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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

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Center for Transportation  
Research and Education

IOWA STATE  
UNIVERSITY

## Cameras reduce red light running crashes in Iowa

If you have a signalized intersection where red light running (RLR) is a problem, automatic RLR cameras can be another tool for your safety toolbox.

RLR cameras are mounted at signalized intersections. They detect and photograph vehicles that enter the intersection after the light has turned red.

RLR cameras are a kind of automated enforcement program (speed monitoring cameras are another). They have been implemented through city ordinances in Iowa as civil infractions, similar to parking tickets, which are mailed to the owner of the vehicle.

In Iowa, more than 2,900 crashes (about 4.9 percent of all crashes) in 2004 were RLR collisions. The FHWA estimates that nationally 1,000 fatalities and \$14 billion in economic losses each year result from more than 100,000 RLR crashes.

### The RLR camera study

To address a possible means of reducing the frequency of RLR incidents and related crashes, Shauna Hallmark, associate professor of civil engineering at ISU, investigated the effects of RLR cameras in Iowa. The study's key findings suggest that the presence of RLR cameras seems to dramatically reduce not only the frequency of the offense, but the frequency of RLR-related crashes as well.

Baseline data for the report reveal that in Iowa, approximately 20 percent of signalized intersection crashes and 53 percent of fatal- and major-injury crashes were RLR crashes. Sponsored by the Iowa DOT, the project involved comparing crash trend data from intersections with cameras in two cities,

Davenport and Council Bluffs. Control intersections in each city had similar characteristics but without cameras.

For the duration of the study in Davenport (eight quarters of study crash data compared with 12 quarters of pre-study data), there was a 20 percent reduction in total crashes and a 40 percent reduction in RLR-related crashes.

*RLR cameras continued on page 2*



A red light running camera installation

## 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

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*RLR cameras continued from page 1*

Similarly, in Council Bluffs (where four quarters of study data were compared with 12 quarters of pre-study data), there was a 44 percent reduction in total crashes and an average decrease of 90 percent of RLR-related crashes.

### The overall picture

In each city, the intersections with cameras showed dramatic reductions in total crashes, RLR crashes, and rear-end crashes.

At control intersections—signalized intersections without cameras that were within one mile of the intersections with cameras—drivers ran red lights nine times more often than at treatment intersections.

Hallmark speculates that cameras were effective because drivers became aware of the cameras when they received tickets in the mail for running a red light at the intersection. To avoid getting more tickets, drivers quit running red lights at those intersections.

### For more information

Contact Shauna Hallmark, 515-294-5349, [shallmar@iastate.edu](mailto:shallmar@iastate.edu), or co-principal investigator Tom McDonald, 515-294-6384, [tmcdonal@iastate.edu](mailto:tmcdonal@iastate.edu).

The final report, *Evaluating Red Light Running Programs in Iowa*, and a tech transfer summary are online at [www.ctre.iastate.edu/research/detail.cfm?projectID=1158685907](http://www.ctre.iastate.edu/research/detail.cfm?projectID=1158685907). ■

## Buchanan County honored for railroad flatcar bridges

In September in Chattanooga, Tennessee, Buchanan County Engineer Brian Keierleber accepted the 2007 Excellence in Regional Transportation Award from the National Association of Development Organizations (NADO) on behalf of the county.

Buchanan County has been a leader in purchasing and installing flatcars as replacements for older bridges on lower level roads. Fourteen flatcar bridges have been installed in the county since 2003.

In addition to being a novel use for retired train cars, the flatcar bridges are incredibly

cost efficient, costing on average one-third the price of standard concrete slab bridge construction and requiring only one-half to two-thirds the construction time.

"We rock right across their tops," explains Keierleber.

The flatcar bridges have a slightly shorter life span than conventional bridges, about 30 to 40 years.

