road. Treated roads will dry to a uniform color and the surface will be hard and smooth. If a road looks like an asphalt road, do you have to stripe it like one?

The answer is no. The *Manual of Uniform Traffic Control Devices* (MUTCD) specifically states that only **paved** roads need to be striped. Section 5A.01 of the MUTCD says that a low volume road shall be classified as paved or unpaved, so if the road in question is classified by your local government as unpaved, you don't need to stripe the road.

What kinds of road surfaces are considered to be "paved?" The U.S. Department of Transportation, in its book *Transportation Expressions*, defines a paved surface as asphalt or concrete. Road stabilizers like oil are temporary measures and are not considered paving methods.

The 2003 MUTCD's Chapter 5E on markings for low volume roads [less than 400 vehicles per day] says this about markings on low volume roads:

Section 5E.02 Centerline Markings [for low volume roads]

Standard: Where centerline markings are installed, no-passing zone markings in conformance with Section 3B.02 shall also be installed.

Guidance: Centerline markings should be used on **paved** low-volume roads where engineering judgment or an engineering study indicates a need for them.

Section 5E.03 Edge Line Markings [for low volume roads]

Support: The purpose of edge line markings is to delineate the left or right edge of the roadway.

Guidance: Edge line markings should be considered for use on **paved** low-volume roads based on engineering judgment or an engineering study.

Option: Edge line markings may be placed on highways with or without centerline markings.

Edge line markings may be placed on **paved** low-volume roads for roadway features such as horizontal curves, narrow bridges, pavement width transitions, curvilinear alignment, and at other locations based on engineering judgment or an engineering study. ■

Are there any environmental regulations for applying chemicals on roads?

... by Lisa Harris

With Phase II NPDES regulations addressing water pollution on a more local scale, the question comes up: Will regulations for road surface runoff be next? And if yes, how would that affect application of de-icing and dust control chemicals?

Alan Brooks, engineer with the Kansas Department of Health and Environment (KDHE), doesn't think we will see these chemicals regulated anytime soon—especially regarding their application on roads. There are existing USDOT regulations about their handling during transport.

"These chemicals in runoff certainly affect water quality, he said, "but there is an over-arching safety issue to consider." In other words, using these chemicals makes roads safer to drive, and that must be taken into consideration when addressing other concerns.

Brooks said that if any new regulations were to be developed, they would likely address safe handling of the chemicals at the work site and effective storage away from water sources.

"When driver safety is at stake, you just can't say: 'No salt,'" Brooks said. "The only advice KDHE offers about using chemicals properly on roadways is to read the manufacturer's guidelines for whatever product you're using, and follow them," he said. ■

Soil stabilizers: What the products' manufacturers don't want you to know!

... by Investigative Reporter
Courtney Hansen

A number of companies are currently marketing soil stabilization products meant to be diluted with water and sprayed on pavement base and subgrade soil. The function and usefulness of these products, though, is not well understood. For this reason, the Center for Transportation Research at the University of Texas at Austin researched some of these products,

In the first set of tests, at the "micro" level, researchers applied the products at a much higher rate than that recommended by the manufacturer, then studied the samples at the particle level. They looked for changes in the makeup of the particles, using the higher application rate to determine the maximum change possible in the soil samples.

In the second, "macro," set of tests, researchers applied the products at the suppliers' recommended rate and at 10 times that rate. The samples

ry or in the field, establish a consistent method of labeling application rate, such as the application mass ratio, or AMR, which is defined as the mass of the product per mass of dry soil.

There are several options for testing the efficacy of the stabilizers. Tests should be completed to establish appropriate application levels for your project, as this may change based on soil type and makeup. You should also establish how much change you expect to see with use of the stabilizers, as a guide for justifying use of the prod-

Supplier claims should be viewed with skepticism until the usefulness of the product can be established under your conditions.... test the products on your soil, and compare their effects to those of your current method.

attempting to identify their key ingredients, functions, and effectiveness.

Calcium-based stabilizers such as lime are usually used to treat soil; however, the newer chemical products, if effectual, can be a useful alternative for use on sulfate-rich soils, which react poorly to lime treatment.

Study procedures

The researchers selected three commercially-available stabilizers, one from each category of commonly available products. The first type of product consists of **ionic stabilizers**, which reportedly work by changing the mineral makeup of the soil.

