Risk alert: Don’t let roadside meth waste catch you holding the bag

Roadway employees who keep our roadsides clean and beautiful—particularly mowers and ditch cleaners—face an unexpected danger as they perform their jobs: exposure to waste from methamphetamine (“meth”) labs.

For every pound of meth manufactured, five to six pounds of toxic waste is produced. Proper “safe” disposal of the waste is expensive and controlled. The people running meth labs often dump toxic waste or lab equipment without regard for the hazards it causes people, property, and the environment.

This stuff can look just like any other trash commonly dumped at the side of the road, but waste from meth labs may contain or be surrounded by potentially hazardous chemicals. Use the information below to recognize and avoid the dangers caused by contact with the by-products of meth production.

What is meth?
Meth is an extremely dangerous and highly addictive stimulant drug that releases high levels of the neurotransmitter dopamine in its users. It is highly addictive and extremely hard to stop using. After just one use, 98 percent of users become addicted. Meth use can cause psychotic behavior and brain damage, and chronic use can bring about violent behavior, anxiety, confusion, insomnia, auditory hallucinations, mood disturbances, delusions and paranoia.

If you see evidence of meth activity, call 1-800-KS CRIME

Continued on page 2
Meth lab waste on roadsides, continued from page 1

ephedrine—which is found in many over-the-counter cold medicines, although Kansas is now regulating sales of these medicines.

Meth can be made just about anywhere. Labs have been found in houses, apartments, barns, outbuildings, garages, hotel and motel rooms, storage facilities, vacant buildings, and vehicles. A makeshift lab can fit in a suitcase.

The potential dangers of meth exposure & how to avoid them

The chemicals used to make meth are toxic. The fumes from meth waste can cause itching and burn the eyes, throat, and lungs if inhaled. Physical contact with the chemicals or piles of waste can burn the skin and cause very severe respiratory damage.

Protect yourself by knowing what to avoid.

Smell: Know what to sniff for. Meth lab trash might emit strong chemical odors. It may smell like cat urine, ether, ammonia, nail polish remover (acetone), or similar chemicals.

Sight: Look at the waste before picking it up. The following list includes items that are used to make meth. When found clustered together, these items indicate that a pile of trash could be waste from a meth lab.

—Anhydrous ammonia tanks, often with brass tank valves that are bluish-green
—Loose pills that look like common cold pills or diet pills, or packaging from cold pills that contain ephedrine or pseudo-ephedrine
—Empty or full containers that are labeled as Muriatic acid, Freon, or Starter fluid
—Alcohol or methanol (“Heet” brand gasoline additive or rubbing alcohol)
—Camp stove fuel (“Coleman” fuel) or lantern fuel cans
—Red-stained coffee filters, bed sheets, pillow cases, or old clothing
—Iodine crystals (grayish-black and shiny)
—Containers that held sodium hydroxide, sulfuric and hydrochloric acid (“Red Devil” lye), or other drain cleaners
—Red phosphorus (in match books or sticks)
—Ether (engine starting fluid)
—Cans of solvents such as Acetone, Benzene, Toluene, Methyl Ethyl Ketone or Xylene
—Disassembled lithium batteries
—Clear glass containers that look like they’re from a laboratory, with rubber or plastic hosing
—Containers from table salt or rock salt

What to do if you think you’ve found a meth lab dump site

Don’t investigate, because prodding the material could further endanger you or others in the area. Immediately contact local police or the sheriff’s department to notify them of your suspicions. Call 911 if you think you’ve been exposed to toxic chemicals.

What to do if you or a co-worker is exposed (after calling 911)

Inhalation Exposure: Move to fresh air. Give artificial respiration if your colleague is not breathing. If breathing difficulty occurs, give oxygen and seek medical attention.

Contact with clothing or skin: Remove contaminated clothing. Flush exposed skin and hair with water for at least 15 minutes. Thoroughly wash with soap and water when possible. Meth can be absorbed through the...
skin. Seek medical attention if needed.  

Contact with eyes: Flush exposed eyes with water or saline solution for at least 15 minutes. Remove contact lenses if possible. Seek immediate medical attention.

Rural activities
The Kansas Methamphetamine Prevention Project (KMPP) works with rural organizations to combat the meth problem in Kansas, with assistance from K-State’s Research and Extension service. KMPP has promoted the use of a tamper tag—a small, wire device that attaches to an anhydrous ammonia tank to alert a farmer that the tank has been tampered with. About 74,000 tamper tags have been distributed to communities in Kansas. The KMPP is also promoting locks for anhydrous ammonia tanks.

