

## Inside this issue

- 3 2008 Snow Rodeo winners
- 4 Fenced in: Keeping snow off the road
- 6 Just for street and road workers  
Routine bridge observation activities
- 8 Just for street and road workers  
Routine bridge work
- 9 The Iowa LTAP Advisory Board
- 10 Stanley L. Ring Memorial  
Library: New acquisitions
- 11 Conference calendar
- 11 Low cost safety and traffic  
studies workshops
- 11 Tractor-Mower workshops  
a success

Iowa State University's Center for Transportation Research and Education (CTRE) is the umbrella organization for the following centers and programs:

Bridge Engineering Center  
Center for Weather Impacts on Mobility and Safety  
Construction Management & Technology  
Iowa Local Technical Assistance Program  
Iowa Statewide Urban Design and Specifications  
Iowa Traffic Safety Data Service  
Midwest Transportation Consortium  
National Concrete Pavement Technology Center  
Partnership for Geotechnical Advancement  
Roadway Infrastructure Management & Operations Systems  
Sustainable Transportation Systems Program  
Traffic Safety and Operations

**ctre**  
Center for Transportation  
Research and Education

IOWA STATE  
UNIVERSITY

## Shop Focus: Preparing your equipment for winter

With the winter winds soon blowing, it is never too soon to prepare your equipment for the season to come.

### Winter-specific preparation

Winter involves using different equipment such as chains, heaters, and additional plowing attachments. Preparation means having this winter-specific equipment inspected, stocked, and ready to go once the previous season ends.

To prepare for winter, the city of West Des Moines follows an exhaustive two-page checklist for equipment maintenance and performs vehicle inspections from top to bottom. "It's not an option to have anything not be available," says West Des Moines operations supervisor Bob Dingman. His preparations include mounting spreaders, greasing deicers, adjusting chains, and checking plow blades to ensure all equipment performs as it should. "We pride ourselves on our snow program to keep the major streets open at all times," he says.

By September, Dingman's agency is already updating its snow and ice control manuals with new streets, expanded zones, and more. His agency also holds annual snow meetings to inform personnel of any changes. At the same time, he is also advertising for part-time, on-call help to fill in for any absences that may occur in the winter. Updated manuals, meetings, and part-time help all go together, he says, stressing the importance of winter preparation. "We have to make sure everyone is up to speed on what's new."

Early fall is also when West Des Moines motor grader operator Matt Dolan runs through winter-specific preparations. His equipment inspections include air pressure adjustments to tires to support his vehicle's wings, chain inspections, and antifreeze checks. Once he has inspected his equip-

ment, Dolan performs a dry run through his area to make sure his equipment works fine. Dolan's method is what every West Des Moines operator does and is a tip for every agency: It is one thing to make adjustments for the winter, but it's another thing to ensure they work.

### Year-round preparation

Winter preparation involves not only winter-specific preparation but also year-round preparation. Many local agencies perform year-round vehicle inspections and maintenance. "When winter ends we're already taking inventory and stocking up for next year," says Dingman.

A list of year-round inspections may include the following:

- Fluids (e.g., fuel, windshield washer)
- Windshield wipers
- Bolts, pins, and cracks

*Preparing for winter continued on page 2*

## Equipment preparation tips

Your agency can better ensure its equipment is prepared for winter by asking five key questions:

1. Has your agency developed a 'Winter Preparation' equipment checklist and checked everything twice?
2. Is your agency's inventory checked and updated for the winter?
3. Are your agency's manuals updated?
4. Do your agency's trucks have proper winter attachments, and do they work?
5. Are your agency's employees trained and aware of your winter equipment preparation?

## Acronyms in *Technology News*

AASHTO	American Association of State Highway and Transportation Officials
APWA	American Public Works Association
CTRE	Center for Transportation Research and Education (at ISU)
FHWA	Federal Highway Administration
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  
of Transportation

LTAP is a national program of the FHWA. Iowa LTAP, which produces this newsletter, is financed by the FHWA and the Iowa DOT and administered by CTRE.

Center for Transportation Research and Education  
ISU Research Park  
2711 S. Loop Drive, Suite 4700  
Ames, Iowa 50010-8664  
Telephone: 515-294-8103  
Fax: 515-294-0467  
[www.ctre.iastate.edu/](http://www.ctre.iastate.edu/)

Any reference to a commercial organization or product in this newsletter is intended for informational purposes only and not as an endorsement. The opinions, findings, or recommendations expressed herein do not necessarily reflect the views of LTAP sponsors. All materials herein are provided for general information, and neither LTAP nor its sponsors represent that these materials are adequate for the purposes of the user without appropriate expert advice. ISU makes no representations or warranties, expressed or implied, as to the accuracy of any information herein and disclaims liability for any inaccuracies.

Iowa State University does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, gender identity, sex, marital status, disability, or status as a U.S. veteran. Inquiries can be directed to the Director of Equal Opportunity and Diversity, 3680 Beardshear Hall, 515-294-7612.

