

Inside this issue

- 2 Just say no to noxious weeds
- 3 Tell us your training needs
- 5 Tear-out on best safety practices
- 7 Conference calendar

Help us select topics for upcoming workshops—complete the tear-out survey and you may win an iPod!

Don't miss the tear-out on best safety practices included in this issue.

IOWA STATE UNIVERSITY
Institute for Transportation

Knapp named LTAP director



“It’s great to return to Iowa and focus on providing effective materials and useful training opportunities.”

Crash Information and Research Center, a nine-state pooled-fund center currently led by the FHWA; and program director in the Engineering Professional Development Department, University of Wisconsin.

The common thread in Keith’s career has been his focus on transportation safety and training, most specifically on the operational and safety impacts of roadway characteristics. He has

- Developed, organized, and/or taught a program of 9 to 12 transportation-related training courses each year throughout the United States
- Been an instructor in various formats, including electronic and face-to-face training
- Organized and been an instructor of the Wisconsin LTAP Highway Safety course, offered seven times a year
- Helped complete contract training courses for state DOTs, the FHWA, and the Institute of Transportation Engineers
- Organized an annual symposium for the Deer-Vehicle Crash Information and Research Center

Keith’s involvement with both local and national safety and training-related efforts will benefit Iowa’s local transportation community.

“It’s great to return to Iowa and focus on providing effective materials and useful training opportunities,” Keith says.

“I have a lot to learn about Iowa’s local street and road agencies, but the bottom line is I’m happy to be part of a program that helps actively respond to the ever-increasing demands on local professionals’ time and resources.”

And we’re happy to have you here, Keith. Welcome, and best wishes. ■

“People in LTAP are a can-do, what-can I-do-to-help-you-out, kind of people,” says Keith Knapp.

Keith, who as of June 1 has replaced the retired Duane Smith as director of Iowa LTAP, was responding to his baptism-by-fire: attendance at the 2010 annual national LTAP conference in Oklahoma City.

“There was a different kind of energy at the LTAP conference than I’ve experienced at many other conferences. It was a straight-forward approach – how can we be more effective at helping our locals — kind of meeting. There are lots of interesting approaches being taken, especially in these hard economic times, that might be worth checking out.”

Joining LTAP at Iowa State University is a little like coming home for Keith. From 1998 to 2000, he worked for an earlier incarnation of InTrans (CTRE) as a traffic and safety engineer and an ISU faculty member.

Keith has held a variety of professional positions, among them director of Transportation Safety Engineering, University of Minnesota’s Center for Excellence in Rural Safety; director of the Deer-Vehicle

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
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
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 the Institute for Transportation.

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Just say no to noxious weeds

Toxic and/or invasive weeds take a huge economic toll every year in Iowa. They

- Displace and destroy native ecosystems
- Put pressure on endangered species
- Impede opportunities for recreational activities
- Disrupt agriculture by spreading into cropland

For these reasons, public agencies need to do their part in properly managing noxious weed populations in public rights-of-way.

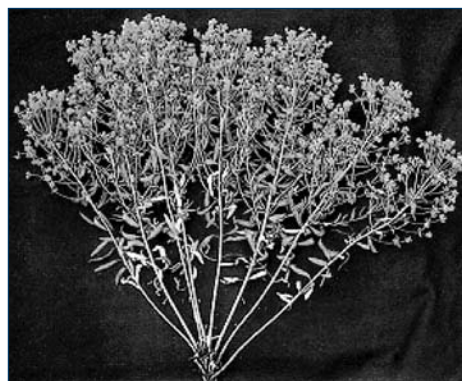
Leafy spurge and Canada thistle

Two of the most prominent noxious weeds in Iowa include leafy spurge and Canada thistle.

Leafy spurge. Leafy spurge is a perennial herb with yellow flowers that can reach 2½ or 3 ft tall. The stems usually cluster from a vertical root that can extend several feet into the ground.

