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### Iowa Local Technical Assistance Program

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IOWA STATE UNIVERSITY  
Institute for Transportation

## 2011 Work Zone Safety Workshops announced



Iowa Safety Circuit Rider Tom McDonald leading a 2010 Work Zone Safety Workshop

Beginning in February 2011, the Iowa LTAP at InTrans will co-sponsor the annual workshops on temporary traffic control for construction, maintenance, and utility work zones across the state.

Each day-long workshop is divided into a general session for all participants and breakout sessions for specific types of work zone activity: city, county, utility, Iowa DOT construction and contractors, and Iowa DOT maintenance.

Presenters for the general session include Jerry L. Graham, president of Graham Consulting; Jerry Roche, transportation safety and operations engineer with FHWA; and officers from the Iowa State Patrol or local police.

### Workshop objectives

- Introduce the principles and convey the importance of using proper methods for safe and efficient temporary traffic control at work sites.
- Examine specific applications relevant to situations routinely encountered by city, county, utility, contractor, and Iowa DOT crews.
- Reduce motor vehicle traffic crashes at road work sites, resulting in greater safety for highway users and workers alike.

### Who should attend?

The MUTCD recommends that all workers complete work zone traffic control training. All workers (and their supervisors) whose duties place them on or near the traveled portion of the roadway should attend. Because the information is valuable for workers at all levels, attendance can be rotated systematically, making it possible for all workers within an agency to attend every few years. It is not necessary for participants to attend each year; every three years is recommended. Contractors and consultant engineering staff are welcome to participate.

For those interested in Iowa DOT specifications and requirements, the Iowa DOT Construction and Contractors breakout session may be most appropriate. The city breakout session may be best for those interested in urban work zone applications.

### Registration fee

The registration fee of \$75 is intended to encourage greater participation. The Iowa DOT Office of Traffic and Safety provides supplemental funding for these workshops.

### Questions?

For questions about program content, call Tom McDonald at the Iowa LTAP at 515-294-6384, [tmc-donal@iastate.edu](mailto:tmc-donal@iastate.edu). For questions about registration, contact ISU Registration Services at 515-294-6222 or [cepd-info@iastate.edu](mailto:cepd-info@iastate.edu).

To find a workshop near you, check out our calendar on page 3. ■

Feb. 8	Ames	Feb. 23	Mason City	Mar. 2	Council Bluffs
Feb. 9	Iowa City	Feb. 24	Mason City	Mar. 9	Ames
Feb. 10	Iowa City	Feb. 28	Storm Lake	Mar. 10	Ames
Feb. 11	Ottumwa	Mar. 1	Sioux City		

**Acronyms in *Technology News***

AASHTO	American Association of State Highway and Transportation Officials
APWA	American Public Works Association
FHWA	Federal Highway Administration
IHRB	Iowa Highway Research Board
InTrans	Institute for Transportation (at ISU)
Iowa DOT	Iowa Department of Transportation
ISU	Iowa State University
LTAP	Local Technical Assistance Program
MUTCD	Manual on Uniform Traffic Control Devices
NACE	National Association of County Engineers
TRB	Transportation Research Board



U.S. Department of Transportation  
Federal Highway Administration



Iowa Department  
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## Message from the director: We have a lot to offer



*“Our goal at Iowa LTAP is to offer a wide range of low-cost training and technical information that improves the safety, efficiency, and effectiveness of all local transportation agency staff.”*

The snow is flying horizontally outside, carried along by a brisk 25 to 35 mph Iowa wind. The first major snow event of the 2010-2011 winter season has hit central Iowa. As I write this, I'm thinking about many of the people I've met in my first five months at Iowa LTAP. I'm praying that they are keeping safe on the job. I also hope that LTAP has contributed, in some small way, to helping them stay safe and complete their tasks efficiently and effectively. In this newsletter, you'll see photos of just some of these folks—the operators who won the Snow Roadeo in September. (There is also a short description of the Snow Plow Operators Training offered that same week.)