Careful design, engineering, and analysis go into each flatcar bridge to ensure it can carry heavy agricultural loads. ■



With careful design, engineering, and analysis, Buchanan County is experiencing success with cost-effective railroad flatcar bridges

## Small town signs program just got better

*Now communities can decide for themselves which signs to replace under the program.*

If your community's population is less than 5,000, you can apply to replace damaged, obsolete, or substandard signs and signposts. The Iowa DOT Office of Traffic and Safety's Small Town Sign Replacement Program will provide up to \$5,000 of signs and signposts per applying community on a first-come, first-served basis.

This program is "a good opportunity for small towns to get signs for free and without consultants or bureaucracy," says Jeff Stratton, program coordinator. "We chose the signs for the program that we think have the biggest bang for the buck for safety," such as stop and yield signs.

A small-town program has been part of the Iowa Traffic Safety Improvement Program for more than 20 years, but in the past, a consultant had to provide a sign inventory. Now communities can decide for themselves which signs to replace under the program.

All eligible communities are encouraged to apply even if they have already participated

in a similar program. Communities can use these signs to help bring their signs into compliance with the new MUTCD standards for retroreflectivity.

### What kind of signs are available?

Table 1 shows the different kinds and sizes of signs and the different kinds, sizes, and types of signposts and mounting accessories that are available through the program. In addition to wood and galvanized steel signposts, you can order Telespar® posts and mounting accessories that are right for each sign installation.

### What do communities have to do?

Each community is responsible for evaluating its need for replacement signs, which includes determining the proper location for each replacement sign and describing the sign type, route, location, side of the street, and the direction the sign faces.

Each town is also responsible for correctly installing the posts and signs within a specified time frame.

To apply, submit a city council resolution and a completed application form. Download an application packet at [www.dot.state.ia.us/traffic/smalltownsign.htm](http://www.dot.state.ia.us/traffic/smalltownsign.htm). The packet contains

- a pdf file that includes a sample council resolution and details about the process of completing the application and
- an Excel spreadsheet that has all the information you need so you can describe the signs that need to be replaced and then itemize and automatically calculate your order.

### For more information

Contact Jeff Stratton, the Iowa DOT Small Town Sign Replacement Program Coordinator in the Office of Traffic and Safety, 515-239-1154, [jeff.stratton@dot.iowa.gov](mailto:jeff.stratton@dot.iowa.gov). ■

**Small Town Sign Replacement Program Materials**

Sign	Size (in.)	Signposts, mounting accessories
STOP	30 x 30	4 in. x 4 in. x 12 ft wood
STOP	36 x 36	4 in. x 4 in. x 14 ft wood
YIELD	36	4 in. x 6 in. x 16 ft wood
DO NOT ENTER	30 x 30	4 in. x 6 in. x 18 ft wood
DO NOT ENTER	36 x 36	U-channel 14 ft galvanized steel
STOP AHEAD	36 x 30	2 in. x 2 in. x 12 ft tubular steel (Telespar®)
Single Headed Arrow	48 x 24	Telespar® anchor bases
Double Headed Arrow	48 x 24	Telespar® concrete mounting bases

## 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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Printed with soy ink

## Virtual training opportunities are plentiful

As agency budgets leave less room for staff to travel to training events, web-based workshops are becoming more common. Some are offered in real time; that is, they are “live” and the audience participates by telephoning or e-mailing questions or comments during the program.

Other courses are “asynchronous.” That is, they have been recorded in some way and the electronic files stored on a web server to be accessed on demand, at the learner’s convenience. Some web-based training-on-demand courses are video based. Others use slides with a narrated voiceover, perhaps enhanced with animations or video clips. Users can view these courses again and again.

Users can find such courses at a variety of quality levels, from professionally designed and produced to rookie productions. It can be difficult to judge the value of a course by its cover. Some poorly produced tools provide excellent information, if users are willing to tolerate fuzzy visuals or fluctuating sound quality.

Iowa LTAP, striving to continue providing top-quality training that is affordable and accessible for Iowans, is paying close attention to training offerings already available via the web that we can recommend.