Training in Kansas
KMPP staff and partners have developed training for various public and private organizations and have geared the content to the needs of the audience. Project staff and partners have trained nearly 13,500 people to date. Audience members have included social workers, prevention and treatment specialists, foster parents, state corrections employees, home visitors, high school students, factory employees, utility workers, law enforcement officers, and business leaders.

Length of training sessions vary. They can range from 45 minutes to two days long. Project staff are available to travel to the training location. Contact KMPP’s Assistant Coordinator if you're interested in training.

KMPP held its first state conference on September 22-23, 2003 in Topeka. Another statewide summit was recently held this year in Wichita.

The Kansas Methamphetamine Prevention Project is a project of Shawnee Regional Prevention and Recovery Services, Inc and is a not-for-profit agency.

Why has Kansas been a meth “hot spot?”

Meth-related activity is proliferating nationwide, but there are some reasons Kansas has been particularly vulnerable. First, its interstate system and proximity to rail/hub infrastructure makes this part of the country attractive for meth and meth-product importation and distribution. Second, after Oklahoma passed a law requiring ephedrine products—the main ingredient in meth—to be removed from the shelves and sold only by licensed pharmacists, numerous counties near the Oklahoma border reported a significant increase in Oklahoma residents coming to Kansas to purchase or steal the products. The latter situation was addressed by the Border County Initiative, an awareness program created two years ago. The 17 counties participating in this initiative are Morton, Stevens, Seward, Meade, Clark, Comanche, Barber, Harper, Sumner, Sedgwick, Cowley, Chautauqua, Montgomery, Labette, Cherokee, Crawford, and Allen. Funding for the initiative is provided by Consumer Healthcare Products Association.

Certain counties in Kansas are part of the nationally-designated Midwest High Intensity Drug Trafficking Area (HIDTA), along with specific counties in Iowa, Missouri, Nebraska and South Dakota. HIDTA is a consortium of law enforcement, prosecution, forensic laboratory and other professionals who are combining resources and expertise to combat the increase in meth trafficking and production.

In 2005 the Kansas Legislature took an important step to address the problem head-on. They passed legislation (KSA 65-001 through 65-015) that follows the model of the laws passed in Oklahoma, placing such ephedrine products behind the counter, limiting the amount of purchase, requiring a photo ID at the time of purchase, and mandating that pharmacies keep a log of purchases. Since then, the number of meth lab seizures and dumps in Kansas has declined by more than half. Kansas still has meth labs and dumps sites, and road workers still need to be cautious when encountering waste on our roadsides, but with this legislation, our state has one less (big) reason to be attractive to meth lab operators.

For more information about meth in Kansas, contact:
Kansas Methamphetamine Prevention Project (KMPP)
2209 SW 29th Street
Topeka, KS  66611
Phone (785) 266-8666

This article was adapted from an article originally published in the Tech Transfer Newsletter, Spring 2006, University of California Berkeley, Institute of Transportation Studies, from material published by the Montana LTAP Center.

Other sources for this article:
http://www.ksmethpreventionproject.org
http://kci.org/meth_info/meth_in_kansas.htm
www.methfreemt.org.
KDOT takes proactive approach to EPA’s increasing scrutiny of erosion control at road work sites

Kentucky is known for great bourbon and horse races, and... erosion control

The State of Kentucky has developed an easy-to-use guide to best practices for erosion and sediment control at road construction sites.

The Kentucky Erosion Prevention and Sediment Control Field Guide stands out in two ways: 1) the number of illustrations and photographs it uses to explain the subject, and 2) its easy-to-read style. The guide has something for everyone—from the worker at the job site setting up erosion control devices to the administrator back at the office making sure all regulations are being followed. It includes an appendix with relevant regulations.

The guide’s review board included representatives from cities and counties.

Best of all, this guide is available free (as a PDF) from our Web site: www.ksltap.kutc.ku.edu.

Check out Overland Park’s erosion control Web page

Overland Park has an excellent Web page on erosion control with information and links of use to any transportation agency in Kansas. It has a summary of the City’s erosion and sediment control requirements and is intended for use by developers, project designers, plan reviewers, contractors, and inspectors to aid in development of effective erosion and sediment control plans. Overland Park ordinances and forms are a click away. Go to: http://opkansas.org/_Bus/Engineering_Services/erosion_resources.cfm.
This and that...

Road Scholar News: It’s a Big Deal for Cities

The Kansas County Road Scholar Program will shorten its name to the Kansas Road Scholar Program in Spring 2007. That’s because the program will be extended to participants from cities. The KS Chapter of APWA and the KS County Road Scholar Committee are meeting this winter to finalize plans.