Our goal at Iowa LTAP is to offer a wide range of low-cost training and technical information that improves the safety, efficiency, and effectiveness of all local transportation agency staff. Several of the courses can be provided at your site, and others are regionally located (e.g., four or five sessions offered throughout Iowa for each course) and regularly advertised. We also have new online offerings, and I hope we can have more of these in the future (or at least share links to those already available). In 2011, we will be reviewing the content of many of our courses, as well as working on our website.

Here are just some of the things you can do to take advantage of what LTAP has to offer:

- As the saying goes, “Great ideas don't care where they come from.” Give us a call or email and shoot the breeze—

suggest training subjects/needs or just tell us what problems you're struggling with. These discussions, more often than not, lead to ideas for training. Tell us how we can improve.

- Sign up for our newsletter mailing list (maybe you want to get it electronically—we'll be asking about that soon), order some materials from our library, and/or check out our website as we start to update the content in 2011.
- Update/check your contact information when you can to hear about all the training/events mentioned above. In addition, more and more notifications and information are being shared electronically and in real time. In just the last month, we received two offers related to free training opportunities that have required a quick response time. We'd love to be able share these with you, as appropriate, in the future.
- Get directly involved—join a planning committee, maybe related to our newsletter or an individual training course/event. Or, you may even have an interest in being an instructor.

Iowa LTAP has a lot to offer and will be working to constantly improve. We are easy to reach by phone (see [www.iowaltap.iastate.edu](http://www.iowaltap.iastate.edu)) or email ([iowaltap@iastate.edu](mailto:iowaltap@iastate.edu)). ■

In 2011, Iowa LTAP will be forming a newsletter committee. This committee will provide ideas for article topics and feedback on the design of the newsletter. If you are interested in being a part of this committee, contact Keith Knapp, 515-294-8817, [kknapp@iastate.edu](mailto:kknapp@iastate.edu).

## 2011 and 2012 Compliance Dates in the 2009 MUTCD

Compliance dates were revised considerably in the 2009 edition of the MUTCD. Listed below are items that must be in compliance by upcoming dates in 2011 and 2012.

### January 17, 2011 deadline

#### Section 2B.09—YIELD Sign Applications—

Changes in YIELD sign application criteria from the 1988 MUTCD to the 2003 MUTCD\*

#### Section 2C.30—PAVEMENT ENDS Sign (W8-3)—

Removal of symbol sign (2000 MUTCD Section 2C.23)\*

#### Section 2C.50—Non-Vehicular Warning Signs—

Elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow (W16-7P) supplemental plaque if at the crossing (2003 MUTCD Section 2C-41)\* \*\*

2J.05—Size of Lettering—Minimum height of letters and numerals on Specific Service signs (2000 MUTCD Section 2F.05)\*

Section 7B.11—School Advance Crossing Assembly—Use of AHEAD (W16-9P) plaque or distance plaque (W16-2P or W16-2aP) (2000 MUTCD Section 7B.08)\*

Section 7B.12—School Crossing Assembly—elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow (W16-7P) supplemental plaque (2000 MUTCD Sections 7B.08 and 7B.09)\*

Section 8B.03—Grade Crossing (Crossbuck) Sign (R15-1) and Number of Tracks Plaque (R215-2P) at Active and Passive Grade Crossings—Retroreflective strip on crossbuck support\*

#### Section 8B.19 and 8C.02 through 8C.05—LRT: Approaching-Activated Blank-Out Warning Sign, Flashing Light Signals, and Automatic Gates—

Automatic gates, flashing-light signals, and blank-out signs at highway-LRT crossings (2000 MUTCD Part 10) \*

Section 9B.18 Bicycle Warning and Combined Bicycle/Pedestrian Signs (W11-1 and W11-15)—Elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow (W16-7P) supplemental plaque if at the crossing (2000 MUTCD Section 9B.15)\*

### December 31, 2011 deadline

Section 6D.03—Worker Safety Considerations—New requirement in the 2009 MUTCD that all workers within the right-of-way shall wear high-visibility apparel

Section 6E.02—High-Visibility Safety Apparel—New requirement in the 2009 MUTCD that all flaggers within the right-of-way shall wear high-visibility apparel

Section 7D.04—Uniform of Adult Crossing Guards—New requirement in the 2009 MUTCD for high-visibility apparel for adult crossing guards