Enzyme stabilizers, a second type of chemical product, stabilizes by redistributing moisture within the soil. A third type of product, **polymer stabilizers**, coats the surface of the soil particles and causes the soil to bind.

In this study, three reference clays (kaolinite, illinite, and montmorillonite) and five clays native to Texas were used to test the chemical stabilizers. Two kinds of tests were performed.

were also treated with hydrated lime for comparison. The samples were then tested to reveal changes to the engineering qualities of the soil.

In both sets of tests, the researchers found little to no noticeable consistent changes to the soil when compared to untreated soil; in fact, they found that the lime had the greatest, though not remarkable, effect on the samples.

What this means

This project demonstrates the need to conduct tests on these products prior to using them in the field. While these chemical stabilizers may be effective in some situations, supplier claims should be viewed with skepticism until the usefulness of the product can be established under your conditions.

The researchers offer several recommendations for evaluating the non-traditional stabilizers in this study. Obtaining objective data on product performance from suppliers is an important first step. Additionally, before testing stabilizers in a laborato-

ucts. When conducting lab tests, use several identical samples to ensure valid results. For the same reason, you should also prepare and evaluate soil specimens consistently. Finally, if the stabilizing product seems effective in lab tests, a field test may be a useful tool for determining the real-world effectiveness of the product.

Even though the product may prove to be effective immediately after application, additional studies may be needed to establish long-term effectiveness.

As this study suggests, these products cannot be assumed to be effective. Before using them, test the products on your soil, and compare their effects to those of your current method. You may end up saving considerable maintenance time and money.

For more information, contact the Center for Transportation Research Library at (512) 232-3138 or download the report summary at www.utexas.edu/research/ctr/pdf_reports/7_1993_S.pdf. ■

More examples of dust control programs in Kansas

... by Lisa Harris

In our Summer 2003 issue, we described dust control practices of Johnson County. That article generated a lot of interest, and our readers asked for examples of similar programs from other counties. Here are three more:

Douglas County has had a dust control program since 1986. Each spring the County advertises in the local newspaper an enrollment period for residents wishing to purchase a “dust palliative” treatment for the road fronting their property. They use either magnesium chloride or calcium chloride, depending on the bid price.

Having an enrollment period allows for the collective purchase of the product in a large enough quantity to achieve an economy of scale. Typically the cost to the property owner is \$0.75 per linear foot of roadway with an additional \$45.00 administrative fee.

Douglas County has no minimum or maximum limit for the length of road to be treated. Some residents pay for as little as 150 or 200 ft of road treatment. Residents pay in person, in advance, and receive two surveying flags with which to mark the section of road to treat.

Once the one-month enrollment period closes (this year on March 5), public works staff visit each location to determine if it has been marked properly. The quantity of dust palliative to cover the locations is then calculated and a bid process is initiated.

Once the bid is awarded, large tank trucks apply the product to the locations around the county.

One of the challenges of Douglas County’s dust control program is coordinating with the townships in the county. Douglas County is part of



Residents pay for the cost of treatment in front of their homes.

a county-township system, and townships maintain their own roads. Each year the county first asks township trustees if they want to participate in the program. “Most townships do, but there were a few years when one or two did not participate,” said Keith Browning, Douglas County Engineer. Once the road sections to be treated are determined—usually by mid-March—the county sends a map to each township showing the sections that will be treated. The county follows up with a phone call closer to treatment time to tell the townships the date of treatment and remind them that the roads need to be in good shape prior to treatment. “The goal of the program is to not grade the road again for the rest of the dust season,” said Browning. Grading breaks the crust formed by the chemical and significantly reduces its effectiveness.

Townships receive compensation for their participation. They receive one-third of the per-linear-foot rate collected by the county for the road sections treated in their jurisdictions.

In Douglas County roads receive two dust palliative applications—0.3 gallons per square yard in early May and another 0.15-0.2 gallons per square yard about a month later.

“We used to spray just once” said Browning, “but residents told us the dust came back. Two applications are more effective, especially when summers are dry like they have been.”

The program has grown steadily over the years, starting with just five(!) participants in 1986. This year 174 residents are participating, and road sections totalling 20.8 miles will be treated with 134,00 gallons of magnesium chloride.

The county provides information about their dust palliative program on the county’s web site at www.douglas-county.com/Public_Works/pwfaqs_printable.asp.