Watch your mailbox for the new Road Scholar brochure and application forms. The Committee plans to recognize the first graduates from cities in Spring 2008. For more information, contact Rose Lichtenberg at (785) 864-2594.

Update from the Kansas Collaborative Transportation Breakthrough Team: 1R construction project notification and sharing

Each county in Kansas should have received maps from their KDOT Area Engineer showing projects in the district or throughout the state. [If you haven’t been contacted by your area engineer, call Lisa Harris at (785) 864-2590.]

Examine the maps of 2007 projects and see if there are any projects in or near your county. Contact your KDOT Area Engineer if you have any questions about the upcoming projects. [Counties: If there are projects in your area, be sure to pass along project information to the cities in your county.]

Having advance notice of projects provides local governments the opportunity to take advantage of KDOT contractors being in the area. These contractors may be able to perform work that is not normally done by local contractors, or at least provide for more competition if the project is bid. A good example is that in many rural areas of the state there is no permanent hot mix plant or adequate number of contractors to competitively bid paving, sealing and certain types of road projects. Typically hot mix plants are located in the area only when there is a large paving project—usually this is a contract with KDOT. Local governments would like to have advance notice of projects so they can budget for possible street work or buy hot mix or other materials from the contractor. Cooperation in this area has significant potential to reduce cost of local projects, but it is up to the counties and cities to take the initiative and figure out how best to benefit from this opportunity.

It is the county’s and city’s responsibility to determine if a KDOT project might provide an opportunity to save costs. The local government should contact the contractor if they have specific questions on hot mix plant locations, timing, equipment to be on site, etc. Remember, bidding statutes are not superseded, and it is up to the local governments to determine the most appropriate way to proceed.

For more information, contact Joel Wright at the Kansas Collaborative, (913) 492-4797.

Harris elected president of National LTAP Association

Lisa Harris, editor of the KUTC Newsletter and the Kansas Trans Reporter, was elected president of the National LTAP Association (NLTPA) in August 2006. NLTPA’s members include the 58 LTAP Centers across the country. The Association represents LTAP to FHWA and partner organizations, and helps the Centers build their capacity to best serve their local agency customers. Harris will be speaking at the NACE board meeting in Milwaukee in April and will chair the National LTAP conference in August 2007.

The National LTAP Association has partnerships with other organizations, including NACE and APWA. This spring, LTAP Centers will meet with APWA Chapter representatives at a national meeting to discuss ways centers and chapters can work more closely together to achieve their goals. NLTPA will also be assisting NACE in updating some of its action guides.

Kansas welcomes new public works leaders

Douglas County Public Works Director Keith Browning was elected President of the Kansas County Highway Association and Russ Tomevi, City of Winfield Public Works Director, was elected President of the Kansas APWA Chapter at the fall meetings of these organizations. Joel Riggs, President of the Peridian Group, Gardner, KS, was elected president of the Kansas City Metro Chapter. Congrats!

New manual on dirt and gravel road maintenance

The Pennsylvania DOT, with funding assistance from the EPA, has published Environmentally Sensitive Maintenance for Dirt and Gravel Roads. This guide gives the users a “tool box” of environmentally sensitive maintenance tools or practices, recognizing that not one size fits all when it comes to road maintenance. Download the manual from Kansas LTAP at: www.ksltap.kutc.ku.edu, or see page 15.
Bio fuels and public works

In 2005 the Michigan Soybean Promotion Committee awarded grants of around $10,000 to eight County Road Commissions (CRCs) in Michigan to give the counties an opportunity to determine if using biodiesel fuel is a good alternative for them. The grants covered the difference in purchase cost between diesel fuel and biodiesel for one year. They used a B20 blend which requires no engine modification and could be stored in existing storage tanks without any problems or added expense.

Chippewa County CRC’s Dirk Heckman, Engineer/Manager, had heard stories of the fuel clogging fuel lines and filters, but has been “pleasantly surprised with the fuel so far. We have seen no difference in the wear on our vehicles or experienced any problems with our storage facility.”

The initial move to biodiesel use has been smooth and trouble free for all of the counties. Because the counties have been using the biodiesel for only a few months, many said it was too early to make comparisons between the two fuels. There are other factors in cost effectiveness besides the cost of the fuel, such as the possibility of fewer scheduled oil changes due to the cleaner burning fuel, and an increase in fuel mileage.

Calhoun County Fleet Maintenance Supervisor Robert Volkmer has noticed that the fuel systems on their vehicles appear to be cleaner after running the biodiesel. Dan Parshall, Equipment Supervisor for Eaton County, said they evaluate oil samples after every oil change and will be comparing the biodiesel to straight diesel to see if in fact it is a cleaner fuel. Being able to go longer between oil changes could be a substantial savings in maintenance costs. Chuck Walker from Jackson County repeated comments made by the other counties that “no changes in performance were noted by drivers” although some did mention that the exhaust smell was different.