Leafy spurge displaces native plants in prairies and fields. It can grow in moist or dry soil conditions, but it thrives in dry conditions when there is less competition from native plants.

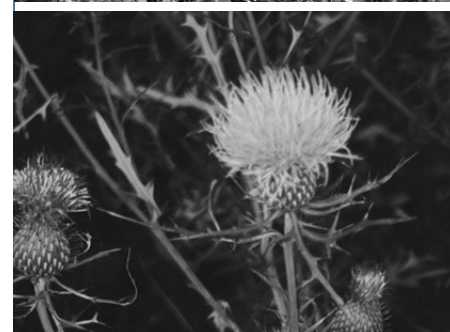
Once established, leafy spurge prevents growth of other plants by releasing toxins. If ingested, these toxins also threaten many animals. Ingesting too much can be fatal.



Leafy spurge

Canada thistle. Another noxious perennial herb in Iowa is Canada thistle. It has purple, lavender, and white flowers that bloom from June through October. It can reach 2 to 4 ft tall. The stem is branched and prickly, as are the leaves, which grow singly and alternately from the stem.

Canada thistle establishes itself by crowding out other plants through shading, competing for soil resources, and releasing toxins that poison surrounding species.



Canada thistle

Management responsibilities and options

It is important to prevent noxious weeds from spreading to crop or pasture areas where they can displace grain crops or be consumed by livestock.

In Iowa, county weed commissioners are required to eradicate noxious weeds on all public land and enforce eradication by landowners of private land. Although "eradication" is stipulated, land managers have acknowledged that some weeds cannot be fully eliminated. They can, however, be suppressed and controlled through a variety of methods.

Mowing. Cody Peterson, Webster County weed commissioner, encourages anyone who mows and bales ditches to watch for noxious weeds. Do not use any bales containing leafy spurge as fodder. Identify

Just say no to noxious weeds continued on page 7

Everyone who completes and returns a copy of this survey by September 15, 2010, and provides valid contact information, will have a chance to win a new iPod!

The iPod winner will be selected in a random drawing during the 2010 Iowa Streets and Roads Conference at the end of September. (The winner does not need to be present.)

Tell us your training needs

To help us choose topics for future LTAP workshops, please complete the following survey and return it by September 15, 2010.

Potential Workshop Topics

For each topic listed below, circle the number indicating the likelihood that you or someone from your organization will attend. Remember, most LTAP training is conducted locally or regionally. (Note: The following topics are in addition to regular LTAP conferences and workshops, such as the Snow Rodeo, Motor Grader Operator Training, Work Zone workshops, etc.)

Potential Topics	1 = Very likely to participate 2 = Somewhat likely to participate 3 = Not likely to participate		
	1	2	3
Basic and Advanced Math	1	2	3
Basic Construction Inspection (Technicians)	1	2	3
Construction Inspection Administration (Engineers/Managers)	1	2	3
Designing and Maintaining Pedestrian Facilities for ADA Guidelines	1	2	3
Designing and Maintaining Traffic Signals	1	2	3
Excavation Safety	1	2	3
Guardrail Design and Maintenance	1	2	3
Low-Cost Surface Treatment Rehabilitation	1	2	3
Management of Signing, Bridge, and Pavement Assets	1	2	3
Managing Snow and Ice	1	2	3
Roadside Safety	1	2	3
Roadway Signing and Pavement Markings	1	2	3
Safety Coordinators Training	1	2	3
Sign Retro-Reflectivity Program Implementation	1	2	3
Tractor Mower Safety	1	2	3

Other Potential Topics?

Do you and/or your staff need to improve an activity or process? Tell us about it, and maybe we can provide specific training. _____

Rainy Day Training Online?

Iowa LTAP is considering supplementing its online Leadership Academy (www.intrans.iastate.edu/ltap/leadership_academy.htm) by developing short, online modules for individual training on specific topics. You and/or your staff could access them during unexpected free time. Minimum fees would be charged.

