

# MISSOURI-LTAP

Missouri Local Technical Assistance Program

Located at Missouri University of Science and Technology

## in this Issue

- Driving in Snow & Ice
- Missouri LTAP's Progress
- Advisory Committee & Ambassador Meeting Update
- County & Public Works Connection
- Hard Hat Area: Snow Plow Safety
- MoDOT Connection
- Safety Engineering
- Reduce Winter Driving Speed

## on the Horizon

- WORK ZONE SAFETY CONFERENCE**  
February 17, 2010  
Cincinnati, OH
- 2010 TEAM CONFERENCE**  
March 17-19, 2010  
Branson, MO
- LIFESAVERS CONFERENCE**  
April 10-13, 2010  
Philadelphia, PA
- APWA'S 2010 NORTH AMERICAN SNOW CONFERENCE**  
April 18-21, 2010  
Omaha, NE
- 2010 ANNUAL NACE CONFERENCE**  
April 25-29, 2010  
Ft. Worth, TX
- 2010 MISSOURI CONCRETE CONFERENCE**  
May 4-5, 2010  
Rolla, MO

## Driving in Snow & Ice



The best advice for driving in bad winter weather is not to drive at all, if you can avoid it. Don't go out until the snow plows and sanding trucks have had a chance to do their work, and allow yourself extra time to reach your destination. If you must drive in snowy conditions, make sure your car is prepared, and that you know how to handle road conditions. It's helpful to practice winter driving techniques in a snowy, open parking lot, so you're familiar with how your car handles. Consult your owner's manual for tips specific to your vehicle.

### DRIVING SAFELY ON ICY ROADS

1. Decrease your speed and leave yourself plenty of room to stop. You should allow at least three times more space than usual between you and the car in front of you.
2. Brake gently to avoid skidding. If your wheels start to lock up, ease off the brake.
3. Turn on your lights to increase your visibility to other motorists.
4. Keep your lights and windshield clean.
5. Use low gears to keep traction, especially on hills.
6. Don't use cruise control or overdrive on icy roads.
7. Be especially careful on bridges, overpasses and infrequently traveled roads, which will freeze first. Even at temperatures above freezing, if the conditions are wet, you might encounter ice in shady areas or on exposed roadways like bridges.
8. Don't pass snow plows and sanding trucks.
9. The drivers have limited visibility, and you're likely to find the road in front of them worse than the road behind.
10. Don't assume your vehicle can handle all conditions. Even four-wheel and front-wheel drive vehicles can encounter trouble on winter roads.



### IF YOUR REAR WHEELS SKID...

1. Take your foot off the accelerator.
2. Steer in the direction you want the front wheels to go. If your rear wheels are sliding left, steer left. If they're sliding right, steer right. If your rear wheels start sliding the other way as you recover, ease the steering wheel toward that side. You might have to steer left and right a few times to get your vehicle completely under control.
3. If you have standard brakes, pump them gently.
4. If you have anti-lock brakes (ABS), do not pump the brakes. Apply steady pressure to the brakes. You will feel the brakes pulse — this is normal.

### IF YOUR FRONT WHEELS SKID...

1. Take your foot off the gas and shift to neutral, but don't try to steer immediately.
2. As the wheels skid sideways, they will slow the vehicle and traction will return. As it does, steer in the direction you want to go. Then put the transmission in "drive" or release the clutch, and accelerate gently.

### IF YOU GET STUCK...

1. Do not spin your wheels. This will only dig you in deeper.
2. Turn your wheels from side to side a few times to push snow out of the way.
3. Use a light touch on the gas, to ease your car out.
4. Use a shovel to clear snow away from the wheels and the underside of the car.
5. Pour sand, kitty litter, gravel or salt in the path of the wheels, to help get traction.
6. Try rocking the vehicle. (Check your owner's manual first — it can damage the transmission on some vehicles.) Shift from forward to reverse, and back again. Each time you're in gear, give a light touch on the gas until the vehicle gets going.

Resource: [www.weather.com](http://www.weather.com)

## LETTER *from the director*

### CONTACT INFO

#### Address

Missouri LTAP  
710 University Drive, Suite 121  
Rolla, MO 65409

**Phone** 1 (866) MO-ROADS

**Fax** 1 (573) 341-7245

**Email** moltap@mst.edu

**Web** www.moltap.org

### MISSOURI LTAP STAFF

**Heath Pickerill**

*Director*

**Kristi Barr**

*Program Coordinator*

**Dan Ratermann**

*Training and Outreach Coordinator*

**Doreen Harkins**

*Administrative Assistant*

**Coty Nichols**

*Student Assistant*

### PUBLICATION INFO

#### Printing

Missouri University of Science and  
Technology  
Printing Services

### THE FINE PRINT

*Missouri LTAP Quarterly* is published by the Missouri LTAP office located on the campus of Missouri University of Science and Technology. The opinions, findings and recommendations expressed in this newsletter are not necessarily those of Missouri S&T, MoDOT, or the Federal Highway Administration.



### ABOUT LTAP

LTAP is composed of a national network of centers — one in every state, Puerto Rico and regional centers serving tribal governments. The LTAP centers enable local counties, parishes, townships, cities and towns to improve their roads and bridges by supplying them with:

- a variety of training programs
- an information clearinghouse
- new and existing technology updates
- personalized technical assistance
- newsletters.

Through these core services, LTAP centers provide access to training and information that may not have otherwise been accessible. Centers are able to provide local road departments with:

- work force development services
- resources to enhance safety and security
- solutions to environmental, congestion, capacity and other issues
- technical publications
- training videos and materials

Hello from the Missouri LTAP office located at Missouri University of Science and Technology (Missouri S&T). Well, we did it! My staff and I set a goal of holding at least 100 training classes in 2009, and I'm happy to report that we ended the year with 110 classes. That is a significant increase over the 61 that was held in 2008, and we trained over 2,500 attendees. I want to thank my staff for all of their hard work. I also want to thank all of the agencies who sent employees again this past year for making the trainings so successful. We look forward to maintaining the number of classes in 2010. We will be working hard to reach more people by maximizing the attendance at our classes this year.