### Direct links from NLTAPA

The National LTAP Association has collected a list of web-based courses, many of which can be accessed free. Find the entire list at [www.ltapt2.org/resources/webtraining.php#web](http://www.ltapt2.org/resources/webtraining.php#web). A few need to be updated, but here’s a short list of available courses we were able to access quickly:

- Modified Asphalt (video), Connecticut DOT <http://www.ct.gov/dot/cwp/view.asp?a=1617&Q=281128&PM=1>
- ESRI Training and Education in various GIS applications <http://training.esri.com/gateway/index.cfm?fa=search.results&cannedsearch=2>
- International Stormwater BMP Database; Scenario Planning for Better Transportation Decision Making;

Context Sensitive Solutions: A Better Way; and several others, Center for Transportation and the Environment (CTE) National Broadcast Series (videos available in Windows Media, Real Media, or MP3 audio) <http://itrc.ncsu.edu/cte/techtransfer/teleconferences/archive.asp>

- Training on Use of the Falling Weight Deflectometer, Minnesota DOT (video) [www.mrr.dot.state.mn.us/research/DCP/DPC\\_Operation\\_28mb.wmv](http://www.mrr.dot.state.mn.us/research/DCP/DPC_Operation_28mb.wmv)
- Temporary BMPs for Water Pollution Control, CalTrans (video) <http://msmedia.dot.ca.gov/stormwater/water%20pollution.asf>
- Safe Routes to School, League of American Bicyclists (video) [www.bikeleague.org/programs/saferoutes/video.php](http://www.bikeleague.org/programs/saferoutes/video.php)

### APWA Click, Listen, and Learn series

APWA’s Click, Listen, and Learn courses provide real-time web-based training at relatively low cost. Users pay a site fee to access each course, and several people from different organizations can view the training from the site. Here are some upcoming topics:

- Work Zones—Safety First
- Green Buildings—LEED the Way
- Developing a Successful Fleet Replacement Program

For more Click, Listen, and Learn titles and registration information, see [www.apwa.net/Education/CLL/](http://www.apwa.net/Education/CLL/).

### Learn about concrete mixtures online

And the National Concrete Pavement Technology Center at CTRE, courtesy of the Iowa DOT, is providing a professionally edited, videotaped course on concrete mixtures for pavements. The two-day course is offered in one-hour modules on the web. See [www.cptechcenter.org/t2/imcp\\_videos.cfm](http://www.cptechcenter.org/t2/imcp_videos.cfm).

### Coming: Roads Scholar course in supervision

Iowa LTAP is beginning to experiment with web-based training technologies that will allow us to offer courses specifically tailored for Iowans. See page 5 for details. ■

## Moodle your way to better supervisory skills

The Roads Scholar program is hitting the highway—the information superhighway, that is.

Beginning this spring, some Roads Scholar courses will be available in a new online format

*The first course to be offered online will be Supervisory Techniques & Skills.*

through Engineering Distance Education at Iowa State University. The first course to be offered online will be Supervisory Techniques and Skills (formerly called

Successful Management), one of the core courses required to achieve the level of Senior Roads Scholar.

The Supervisory Techniques and Skills course is designed for city, county, and state transportation

personnel, as well as other public works employees in supervisory positions. The course covers basic supervisory and management techniques to help supervisors motivate employees, communicate effectively, and handle disciplinary issues.

Offered through an online system called Moodle, the Supervisory Techniques and Skills course will allow participants to view informational videos, conduct self-assessment inventories, and review course materials at their own pace. On completion of the course, participants will receive a certificate of completion and six hours of credit in the Roads Scholar program.

The course is expected to be available in early March; participants can register online at that time. The \$75 registration fee covers all course materials. Participants will have six months from the time of registration in which to complete the course.