Do you and/or your staff have access to a computer with internet service for in-house training? (Check one.) Yes No

Assuming quality material, do you think you and/or your organization would take advantage of such resources? (Check one.) Yes No

Comments about online training modules? _____

Tell us how we can improve LTAP and serve your agency better _____

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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Tell us your training needs continued from page 3

About You

What type of organization do you work for? (Check one.) Local government State government Contractor
 University Other _____

Please provide this information so we can enter your survey in the iPod drawing (see opposite side), respond to specific questions or requests, update our records, and build our e-mail list to save printing and postage costs.

Name (first, last):	Position:
Organization:	
Address (street or P.O. box):	
City, state, zip:	
Daytime phone:	
Email (yours or that of someone who can pass information on to you):	

Send the Completed Form

Fax this form to 515-294-0467

Thank You!

We appreciate your input.

Best Practices for Low-Cost Safety Improvements on Iowa’s Local Roads | Excerpt 5 — Guardrail and Barriers

This is the fifth in a series of summarized excerpts from the manual Best Practices for Low-Cost Safety Improvements on Iowa’s Local Roads. This excerpt is based on Chapter 5: Guardrail and Barriers and Chapter 10: Bridges and Culverts. Remove this page and post it, or photocopy it and distribute it to your staff.

Reflective Tape and Paint on Guardrails

Reflective tape and paint on guardrails emphasize an area of changing alignment and/or physical width during all hours of the day and provide the driver with additional awareness. Tape has been placed on guardrails on IA 212 between Belle Plain and Marengo and is especially effective when placed on bridge approach and horizontal curve guardrails. In 2007, Sioux County installed reflective paint (paint and beads) on guardrails on B30 just west of K22 and another Sioux County bridge. While still being evaluated, this treatment has been effective on bridge approaches and horizontal curves.

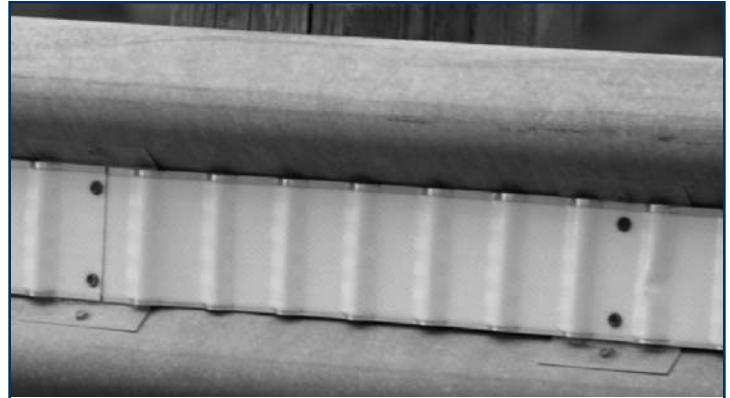
Project contact

Reflective tape

Iowa DOT
Office of Traffic and Safety
800 Lincoln Way
Ames, IA 50010
Phone: 515-239-1557

Reflective paint

Doug Julius, P.E.
Sioux County Engineer
P.O. Box 17
Orange City, IA 51041
Phone: 712-737-2248
dougj@siouxcounty.org



Additional emphasis for guardrails provided by reflective tape (top) and reflective paint (bottom). (Photos courtesy of the Iowa DOT [top] and Bob Sperry [bottom])

Roadside Cable Barrier

Cable barriers are guardrail made of cable that help protect drivers during run-off-road incidents at hazardous locations (e.g., embankment areas and curves). Beginning in 2008, Winnebago County has installed cable barriers in spot locations. This strategy helps drivers avoid lane departure or hitting immovable hazards near the clear zone, including embankments and bodies of water. While installing cable barriers is expensive, when installed correctly they can help decrease reportable outside curve roadway departure crashes.