The Missouri "Show-Me" Road Scholar Program continued to grow in 2009. We are excited to have our first Road Scholar graduates from the City of Republic. They will be recognized in early 2010 for their accomplishment. We want to thank all of our partnering organizations for their continued involvement to ensure the continued growth and success of the program. The Road Scholar partnership committee decided to award Carhartt coats to the first 100 graduates, so don't miss out on this opportunity. Sign up today or register your employees and take an active role in your personal and professional growth or that of your employees.

I am happy to report that Missouri LTAP again had a strong presence at a number of conferences across the state this past year and served on a number of committees in order to serve and reach as many local agencies as possible. We met with our Advisory Committee in March and again in November to update them on our activities and gather their input on our planned programs. We also met with our MoDOT ambassadors in December to discuss how Missouri LTAP can best serve the local agencies in each district. We discussed ideas for future trainings and other services that we can provide. Please see the articles on the recent Advisory Committee meeting and Ambassadors' meeting.

We are excited to announce the development of our equipment loan program that we are deploying this year. It will make equipment, such as a retroreflectometer, portable speed radar sign and traffic counters available to local agencies. Watch for details on this new program in upcoming newsletters. We will of course continue to focus on providing training and resources to local agencies around the state in 2010. I want to thank everyone for their support of MO LTAP, and we look forward to another busy and productive year.

Best wishes,

Heath Pickerill  
Director, Missouri LTAP

### Missouri LTAP *Ambassadors*

**Darby Logan**, District 1 MoDOT

**Ronald Watts**, District 2 MoDOT

**Mike Baxter**, District 3 MoDOT

**Jeffrey Cremer**, District 4 MoDOT

**Dion Knipp**, District 5 MoDOT

**Doug Canady**, District 6 MoDOT

**Eric Kellstadt**, District 7 MoDOT

**Andrew Seiler**, District 8 MoDOT

**Rick Pilcher**, District 9 MoDOT

**Jay Lancaster**, District 10 MoDOT

### Missouri LTAP *Advisory Committee*

**Larry Benz**, Director, Cole County Public Works

**Donnie Brown**, Highway Engineer, New Madrid County

**Phil Broyles**, Assistant Director, City of Springfield  
Public Works

**Mara Campbell**, Organizational Results Director, MoDOT

**Richard Cavender**, Executive Director, MRPC

**Tony DeLong**, County Council Coordinator, UM Extension

**Ken Foster**, FHWA Missouri Division

**Jim Dickson**, Special Projects Coordinator, MoDOT

**Larry Frevert**, Vice President, HDR, Inc.

**Mike Geisel**, Director, City of Chesterfield Public Works

**Doug Hermes**, Statewide Planning Coordinator, MACOG

**Robert Holthaus**, Loss Prevention Coordinator, MAC

**Debbie Lehmann**, Assistant Bridge Engineer, FHWA

**Bonnie McCord**, Commissioner, Vernon County

**John P. Miller**, Traffic Safety Engineer, MoDOT

**Greg Sager**, Director of Public Works, Platte County

**John Schaefer, Jr.**, MoDOT Safety Division

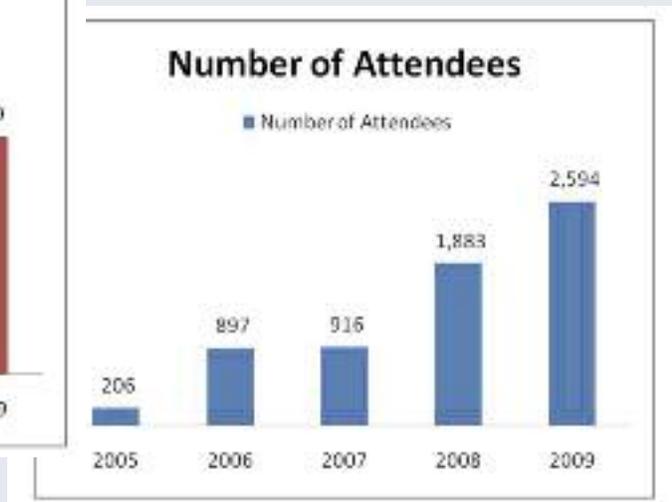
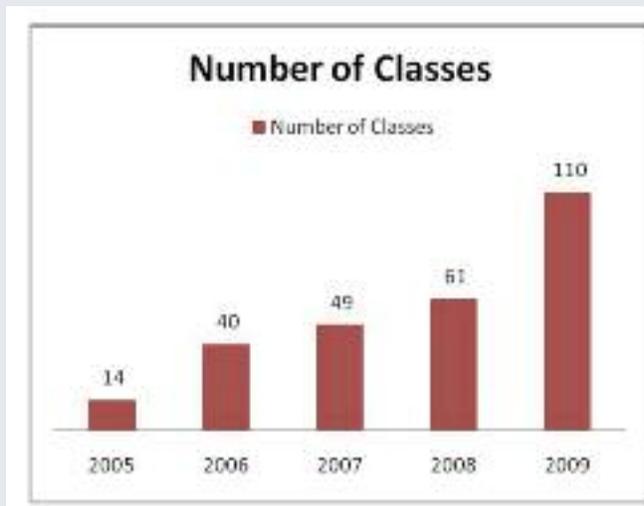
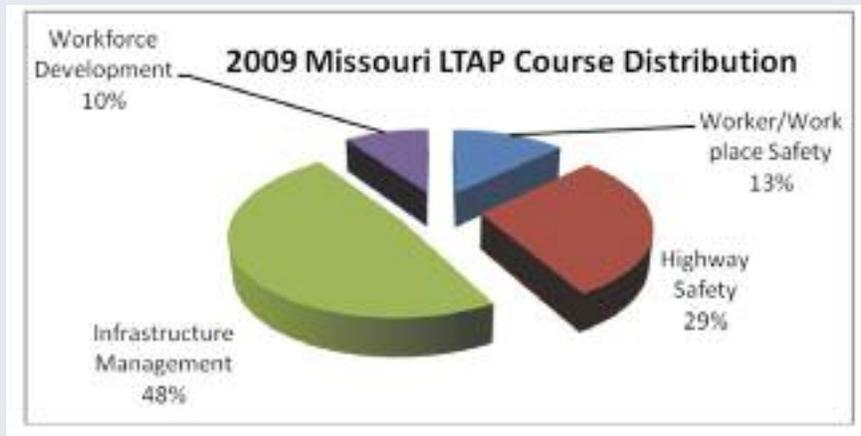
**Skip Wilson**, District Bridge Inspector, MoDOT



# Missouri LTAP's Progress

One of the primary focuses of Missouri LTAP is to provide low-cost training to our customers. In 2009, Missouri LTAP sponsored and/or co-sponsored 110 training sessions, covering 31 topics. The classes were reported to the FHWA in four different categories. The pie chart below illustrates course distribution. Infrastructure management was the main focus area for training and was followed by highway safety.