Biodiesel has been used year-round by other Michigan agencies and industries for 15 years. Many of the counties plan to use the fuel all winter as well. The biodiesel supplier for northernmost Chippewa CRC will be providing a special modified blend for their winter use.

The Ionia CRC has experienced the same positive reaction to biodiesel. All county diesel vehicles that fill at their pump use the biodiesel fuel and if they need to fill up before getting back to the garage, they can fill with regular diesel. With no gadgets to add to existing equipment, the trial program was a “no-brainer.”

by Kelly Heavey

Some say we’re in the midst of an environmental crisis. The ice caps are melting, the ozone is thinning, and summers are hotter than ever. As people are searching for ways to turn this trend around, one option may be available at the pump: biodiesel fuel.

What is biodiesel?
Pure biodiesel is created from natural oils, such as soybean oil, refined to eliminate environmentally harmful elements such as glycerin. It has been in production since 1998, and it is the only alternative fuel to comply with the 1990 Clean Air Act Amendments.

Typical biodiesel fuel is a mixture of pure biodiesel mixed with regular diesel fuel. A number is tacked on the end of the letter “B” to signify the percentage of pure biodiesel in the blend. So B20 is 20 percent biodiesel, for example. All diesel engines can use B20 or a lower.

Biodiesel fuel reduces harmful carbon dioxide emissions by 78 percent, compared to regular diesel. This is because the natural elements of the fuel’s exhaust are easily absorbed by plants growing in the environment.

The majority of biodiesel fuel is produced in the Midwest, and Kansas is a big player. Consumers across the country used 75 million gallons of biodiesel fuel in 2005—tripled from the year before. One gallon costs about the same as normal diesel fuel.

Who’s driving biodiesel fuel?
There is strong national support for biodiesel use. In October 2005, President Bush said at the Advancing Renewable Energy conference in St. Louis, Mo. that, “It makes a lot of sense for us to continue to invest in biodiesel technologies to make the production process even more efficient.” He went on to say he supports the biodiesel tax incentive signed in 2004 because it helps our economy and our national security. The Department of Energy and the U.S. Department of Agriculture have recently pledged more than $20 million to aid research and development.
Biodiesel fuel in Kansas
There are 157 biodiesel producers in Kansas, according to the National Biodiesel Board Web site, and there are 74 biodiesel fuel pumps.

Kansas law requires state-owned diesel vehicles in the state to fuel up on biodiesel when practical. KSA 75-3744a states: “Where available, and as long as the price is no greater than 10 cents more per gallon than the price of diesel fuel, a 2 percent or higher blend of biodiesel must be purchased for use in state-owned diesel powered vehicles and equipment.” In April of last year, Kathleen Sebelius initiated the Kansas Qualified Biodiesel Fuel Producer Incentive Fund, which gives $.30 per gallon sold to biodiesel fuel producers in Kansas.

Across the border, Iowa law requires state agencies to give soy-based hydraulic fluid, greases and industrial lubricants a purchasing preference. See a pattern? This trend is worth paying attention to. It benefits farmers, the economy, and the environment.

“[Biodiesel production] been growing steadily for the past five years,” Kansas Soybean Association Administrator Kenlon Johannes said. “Kansas farmers worked hard to get it going.”

“We have the advantage of the support of our state transportation agency,” Johannes said. “KDOT led the way for other state agencies to use biodiesel blends.”

If you’d like to learn more, visit www.biodiesel.org. For information specifically about biodiesel fuel in Kansas, visit www.kansassoybeans.com. A handy online biodiesel pump locator can be found at: http://afdcmap2.nrel.gov/locator/FindPane.asp

Sources:
www.biodiesel.org
www.kansassoybeans.com
www.eere.energy.gov/afdc/
Michigan LTAP Newsletter: The Bridge

Report from MINK 2006

... by Gary Rosewicz, Assistant County Engineer, Riley County, and Local Roads Coordinator for Kansas

The MINK 2006 FHWA/Local Road Conference took place in St. Joseph, MO, October 18-19. Over 60 participants attended, representing counties from the “MINK” states (Missouri, Iowa, Nebraska and Kansas). DOTs from the four states, and the FHWA were in attendance.