### January 9, 2012 deadline

Section 2D.43—Street Name Signs (D3-1 or D3-1a)—Six-in. letter height for lettering on past-mounted Street Name signs (except on multi-lane streets with speed limits greater than 40 mph) (2000 MUTCD Section 2D.38)\*

### January 22, 2012 deadline

Section 2A.08—Minimum Retroreflectivity Levels—New requirement in the 2009 MUTCD requires implementation and continued use of an assessment or management method that is designed to maintain traffic sign retroreflectivity at or above the established minimum levels

\* Date established in the Final Rules for the 2000 MUTCD

\*\*Date established in the Final Rules for the 2003 MUTCD

## Conference calendar

February 2011			
8	Work Zone Safety	Gateway Hotel and Conf. Center, Ames	Tom McDonald 515-294-6384 tmcdonal@iastate.edu
9	Work Zone Safety	Quality Inn and Suites, Iowa City	Tom McDonald
10	Work Zone Safety	Quality Inn and Suites, Iowa City	Tom McDonald
11	Work Zone Safety	Indian Hills Community College, Ottumwa	Tom McDonald
23	Work Zone Safety	North Iowa Area Comm. College, Mason City	Tom McDonald
24	Work Zone Safety	North Iowa Area Comm. College, Mason City	Tom McDonald
28	Work Zone Safety	Buena Vista University, Storm Lake	Tom McDonald
March 2011			
1	Work Zone Safety	Western Iowa Tech Comm. College, Sioux City	Tom McDonald
2	Work Zone Safety	Iowa Western Comm. College, Council Bluffs	Tom McDonald
9	Work Zone Safety	Gateway Hotel and Conf. Center, Ames	Tom McDonald
10	Work Zone Safety	Gateway Hotel and Conf. Center, Ames	Tom McDonald
April 2011			
17-21	NACE 2011 Annual Conference	Minneapolis, MN	Keith Knapp 515-294-8817 kknapp@iastate.edu
July 2011			
24-27	Conference on Low-Volume Roads	Lake Buena Vista, FL	Keith Knapp
August 2011			
18-19	2011 Mid-Continent Transportation Research Symposium	Gateway Hotel and Conf. Center, Ames	Kris Angaran 515-294-8103 krisa@iastate.edu

### New training under consideration

- OSHA Training for Roadway Construction
- Motor Grader Operation
- Changes to the MUTCD

## Iowa LTAP Mission

To foster a safe, efficient, and environmentally sound transportation system by improving skills and knowledge of local transportation providers through training, technical assistance, and technology transfer, thus improving the quality of life for Iowans.

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The professionals listed below help guide the policies and activities of Iowa LTAP. Contact any of the advisory board members to comment, make suggestions, or ask questions about any aspect of LTAP.

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# Snow Plow Operator Training a success



Preparing for the Snow Rodeo

Nearly 90 people participated in the 2010 Snow Plow Operator Training on September 14–15 at the Iowa State Fairgrounds in Des Moines. During this two-day event, new plow operators and operators with limited plowing experience had the opportunity to learn about the art of snow plowing through expert presentations and discussions with other operators.

Each operator also had the opportunity to practice and hone his or her skills with

personal feedback and coaching from an experienced snow plow operator/trainer.

The Iowa LTAP would like to thank all the participants and others who made this event a success!

The SPOT training will be held again in 2011, possibly in more than one location. Watch for the brochure or contact us for more information. ■

## 2010 Snow Rodeo winners

Following the Snow Plow Operator Training, more than 85 individuals competed in the 2010 Snow Rodeo, held September 16 at the Iowa State Fairgrounds in Des

Moines. The Rodeo offered snow plow truck drivers, motor grader operators, and loader operators the chance to test their knowledge and demonstrate their skills. ■



2010 Snow Plow Truck Winners (left to right): 1st Place: Nathan Geil and Laramie Sandbulte (City of West Des Moines); 2nd Place: Tommy Bell and John Thill (City of West Des Moines); and 3rd Place: Randy Moore and Lew Lintz (City of Des Moines)



Motor Grader winners (left to right): 1st Place: Kevin Decker (City of Des Moines); 2nd Place: Jim Case III (City of Des Moines); and 3rd Place: Rick Crouse (City of Davenport)



Loader winners right (left to right): 1st Place: Jasen Nielsen-Harvey (City of Urbandale); 2nd Place: Gary Knapper (City of Davenport); and 3rd Place: Brian Snyder (City of West Des Moines)



Grilling at the Snow Roadeo

**A BIG THANK YOU** to the folks from the City of West Des Moines and others who spent three days grilling food for the SPOT training and Snow Roadeo participants!