Project contact

Winnebago County Engineer
126 South Clark
Forest City, IA 50436
Phone: 641-585-2891
dreisetter@wctatel.net



Cable guardrails at an embankment area (top) and at a curve location (bottom). (Photos courtesy of Tom McDonald)

Best Practices for Low-Cost Safety Improvements on Iowa's Local Roads | Excerpt 5 – Guardrail and Barriers

This is the fifth in a series of summarized excerpts from the manual Best Practices for Low-Cost Safety Improvements on Iowa's Local Roads. This excerpt is based on Chapter 5: Guardrail and Barriers and Chapter 10: Bridges and Culverts. Remove this page and post it, or photocopy it and distribute it to your staff.

Roadside Beam Guardrail

Beam guardrails are steel beams mounted on posts that are typically used where lane departure crashes are common and at sites that would result in specially severe damage. This type of guardrail was installed around a lake in Story County in the early 1980s soon after the lake was constructed and before the trees along the edge had matured. Beam guardrails can reduce reportable crashes.

Project contact

Darren Moon, P.E.
Story County Engineer
 837 N Avenue
 Nevada, IA 50201
 Phone: 515-382-7355
 engineer@storycounty.com



Guardrail along embankment at the edge of the county lake. (Photos courtesy of Bob Sperry)

Guardrail at Culvert Ends

Guardrails protect drivers from roadside hazards that cannot be removed. Beginning in the 1980s in Story County, guardrails have been installed at culverts to protect drivers from the drop-offs. The length of guardrail required depends on the culvert dimensions; guardrails can cost between \$7,000 and \$10,000 per side. This strategy can help reduce all reportable crashes.

Project contact

Jim George, P.E.
Dallas County Engineer
 415 River Street
 Adel, IA 50003
 Phone: 515-993-4289
 jgeorge@co.dallas.ia.us



A guardrail around a culvert, protecting from the drop-off hazard. (Photos courtesy of Bob Sperry)

Guardrail at Bridge Ends

Bridge guardrails can protect drivers from direct impacts with concrete abutments and from lane departures over embankments. Since the 1970s, Boone County has installed guardrail at most bridges on the Federal Aid Route. The current standard for federally funded bridges is guardrails at all four corners on collector routes (e.g., approach and departure locations) and on the approaches on local routes. Guardrails can cost between \$3,000 and \$4,000 per corner. This strategy can decrease all reportable crashes and, especially, fatal crashes.

Project contact

Jim George, P.E.
Dallas County Engineer
 415 River Street
 Adel, IA 50003
 Phone: 515-993-4289
 jgeorge@co.dallas.ia.us



Approach guardrail on a typical bridge. (Photos courtesy of Bob Sperry)

Just say no to noxious weeds continued from page 2

locations that may need special attention, such as treating with herbicides or burning as described below.

Cleaning equipment. Ben Hoskinson, Mahaska County roadside manager, says that management of noxious weeds begins with something as simple as cleaning your equipment thoroughly before leaving a site. Doing so reduces the likelihood of seed transport.

Herbicides. Peterson says that Roundup Ready fields help prevent the spread of leafy spurge into crop areas.

Webster County implements a fall spraying program to treat leafy spurge and Canada thistle. Roadsides are treated in a two-year cycle, half in one year and the other half in the second year.

Contractors also apply an herbicide called Milestone. In known problem areas, Peterson does follow-up spot-spraying with Milestone, avoiding areas with native species.

Other chemicals applied by spraying programs to treat noxious weeds include Banvel, Plateau, Glyphosate, and Tordon.

Burning. Webster County does not currently have a burn program, but Peterson says burning can reduce seed germination.

Spraying and burning. A solid strategy is to combine spraying and burning: Apply chemicals in the fall when weed nutrients are concentrating in the root systems, and then follow up the next spring by burning infested areas before seeds develop.