Clark Martin from FHWA Headquarters in Washington, DC, opened the conference with a presentation on the local funding levels provided in the SAFETEA-LU Highway program. This was followed by an update from DOT representatives from the MINK MINK presentations included impacts of development on road systems.

states on the status of the State Comprehensive Highway Safety Plans. These plans are mandated by SAFETEA-LU with the goal of reducing fatality accidents. They are of great importance to counties due to the vast majority of fatality accidents occurring on rural roads.

The afternoon continued with presentations on the impacts of rural development on road systems and when to pave a gravel road. It was apparent from the discussions that modern traffic patterns, subdivisions, and factory farms are creating issues common to all four states. Dust and maintenance of non-hard-surfaced roads were the prevailing topics.

Doug Daugherty and Mark Morrison followed with KDOT’s approach to avoiding fines from the EPA involving jobsite erosion control.

Thursday morning’s program began with reports from the individual State DOTs on the High Risk Rural Road Program and the Safe Routes to Schools Program. It was interesting to note the differences in requirements and methods of implementation being utilized for these programs in just our four-state region.

The final session featured round-table discussions dealing with subjects such as access management in rural areas and bridge rating requirements.

MINK 2007 has been scheduled for October, 2007 once again in St. Joseph, MO. I strongly encourage any and all Kansas County Highway Association members to take advantage of the information and opportunities this one-of-a-kind conference offers.

I would also like to commend Lisa Harris, Kansas LTAP, for her continued involvement and support of the MINK Conferences.
The document itself
The current draft of the agreement is five pages long with several attachments at the end. Contents include:
—An opening section with the purpose of the agreement, definitions, and a list of what the county agrees to do, as well as what KDOT agrees to do;
—A page for signatures;
—Attachment I, Part One, which identifies the state highway routes in the county.
—Attachment I, Part Two, which is a log for county workers to list intersections and interchanges (and which diagram to use with them).
—Attachment II, a list of structures that are outside the line of maintenance but fall under the provisions of this agreement.
—Several diagrams of intersections and interchanges. Eighteen (18) generic diagrams have been developed for “typical” locations but other site-specific diagrams may developed and added for locations where the “typical” sketches do not apply.

The agreement must be signed by the board of county commissioners, as well as a county highway official and the KDOT district engineer, so you will need to include the agreement in training sessions for county maintenance workers.

Benefits for all
Although the agreement is voluntary, KDOT and KCHA hope counties will see the benefit of signing it. Don Drickey, District 2 Engineer, says the agreement should eliminate confusion.

“Now, when a new guy takes over in the county, he can look at the agreement and see which roadways the county takes care of,” says Drickey. “He won’t have those moments of panic.”

According to Drickey, very little will actually change. “It’s just formalizing what we’ve been doing for years,” he says.

KDOT has received endorsements for the agreement’s boilerplate internally and from the KCHA Board of Directors and the KAC Governing Board. With the agreement now complete, Drickey is getting the process started with some of the counties in District 2. “We’re looking forward to seeing how it works,” said Seitz.

For more information on the county-wide maintenance agreement, contact Ron Seitz at (785) 296-3861.

Source:
In almost every occupation, sharing information is not only important, but can take place in many different ways—from a group chatting in the break room to a formal conference or meeting. These groups, whether they intend to or not, form a “community of practice.”

Technology has allowed communities of practice—or CoPs—to go electronic, and online communities are sprouting around the country, hosted by a variety of organizations. The Federal Highway Administration hosts a wide variety of transportation-related CoPs, and many are useful to local agencies.

According to FHWA, CoPs averaged 85,000 visits per month by July 2005, with 25 communities supporting over 250 topics. Many of these CoPs had local agency participants.

**Why are CoPs useful?**

“We’re getting people with knowledge and expertise in a position to share what they know,” said FHWA’s Chief Knowledge Officer Mike Burk. CoPs provide an opportunity for people with questions to get answers from experts on the topic.

Use of FHWA-supported CoPs varies, depending on how “hot” each topic is at the time. The (external) Asset Management community, a partnership with AASHTO, is a good example. Burk explained that when changes were occurring in asset management several years ago, the CoP was visited heavily. “Now it’s quieted down,” Burk said. “But they all have their place and day.”

**CoPs and local agencies**

Most of FHWA’s CoPs have a mix of users and who bring their own perspectives, ranging from public road agencies to the private sector to FHWA professional staff. This mix of individuals can be helpful when discussing complex topics, Burk said. Another benefit: It’s an effective way for FHWA to hear from transportation departments involved in road projects.

“We don’t actually build the roads, so we want to share knowledge with all of our partners that do those jobs,” Burk said.

Often existing networks for local agencies are based on traditional methods, like professional association conferences, peer exchanges, and meetings such as APWA roundtables.