## Subscribe to *Technology News*

Subscriptions to *Technology News* are free. We welcome readers' comments, questions, and suggestions. To subscribe, or to obtain permission to reprint articles, contact the editor (see page 4).

## Subscribe to *Tech E-News*

For brief, e-mail reminders about upcoming workshops and other LTAP news, subscribe to Iowa LTAP's free service: Tech E-News. Send an email to Marcia Brink, [mbrink@iastate.edu](mailto:mbrink@iastate.edu). Type "Subscribe Tech E-News" in the subject line.

*Preparing for winter continued from page 1*

- Hydraulics
- Batteries
- Connections

Agencies handle equipment inspections and repairs differently. In West Des Moines, machine operators such as Dolan inspect and repair their machines throughout the year. When winter approaches, the preparation is already underway.

Failure to keep a watchful eye on regularly used equipment can lead to trouble. Drivers can become stranded in frigid conditions because of equipment failure or simply running out of fuel. "There's nothing like being stuck in a blizzard with a broken vehicle," says Dolan. Continual equipment inspection is part of Dolan's year-round motor grader operation. Not only will this yearly preparation ensure you're ready for the winter, but, Dolan says, "it will add time to your equipment's life, as well as to your own."

### For more information

For more information on preparing your agency's winter equipment, contact West Des Moines operations supervisor Bob Dingman, 515-222-3535, [bob.dingman@wdm-ia.com](mailto:bob.dingman@wdm-ia.com) or West Des Moines motor grader operator Matt Dolan, 515-222-3480. ■

## Training your employees

Proper snow plow skills are essential to successful snow management. Every year Iowa's Snow Rodeo offers participants an opportunity to test their skills operating a snow plow. Below are some training tips used in the snow rodeo your agency can try.

- Practice driving forward/backward.
- Navigate obstacles (e.g., barrels, cones).
- Check warning lights.
- Practice spotting and operating wings.
- Negotiate curves.

For more information and to download the snow rodeo training course map and materials, visit: <http://www.ctre.iastate.edu/events/expo/snowplow.htm>.

## Snow and ice control

### ✓ Equipment checklist

#### Spreaders

- ✓ Inspect pumps, hoses, controls, and fittings.
- ✓ Check spinners, augers, and auxiliary engines.

#### Hydraulic spreader controls

- ✓ The two major components are the pump and the controls, whether manual or automatic. Operators should become familiar with spreader controls. Understand how the auger, or conveyor, and the spinner react at various settings.

#### Snow plow blades

- ✓ Carefully inspect blades after each use. If blade wear is excessive it may damage the moldboard. Snow plow blades do not wear evenly and should be replaced when they are worn at any point.

#### Electrical equipment

- ✓ Inspect and service all lighting and electrical equipment regularly, including wiring and sockets.
- ✓ Carry ample stocks of parts for rotating flasher units, including lenses and lamps.

#### Safety equipment

- ✓ Make sure there are flashlights, flares, flags, safety vests, and first-aid kits in truck cabs.
- ✓ Don't start a run without securing your seat belt.

#### Plan for emergencies

- ✓ Know the locations and telephone numbers of emergency repair and refueling stations.
- ✓ Skilled personnel should be on hand in garages during storms to promptly carry out minor repairs.
- ✓ Replenish spare parts inventory immediately following storms, or at the first opportunity.

# 2008 Snow Roadeo winners

More than thirty teams and twenty individuals competed in the 2008 Snow Roadeo, held September 10 at the Iowa Speedway Complex in Newton. The Roadeo offered snow plow truck drivers, motor grader operators, and loader operators the chance to test their knowledge and demonstrate their skills. Congratulations to all the winners!

## Snow plow truck winners

1<sup>st</sup> place—Craig Shepherd and Randy Moore,  
City of Des Moines

2<sup>nd</sup> place—Wayne Barrett and Scott Thomas,  
City of West Des Moines

3<sup>rd</sup> place—Brian Crnkovich and Jeff Sherman,  
City of West Des Moines

2<sup>nd</sup> place—Randy Salm, City of Iowa City

3<sup>rd</sup> place—Pat Linehan, City of Davenport

## Motor grader winners

1<sup>st</sup> place—Matt Dolan, City of West  
Des Moines

2<sup>nd</sup> place—Gary Rank, City of West  
Des Moines

3<sup>rd</sup> place—Johnny Virden, City of  
Des Moines

## Loader winners

1<sup>st</sup> place—Jim Case, City of Des Moines

## 2008 Snow Roadeo sponsors and donors

Thank you to all those who made the 2008 Snow Roadeo possible through various forms of sponsorship and donations.