There were 2,594 attendees at the 110 classes supported by Missouri LTAP in 2009, for a total of 8,828 contact hours of training. As illustrated in the bar graphs below, the increase in attendance reassures us that we are moving in the right direction. Our goal is to maintain the current number of classes in 2010, and we plan to do that by maximizing class attendance, pursuing new partnering efforts and exploring the most efficient ways to deliver training.



# Advisory Committee Meeting Update



The Missouri LTAP team met with the Advisory Committee on November 12, 2009 on the campus of Missouri University of Science and Technology. The following attendees were present: Heath Pickerill, MO LTAP; Kristi Barr, MO LTAP; Dan Ratterman, MO LTAP; Doreen Harkins, MO LTAP; Jim Dickson, MoDOT; Skip Wilson, MoDOT; Richard Cavender, Meramec Regional Planning Commission; Larry Benz, Cole County Public Works; Phil Broyles, City of Springfield Public Works; Bob Holthaus, Missouri Association of Counties; Bonnie McCord, Presiding Commissioner, Vernon County; Tony DeLong, University of Missouri Extension; Larry Frevert, APWA Past President; Ken Foster, FHWA; John P. Miller, MoDOT and John Schaefer, Jr., MoDOT. The meeting was held to update the committee members on the MO LTAP program and budget, as well as gather their input.

Heath Pickerill, MO LTAP Director, opened the meeting by giving an overview of the current activities of MO LTAP and noting the conferences that the LTAP staff had attended throughout 2009. He also referenced the meeting minutes from the previous Advisory Committee meeting held March 10, 2009. He pointed out that the 2010 Work Plan was currently being updated and reformatted to reflect the change from the previous six tasks to the new four focus areas, safety, infrastructure management, workforce development and organizational excellence. The group then discussed a number of important topics being addressed by the MO LTAP Center, which includes the following:

- Discussed the growth of the Missouri "Show-Me" Road Scholar Program, which currently has 130 participants representing 25 agencies;
- reviewed the 2009 training calendar and courses that were held throughout the year;
- reviewed the 2009 MO LTAP budget and current spending and the proposed 2010 budget;
- discussed MO LTAP and MoDOT continuing to work closely in providing training by sharing resources and curriculum whenever possible;
- discussed developing a Safety Circuit Rider in Missouri, who could travel throughout the state meeting with local agencies to develop and promote safer local roads, as part of the MO LTAP staff;
- discussed the advisory committee membership to ensure that there is good representation in a variety of organizations and municipalities from across the state and ensure active participation from all members.

The meeting concluded with closing comments from each committee member. This allowed each member the opportunity to make final suggestions and offer input to the MO LTAP team. The next Advisory Committee meeting will be held in early March. If you have any questions or would like to request more detailed information on the topics covered during the meeting, please contact Kristi Barr, Program Coordinator, at (573) 341-7200 or [kristib@mst.edu](mailto:kristib@mst.edu).



# Ambassadors Meeting Update

The MO LTAP team met with the MoDOT ambassadors on December 3 & 4, 2008 on the campus of Missouri University of Science and Technology. The following attendees were present: Heath Pickerill, MO LTAP; Kristi Barr, MO LTAP; Dan Ratermann, MO LTAP; Doreen Harkins, MO LTAP; Jim Dickson, MoDOT; Darby Logan, MoDOT District 1; Skip Wilson, District 3; Dion Knipp, District 5; Doug Canady, District 6; Andrew Seiler, District 8; Rick Pilcher, District 9 and Jay Lancaster, District 10. The meeting allowed the MO LTAP team the opportunity to meet with all of the ambassadors as a group and gather their input and feedback. The MO LTAP highlights from 2009 were discussed and include the following:



- MO LTAP hosted the 2009 Summer Transportation Institute (STI), see Fall Newsletter 2009 for details;
- Missouri "Show-Me" Road Scholar Program continues to grow; a data base was developed to allow participants to be updated easily on their status;
- MO LTAP is developing an equipment loan program, which will include equipment, such as a reflectometer and portable speed radar sign;
- new training classes offered in 2009 included: Basic Computer Skills, Bridge Incident Inspection, Communication Skills, Emergency Management for Public works Officials, Equipment Operation & Safety, Math Skills and Signing & Pavement Marking;
- MO LTAP continued to strengthen partnerships, which included partnering with the University of Missouri Extension to offer the Basic Computer Skills class at all of the Telecommunication Resource Centers (TCRC's), partnering with MoDOT on training/curriculum development and a pilot program, hosting regional trainings with MACTO and partnering with MoDOT on the promotion and registration of the ATSSA Incident Traffic Control for Responders class being offered to local agencies;

In addition, a number of other topics were covered, which include the following:

- Received updates from each district - each district reported that they are very busy with projects funded through the stimulus package or American Recovery and Reinvestment Act (ARRA);
- reviewed all of the training courses held in 2009 and discussed the need to maximize attendance at all locations to make training dollars go further in 2010;
- discussed the training calendar for 2010;
- discussed the need for a course to educate local agencies involved with projects funded through ARRA;
- discussed future training course ideas which include the following:
  - land acquisition & right-of-way;
  - GIS training;
  - ADA training;
  - OSHA training;
  - materials inspection.

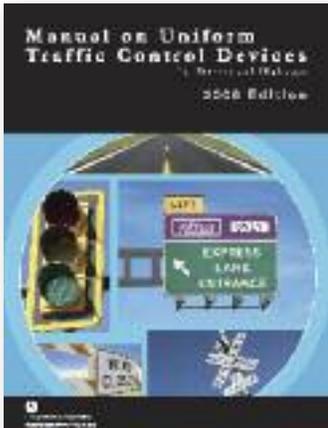


As in previous years, some of the course ideas discussed at the ambassador's meeting have been developed into MO LTAP courses. The Emergency Management for Public Works Officials was an idea discussed the previous year and developed in 2009. See the 2010 training calendar posted on the MO LTAP website, [www.moltap.org](http://www.moltap.org) to see when this course is being offered in an area near you. If you have any questions or would like to request more detailed information on the topics covered during the meeting, please contact Kristi Barr, Program Coordinator, at (573) 341-7200 or [kristib@mst.edu](mailto:kristib@mst.edu).