Coffey County also has an enrollment period for their dust control program. Residents are notified about the program through the official county newspaper. The deadline for application this year was April 30. The deadline is firm; applications submitted after that date are returned.

Eligible homes are within 300 feet of a rock road. In 2004, 32 households participated in the project. A little over three miles of road were treated with 21,333 gallons of magnesium chloride.

The county prepares the roads prior to treatment and a contractor sprays the roads in May and June. The chemical is applied once, at a rate of .5 gallons per square yard to road-sections a minimum of 300 ft. long and a maximum of 700 ft. long. The length of road to be treated is determined by the homeowner. The county charges \$0.75 per foot of treated road, to be paid in advance.

On its application form, Coffey County makes it clear that counties are not required to provide dust control in Kansas and also that “the County will not pay for cleaning cars” [if driven on the road surface before

the chemical has soaked in.]

The county's dust control application describes the properties of magnesium chloride and what to expect on the day it is applied. It says "drivers will be able to see the darkened and moistened area ahead," and that vehicles should drive slowly through those areas for the first several hours after the chemical is applied. The form also informs residents that, due to the large number of dust control strips to be applied, the county will not be able to erect barricades and large warning signs.

The county has been using magnesium chloride since 2000. Prior to 1994 the county used asphalt oil to control dust and then switched to calcium chloride for six years. The county switched to magnesium chloride based on research done by their county engineer, Hub Caspar. He learned that magnesium chloride works better in low humidity and is not as corrosive as calcium chloride. "It's better for the environment and does a better job," he said.

Caspar also noted that it's possible to reduce the amount of magnesium chloride used in treatment by adding good rock to the roads being treated and taking care that the roads are properly maintained.

Coffey County's dust control program application form can be found as a 215K downloadable PDF on the county's web site at: www.coffeycountys.org/service9.html.

Miami County, adjacent to Kansas's booming Johnson County, is developing rapidly, as well. With increased traffic, dust control is a serious issue. Last year the county granted 158 new house permits, and 120 of them were on gravel roads. "This doesn't help matters," said J.R. McMahon, Road Supervisor. "You have a responsibility to help residents." Miami County has two programs using magnesium chloride on roads—a residential dust abatement program and a county dust

stabilization program for roads with over 300 vehicles per day.

Miami County mails a brochure for its residential program in late March to previous customers and other county residents who request information. The enrollment deadline is June 1.

The brochure says the county "understands the seriousness of the [dust] problem and the concerns of area residents," but makes it clear

that dust control is an optional service and could be discontinued in the future, if fiscally necessary (see box above).

County crews treat roads in June with magnesium chloride. Cost is \$1.25 per linear foot with a 300 foot minimum. Residents are billed after their areas are treated.

Miami County treats 120 areas of road a year under this program, and another 20 miles of road under its base stabilization program. Application rate is .5 gallons of magnesium chloride per square yard.

Treated roads are typically bladed twice a year. "We blade them, add

The purpose of the Miami County Dust Abatement Program is not to encourage people to build along gravel roads, but to offset the effect of dust from increases in traffic that have occurred due to population growth.

By financial necessity, the program is designed to have minimum impact on the county's long range plan to upgrade major collector routes.

As revenue sources decrease and service demands increase, budgetary constraints may force the discontinuation of the Dust Control Program in the future.

From Miami County's 2004 Dust Abatement Program brochure.

rock, then add more mag chloride," said McMahon. This treatment slowly improves the quality of the road. "You really see results in about the third year," McMahon said.

The county pays about \$70,000 per year for material for its base stabilization program.

Miami County tried soy oil as an alternative dust control measure, in patches, but they found it crusted over and lost its effectiveness when bladed.

For more information on these programs, contact Keith Browning (784) 832-5293; Hub Caspar (620) 364-2441; or J.R. McMahon (913) 294-4377. ■

Hold off re-evaluating those yield signs

... by Lisa Harris

The National Committee for the Manual on Uniform Traffic Control Devices (MUTCD) has decided to rework the Section 2B.09A on yield signs in the 2003 edition. The previous edition allowed yield signs at intersections with slow approach speeds; the 2003 language is more stringent and requires much more sight distance than before. With the new requirement, local agencies would have to re-evaluate their yield sign locations and may replace many of them with stop signs.

The committee intends to develop less stringent wording. The final language has not been published yet, so, for now, you might want to hold off re-evaluating your yield signs and wait for the new language to be published as revision to the 2003 edition. Take advantage of the time allowed for compliance with the 2003 manual until the new language is available.