## 2008 Snow Roadeo sponsors

- American Public Works Association
- Iowa County Engineers Association
- Iowa Secondary Road Maintenance Supervisors Association
- Iowa Department of Transportation
- Iowa LTAP at Iowa State University's Center for Transportation Research and Education
- Federal Highway Administration
- Iowa State University Extension
- Midwest Wheel

## 2008 Snow Roadeo donors

- Beau Roc Dump Bodies
- Everest Dump Bodies
- Force America
- Hawkeye Truck Equipment
- Hawkeye International
- Henderson Truck Equipment
- Henke Snow Plows
- Hiway Equipment
- Logan Contractors
- O'Halloran International
- Tafco
- Trans-Iowa Equipment
- TriState Truck Equipment
- Truck Country
- Ziegler CAT



2008 Snow plow truck winners (from left to right; the first place team of Craig Shepherd and Randy Moore, the second place team of Wayne Barrett and Scott Thomas, the third place team of Brian Crnkovich and Jeff Sherman)



2008 Loader winners (from left to right; first place winner Jim Case, second place winner Randy Salm, third place winner Pat Linehan)



2008 Motor grader winners (from left to right; first place winner Matt Dolan, second place winner Gary Rank, third place winner Johnny Virden)

## 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.

### Staff

**Shashi Nambisan**  
Director of CTRE  
shashi@iastate.edu

**Duane Smith**  
Director of Iowa LTAP  
desmith@iastate.edu

**Tom McDonald**  
Safety Circuit Rider  
tmcdonal@iastate.edu

**Bob Sperry**  
Local Roads Safety  
Liaison  
rsperry@iastate.edu

**Georgia Parham**  
Secretary  
gparham@iastate.edu

**Marcia Brink**  
Communications  
Manager and Editor  
mbrink@iastate.edu

**Michele Regenold**  
Issue Editor

**Alison Weidemann**  
Designer

**Sabrina Shields-Cook**  
**Theodore Wolff**  
Contributing Writers

### Advisory Board

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.

**Royce Fichtner**  
Marshall County Engineer  
641-754-6343  
rfichtner@co.marshall.ia.us

**Gary Fox**  
Transportation Director, City of Des Moines  
515-283-4973  
glfox@dmgov.org

**Neil Guess**  
Howard R. Green Company  
515-278-2913  
nguess@hrgreen.com

**Bret Hodne**  
City of West Des Moines  
515-222-3480  
bret.hodne@wdm-ia.com

**Larry Jesse**  
Iowa DOT, Office of Local Systems  
515-239-1291  
larry.jesse@dot.iowa.gov

**Joe Jurasic**  
Operations Engineer, FHWA–Iowa Division  
515-233-7321  
joe.jurasic@fhwa.dot.gov

**Wally Mook**  
Director of Public Works, City of Bettendorf  
319-344-4128  
wmook@bettendorf.org

**Charlie Purcell**  
Iowa DOT, Office of Local Systems  
515-239-1532  
charlie.purcell@dot.iowa.gov

**Christy VanBuskirk**  
Keokuk County Engineer  
641-622-2610  
cvanbuskirk@keokukcountyia.gov

**Dan Waid**  
Hamilton County Engineer  
515-832-9520  
dwaid@hamiltoncounty.org

# Fenced in: Keeping snow off the road

Snow fences are an effective and economical way of improving winter safety. They keep snow and ice off the road and increase driver visibility by reducing the force of the wind on the snow. A 2006 report by Tabler & Associates revealed that snow fences helped reduce accidents caused by poor visibility by up to 70% along I-80 in southeastern Wyoming.

Snow fences may also reduce costs by supplementing traditional snow removal, reducing the number of trucks and salt used to keep roads clear. Simply put, snow fences are a great addition to an agency's winter program.

### It begins with preparation

Effective snow fence installation requires a plan of action. "Putting up a snow fence is the easy part," says Iowa DOT Road Weather Information Systems Coordinator Tina Greenfield, stressing that preparation is the key to success. Successful snow fence installation demands you know the right spot to install a fence. A poorly placed fence can be ineffective or do more harm than good. Preparation is also important if the snow fence needs to be installed on private property, such as local farm land. Your agency will need enough time to establish a relationship with the farmer to allow your use of the land.

### Three steps to snow fence success

According to Greenfield, there are three primary steps in preparing snow fences for installation, each of which will increase your likelihood for success.

1. Identify your spots. Knowing the roads and areas with the biggest drift and visibility problems will help you figure out where a snow fence is needed. To do this you can ask experienced employees who are familiar with trouble spots.
2. Identify your best chance for success. Not every trouble spot will yield the same chance for success. Some spots may be unavailable due to constraints such as land access or configuration.

Determine which spots are likely to bring success and focus on those first.

3. Identify your budget. Installation requires time, labor, and materials. Determining all three of these will give you a better idea of how to successfully implement your snow fence program and operate within your means.

### When to install

If your agency needs to contact landowners and establish a contract with them to install a snow fence on their land, then by late summer you will want to establish talks and develop a plan for winter.

Many times installation cannot begin until harvest ends and a farmer is out of the field. This can be potentially troublesome depending on the weather. Once the ground freezes and receives snow, it may be too late to install.