## CONGRATULATIONS to all our 2010 Snow Roadeo winners!



Iowa LTAP Director Keith Knapp (far left) and our celebrity snow plow drivers (left to right): Lubin Quinones (FHWA – Iowa Division Administrator), Skip Moore (City of Des Moines Council Member), and Kevin Trevillyan (City of West Des Moines Council Member)

## Iowa LTAP hosts Iowa Streets and Roads Workshop and Annual Conference

Nearly 100 people attended the annual Iowa Streets and Roads Conference September 29–30, 2010, in Ames, Iowa. Speakers at the conference shared tips on how to do more with less, making daily tasks easier and more cost effective.

In addition, nearly 60 people attended the annual Iowa Streets and Roads Workshop was held on September 28, prior to the conference. Module 6 of the Iowa Public Employees Leadership Academy, “Legal Understanding,” was presented at this workshop. ■

## Going green in snow and ice management

Adapted from an article by Ellen Kobach and Brian Birch, Snow and Ice Management Association (SIMA)



Road clear of ice and snow

Managing snow and ice during harsh winter conditions is challenging work. From unpredictable weather patterns to dangerous conditions, snow and ice professionals face many difficulties while maintaining safety for the public during the worst winter weather. In addition to these existing challenges, a whole new set of issues is arising regarding environmental stewardship and conservation. The increased pressure and paradigm shift that is taking place in the United States (and is occurring at a faster pace in many countries across the globe) related to environmental concerns will continue to affect how we operate.

The “green movement” is a hot topic in today’s society, and the call for conservation of resources and reducing practices harmful to the environment is both widespread and enduring. Snow and ice management professionals are no strangers to these demands, as the use of heavy equipment and deicing/anti-icing materials is paramount to keeping streets and parking lots clear of snow and ice. It is a balancing act of managing the impact snow and ice professionals have on the environment with the need for pedestrian and motorist safety during winter. Fortunately, there are a number of best practices and new technologies that can help reduce harm to the environment while still providing top-notch safety to the public during winter weather.

### What can you do to make your operation green?

There are many steps snow and ice professionals can take to help lessen harmful impacts on the environment. The following are ideas specifically for the snow and ice industry suggested by the International Council for Local Environmental Initiatives (ICLEI) and the American Association of State Highway and Transportation Officials (AASHTO):

- **Evaluate your equipment.** Conducting a fleet inventory can help to set goals for reducing energy use and air pollutants. Consider the number of vehicles and amount of fuel they use. Make sure the most efficient vehicle is being used for each job, and eliminate any unnecessary equipment. When purchasing new vehicles, consider fuel efficient and/or alternatively fueled vehicles.
- **Perform regular vehicle maintenance.** A simple way to reduce emissions, regular maintenance is important to ensure that each piece of equipment is running as efficiently as possible. This includes changing oil and filters regularly, consistently checking tire pressure, and making sure engines are operating in correct temperatures.
- **Consider alternative fuels.** As governmental standards become stricter regarding air emissions, fuel technology continues to improve. There are several options to replace or supplement current fuel usage, including diesel, biodiesel, and ultra-low sulfur fuel.
- **Train drivers to operate vehicles efficiently and correctly.** Ensure that drivers know the proper way to operate vehicles. Route planning using GPS or other software can help to maximize efficiency when operating vehicles. Instituting a strict no-idling plan will also help to decrease fuel use and unnecessary emissions.