You can find the latest information on MUTCD revisions by going to www.mutcd.fhwa.dot.gov.

Thanks to Lee Holmes of KDOT's Bureau of Local Projects for bringing this to our attention. ■

KDOT Korner

Simple, straightforward information on erosion control

If you need some guidance on erosion control, start with this free guide from KDOT.

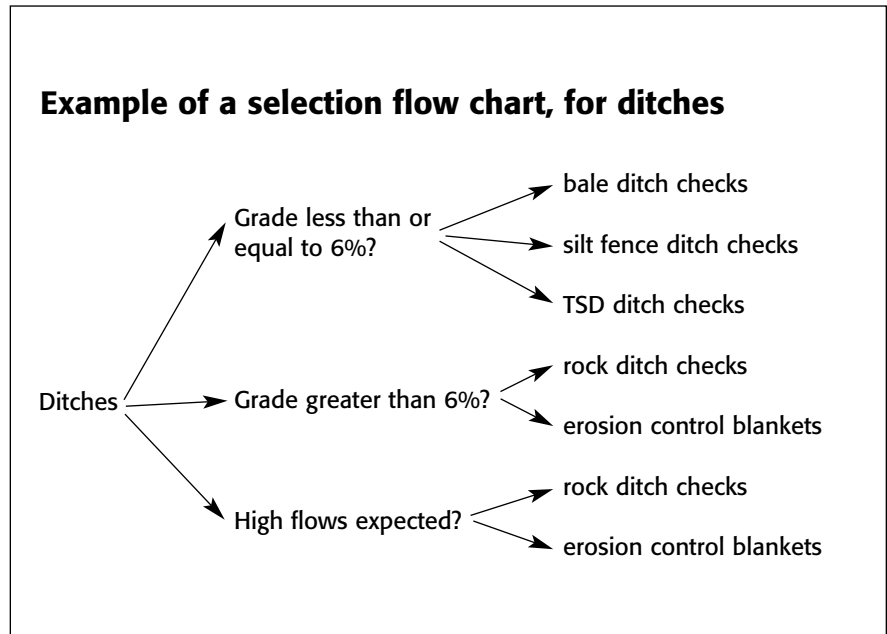
... by Lisa Harris

The *KDOT Temporary Erosion-Control Manual* provides guidance for choosing, installing and maintaining temporary erosion control measures (TECMs). It provides tools needed to implement practical and efficient stormwater pollution prevention plans to comply with federal erosion control requirements.

The manual streamlines the process of selecting appropriate temporary erosion control measures through the use of flowcharts. The user identifies an erosion or sedimentation condition (ditch, slope, and inlet) and then answers site-specific questions along the flowchart paths. When the end of a path is reached, TECM selection is complete. The user is then directed to specific pages in the manual that describe the TECM(s) selected.

Each TECM description contains information on design, placement, material specification, installation, inspection, and maintenance. No design calculations are needed, because all design data is provided in tabular form.

- The manual covers 10 types of temporary erosion control measures:
- bale ditch checks
 - silt-fence ditch checks
 - triangular silt dike ditch checks
 - rock ditch checks
 - bale slope barriers
 - silt-fence slope barriers
 - bale drop-inlet barriers
 - triangular silt dike drop-inlet barriers
 - temporary erosion control blankets, and



Flowcharts like this one from the manual help simplify the decision-making process when choosing a temporary erosion control measure.

—temporary seeding

The manual explains that design objectives for erosion control measures are, preferably 1) keep the soil at its original location; or if that's not possible, 2) keep the soil close to its original location, or lastly, 3) keep the soil on the site.

The manual contains an excellent overview of the National Pollutant Discharge Elimination System (NPDES) regulations and how a storm water pollution prevention plan is a key element in compliance. It also walks the reader through the steps in achieving compliance.

If you have internet access, you may download the manual from the Kansas LTAP web site at:

www.ksltap.kutc.ku.edu. The size of the file is 1.3 MB. We'd be happy to send a printed copy to any Kansas local roads department that does not have internet access. Call Jason Pfister at (785) 864-5658.

The manual was produced as part of a KTRAN project (KU-97-2) by Dr. Bruce McEnroe of the University of Kansas.