# County Connection

Send us your County News!

Use the FAX BACK form (on page 15) to fax your news to us OR Email your news to: [moltap@mst.edu](mailto:moltap@mst.edu)



## USDOT Releases MUTCD Update

2009 Edition

The US Department of Transportation released December 16 a comprehensive update to the Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD's 2009 edition features many new and updated requirements, ranging from changes in highway signs and bike lanes to the color of

high-visibility garments worn by road workers. For an overview of the new rules and recommendations, visit <http://mutcd.fhwa.dot.gov>.

The MUTCD is the national standard for all traffic control devices, including traffic signs, pavement markings, signals and any other devices used to regulate, warn or guide traffic. It has been administered by the Federal Highway Administration (FHWA) since 1971. This is the first comprehensive update to the manual since 2003.

Among new provisions in the MUTCD:

- Replacing highway signs with brighter, larger and more legible ones that are easier to understand at freeway speeds. States will begin using the newer signs as existing ones wear out.

- Adding different lane markings for lanes that do not continue beyond an intersection or interchange to give drivers more warning that they need to move out of the lane if they don't intend to turn.
- Expanding the use of flashing yellow arrow signals at some intersections to give a clearer indication that drivers can turn left after yielding to any opposing traffic.
- Changing the formula used to calculate crosswalk times to give walkers more time.
- Identifying electronic toll collection lanes with purple signs – the first time purple has been sanctioned for use on highway signs.
- Adding overhead lane-use control signs to reduce confusion among drivers in unfamiliar multi-lane roadways.

By requiring better pavement markings which can increase bike lane safety, and extending walk times for pedestrians at crosswalks, the updated MUTCD furthers the "complete streets" concept – an effort long championed by FHWA to ensure roads accommodate all types of travel, not just automobiles.

Resource: <http://www.fhwa.dot.gov/pressroom/fhwa0937.htm>

## Sign Retroreflectivity Guidebook



A new sign retroreflectivity toolkit is available through the Missouri LTAP center, thanks to the Federal Highway Administration. The guidebook and CD-ROM were developed to address the new MUTCD requirements in lay terms. This helpful toolkit will be

distributed as part of the Missouri LTAP centers retroreflectivity training in 2010.

## RETROREFLECTOMETER



To the left, Missouri LTAP's retroreflectometer used to monitor sign retroreflectivity; below, the Missouri LTAP retroreflectometer being used in the field. These instruments are important elements for some of the management and maintenance methods required in the Manual on Uniform Traffic Control Devices (MUTCD). Monitoring sign sheeting retroreflectivity levels and their

data will help Missouri municipalities manage their signs.

MO LTAP now has a retroreflectometer that is available for loan to local agencies. Please contact MO LTAP for more information.





Send us your Public Works News!

Use the FAX BACK form (on page 15) to fax your news to us OR Email your news to: [moltap@mst.edu](mailto:moltap@mst.edu)



## Missouri LTAP Hosts APWA Click, Listen & Learn Webinar

On October 15 and November 5, 2009, Missouri LTAP hosted a free viewing of the American Public Works Association's Click Listen & Learn webinar — Sign

group of seven viewed the webinar in a conference room in Cape Girardeau. Participants were able to view the presentation on a large projection screen in a comfortable setting.

Retroreflectivity, Part I and II. APWA routinely presents these webinars on a variety of topics and they are often of interest to folks in the transportation field. However, the \$175 cost (\$225 for non-members) of the typical webinar is usually not justified when only one representative at a local government will be benefitting from what is typically a two-hour overview. The Missouri LTAP wanted to gauge the interest of Missouri local and state officials for these types of webinars in a group setting where any number of individuals can benefit for the cost of a single site fee (paid for by the Center, along with some light refreshments). A

In the setting of a two-hour session, the two speakers were restrained to broad overviews, but their presentations provoked some interesting discussions

The Missouri participants felt they gained helpful information from the webinar and Missouri LTAP hopes to host future transportation webinars. Stay tuned if you would like to be on our email list for such events. Send your information to Kristi Barr at [kristib@mst.edu](mailto:kristib@mst.edu).

## WHAT IS A WEBINAR?



Webinars have become a popular way of distributing information and educational materials to broad audiences in a cost effective way. Some

webinars are free, while others usually charge a per site fee, enabling any practical number of people to gather in a single room for one fee. The typical webinar consists of a slide presentation that the webinar producer advances at the pace of the speaker, whose voice is heard over a telephone; videos are often added

also. There are variants e.g., some webinars broadcast image and voice over the Internet connection together. Question pods are usually available to the participants, along with presentation download and lists of other participants. Webinars are best suited for educational overviews or awareness-raising topics. Training that is highly interactive requires more than about two hours, or that merits greater detail is less suited for webinar applications.

Resource: Adapted from the Delaware LTAP Winter 2010 Newsletter

### NEW MISSOURI CHAPTER MEMBER LIST

Mr. Michael K. Doi, PE  
Mr. Jeff McCann, PE  
Mr. W. Vernon Pape  
Mr. Dale E. Nordgarden

Abacus Properties  
Boone County, MO  
City of Bridgeton  
City of Bridgeton

Mr. Andrew J. Potthast  
Mr. Lee C. Walters  
Mr. Douglas G Zaiz

HNTB Corporation  
Earth City Supply  
City of Woodson Terrace

# HARD HAT

area

## SNOW PLOW SAFETY...



It's time to think about what it takes to be safe while getting your snow plowing job done. Driving a snow plow is hard work. It requires driving for long hours in conditions that many other drivers consider too bad to go out in. While you are concerned with providing safe and clear travel for motorists, you must not overlook your own safety.