However, in the case of conferences, Burk points out there is a lot of time between those gatherings, so there is value in making the kinds of information shared at conferences more immediately accessible,” Burk said. On-line CoPs can help with that. “Everyone can benefit,” he said.

Local agencies are part of the target audience of the CoPs, said Burk. He said local agencies use the CoP
Quick and sturdy domes

Mats can be glued to existing concrete ramps; stand up to snow blowers and plows

Topeka installation demo

Topeka is the first city in Kansas to use a USA Safety Domes surface mat. The company installed a demo by the downtown Ramada Inn. Bernie Crosby, city bridge engineer for Topeka Public Works, said the installation of USA Safety Domes did not result in a significant amount of savings, but the product was easier to install than laying bricks with domes. Crosby said other aspects were pleasing as well.

“They are less susceptible to damages than most,” he said. “It’s a good fit when retrofitting an existing ramp because [public works] wouldn’t have to do the demolition work to lay the bricks.”

Crosby said he hasn’t heard any complaints about the mat’s condition since installation. USA Safety Domes will not become a new standard for truncated domes in Topeka, but it will be an option.

“We won’t require any particular model,” Crosby said, “the domes just have to conform to ADA requirements.”

Bottom line

With many options available to meet the ADA requirements for truncated domes, two main points to consider are the cost of installation and the durability of the domes.

USA Safety Domes’ method of laying down a surface mat cuts the construction cost and hassle, and is also less susceptible to damage by snow plows and daily tread over time. Sounds like a good option.

USA Safety Domes surface mats cost $26 per sq ft and wet-set mounts cost $29 per sq ft. For more information on USA Safety Domes, visit www.usasafetydomes.com.

Sources:


Spreading out

“Sales of USA Safety Domes are gradually spreading out,” Coehn said. The products have additional demos in Colorado and Iowa.
called “Re: NEPA” to keep in touch about federal environmental and environmental justice requirements and stay informed about what others are doing. “This helps people learn faster about a particular problem or project,” Burk said. See other CoPs of interest to local agencies at right. Recently, LTAP staff in Washington, DC, have been talking with Burk about adding more CoPs on FHWA programs affecting local governments.

More about “Re: NEPA”
The Re: NEPA CoP was established in July 2000 to support the open exchange of knowledge, information, and ideas about the National Environmental Policy Act, related environmental issues, and the transportation decision-making process.

FHWA reports that the Re: NEPA community saved users from 30 minutes to 40 hours worth of work on a given issue, and overall the community resulted in an estimated $6 million per year worth of benefits. ¹

“The issues involved in NEPA touch so many projects, and they are very operational—part of the overall process to get projects built and opened,” Burk said. “Right now the focus on many of the environmental issues is streamlining—the ways we can accelerate the processes involved at lowered costs. The CoP allows people to share ideas about these issues.”

Getting involved with CoPs
To access the FHWA Knowledge communities, go to http://knowledge.fhwa.dot.gov/cops/FHWAKnowExt.nsf/pages/index.html. Mike Burk can be reached at (202) 366-8035 or Mike.Burk@dot.gov.

¹ This figure was calculated as follows: 1200 employees x 2 hr/week (working on a problem) x 50 weeks x $50/hour.

Selected FHWA “Communities of Practice” of interest to local governments

To access the CoPs, go to http://knowledge.fhwa.dot.gov/cops/FHWAKnowExt.nsf/pages/index.html. We’ve printed some of the knowledge communities most relevant to local agencies here.

AASHTO Transportation Asset Management Today—In partnership with AASHTO, academia, and key states, this CoP serves to accelerate adoption and innovation of asset management practices.

Highway Community Exchange—This CoP provides open exchange of information and knowledge about a variety of issues that are important to the transportation community, including work zone safety and finance.

Highways for Life Stakeholder Community—The Highways for Life stakeholder community will focus on questions and answers about the new HfL program [promoting road safety audits/assessments] as well as related technologies and practices.

“It All Adds Up to Cleaner Air” Exchange—A partnership between FHWA and EPA to share practices and increase utilization of clean air social marketing strategies and tools.

Manual on Uniform Traffic Control Devices (MUTCD)—The MUTCD online community supports ongoing collaboration with partners on MUTCD-related issues.

National Transportation Operations Coalition—The NTOC, a national operations alliance, sponsors online forums on operations and ITS.

Performance Measurement Exchange—This community builds on TRB Performance Measurement Committee activities with an ongoing forum for the broader highway community on key Performance Measurement issues.

Re: NEPA—The most active of FHWA communities, Re: NEPA is an open exchange of knowledge, information, and ideas concerning the NEPA, related environmental issues, and transportation decision-making.