### Where to install

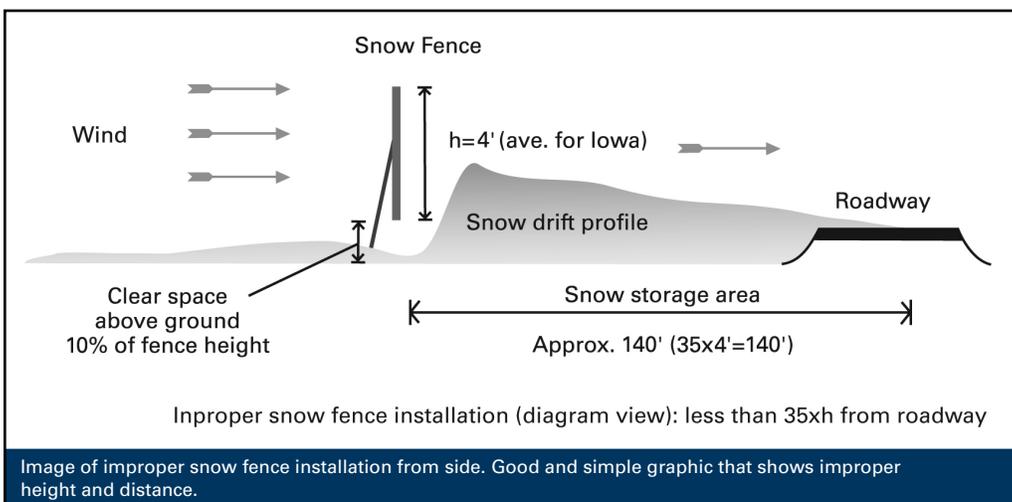
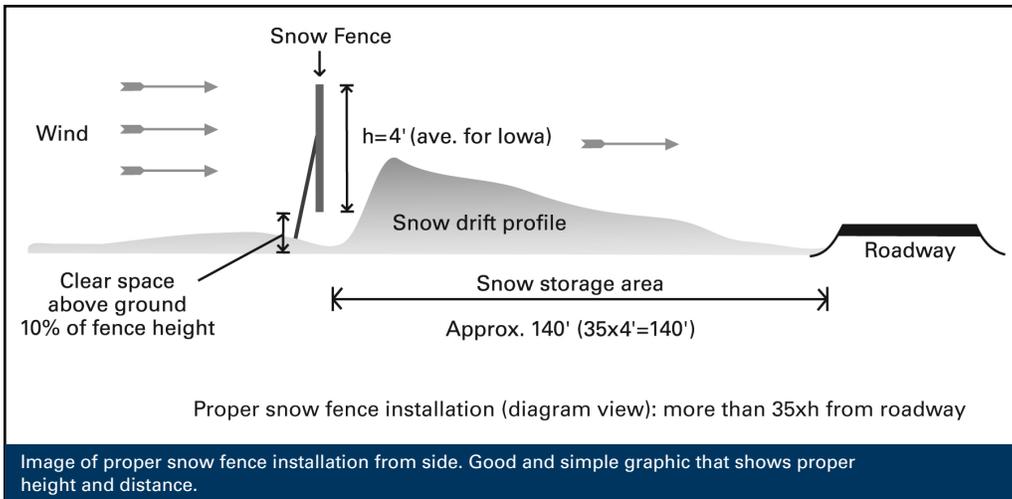
As a rule of thumb, a snow fence should be installed at a distance of 35 times its height from the edge of the road. That is, if you were installing a six-foot-high fence, it would need to be at least 210 feet from the road to be effective. This distance will set the fence far enough away to allow snow to accumulate before the fence and between the fence and the road, rather than over and on the road itself.

A common pitfall in snow fence installation is placing a fence too close to or too far from the road. A fence too close to the road can actually increase the amount of snow on the road. A fence too far from the road will allow the wind to pick snow back up and deposit it on the road. It is best to properly measure the distance and, if needed, to install multiple fences.

A snow fence should also extend approximately 20 feet or 30 degrees past the length of the area intended for protection. This will reduce the effect of wind wrapping around the edge of the fence, increasing the area of coverage. Extending the fence also helps protect against a larger variation of wind directions.

The orientation of the snow fence should be parallel to the road and perpendicular to prevailing winds. However, the makeup of the terrain may alter fence placement. An adjust-





### Determining height

The height of your snow fence is an important factor in stopping snow. The higher a fence, the more snow it can stop, but the more expensive it is. Tina Greenfield says a height of four to six feet is average for the Iowa DOT, but it largely depends on the location and extent of the snow problem.

ment in a fence's angle up to 25 degrees will not significantly detract from the fence's effectiveness.

### How to install

The physical installation of the fence is perhaps the most traditional part of the installation process but can vary depending on the type of your fence. Common fence types include post-supported fences, truss-type fences, and living fences.

Post-supported fences are made by driving steel or wooden posts into the ground, unpacking the fencing material, and tying the fence to the posts. This type of fence can take more time and labor to install, with numerous trips to transport materials.

Truss-type fences consist of a surface-mounted framework that's anchored to

prevent overturning in the wind. Truss-type fences are often prefabricated, reducing the time and labor required to install them.