For more information, contact Engineering Distance Education at Iowa State, 515-294-7470, [ede@iastate.edu](mailto:ede@iastate.edu), or visit the website, [www.ede.iastate.edu/Non-Credit/Successful-Management.html](http://www.ede.iastate.edu/Non-Credit/Successful-Management.html). ■

## Snow Roadeo winners 2007

Several teams and individuals demonstrated their prowess with snow-removal equipment at the fall 2007 Snow Roadeo, held this year at the Iowa State Fairgrounds in Des Moines. Winners and

losers alike are getting a workout this winter of 2007–2008! We hope everybody's keeping up and staying safe. ■



Snow plow truck competition: Left to right, 1st place winners Jim Case and Lewis Lintz, Des Moines; 2nd place winners Justin Maschke and John Evans, Des Moines; and 3rd place winners Brett Connelly and Kevin Decker, Des Moines



Motor grader competition: Left to right, 1st place winner Kary Obman, Sac County; 2nd place winner William Messerschmitt, Keokuk County; and 3rd place winner Matt Dolan, W. Des Moines



Loader competition: Left to right, 1st place winner Josh Reynolds of W. Des Moines; 2nd place winner John Hughes, W. Des Moines; and 3rd place winner Steve Caylor, Des Moines

## 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.ctre.iastate.edu/library/search.cfm](http://www.ctre.iastate.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 1705 Roadway Design Standards for Rural and Suburban Subdivisions

Iowa has no design standards for roadways in rural and suburban subdivision developments. This report presents the state of the practice based on a literature search and a questionnaire completed by counties. Included are recommendations for establishing regulations for subdivision development.

### P 1706 Sidewalks and Shared-Use Paths: Safety, Security, and Maintenance

This report presents a list of findings from a literature review, interviews, and a policy forum.

### P 1707 A Study of Benefits, Accomplishments, and Resource Needs of the Local Technical Assistance Program

This study documents the accomplishments of and benefits that local governments have derived from the Local Technical Assistance Program.

### P 1708 Basic Asphalt Recycling Manual

This manual provides information on the methods, benefits, and performance of asphalt recycling. It also covers procedures for evaluating potential projects, mix design philosophies, equipment requirements and methods, inspection and acceptance techniques, and specification requirements.

## Oldies but goodies

### P 1665 Backcountry Road Maintenance and Weed Management

Noxious weed species frequently colonize roads and are likely to be spread during road maintenance activities. This report recommends ways to reduce or eliminate the spread of weeds during road maintenance. It includes a list of references and links to web-based resources.

### P 238 Guidelines for Spring Highway Use Restrictions

This report is a supplement to V 53. It provides written guidelines and calculation forms with examples.

### V 53 Guidelines for Spring Highway Use Restriction

This video presents an overview of problems related to the effect of freezing and thawing on flexible pavements. It discusses where to apply load restrictions, the appropriate amount of load restrictions, and when to apply and remove such restrictions. It also includes a sample problem showing the data collections (ambient high-low temperatures) and calculations for determining the Freezing Index and Thawing Index. ■

## Earlier application due date for TSF program

Beginning in 2008, applications from cities and counties for Traffic Safety Funds will be due at the Iowa DOT Office of Traffic and Safety by June 15 (instead of August 15).

Iowa's Traffic Safety Fund (TSF), also known as the Traffic Safety Improvement Program (TSIP) or the Half-Percent Program, provides funding for local safety-related projects in three categories:

- construction or improvement of traffic safety and operations at a specific site with an accident history;
- purchase of materials for installation of new traffic control devices such as signs

or signals, or replacement of obsolete signs or signals; or

- transportation safety research, studies or public information initiatives such as
  - sign inventory,
  - work zone safety, or
  - accident data.

At the request of several Traffic Safety Fund applicants, the city/county/state advisory committee for this program recently supported the idea of evaluating applications and notifying applicants of their award status by the end of the calendar year. This will allow jurisdictions

to begin designing approved projects during the winter.

This change will not go into effect until the state administrative rules have been officially changed, likely in June 2009.

However, a new application submission schedule will begin immediately in anticipation of this change. Applications for 2009 projects will therefore be due by June 15, 2008.