Right of Way Exchange—The Right of Way Exchange is a mechanism for ongoing collaboration and outreach to customers and partners on right of way topics.

Rumble Strips—FHWA’s Office of Safety’s rumble strip website is a prototype of how members of an electronic community of practice can share information, resolve technical issues, and publish results.

Roadside Hardware—The Roadside Hardware community focuses on sharing best practices, professional community and road user resources, and contains an interactive “ask-the-expert” area.

Other listservs of interest to Kansas road and bridge departments:

APWA’s InfoNow Communities. http://www.apwa.net/infoNOW/
Kansas LTAP. http://www2.ku.edu/cgiwrap/kutc/ltap.listserv.php
Salt storage: A primer

To make the purchase of road salt as economical as possible and to ensure a consistent supply, road departments buy salt in bulk and store it for use throughout the entire winter season. This article will provide basic tips for proper salt storage, and information on an economical salt storage structure.

How much salt?
First, is it really necessary to buy and store a whole season's worth of salt? Why not use more of a “just in time” strategy? The answer is yes—you need to buy ahead. When winter hits, demand for salt increases nationwide, and the supply often cannot meet the demand. If you run out of salt, and your suppliers run out, you will be compromising the safety of your roads.

Your salt purchase records from previous years are a good place to start for estimating salt usage. Be sure to account for any significant additions in lane-miles in the past year, such as new roads for new subdivisions.

Table 1 lists the approximate amount of salt required for a winter season, depending on the number of storms and length of (2-lane) road to cover.

Where?
When determining the proper location for salt storage facilities, the Salt Institute recommends to think: S-A-L-T-E-D. Here’s what they mean: Safety: A safe environment must be maintained for all workers as well as the general public. Visibility for the truckers must also be taken into consideration when they are pulling out of the storage facilities. Also, proper precautions should be taken so that children cannot easily gain access onto the site.

Accessibility: Trucks must not only be able to reach the facility in poor weather, but must also be able to maneuver around front-end loaders that are loading salt onto the trucks.

Legality: Local zoning as well as local, state, and federal environmental regulations must be followed. Tidiness: The salt storage facility owners should try to make their environment blend with the surrounding areas, and maintain a clean work environment.

Economics: The location of the facility should not require trucks to have to drive long distances just to reload with salt. Also, the better protected the salt is, the less likely it is to be lost to precipitation. Drainage: Pads should have a 1/4” slope from the center and the drainage should go away from the stockpile. Salt storage pads should not be placed near any water sources, whether natural or wells. To improve drainage, it may be necessary to install ditches, pipes, or tiles.

The proper thickness of the pad depends on the condition of the sub-grade and the weight of the salt that is to be supported.

How much space?
When calculating storage space requirements, use the figure 80 pounds per cubic foot or 2160 pounds per cubic yard. Thus, a ton of salt would require 25 cubic feet of storage space. Some space will be lost due to the slope of the pile, called the angle of repose, which is dependent upon the height of the pile (see Table 2). The Salt Storage Handbook has tables listing storage space needed for conical and windrowed salt piles of various dimensions. See sources at the end of this article.

Table 1. Tons of salt needed per season: 2-lane hwy on bare pavement; short tons based on 4 applications per storm per 2-lane mile

<table>
<thead>
<tr>
<th>Number of storms</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
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<td>2400</td>
<td>2800</td>
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<tr>
<td>6</td>
<td>600</td>
<td>1200</td>
<td>1800</td>
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<td>2400</td>
<td>3200</td>
<td>4000</td>
<td>4800</td>
<td>5600</td>
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<td>4000</td>
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<td>2800</td>
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<td>8000</td>
<td>10000</td>
<td>12000</td>
<td>14000</td>
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Table 2. Typical tonnage of lost storage to angle of repose

<table>
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<tr>
<th>Height of pile (ft)</th>
<th>Width of pile (ft)</th>
<th>Deduct this (tons)</th>
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<tr>
<td>8</td>
<td>12</td>
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<td>12</td>
<td>54.9</td>
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<td>15</td>
<td>12</td>
<td>85.8</td>
</tr>
<tr>
<td>20</td>
<td>12</td>
<td>152.6</td>
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</table>

H x H x W x 0.0318 = short tons lost due to angle of repose
Watch the wind
For storage facilities open on just one end, the storage pad should be configured so that the working face of the salt stockpile is downwind of the prevailing wind direction. For example, if the prevailing wind direction is from the northwest, the pad should be configured so that the working face is at the southeast end of the stockpile. In addition, the working face must be consistent with the pad slope and prevailing wind direction. For the example just cited, the down-gradient end would be to the southeast.