Living fence installation is up to the land owners, who plant trees or shrubbery or leave corn stalks in their fields to act as a fence and prevent the wind from carrying snow onto the road.

A gap of approximately 10% of the fence's height should be left underneath the snow fence. If you were installing a fence with a height of four feet, you would want to install the fence with 4–5 inches between the bottom of the fence and the ground. This gap will prevent snow from accumulating near and on the fence. This will reduce extra weight and damage from snow accumulation and increase the effectiveness

of your fence.

### A successful installation

The benefits of snow fences cannot be overlooked. Ineffective snow fences, or a lack of snow fences can result in impaired driver visibility, buried informational signs, and snow drifts making a road inoperable—all of which increase the dangers and risks to road workers and drivers. Snow fences help reduce these dangers and reduce the costs of other means of snow removal to provide better snow management.

### For more information

For more information, contact Iowa DOT RWIS Coordinator Tina Greenfield, 515-233-7746, [tina.greenfield@dot.iowa.gov](mailto:tina.greenfield@dot.iowa.gov). ■

# Just for street and road workers

*Editor's note:* The two articles on page 6–8 are the latest in a series based on information in Iowa's Local Roads Maintenance Workers' Manual. The manual was developed by CTRE and sponsored by the Iowa Highway Research Board (TR-514). The series began with the July–August 2006 issue of *Technology News*. Previous topics included maintaining gravel roads and identifying/repairing pavement distresses.

## Routine bridge observation activities

A bridge failure can be catastrophic. It can cause injury or death and can be very expensive to restore. Defects, damage, erosion, or other serious flaws need to be addressed quickly.

City and county road maintenance workers should always be alert for and tell your supervisor about any signs of bridge problems. As you drive over bridges or work in their vicinity, be aware of the signs of bridge stresses.

Conduct these informal observations on a routine, ongoing basis during all seasons of the year. When spring arrives, look particularly at bridge approaches and bridge decks for deterioration from freeze-thaw action.

### Bridge approach

On gravel road approaches to bridges, look for the following potential problems:

- Poor crown transition from the road to the bridge deck.
- Too much aggregate and/or inadequate crust on the bridge approach, so that the aggregate migrates onto the bridge deck. Aggregate on the bridge deck may, in effect, narrow the operating width of the bridge.
- Standing water or erosion at the shoulder line.

On paved road approaches to bridges, look for the following potential problems:

- Pavement distresses and excessive cracking
- Joint failures
- Erosion at the pavement edges
- Cracking or settlement of approach slabs
- Poor condition of expansion joint where the slab meets the bridge deck
- Poor ride
- W-beam rail sections badly bent out of shape

- Loose bolts
- Loose, broken, or rotted wooden posts
- Bent or badly off line steel posts
- Inadequate guardrail blister offering too little support of the end section
- Holes or ruts under the guardrail that vehicle wheels could drop into
- Traffic damage
- Too low or too high rail
- Overgrown vegetation under and around the rail

### Bridge decks

In Iowa, bridge decks can be timber, concrete, or steel.

**Timber decks.** Potential problems:

- Loose nails, spikes, or fasteners
- Openings between planks over abutments and piers which allow dirt to sift through
- Split, worn, broken, or decayed planks

**Concrete decks.** Potential problems:

- Cracking
- Leaching
- Exposed reinforcing
- Scaling
- Potholes
- Spalling
- Other evidence of deterioration

**Steel decks.** Potential problems:

- Corrosion
- Unsound welds
- Loose welds where the deck is fastened to the stringers
- Dirt collected in open-grid decking on top of stringers
- Deteriorated paint



Check under the bridge for seepage, calcium deposits, and cracks in the deck or beams

### Traffic control devices

Typical traffic control devices (TCDs) at bridges include object markers, delineators, pavement markings, and signing. All TCDs should be easily visible and not damaged or worn.

### Structural members

Observe the condition of trusses by sighting along the roadway rail or curb and along the truss chord members. Look for truss misalignment, either vertical or horizontal. Bent trusses may reduce the bridge's operating width and/or reduce the structure's soundness.

Note any members damaged by vehicles.

**Underside of the deck.** Potential problems:

- Seepage
- Calcium deposits
- Cracks in the deck
- Exposed reinforcing

**Structural members.** Potential problems with steel or pre-stressed concrete beams, bridge abutments, and backwalls:

- Steel beams that are corroded, discolored, or bent from being hit
- Pre-stressed beams that are cracked or have pieces missing, particularly on the bottom flanges
- Backwalls that are eroded or pushed out of alignment

- Abutments that are deteriorated or have erosion problems or leaking deck joint
- Bearings that are corroded or frozen up due to rusting

**Piers and columns.** Potential problems:

- Erosion at the bottom of the columns
- Deteriorated concrete in the columns
- Pier caps that are cracked or out of alignment
- Piers that are damaged due to ice or other debris

### Slope protection

The purpose of bridge slope protection is to control erosion and vegetation growth. On paved slope protection, look for the following potential problems:

- Broken panels (Broken panels may not need to be replaced if they are seated and generally conform to the slope.)
- Cracks (Although cracks themselves are not detrimental to the performance of slope protection, they should be sealed to prevent water intrusion, which may cause settlement and/or sliding of the panels.)