For more information about the program itself, see the TSF program website, [www.dot.state.ia.us/tsip.htm](http://www.dot.state.ia.us/tsip.htm). ■

## Conference calendar

### March 2008

5-6	Greater Iowa Asphalt Conference	Ames	<a href="http://www.ucs.iastate.edu/mnet/asphalt/home.html">www.ucs.iastate.edu/mnet/asphalt/home.html</a>
7	Pervious Concrete Forum	Council Bluffs	Anne Leopold 515-964-2020 <a href="mailto:aleopold@snyder-associates.com">aleopold@snyder-associates.com</a>
10-11	Multi-Discipline Safety Planning Forum: Putting the Pieces Together	Ames	Judy Thomas 515-294-1866 <a href="mailto:jathomas@iastate.edu">jathomas@iastate.edu</a>
14	Pervious Concrete Forum	Ottumwa	Anne Leopold 515-964-2020 <a href="mailto:aleopold@snyder-associates.com">aleopold@snyder-associates.com</a>
20-21	Iowa Concrete Pavement Preservation Workshop	Ames	Sharon Prochnow 515-294-3781 <a href="mailto:prochnow@iastate.edu">prochnow@iastate.edu</a>
24	Work Zone Safety	Storm Lake	Tom McDonald 515-294-6384 <a href="mailto:tmcdonal@iastate.edu">tmcdonal@iastate.edu</a>
25	Work Zone Safety	Sioux City	Tom McDonald 515-294-6384 <a href="mailto:tmcdonal@iastate.edu">tmcdonal@iastate.edu</a>
26	Work Zone Safety	Council Bluffs	Tom McDonald 515-294-6384 <a href="mailto:tmcdonal@iastate.edu">tmcdonal@iastate.edu</a>
27	Work Zone Safety	Ames	Tom McDonald 515-294-6384 <a href="mailto:tmcdonal@iastate.edu">tmcdonal@iastate.edu</a>
28	Work Zone Safety	Ames	Tom McDonald 515-294-6384 <a href="mailto:tmcdonal@iastate.edu">tmcdonal@iastate.edu</a>

### April 2008

4	Pervious Concrete Forum-Iowa City		Anne Leopold 515-964-2020 <a href="mailto:aleopold@snyder-associates.com">aleopold@snyder-associates.com</a>
7-11	National Work Zone Awareness Week	Kickoff in Sacramento, CA	Get more information <a href="http://www.workzonesafety.org/news_events/awareness_week/2008/brochure">www.workzonesafety.org/news_events/awareness_week/2008/brochure</a>
8	Tech Transfer Concrete Consortium	Baton Rouge, LA	
9-10	National Concrete Consortium (NC2)	Baton Rouge, LA	
TBD	Motor Grader Operator Workshops	various locations TBD	Georgia Parham 515-294-2267 <a href="mailto:gparham@iastate.edu">gparham@iastate.edu</a>

### June 2008

16-20	Mower Safety Workshop	locations TBD	Tom McDonald 515-294-6384 <a href="mailto:tmcdonal@iastate.edu">tmcdonal@iastate.edu</a>
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### September 2008

10	Snow Rodeo (Truck, Motor Grader, Loader)	Newton	Duane Smith 515-294-8103 <a href="mailto:desmith@iastate.edu">desmith@iastate.edu</a>
11	Iowa Maintenance Training Expo	Newton	Duane Smith 515-294-8103 <a href="mailto:desmith@iastate.edu">desmith@iastate.edu</a>

## New video captures perspectives on national transportation challenges

Here's a staggering bit of information:

According to ASCE's 2005 assessment of national infrastructure, \$1.6 trillion is needed in the next five years to bring the nation's infrastructure to good condition.

A video recently released by AASHTO presents the challenges facing U.S. transportation infrastructure in the next 50 years, with perspectives from transportation leaders and experts.

The brief presentation discusses the trends, as well as possible solutions, dictating the need for a strong, reliable infrastructure system to support future intermodal needs, [www.youtube.com/user/aashtovideo](http://www.youtube.com/user/aashtovideo). ■

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