Source: *KDOT Temporary Erosion-Control Manual*, Kansas Department of Transportation, December 1997.■

“511” travel information system replaces 585-ROAD hotline

. . . by Barb Blue, ATIS Coordinator

It hasn't taken Kansans long to catch on to a better way to get travel information.

An advanced traveler information phone system simply called 511 was launched in January 2004 to replace the Kansas Road Condition Hotline (1-800-585-ROAD). It was hoped that the new, simpler system would attract 100,000 calls in its first year. That number was topped in just the first few months.

Clearly Kansans have identified this as a valuable and informative service. During stormy weather, Kansas 511 sees huge spikes in call volumes which indicates that people have already started to rely on this service for safety information.



Frequent updates

Dedicated KDOT crews around the state are working to get the very latest information onto 511 through the Kanroad updates. As every Kansan knows, the weather in Kansas can change very quickly. With updates every fifteen minutes, Kansas 511 can be a resource to help keep travelers informed about changing conditions.

What does 511 provide?

The Kansas 511 system provides weather, road condition and construction detour information for the Kansas State Highway System and the Kansas Turnpike. By dialing 511 inside Kansas or 1-866-511-KDOT anywhere in the U.S., travelers can get route-specific information all day,

every day. The call is free from a land-line phone. For most wireless users, the call may be subject to charges for minutes, but no roaming fee should be involved.

585-ROAD discontinued

Now that the Kansas 511 has been established, KDOT has discontinued the 1-800-585-ROAD hotline. In addition, the old 585-ROAD signs are coming down and new Kansas 511 signs are going up. KDOT will also promote Kansas 511 through media spots.

KDOT knows that over the years the 585-ROAD number has been printed on many resource materials. KDOT wants to be certain that everyone is informed of this change and that materials that include the 585-ROAD number are no longer distributed. Should there be any materials produced by any agency other than KDOT (e.g. city or local governments) that include 585-ROAD information, KDOT asks that plans be made to change it to the new Kansas 511 numbers as soon as it is feasible. Again, those numbers are: 511 (inside Kansas) or 1-866-511-KDOT (outside the state).

Questions?

For questions about items/information or how to make the transition, please contact Barb Blue, ATIS Coordinator, at (785) 291-3818 or by e-mail at bblue@ksdot.org.

Thanks for helping KDOT help Kansas transition to a new and improved travel information system! ■

KDOT accepting TE applications

Have you considered applying for federal funding to construct a pedestrian/bicycle path, restore the old railroad depot or maybe create a new look for Main Street? If your answer is yes, you will want to obtain application materials for KDOT's Transportation Enhancement Program for Fiscal Year 2006 & 2007 funded projects.

Participants at the recent transportation enhancement (TE) workshop in Wichita received application materials in the workshop packet. Those who could not attend the workshop can obtain these materials by calling KDOT (see below). Completed applications must be sent to KDOT, postmarked no later than November 8.

For a project application to be eligible for funding, it must be surface transportation-related and qualify in at least one of three major categories: 1) historic; 2) scenic and environmental; or 3) pedestrian/bicycle facilities. This federally-funded reimbursement program requires the application sponsorship of a local governmental entity. Additionally, the local governmental entity must commit to 100 percent of the preliminary engineering costs and a minimum of 20 percent of the total project construction and construction engineering costs.

The TE program has provided many local Kansas governmental entities with the opportunity to significantly enhance their local communities. For more information, call Kaye Jordan-Caine at KDOT at (785) 296-7940.

Adapted from a Transportation Enhancement Workshop announcement for 2006-2007 projects, KDOT, 2004. ■

A Leg Up

Truncated domes trip up local governments

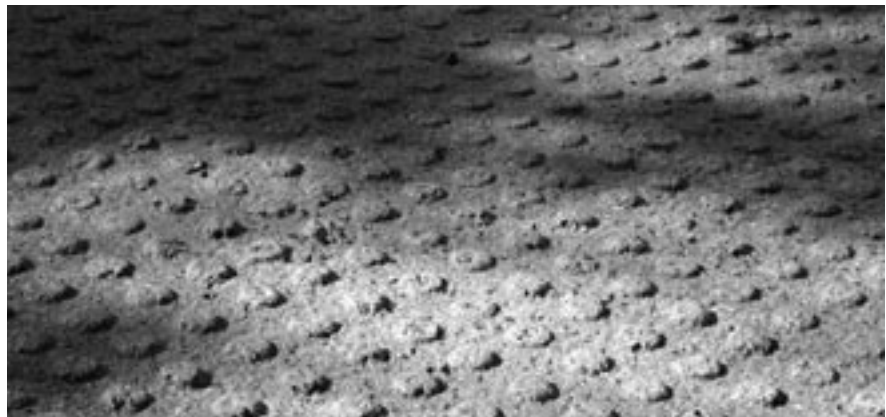
... by Courtney Hansen.