Most slope protection is riprap or revetment. Look for the following problems:

- Bare areas
- Exposed fabric
- Erosion
- Inadequate rock size

## Characteristics of well-maintained bridges

- The operating lanes are as wide as they were when the bridge was constructed.
- Structural members are free from damage and corrosion and are in the same alignment as when they were built.
- The deck is free of debris and deterioration.
- All traffic control devices are in place, well maintained, and visible.
- The channel is free of erosion.
- The channel and structural members are clear of debris.
- The bridge railing is in good condition.
- Any approach guardrail is in place and properly aligned.
- The approach provides smooth access to the bridge deck.

### Drainage systems and waterways

Drainage systems should be repaired or replaced as necessary to prevent further damage. Look for the following potential problems along the waterways:

- Debris collecting near piers or in the stream channel. Debris accumulations may cause scour, redirect the stream channel, apply excessive hydraulic loads, or become a fire hazard. They should be removed as soon as possible.
- Damage to wing dams, etc., which protect the bridge or control the streambed. Such damage should be scheduled for repair as soon as possible.
- Sand and gravel bars that divert water flow and perhaps cause scour.

### For more information

For in-depth bridge inspection and repair documents and courses, contact Iowa LTAP librarian Jim Hogan, 515-294-2481, hoganj@iastate.edu. ■

# Just for street and road workers

## Routine bridge work

Consult your supervisor and perform routine bridge maintenance and repair as directed.

### Cleaning

First remove debris or excess vegetation from the bridge approach, bridge deck, under and around the guardrails, under the bridge, and in the waterway.

Dispose of accumulated debris. Do not leave debris where it might be picked up during the next high water event.

Clean decks, piers, abutments, and expansion joints. You may be asked to blow incompressible materials from the joints.

### Blading the bridge approach (granular surface)

Bridge approaches may need frequent blading because they are difficult to drain and the subbase beneath the crust is prone to settling.

If a bridge deck is crowned, gradually reduce the road crown to match the bridge crown. If the bridge does not have a crown, gradually zero out the road crown to meet the elevation of the bridge deck.

Do not drag too much rock onto the bridge deck.

### Repairing wood decks

Loose or broken planks can create a safety hazard for drivers. If you observe either, tell your supervisor immediately.

You may be asked to make minor repairs. First, tighten loose planks with existing or new bolts.

Then determine the number of planks to be replaced, and measure the lengths required. Bring new bridge planks to the site and cut them to length using a chain saw. Remove and replace old broken planks.

When you're finished and the bridge deck is secure, notify your supervisor. Documenting the timing of maintenance repairs can be critical in liability lawsuits.



Cleaning debris in river channel (Photo courtesy of Indiana LTAP)

### Repairing delaminated decks

To determine the extent of surface delamination, drag a log chain over the entire deck surface. Where the concrete is deteriorating, you will hear a distinct hollow sound. Mark these areas with spray paint.

With jack hammers and hand tools remove the deteriorating concrete down to sound concrete. The deterioration may extend under the re-bars. Thoroughly clean the area with an air compressor and power and hand brooms.

If you are repairing the deck during cold weather, place a temporary asphalt patch.

If the weather is moderate, apply a grout or bonding agent and then place a concrete surface patch. Cover the new concrete with a liquid curing compound, plastic, and/or wet burlap, as directed by your supervisor. This protection allows the concrete to cure (develop the required strength) adequately before traffic is allowed on the concrete. ■

### Effects of delamination on bridge decks

Delamination is generally caused when chloride ions (salts) infiltrate the concrete deck and eventually corrode the reinforcing bar (re-bar). When steel corrodes, it expands up to eight times. The expansion puts pressure on the concrete until its bond with the re-bar is broken and cracks develop.

Eventually pieces of the concrete deck will come loose and break off. Broken areas are like tooth decay: They will spread until the damaged areas are removed and filled with new material.

# LTAP 25th Anniversary

## The Iowa LTAP Advisory Board

**Editor's note:** This article is part of our ongoing series celebrating Iowa LTAP's 25th anniversary in 2008.

In 1983, the Iowa LTAP began providing services to Iowa's cities and counties. As time went on, the LTAP staff wanted to know how they were doing. Were the newsletter articles helpful to city and county employees? What additional training programs were needed? How could the library better serve local agencies?

To answer these questions and create better communication between the Iowa LTAP staff and the local agencies it serves, Iowa LTAP created its first advisory board in 1994. The 1994 advisory board consisted of representatives from the Iowa County Engineers Association (ICEA), the Iowa chapter of the APWA, the Iowa Highway Research Board, the Iowa DOT, and the FHWA.