Using biological controls. Biological controls sometimes include the use of insects to minimize noxious weeds. The results from biological controls are not as immediate as from herbicide applications. If the use of pesticides is minimized in the infested area so that biological agents can flourish, however, the results can be very satisfactory.

As an alternative to chemical and mechanical controls, the U.S. Department of Agriculture has reported the success of some biological controls for leafy spurge. These include the following:

- Leafy spurge stem boring beetle (*Oberea erythrocephala*)

- Leafy spurge flea beetles (*Aphthona* spp.)
- Leafy spurge gall midge (*Spurgia esulae*)

Using native vegetation. When a prairie is planted, weeds are smothered by other, more desirable plants. Although establishing prairie can take up to five years, counties can feel the value where it counts—in their budgets, due to savings in mowing and spraying expenses.

A prairie mix in Iowa is quite diverse. It usually includes up to seven native grasses, including big bluestem, little bluestem, Indian grass, and sideoats grama, plus 15 to 30 wildflower species. This variety of species enables the plantings to occupy more ecological niches that would otherwise be susceptible to various kinds of weed infestation.

For more information

Basic information for this article was provided by the Integrated Roadside Vegetation Management (IRVM) program at the University of Northern Iowa. For questions or assistance managing invasive species and noxious weeds, contact the IRVM program manager, Kirk Henderson, 319-273-2813, kirk.henderson@uni.edu.

Or, contact your local weed commissioner. An online list of county contacts is maintained by IRVM: www.uni.edu/irvm/Countycontacts.htm.

Other potential contacts referenced in this article include the following:

- Cody Peterson, vegetation specialist and Webster County weed commissioner, 515-576-4258, peterson@webstercountyia.org.
- Ben Hoskinson, Mahaska County roadside manager, 641-672-2897, ext. 16, hoskinson@Mahaskacounty.org.

Three publications in the Iowa LTAP library could be useful:

- *Back Country Road Maintenance and Weed Management*, U.S. Department of Agriculture, Forest Service; 22 pages, P1665.
- *Vehicle Cleaning Technology for Controlling the Spread of Noxious Weeds and Invasive Species*, U.S. DOT, FHWA; 27 pages, P1687.
- *Roadside Weed Management*, U.S. DOT, FHWA; 369 pages, P1704.

Concepts in two previous Technology News articles—“Iowa’s Roadside Prairies” (June 1997) and “Why Roadside Management?” (May–June 2000)—are still appropriate. Find them online: www.intrans.iastate.edu/ltap/tech_news/1997/97junetn.pdf (see page 4) and www.intrans.iastate.edu/ltap/tech_news/2000/00may-ju.pdf (see page 9), respectively. ■

Conference calendar

August 2010			
19-20	Mid-Continent Transportation Research Forum	University of Wisconsin, Madison, Wisconsin	Jason Bittner 608-262-7246 www.mrutc.org/midcon/
September 2010			
14-15	SPOT (Snow Plow Operator Training) Workshop	Iowa State Fairgrounds, Des Moines	Georgia Parham 515-294-2267 gparham@iastate.edu
16	Snow Rodeo (Truck, Motor Grader, Loader)	Iowa State Fairgrounds, Des Moines	Georgia Parham 515-294-2267 gparham@iastate.edu
15-17	APWA, Iowa Chapter Fall Conference	ISU Alumni Center Ames, IA	John Joiner 515-239-5165 JJoiner@city.ames.ia.us
23-24	24th Annual Roadside Conference “Native Vegetation at Work”	Quality Inn & Suites Ames, IA	Kirk Henderson 319-273-2813 kirk.henderson@uni.edu
28	Iowa Streets and Roads Workshop 2010: Legal Understanding	Quality Inn, Starlight Conf. Center, Ames	Georgia Parham 515-294-2267 gparham@iastate.edu
29-30	Iowa Streets and Roads Conference 2010: Doing More with Less	Quality Inn, Starlight Conf. Center, Ames	Georgia Parham 515-294-2267 gparham@iastate.edu

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