### Here are a few tips to make snow plowing safer:

- ▲ Start work physically and mentally rested and properly clothed.
- ▲ Check all equipment before each use. Inspect the lights, brakes, windshield wipers, defroster, plow bolts and chains, spreader and auger, flares and other safety equipment.
- ▲ Know your route. Perform pre-storm route inspection observing landmarks and the locations of possible hazards (guardrails, curbs, railroad tracks, bridge joints, mailboxes, manhole covers, etc.) which may be hidden by falling or plowed snow.
- ▲ Choose the speed appropriate for conditions. Resist the urge to get the job done in a hurry.
- ▲ Be considerate of motorists having trouble driving in the snow. Keep your temper and patience when vehicles pass or tailgate.
- ▲ Be brief when using the radio. Report stranded motorists and other emergencies when possible.
- ▲ Observe all traffic laws and signal your intentions clearly. Always wear your seat belt.
- ▲ Before leaving the cab, set the brakes and disengage the power to the spreader and snowplow.
- ▲ Watch for signs of fatigue. Staring for hours at the driving snow can have a hypnotizing effect on drivers. The long hours and stress can take their toll as well. If you feel the onset of fatigue, take a short break – get out and walk around the truck and take some deep breaths.
- ▲ Take care of yourself by observing these few tips and keep your shift a safe one.

Resource: Contributed by the Rhode Island LTAP.



**ICE & SNOW**  
TAKE IT SLOW

**Reduce Speed**  
When it snows, use your head not your feet.

**Travel Safe**  
Don't crowd the plow. A snowplow operator's field of vision is restricted. You may see them but they may not see you.

**Be Prepared**  
Before leaving home, find out about the driving conditions. If the weather is bad, remember, ice and snow, take it slow, or just don't go.



**ICE & SNOW**  
TAKE IT SLOW

**Ice and Snow ...  
Take it Slow**

**Don't crowd the plow.**

# WINTER MAINTENANCE ACTIVITIES

## “Snow Plowing Safety Tips For Your Drivers”

When most of us are relaxing at home during a winter snowstorm, the road commission snowplow operators take to the road. Their mission is to clear snow and ice accumulations from road and bridge surfaces so that the “motoring public” can travel safely around our communities.

It is no surprise that operating snowplowing trucks and equipment along a county road is much different than plowing driveways and parking lots. A driver must be alert to (but not limited to) people walking/standing near the road, parked cars on the shoulder, snowmobile and vehicle traffic, children playing, etc. Needless to say, a snowplow operator’s attention cannot be distracted for a single moment!

It is very important that all new snowplow operators receive detailed training and are closely monitored by supervision. Training might include both classroom training and supervised OJT driving by a responsible/qualified person. Regardless of how we approach training, we cannot allow our drivers to learn as they go! Statistics have shown that snowplow related accidents involve both new and experienced drivers. Therefore, we highly recommend that all experienced drivers receive refresher training each year before the winter snowplow season begins.

### **I. SNOWPLOW OPERATIONS: There are four (4) important considerations to a snowplow operation. They include (but are not limited to):**

**1. DRIVER TRAINING** – Snowplow operators should be trained in the standard operating procedures (SOP) of your organization’s winter maintenance program. This includes knowledge of their assigned equipment and their assigned snow routes. Becoming familiar with the snowplow routes before the snow starts flying has many benefits. Identifying and/or correcting problems early can help save equipment down-time and repair expenses. Items to look for include (but not limited to) raised manhole covers and curb drains, concrete hazards, road surface defects, soft/narrow shoulders, etc.

**2. TRUCKS / EQUIPMENT READINESS** - Trucks and equipment must be road worthy and ready to meet the needs of winter maintenance activities. An effective preventive maintenance program is the key to ensuring that your equipment has minimal breakdowns. Ask any fleet manager, roadside breakdowns are less likely when inspections are performed and problem areas identified and corrected.

Drivers should never take a vehicle inspection program lightly. Any driver performing a “drivers seat inspection” is substituting safety with foolishness! Finally, drivers must operate their equipment with care and respect. Abusive behavior can prematurely cause trucks and equipment to breakdown.

**3. WELL RESTED DRIVERS** - When snowplow operators are not getting proper rest, this can play a major role in snow plowing related accidents. Compound a fatigued driver with poor weather conditions and you can have the formula for disaster. All drivers should be made aware of the causes and symptoms of driver fatigue and how to prevent it. A MCRCSIP loss control training is available that addresses “Driver Fatigue”.

**4. DRUGS AND ALCOHOL** – The federal drug and alcohol regulations for CDL safety sensitive duties, have helped cut down on truck related accidents over the past ten years. The regulations hold companies and drivers accountable for their consumption of drugs and alcohol. Surprisingly, some drivers think that they can beat the system by violating these rules during evenings and weekends. Employees should be routinely reminded about the importance of drug avoidance, including the use of certain prescription and over the counter drugs. Alcohol consumption is illegal prior to and during the performance of safety sensitive jobs. If drivers are called to plow snow soon after consuming alcohol, they must understand the consequences.

**II. DEFENSIVE DRIVING: A professional snowplow operator must be a defensive driver at all times. A defensive driver must continuously stay alert to the behavior of other drivers and make every effort to avoid an accident. As part of defensive driving, consider using the “5-Seeing Habits to Safe Driving”:**

- 1. AIM HIGH IN STEERING** - The vehicle steering wheel should be held at the 2 and 10 o’clock positions. This allows the driver to keep total control of the vehicle, especially during evasive maneuvering.
- 2. GET THE BIG PICTURE** – Look far enough down the road to see hazards before you arrive. This helps you spot problems not only ahead of you but to the sides as well.
- 3. KEEP YOUR EYES MOVING** – Don’t lock onto any one item for too long. Keep scanning from side to side to identify changing conditions.
- 4. LEAVE YOURSELF AN OUT** – Don’t box yourself into a poor situation as you travel. Try to keep other drivers out of your blind spots.
- 5. MAKE SURE THEY SEE YOU** – A large orange/red/yellow colored truck generally can be spotted from a great distance. To help ensure they see you, keep your lights and beacons working during winter maintenance activities. To get eye contact, try a friendly tap on the horn.