In July 2001, a federal law affecting local agencies that had been suspended repeatedly for further study was quietly reinstated. This law mandates the use of “truncated domes”—raised bumps approximately one inch wide and a quarter of an inch tall, on sidewalk ramps. The lifting of the last suspension went unnoticed in Overland Park, Kansas, and other cities until just this year.

The law, part of the Americans with Disabilities Act (ADA), was first enacted over a decade ago. It required that ramps be built with bumpy surfaces so that visually impaired residents could more easily detect when they are approaching a street. After three years, though, the law was suspended amid debate about its necessity and effectiveness, and to allow for more research. The domes pose a challenge for local governments because no one is sure how they will hold up under snow and ice removal, or how to most efficiently design and implement them. Even advocates for persons with vision disabilities hold mixed opinions about the effectiveness of the domes in ensuring safety.

Despite these concerns, the law stayed on the books and the last of a series of suspensions lapsed three years ago. The law requires, along with numerous other changes, that all sidewalk ramps constructed or altered since July 2001 include “detectable warning surfaces,” or areas covered with domes.

The reinstatement of the law was hardly a big news event; amid pages upon pages of public works regulations, the change went overlooked by



These truncated domes on a stamped sidewalk ramp are showing wear and tear.

many cities in Kansas, including Overland Park.

Overland Park officials said that they first found out about the reinstatement of the law in late 2002 after being asked to comment about ADA regulations. More than 1,100 curb ramps have been built in Overland Park since the law was reinstated in 2001, and updating all of those to comply with the law could cost the city millions. Each ramp must be inspected for a number of geometric criteria and retrofitted with a mat embedded with domes, adhered with adhesive. Ramps with incorrect design geometry will have to be rebuilt.

In addition to the money local governments must spend on fixing noncompliant projects, the law raises the cost of current and future projects already bid without them; installing the domes requires more time and material than simple paving.

Besides retrofitting with mats, domes can be built into ramps using a concrete stamp or by laying special bricks with domes formed in them.

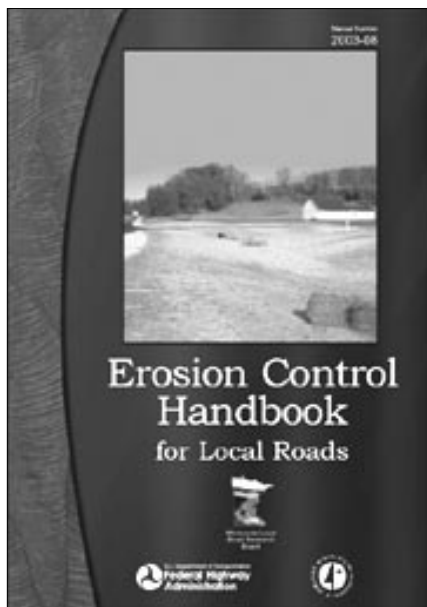
New sidewalk projects in

Overland Park’s public right-of-way must meet design requirements posted at the city’s web site: www.opkansas.org/_Bus/Engineering_Services/Design/ramps.cfm. Shane Creech, P.E., is the city’s contact for these projects. Creech said the city specifies bricks with domes for use on ramps, because they believe bricks will last longer than concrete or mats. The city strongly encourages contractors to contact the city about ramp design, so they can help them meet the regulations. If the ramp angle or design is incorrect, the city will require the contractor to tear out the ramp and start over, said Creech. “We certainly want to avoid that,” he said.

For more information on truncated domes in Overland Park, call Shane Creech at (913) 895-6245 about new construction and Mike Ross about retrofitting at (913) 895-6038.

Source: “Disabilities law requirement catches cities off guard,” by Brad Cooper, *Kansas City Star*, March 14, 2004. ■

This erosion control handbook targets local roads



... by Courtney Hansen

Both during and after road construction, on projects large and small, soil can erode from the job site if not adequately checked. Extra sediment and dust can lead to unhealthy growing conditions for local vegetation and aquatic life, it also can result in additional and costly roadway maintenance. To help local agencies address this issue, the Minnesota Local Road Research Board, the Federal Highway Administration, and the Minnesota Department of Transportation have published a guide called *Erosion Control Handbook for Local Roads*.