Storage structures that are open on both ends should be oriented sideways to the wind.

Economical storage
For the past eight years, Douglas County has been using canvas snow domes to protect their salt piles from weather conditions. Mike Perkins, public works operations division manager, found the units online, and based the purchase on cost savings. A wooden structure could cost five times as much as the canvas option, with other permanent structures costing even more. The County places the canvas structure on a concrete pad about 90' x 130' with about a 1' asphalt base.

We asked Perkins about the durability of the canvas structures, especially given Kansas winds. He said that in the eight years of owning the first storage unit, the only damage sustained is a small hole in the canvas accidentally caused by county workers, and the hole has not expanded more than the original puncture size.

During the Spring of 2006, the area experienced a microburst that caused millions of dollars in damages to the roofing at the University of Kansas, but the only damage sustained by the canvas snow domes was that a couple of flaps were pulled out, which were quickly reattached to the wood frame. The only challenge Perkins cites with the canvas structures is that arched shape of the structure can create clearance problems along the edges.

A wealth of information on salt and deicing can be found at APWA's Winter Maintenance Subcommittee Web page at http://www.apwa.net/About/TechSvcs/Transportation/Winter-Maint/?mode=links

Douglas County has several canvas salt shelters like this one.

In the end, Douglas County has found this system to be a good, economical choice—excellent for storing salt (or equipment, for that matter) as long as there is minimal concern for security.

The Kansas DOT uses structures similar to these to store salt and sand at remote sites. KDOT’s units are designed using pre-cast interlocking concrete blocks—5’ x 5’ x 2.5’—manufactured with waste concrete. The blocks are placed on a concrete footing and are stacked four blocks high. A second row of blocks is then stacked two blocks high adjacent to the first, to prevent bulging of the walls when the bunker is loaded with materials.

When blocks are not available or the cost for transporting them makes them more expensive, KDOT will use cast-in-place concrete walls or timber to create the bunker.

KDOT’s bunkers are covered with a steel truss and tarp purchased from www.coverall.net.

KDOT uses these bunkers as part of a strategy to make winter maintenance more efficient. “We will locate these units at the end of our longer winter maintenance routes,” said Jaci Vogel, assistant bureau chief of construction and maintenance. “That way our trucks can reload at the remote site and treat roads on the way back.”

For more information on salt storage facilities, download the Salt Storage Handbook, referenced below.

Sources cited:
The Salt Storage Handbook:

Ground Water & Source Water Protection: Structural & Non-Structural Controls for Effective Management of Salt Storage Piles.
http://www.saltinstitute.org/pubstat/wolf-betram.html
How to Keep Beavers From Plugging Culverts. The rapid flow of water through culverts and the noise of running water make beavers want to build dams. But beavers can create havoc when they dam culverts. This report identifies options to prevent these problems. USDA Forest Service, 2005. 30 pages.

Endangered Species Act “Build Smart.” This CD set provides an interactive explanation of the key elements of the Endangered Species Act (ESA) as it relates to highway construction activities. Disk 1 provides an introduction to the ESA, compliance to the ESA and a review of the independent duties an agency has under the ESA. Disk 2 addresses constructing to meet the requirements of the ESA, provides two case histories and provides additional resources for field personnel. Includes narration, video clips, and animations to demonstrate concepts. FHWA/Federal Lands, 2004.

Highway Safety and Trees: The Delicate Balance. This DVD offers footage and sound advice about roadway design—finding a balance of good engineering adjustment, particularly when trees come into the equation. The DVD explores the issue of a safe placement of trees along roadsides, stressing that the design of highway projects should be a cooperative effort involving the highway agency, concerned communities, organizations, and individual citizens. Produced by USDOT/FHWA.

Safe Chain Saw Operation. Covers basic safety procedures when using a chain saw, such as OSHA regulations for safety equipment to wear when operating a chain saw, do’s and don’ts for using and sharpening a chain saw, considerations for purchasing a chain saw, tips for avoiding kickback, and guidelines for safely limbing a tree. Compiled by Kansas LTAP, 2006. 10 pages.

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Colorado DOT, 2004. (8 minutes)
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Ice Age: Meth Across America
(60 minutes)
Check one: □ VHS □ CD

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❑ Highway Safety and Trees: The Delicate Balance (DVD)
  USDA Forest Service, 2005.

❑ Safe Chainsaw Operation (booklet)
  Kansas LTAP, 2006.

❑ Endangered Species Act Build Smart (CD)

❑ How to Keep Beavers From Plugging Culverts (booklet)
  USDA Forest Service, 2005.

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❑ Turning Movement Counter Board TDC-8, Jamar Technologies, Inc.
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