**III. OTHER RELATED ITEMS: The following four (4) topics should be included as part of your organization’s winter maintenance program.**

- Safe Vehicle Entry - Climbing into the truck cab can be difficult especially when truck steps are slippery with snow and ice. Remember to use the 3-point contact method of climbing into/exiting vehicle cabs.
- Seat Belts - Wear your seat belt at all times! Don’t be fooled into believing that being in a large vehicle can protect you from injury during a collision. The seat belt holds you in your seat and reduces the potential of being ejected from the cab.
- Mirrors/Lights – Drivers should do a walk around to check side mirrors and lights. Always make the necessary adjustments before getting on the road.
- Equipment Backing - In the process of winter maintenance activities, drivers are often required to perform frequent backing maneuvers. Keep in mind that many objects can be hidden behind a snowplow truck. Avoid unnecessary backing maneuvers whenever possible. Remember the dead space distance (80 – 90 ft) behind your truck that you cannot see when using your mirrors.





## Missouri Highway Fatalities Lowest Since 1950

Not since 1950 has Missouri seen so few people killed in highway crashes. For the fourth year in a row, Missouri has reduced its highway fatalities. Currently, the number stands at 871 in 2009 - almost 100 less than in 2008.

"Lives are being saved because the coalition partners are working together - and it's an exciting thing for Missouri," said Leanna Depue, chair for the Missouri Coalition for Roadway Safety's executive committee.

Overall, since 2005, traffic deaths decreased 31 percent, due to the combined efforts of highway safety advocates in the Missouri Coalition for Roadway Safety. The coalition credits a combination of law enforcement, educational efforts, emergency medical services and engineering enhancements as the successful formula for saving lives.

Since 1950, many things have changed and most differences show increases. For instance, Missouri's total population has increased by more than 51 percent, Missourians are driving five times more miles as they did in 1950, and the number of registered vehicles has quadrupled. Even the cost of a gallon of gas has gone from a mere 20 cents to an average of \$2.73. But the most important number to agencies trying to save lives has now decreased to even less than it was in 1950 at 889.

"That's why this is such a huge accomplishment for Missouri," said Missouri State Highway Patrol Superintendent Colonel

James F. Keathley. "When you consider the dramatic differences between now and 1950, it is truly amazing that we can have almost the same number of fatalities as we did back then and yet the huge difference in the death rate per 100 million miles traveled."

In 2007, Missouri recorded fewer than 1,000 fatalities for the first time in more than 15 years. This allowed the coalition to meet an ambitious goal one year early. In October 2008, the coalition announced a new goal for traffic fatality reductions at 850 or less by 2012. The last time Missouri reached less than 850 fatalities was 1949.

"We came really close in 2009 to reaching our goal of 850 traffic fatalities by 2012," Depue said. "If we can implement additional life-saving strategies, then we have a better chance to meet this goal."

One of the top strategies for meeting the new goal is strengthening Missouri's seat belt law to allow for primary enforcement. A 2009 survey reported only 77 percent of Missourians are buckling up. The state's rate has been at a plateau since 2004 and remains consistently below the national average of 84 percent.

"A primary seat belt law in Missouri would increase the usage rate saving 63 lives, 759 serious injuries and \$179 million in costs in the first year it goes into effect," Depue said.

Resource: <http://modot.org/newsandinfo>

## MoDOT Using More Beet Juice to Keep Roads Clear

Beets are not only healthy to eat, but research proves they can keep you safer on the roads as well. For the past few years, the Missouri Department of Transportation has been using an anti-icing product called Geomelt made from sugar beets to help keep the roads clear.

"Anything that keeps roads safer during extreme temperatures and bad weather means more lives saved," said Jim Carney, MoDOT's State Maintenance Engineer. "Because of the great results we've seen using beet juice, we've increased usage almost 700 percent over the last couple of years."

MoDOT first started testing Geomelt in northwest Missouri in 2006, and now is using it statewide. In 2008, the department used 35,000 gallons of Geomelt. Last winter, 242,000 gallons were used. So far this year, at the end of 2009, 78,000 gallons of the juice assisted crews in fighting winter storms.

Beet juice is a natural product that works well when mixed with either rock salt or liquid salt brine to keep ice from forming on the roads before a storm. It also helps melt snow and ice once they are already on the roads.

Combined with salt, the beet juice freezes at a lower

temperature than just salt alone so it can be used when the weather is colder - even at temperatures closer to zero. The mixture reduces the corrosive properties of salt and improves its effectiveness. That means less salt, more efficiency and less equipment, bridge deck and vehicle corrosion.

The sugar beet juice is brown in color so salt mixed with it is somewhat brown. The liquid is a by-product of sugar production.

Annually, MoDOT spends approximately \$41 million on snow and ice removal. Last year, approximately 3,500 dedicated employees spent more than 554,000 hours using the 1,650 snow-removal vehicles, which added up to \$43 million on snow and ice prevention and removal.

"Although we're constantly looking for new products to clear roads better, and our crews are out there working hard to keep them clear, it is also the motorist's job to drive cautiously, pay extra attention to signs and drive defensively," Carney said. "Remember to give snowplows plenty of room to work, don't tailgate and try not to pass."

Resource: <http://modot.org/newsandinfo>

# Safety Engineering



## RUMBLE STRIPS AND RUMBLE STRIPES AN EFFECTIVE COUNTERMEASURE

Rumble Strips are an effective countermeasure for preventing roadway departure crashes. The noise and vibration produced by rumble strips alert drivers when they leave the traveled way. Rumble stripes is the term used for rumble strips painted with a retroreflective coating to increase the visibility of the pavement edge at night and during inclement weather conditions.

There are two main applications of rumble strips:

**CENTERLINE RUMBLE STRIPS** – an effective countermeasure to prevent head-on collisions and opposite-direction sideswipes, often referred to as cross-over or cross-centerline crashes. Primarily used to warn drivers whose vehicles are crossing centerlines of two-lane, two-way roadways.

**SHOULDER RUMBLE STRIPS** – an effective means of preventing run-off-the-road crashes. They are primarily used to warn drivers they have drifted from their lane. A variation on this is the edge line rumble stripe, which places the pavement marking within the rumble strip, improving the visibility of the marking. This is more commonly used on roads with narrow shoulders.