Application of deicing material

*Going Green in Snow and Ice Management from page 6*

- **Create a plan for reducing salt use.** Calibrating spreaders can help monitor usage and ensure salt isn't being wasted, and pre-wetting salt can also decrease the amount needed. Training on correct salt usage and application rates is also an important step towards using the minimum amount of salt to achieve maximum results.
- **Consider alternatives to salt.** While not necessarily meant to replace salt, there are many alternatives that can supplement the use of road salt. Certain alternative deicers can have less of an impact on the environment. Review the available materials out there in order to make an informed decision about using alternative deicers. Anti-icing using liquid materials is also a good option to consider.
- **Winter operations facility management.** Salt, sand, and other chemicals should be stored correctly to minimize contamination—covered storage for dry chemicals is recommended. General tips for keeping winter facilities environmentally friendly include litter control, monitoring water usage, and consistent and accurate recordkeeping for materials and site management.

These steps towards improving snow and ice management operations can have a beneficial impact on the environment, whether it be reducing emissions or lessening the spread of chemicals. Many small things, such as optimizing routes, eliminating idling, and regulating salt usage are easy ways to reduce impact on the environment.

Article adapted from the Missouri LTAP's Fall 2010 newsletter (edited for length), with permission from SIMA, <http://www.sima.org>.

To read the full article from SIMA, visit <http://www.sima.org/associations/8339/files/Going%20Green%20in%20the%20Snow%20&%20Ice%20Management%20Industry.pdf> ■

## Stanley L. Ring Memorial Library: Current materials

*Note about delivery of materials: The library now sends orders through the U.S. Postal Service. If you have an urgent need for library materials, let us know when you place your order and we will arrange faster delivery.*

### Three ways to order LTAP library materials

- Use the online catalog, [www.intrans.iastate.edu/ltap/library/search.cfm](http://www.intrans.iastate.edu/ltap/library/search.cfm).
- Contact Jim Hogan, library coordinator, 515-294-9481, [hoganj@iastate.edu](mailto:hoganj@iastate.edu), fax 515-294-0467.
- Mail or fax the order form on the back cover of this *Technology News*.

### Publications

#### P-1759 Culvert Scour Assessment (CUSDAs-Forest Service)

This publication quantitatively analyzes the geomorphic and structure controls on channel bed and footing scour at road-stream crossings, and the effectiveness of aquatic organism passage at these crossings, by comparing channel characteristics within the crossing structure to reference channel conditions not influenced by the structure. From this analysis, it is possible to determine design, construction, stream, and channel conditions that contributed to the success or failure of the installation for aquatic organism passage and scour resistance. Seventeen representative case studies are presented in appendix A.

#### P-1761 Crash Impact of Smooth Lane Narrowing with Rumble Strips at Two-Lane Rural Stop-Controlled Intersections (US DOT/FHWA)

This technical brief describes the results of a study to reduce approach speeds by narrowing lanes using rumble strips in the median and on the right lane edge.

#### P-1762 Implementing the High-Risk Rural Roads Program (US DOT/FHWA)

This report documents common challenges, noteworthy practices, and lessons learned through implementation of the High-Risk Rural Roads Program (HRRRP). This information can be used to launch an HRRRP, identify next steps for existing programs, or implement noteworthy practices.

### CDs

#### Winter Roadway Maintenance Computer-Based Training

These CDs are part of the Winter Roadway Maintenance computer-based training series on various topics pertaining to winter road maintenance. These self-paced lessons are intended for administrative and maintenance personnel. Copies have been provided to all county engineers and to 20 cities in Iowa.

#### CR-77 Anti-Icing/RWIS (Version 2)

#### CR-101 Selecting Snow & Ice Control Materials to Mitigate Environmental Impacts

#### CR-102 Equipment Maintenance

#### CR-103 Proper Plowing Techniques

#### CR-104 Deicing

#### CR-105 Blowing Snow Mitigation

#### CR-106 Winter Maintenance Management

#### CR-107 Performance Measures for Snow and Ice Control

#### CR-100 Electronic Reference Library (Iowa DOT)

This CD contains the following Iowa DOT documents: standard and supplemental specifications; materials IMs; standard road, bridge, and culvert plans; sign truss standards; a construction manual; a flagger's handbook; and the SUDAS standard specifications. ■

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