"We wanted to bring all the LTAP partners to the table to help provide guidance and oversight for the program," says Iowa LTAP Director Duane Smith.

### Early goals

The primary goals of the first advisory board were to identify the needs of cities and counties and to figure out ways for LTAP to meet those needs. A notice was published in *Technology News*, introducing readers to the advisory board members and encouraging them to contact board members to comment, make suggestions, or ask questions about the Iowa LTAP.

The board members brought valuable feedback to Iowa LTAP from the agencies they represented. Agencies reported that *Technology News* was the main way they received information about LTAP programs. They requested articles on communication, technology, and practical "tips from the field."

"The most valuable thing about the first advisory board was the way they helped us look at how we interacted with our part-



The advisory board provides guidance and oversight for the LTAP program.

ners," says Smith. That interaction, he adds, is what makes Iowa LTAP so successful.

### Moving forward

Beginning in 1999, the role of the board changed. The agency representatives continued to review the LTAP program and provide feedback for its improvement. The local government representatives began to move away from their strictly reviewing function and began to operate as a working board.

The members of the working board wanted to find a way to increase participation in LTAP training programs. At a 1999 board meeting, they discussed the possibility of developing an accomplishment program to recognize workers for participating in LTAP training programs. This idea became a reality in 2001, when the Roads Scholar Program was implemented through the National LTAP program.

The LTAP board also played a major role in the development of the Iowa Secondary Roads Maintenance Supervisors Association (ISRMSA). Secondary roads supervisors worked in rural counties all across the state and didn't have much contact with each other.

"Supervisors needed a forum to discuss more management-type issues," says Bob Sperry, LTAP Local Roads Safety Liaison and LTAP advisory board member from 1994–2008.

"[The ISRMSA] allowed them the opportunity to share common problems and work together to find solutions," Sperry adds.

### Looking to the future

The current Iowa LTAP advisory board continues to work on developing new programs and finding more effective ways to serve Iowa's cities and counties. The board members are the lifeline connecting Iowa LTAP with the agencies and organizations it serves.

"The board members know our program and are very good at bringing us input from their organizations," says Smith. "Many times they help with ongoing programs or participate in the development of new ones."

For example, the Iowa chapter of the APWA is working jointly with Iowa LTAP to develop the Iowa Public Employees Leadership Academy. The ICEA provides ongoing support for the Motor Grader Operator Program. The Iowa DOT works with LTAP on the biannual Iowa Maintenance Expo. Finally, FHWA and IHRB provide substantial funding to the LTAP program each year.

### Meet your LTAP board

Board members for 2008–2009 are always listed in the sidebar on page 4 of *Technology News*. Feel free to contact them to ask questions or give us feedback.

Board members serve two-year terms. When a board member rotates off the board, the agency or organization that he or she represents is asked to provide a replacement. If you're interested in serving on the LTAP advisory board, contact Duane Smith at 294-8817, [desmith@iastate.edu](mailto:desmith@iastate.edu). ■

## Stanley L. Ring Memorial Library: New acquisitions

*Note about delivery of materials:* The library now sends orders through the U.S. Postal Service. This change is resulting in important savings for LTAP, but ordered materials do not arrive as quickly. 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.ctr.eiastate.edu/library/search.cfm](http://www.ctr.eiastate.edu/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 *Technology News*.

### Publications

#### P-1723 Informational Report on Lighting Design for Midblock Crosswalks

This report provides information on lighting parameters and design criteria that should be considered when installing fixed roadway lighting for midblock crosswalks.

#### P-1724 Minimum Retroreflectivity Levels for Blue and Brown Traffic Signs

This report describes the research activities and consequent findings related to the development of recommendations for minimum retroreflectivity levels for white-on-blue and white-on-brown traffic signs.

#### P-1725 Rumors, Myths, and the Straight Facts

This brief reference dispels misinformation regarding sign sheeting products and regulations.

#### P-1726 Barrier Guide for Low Volume and Low Speed Roads

This guide provides assistance in the warranting, selection, and design of roadside barriers on low volume and/or low speed Federal Lands Highway projects.

#### P-1727 Facilitating Your Own Meetings: Essential Skills for Managers and Supervisors

This publication presents basic skills for effective meeting facilitation. It provides pointers for doing it yourself, knowing when to call on another group member to facilitate, and when to bring in someone from the outside.

#### P-1728 Roadside Revegetation: An Integrated Approach to Establishing Native Plants

This report offers an integrated approach to facilitate the successful establishment of native plants along areas of disturbance associated with road modifications. It guides readers through a comprehensive process of initiating, planning, implementing, and monitoring a roadside revegetation project with native plants.

### Videos and DVDs

#### DVD-173 Safe Operation of John Deere Skid Steers and Compact Track Loaders

This video shows the pre-starting and daily maintenance procedures for the 300 Series skid steers and compact track loaders.

It explains the controls and safety systems on these units, provides some tips, and demonstrates techniques for safe operation to help make work easier and more efficient.