Local agencies are required to develop erosion control plans and abide by the National Pollutant Discharge Elimination System permit requirements for large-scale projects. The publication provides a chapter covering this subject, describing the permit requirements and guiding agencies through the process of applying for the permits. The next chapter describes an erosion control plan and includes a list of topics to consider in

developing a plan, a checklist, and sample plans.

The bulk of the guide contains descriptions of both temporary and permanent erosion and sediment control options. This is also where the book is most helpful, providing charts that help agencies select the best measure or device for the situation.

Three chapters are devoted to individual erosion control options. Each item is given several pages, which describe key aspects of the device's design and function and instruct readers on proper installation and maintenance. Most of the descriptions also include graphs or illustrations.

The final pages of the publication include a few case studies, informa-

tion on gravel road maintenance, and a small collection of sample plans for erosion control.

While the guide addresses the requirements for Phase II construction permits, it is not just for agencies that need to comply with Phase II. Nearly every road department does work that can cause erosion; the erosion control measures described here can help those agencies keep soil on the job site as well.

The guide is available as a 2.42 MB download from the Minnesota Local Road Research Board at: www.lrrb.gen.mn.us/PDF/200308.pdf. It is also available to Kansas road departments without internet access, in hard copy or CD, from the Kansas LTAP. See page 15. ■

Mendocino safety showcase, *continued from page 5*

The registration fee is \$125 per person for the two-day Showcase. This includes lunch during the Showcase, a buffet dinner Tuesday night—perfect for renewing or establishing relationships—a complete manual containing illustrations and text of all presentations, and

accommodations for this Showcase. Area location maps for Ukiah, CA, will be provided upon registration.

We tip our hats to Stephen H. Ford, RCE, with MCDOT for developing and setting this program in motion and to Eugene Calvert, P.E., former MCDOT Director, for guiding the development of the TRB award-winning paper calling national attention to this program.

A heartfelt thank-you is due the MCDOT management team and the Mendocino County Board of Supervisors for their willingness to share their valuable public safety program with the rest of the nation.

MCDOT sample final report tables. Registration fees are not refundable but substitutions are welcome. AAA Travel is available, (800) 881-6707 ext. 2234, to assist with airline and hotel

To register, or for more details, visit www.pdshowcase.org or call Chris Ritch at the Florida LTAP Center, (352) 392-2371 ext. 223, email: chris@ce.ufl.edu, or Daiana Mathis at the California LTAP Center, (510) 231-5672, daianam@berkeley.edu.

Remember, the creators of this Showcase would like to see local agencies attend from every state—including Kansas! Don't miss out. ■

Reviews

... by Lisa Harris

Work Area Protection Guide: Street and Utility Repairs

77 pages, Illinois DOT, December 2003. Contains illustrations of lane closures on various types of streets in various circumstances (at curves, straight run, etc.), describes flagging procedures, and shows examples of signs that are used in a temporary work zone. A good basic guide to proper work zone set-up in conformance with the MUTCD.

Accessible Sidewalks and Street Crossings

FHWA, 2003. This piece is both a poster and a brochure that discusses

sidewalk users, laws affecting the design of sidewalks (ADA and more), and design considerations for making sidewalks accessible. The poster shows several intersecting roads and the different kinds of pedestrian facilities you might find along these roads. An excellent and fairly detailed introduction to the subject.

Dust Palliative Selection and Application Guide

19 pages, US Forest Service, 1999. We have been offering this publication for a few years now, but it seems a good time to remind readers about it in this newsletter on dust and sediment control. The guide tells how to select an appropriate dust suppression

method for your needs and it outlines pros and cons for typical suppressants. The guide covers water-absorbing products, organic petroleum products, organic non-petroleum products, electrochemical products, synthetic polymer products, clay additives, and just plain water. Every road department that does dust control should have this book in its library.