The main cause of roadway departure crashes is driver drowsiness and inattention, which are sometimes compounded by driving too fast. Alcohol and drugs can contribute to both fatigue and speed. Driver fatigue also is induced by highway hypnosis, which occurs when the lines and stripes on long, monotonous stretches of highway reduce the driver's concentration. When drivers stray from the travel lane, rumble strips rouse their attention to allow a safe recovery. Rumble strips also are helpful in alerting drivers to

the lane limits where conditions such as rain, fog, snow or dust reduce driver visibility.

Road agencies also use rumble strips in the travel lanes to warn motorists of any upcoming change that may require them to act — for example, the need to slow down for a toll plaza ahead, change lanes for a work zone around the curve, or stop at an intersection.

### HOW EFFECTIVE ARE RUMBLE STRIPS AS A SAFETY ENHANCEMENT?

Let's do the numbers. Roadway Departures account for 54% of all fatal traffic crashes nationwide and about two-thirds of these Roadway Departures occur in rural areas. Rumble strips are effective for both types of roadway departure crashes, run-off-road, and across centerline. It has been estimated that 40 to 60 percent of run-off-road crashes are due to driver fatigue, drowsiness or inattention. Many studies of the effectiveness of shoulder rumble strips indicate that they can reduce overall crashes by 14-17 percent. Shoulder rumble strips have been documented to reduce run-off-road crashes by 7 to 41 percent. Centerline rumble strips may reduce head-on crashes by 21 to 68 percent. The reductions vary based mostly on type of road, rumble strip geometry, and severity of crashes analyzed.



### Putting It in Perspective.... 2003

- ⇒ Approximately 60 percent of all fatal crashes are roadway departure crashes.
- ⇒ On average, one roadway departure fatality crash occurred every 23 minutes.
- ⇒ An average of one roadway departure injury crash occurred every 43 seconds.
- ⇒ The estimated annual cost of roadway departure crashes is \$100 billion.

### Benefits....

- ⇒ Reduce ROR crashes caused by driver inattention, driver error, visibility, and fatigue.
- ⇒ Are inexpensive to install.
- ⇒ Cause no noticeable pavement degradation.
- ⇒ Require little or no maintenance.
- ⇒ Can be installed on new or existing pavements (milled rumble strips).

Resource: [http://safety.fhwa.dot.gov/roadway\\_dept/pavement/rumble\\_strips/](http://safety.fhwa.dot.gov/roadway_dept/pavement/rumble_strips/)

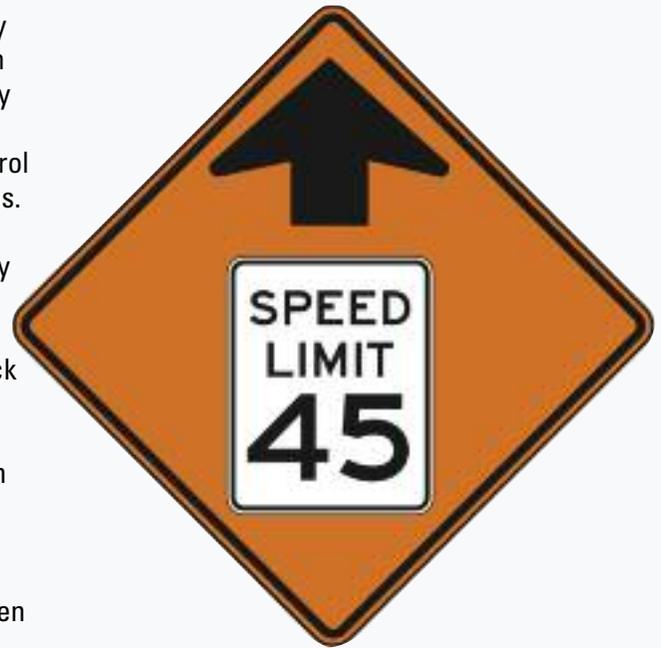
# Reduce Winter Driving Speed



The most effective safety tips for winter driving are simply to take your time and pay attention to your surroundings. Slow down for wet, snowy or icy conditions; when visibility is poor; or when conditions are changing or unpredictable. Using your vehicle's cruise control can be a fatal mistake during winter driving conditions. Turning off your cruise control and not exaggerating vehicle steering, braking or accelerating are other highly effective safety measures.

Drivers should also allow additional room between vehicles. Slick winter road conditions often result in longer stopping distances. Do not take chances when pulling out in front of approaching vehicles because the other driver may not be able to slow down and you may not be able to accelerate as quickly as on dry pavement.

Even when the pavement appears to be just wet, slow down when approaching intersections, off-ramps, bridges, or shady spots. These are prime locations for black ice - a thin coating of clear ice that can form on the pavement surface that may be difficult to see.



Resource: Adapted from Utah LTAP Winter 2010 Newsletter.

**MARK YOUR CALENDARS** on *May 4-5, 2010*

**MISSOURI  
CONCRETE**  
CONFERENCE 2010



The Missouri University of Science and Technology will host the annual Missouri Concrete Conference May 4-5, 2010.

Presentations at the conference include: lightweight mixtures, pumping mixtures, flowable fill, heavyweight mixtures, self consolidating concrete, roller compacted concrete case histories, OSHA training, yield problems, materials problems, construction tolerances, design of slabs-on-ground, basis of strength acceptance, life cycle costing, sustainability, ASCC hotline, tilt-up, city street concrete overlays, and MoDOT case histories, research, and bridge deck advances.

The conference should be of interest to contractors, public

agencies, consulting engineers, testing labs, aggregate producers, ready mix, cement and admixture suppliers, and equipment technical reps. Registration is \$130 per person.

Additional information is also available online at <http://concrete.mst.edu>.