#### V-758 Herbicide Selection and Safe Use

This video covers safe and effective weed control, with emphasis on in-field safety. It includes information on proper equipment and clothing, as well as the choosing, storage, disposal, and spills of herbicides. Also available on DVD-175.

#### V-759 How to Respond to an Emergency

This video covers the basic steps of emergency response and shutdown and evacuation procedures. Also available on DVD-176.

#### V-760 OSHA Recordkeeping

This video shows how to avoid over-recording accidents while still complying with OSHA regulations. It gives clear guidance for accident/illness paperwork. Also available on DVD-177. ■

## Conference calendar

### September 2008

30	ISRMSA Streets and Roads Workshop	Ames, IA	Duane Smith 515-294-8817 desmith@iastate.edu
----	-----------------------------------	----------	--

### October 2008

1–2	ISRMSA Streets and Roads Conference	Ames, IA	Duane Smith 515-294-8817 desmith@iastate.edu
21	Low Cost Safety and Traffic Studies Workshop (Rural)	Ames	Tom McDonald 515-294-6384 tmcdonal@iastate.edu
22	Low Cost Safety and Traffic Studies Workshop (Urban)	Ames	Tom McDonald 515-294-6384 tmcdonal@iastate.edu
28	Traffic and Safety Engineering Forum	West Des Moines	Judy Thomas 515-294-1866 jathomas@iastate.edu
30	Low Cost Safety and Traffic Studies Workshop (Rural)	Carroll	Tom McDonald 515-294-6384 tmcdonal@iastate.edu

### November 2008

18	Low Cost Safety and Traffic Studies Workshop (Rural)	Iowa City	Tom McDonald 515-294-6384 tmcdonal@iastate.edu
19	Low Cost Safety and Traffic Studies Workshop (Urban)	Iowa City	Tom McDonald, 515-294-6384 tmcdonal@iastate.edu
20	Managing Stormwater Quality in Iowa: Focus on Infiltration Practices	Ankeny, IA	Beth Richards 515-294-2869 brich@iastate.edu

## Low-cost safety and traffic studies workshops

Registration is now open for a series of low-cost safety and traffic studies workshops for cities, counties, and planning agencies, sponsored by the Iowa DOT.

Three rural sessions and two urban sessions will be offered at three different locations across the state. There is no charge for attendance. Register online at [www.ctre.iastate.edu/events/low-cost-safety-traffic.htm](http://www.ctre.iastate.edu/events/low-cost-safety-traffic.htm).

Representatives from the Iowa DOT, the Iowa Governor's Traffic Safety Bureau, FHWA, and CTRE will speak on a range of traffic safety issues, best practices, and low-cost maintenance improvements.

For more information, contact Tom McDonald, Center for Transportation Research and Education, 515-294-6384, [tmcdonal@iastate.edu](mailto:tmcdonal@iastate.edu). ■

## Tractor-Mower workshops a success

Iowa LTAP held its first round of Tractor-Mower Operator Safety Training (TMOST) workshops in August. Sixty-six people attended the workshops, which were held in four locations across the state. The workshops were highly rated by attendees in all locations.

TMOST, which is the most recent addition to LTAP's training lineup, included four hours of classroom training and three hours of hands-on training. Topics included safety before, during, and after operation; equipment inspection; and use of personal protective gear.

The workshops were originally scheduled in June, but were postponed due to the flooding that occurred across the state.

If you were one of the many people who planned to attend the June workshop but couldn't attend in August, keep your eye on *Technology News* for additional TMOST

offerings in spring 2009 or check out the LTAP event calendar at <http://www.ctre.iastate.edu/calendar/index.cfm>. ■



A photo of one of the Tractor Mower Safety Operator Training workshop held in Waterloo, IA.

# LTAP Materials

- ✓ Order library materials
- ✓ Send *Technology News* to a friend
- ✓ Correct your mailing information

To make a change to the *Technology News* mail list or to order library materials, please complete the information below and mail or fax this page (including mail label) to CTRE's address below:

**Center for Transportation Research and Education**

2711 S. Loop Drive, Suite 4700

Ames, IA 50010-8664

**Fax:** 515.294.0467

- Add the following name/address to the *Technology News* mail list.
- Correct the name and/or address below on the *Technology News* mail list.

**New or corrected mailing information:**

Name \_\_\_\_\_

Title \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

- Delete the name/address below from the *Technology News* mail list.
- Send the following library materials to the address below (or to the corrected address above):

Title: \_\_\_\_\_

P-, V-, DVD or CR-number: \_\_\_\_\_

Title: \_\_\_\_\_

P-, V-, DVD or CR-number: \_\_\_\_\_

**Subscribe to *Technology News* online at**

[www.ctre.iastate.edu/pubs/Newsletter\\_Request/mailform.cfm](http://www.ctre.iastate.edu/pubs/Newsletter_Request/mailform.cfm).

P 486-0524

## *Technology News*

Center for Transportation Research and Education

ISU Research Park

2711 S. Loop Drive, Suite 4700

Ames, IA 50010-8664

**RETURN SERVICE REQUESTED**