Fog Seal

16 pages, FHWA, 2003. Part of a pavement preservation series, this slim laminated book provides a checklist of steps in effective fog-sealing, from site inspection to clean-up. A handy guide to keep in a truck's glove box. ■

Calendar

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

... 2004

*August 1-4
National LTAP
Conference
Bernalillo, NM

August 19
2004 Kansas Snow
Rodeo
in Manhattan, KS
Contact: Rod Meredith
Phone 785-539-2981

**August 18
Right-of-Way
Cooperation for
Consistency and
Simplicity
Click, Listen & Learn

Aug 29 - Sept 1
Access Management
National Conference
Kansas City, MO
Contact: Chris Huffman
Phone 785-296-3618

*September 7-8
KDOT Snow Expo
in Salina, KS

September 12-15
APWA International
Public Works
Conference and
Exposition
Atlanta, GA
Contact: APWA
Phone 816-472-6100

September 13-14
Stormwater
Management for Phase
II Communities
Atlanta, GA
Contact: ASCE
Phone 800-548-2723

September 16-17
Leadership
Development for the
Engineer
Colorado Springs, CO
Contact: ASCE
Phone: 703-295-6300

October 2-4
League of Kansas
Municipalities Annual
Meeting
in Overland Park
Phone 785-354-9565

▲ Service Excellence in
Local Governments
Lawrence—9/28
Salina—10/5
Hutchinson—10/9
Contact: KAC
Phone 785-272-3585

▲ Snow and Ice
Control
Hutchinson—Oct 11
Hays—Oct 12
Salina—Oct 13
Chanute—Oct 14
Topeka—Oct 15

October 12
APWA Kansas Chapter
Fall Meeting
in Lawrence, KS
Call Tamara Bennett
785-832-3133

▲ *Gravel Road
Maintenance
5 sessions in KS from
Oct 20-Nov 4

*October 26-27
MINK County
Engineers Meeting
St. Joseph, MO
Contact Kansas LTAP

▲ *Workplace and
Equipment Safety
Oct 26—Great Bend
Oct 27—Salina
Oct 28—Topeka
Nov 10—El Dorado

▲ *Fall 2004
Risk Management for
Crews
2 locations in KS

*November 3
Kansas LTAP
Pre-Conference on
Asphalt
in Lawrence, KS

*November 4
Kansas Asphalt
Conference
in Lawrence, KS

November 23
(tentatively)
Fall KCHA Meeting
in Overland Park, KS
Call Mike Graf
785-628-9455

*For information on calendar items indicated with an * or to suggest a topic for an LTAP workshop, contact: Rose Lichtenberg, LTAP Training Coordinator, 785/864-2594, rosemary@ku.edu.

**To arrange for a special APWA/LTAP "Click Listen and Learn" workshop at your own location, call Ashley Gann at (816) 472-6100 ext. 3511. Cost is \$150 per site.

▲ = meets Kansas County Road Scholar Program requirements

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

Poster

Free to road departments in Kansas.

- Accessible Sidewalks and Street Crossings**
A safety poster for your crew or the general public.
Produced by FHWA, 2001.

Publications

You are free to keep these unless otherwise noted.

- Work Area Protection Guide: Street and Utility Repairs**
77 pages, produced by Illinois DOT, 2003.
- Dust Palliative Selection and Application Guide**
19 pages, US Forest Service, 1999.
- Fog Seal**
Laminated booklet, FHWA, 2003.
- **Erosion Control Handbook for Local Roads**
Minnesota Local Road Research Board, Minnesota DOT,
and FHWA, 2003. See article on page 13.
***Hard copies are limited and available only to Kansas road
departments without internet access.*
- Erosion Control Handbook for Local Roads—on CD**

Equipment

Available free—for loan to local highway agencies. Call us at
(785) 864-5658 to arrange time period needed for loan.
There could be a waiting list for these items.

- Jamar Technologies, Inc. (DB-400) Turning Movement Counter Board**
A basic model for recording turning movements at intersec-
tions. The board is is lightweight and comes with its own
case.
- Jamar Technologies, Inc. (TDC-8) Turning Movement Counter Board**
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.

Order Form

_____		_____
Name		Phone number
_____		_____
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Agency		

Street Address		

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- send materials indicated
- address correction
- add to newsletter mail list

Our lending library catalog of videotapes, CDs, and publications is available on-line, in a searchable format.

Visit www.ksltap.kutc.ku.edu.

*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.

Kansas LTAP

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.kutc.ku.edu

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, towns, tribal governments, road districts and others with transportation responsibilities. Editorial decisions are made by Kansas LTAP. 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 statutes dealing with the technical professions.

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