**FOR REGISTRATION QUESTIONS CONTACT**  
Missouri S&T Distance & Continuing Education  
Phone: (573) 341-4200 or email [macet@mst.edu](mailto:macet@mst.edu)

**FOR TECHNICAL INFORMATION, CONTACT**  
Dr. David Richardson  
Phone: (573) 341-4487 or email [richardd@mst.edu](mailto:richardd@mst.edu)

# Road Scholar Registration Form

## ROAD SCHOLAR PROGRAM

### REGISTRATION FORM



Please fill out this form and mail or fax to:

#### MO LTAP

Missouri University of Science and Technology  
710 University Drive, Suite 121  
Rolla, Missouri 65409  
Fax: 573-341-7245

*Please print clearly.*

-----  
AGENCY

-----  
MAILING ADDRESS

-----  
CITY, STATE, ZIP

-----  
WORK PHONE

-----  
WORK FAX

-----  
EMAIL

-----  
CONTACT PERSON & TITLE

#### Road Scholar Participants

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

**PLEASE CHECK THE ELECTIVE COURSES  
THAT YOUR AGENCY IS MOST INTERESTED  
IN ATTENDING.**

## ROAD SCHOLAR I

#### CORE COURSES: (REQUIRED)

Communication Skills  
Work Zone Safety & Flagger Training  
Workplace and Job Site Safety (Worker Safety)

#### ELECTIVE COURSES:

- Bridge Incident Inspection
- Bridge Management and Maintenance
- Culvert Design and Drainage
- Culvert Installation & Maintenance
- Defensive Driving
- Equipment Operation and Safety
- Gravel Road Maintenance
- Materials Inspection
- Math Skills
- Motor Grader Training
- Preventive Pavement Maintenance
- Signing and Pavement Marking
- Snow and Ice Control
- Traffic Signal Maintenance

\*\*

## ROAD SCHOLAR II (UNDER DEVELOPMENT)

#### CORE COURSES: (REQUIRED)

Managing Employee Performance  
Roadway Safety Fundamentals  
Supervisory Communication Skills

#### ELECTIVE COURSES:

- Asset Management and Cost Accounting
- Bridge & Culvert Hydraulics
- Community and Media Relations
- Enhancing Cooperative Work Relationships
- Human Resource Management
- Innovative Financing
- Intergovernmental Relations
- Legal Aspects of Supervision
- Project Planning and Management
- Rural Roads Safety Assessments
- Traffic Design
- Traffic Signal Installation

\*\*

\*\*Attending a conference related to the Road Scholar courses or an external training class can count as one (1) elective course if approved by the Road Scholar partnership committee.



# Missouri State Savings Surplus



## Missouri State Agency for Surplus Property

2846 HIGHWAY 179, JEFFERSON CITY, MO 65109  
888-295-7796 (toll free) • 573-751-3415



11 piece Metric Wrench Set	\$25.00	Pampers baby wipes	\$5.00 per box
23 piece Combination Metric Wrench Set	\$55.00	12" Crescent Wrenches	\$7.50 each
15/40 grade Engine Oil, 5 gallon can	\$15.00 each	Front End Loader, mfg: Dresser, yr: 1986,	
Electric bench top grinders	\$15.00-\$30.00	backhoe attchmt and 2.5 yd bucket, 2848 hours	
Pipe wrenches, 10", 14", 18"	\$7.50-\$20.00		\$17,000.00
12 piece Std Combination Wrench Set	\$25.00		
4 outlet Power Strip	\$5.00 each		

Check out the thousands of items in stock at MOSASP!  
For information about the program, visit: [www.oa.mo.gov/purch/surplus.html](http://www.oa.mo.gov/purch/surplus.html)

*Eligibility requirements can be found under "Read about the Program"*

## MODOT Savings Surplus

Make your dollars go further with  
MoDOT surplus purchasing!

Prices, mileage, condition, and purchasing  
instructions can be viewed online:  
[www.modot.mo.gov/business/surplus](http://www.modot.mo.gov/business/surplus)



### NO EQUIPMENT FOR SALE AT THIS TIME



## ADDED TO OUR LIBRARY

Use our fax back sheet, page 15, to checkout any of these materials. The normal check out time is two (2) weeks. If you have further questions, or would like to inquire about other library items, please contact Kristi Barr at 573-341-7200 or email at [kristib@mst.edu](mailto:kristib@mst.edu).

### US DOT & FEDERAL HIGHWAY ADMINISTRATION

- ◆ Comprehensive Intersection Resource Library
- ◆ Professional Capacity Building Programs
- ◆ TechBrief: Median U-Turn Intersection



### MoDOT Cooperative Procurement Program

Become part of the joint purchasing program with MoDOT to purchase procurement items at MoDOT's rates. Contact us to receive a Coop packet on how you can become a partner; call 573-342-7200, email [kristib@mst.edu](mailto:kristib@mst.edu); or go to our website [www.moltap.org](http://www.moltap.org).

# FA X BACK FORM

Missouri LTAP Fax Number: (573) 341-7245

Today's Date \_\_\_\_\_

Name \_\_\_\_\_ Agency \_\_\_\_\_

Address \_\_\_\_\_

City/State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

Please check your affiliation below:

City     County     State     Federal     University     Other:

**Please select all that apply:**

Add me to your mailing list     Remove me from your mailing list     Correct my information as indicated above

**Library Checkout Form: Publications, Videos & CDs**

Just list the item(s) you wish to borrow below , fill out the information above, and fax all pages to us. *It's that easy!*

## REGISTRATION FOR CLASSES

To register for a training course, please fill out the above and include the list of attendees below. Fill out one for each course you would like to attend.

COURSE DATE: \_\_\_\_\_ COURSE NAME: \_\_\_\_\_

\_\_\_\_\_ COURSE LOCATION: \_\_\_\_\_

ATTENDEES: (NAME & TITLE) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



710 UNIVERSITY DRIVE • SUITE 121 •  
ROLLA, MO 65409

NON PROFIT ORG.  
U.S. POSTAGE  
PAID  
ROLLA, MO  
PERMIT NO.170

# TRAINING SCHEDULE

PLEASE VISIT OUR WEBSITE FOR OUR CURRENT TRAINING CALENDAR.  
[WWW.MOLTAP.ORG](http://WWW.MOLTAP.ORG)

Upcoming classes include:

- ▲ Communication Skills ▲ Culvert Installation & Maintenance ▲ Gravel Road Maintenance
- ▲ Motor Grader Training ▲ Work Zone Safety & Flagger Training

All classes are from 8 am until Noon on the designated day. Each course is \$25/person for local government and \$50/person for all others.



**TO REGISTER**  
(CHOOSE 1 OF THE FOLLOWING)



USE FAX BACK FORM ON PAGE 15



CALL 1-866-MORoadS



EMAIL KRISTI BARR AT [KRISTIB@MST.EDU](mailto:KRISTIB@MST.EDU)



ONLINE REGISTRATION COMING SOON

