

# Technology Transfer



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## CTI and CONN-OSHA Sign Training/Outreach Alliance

Representatives of UConn's Connecticut Transportation Institute (CTI) and the state Department of Labor's Occupational Safety and Health Division (CONN-OSHA) signed a formal training and outreach alliance on March 29. Through the alliance, CTI and CONN-OSHA agree to provide clients of the Institute's Technology Transfer Center with valuable information, guidance, and access to training resources that will help protect employees' health and safety.

The alliance outlines specific goals that the two agencies agree to work together to achieve. Training and education goals include development and delivery of

courses pertaining to on-the-job safety and OSHA regulations, as well as other programs targeted to the public works industry. Outreach and communication goals include development and dissemination of best practices and other information through a variety of media, as well as live presentations and exhibits at CTI events.

According to Technology Transfer Center Director Donna Shea, "The alliance formalizes a long-term relationship between the two organizations and will help foster an even more effective collaborative relationship developing quality safety training in the future."

CONN-OSHA Occupational Safety and Health Manager Tom Hozebin agrees, "CONN-OSHA and CTI have been working together since 1996. This alliance formalizes CTI's commitment to safety and health."



*Technology Transfer Center Director Donna Shea and CONN-OSHA Director Richard Palo sign alliance agreement. Joining them, standing, are CONN-OSHA Program Manager Thomas Hozebin (l) and Department of Labor Deputy Commissioner Thomas Hutton (r).*

# Local Agency Safety Management

Have you considered implementing a Safety Management System (SMS) in your agency? An SMS gives decision makers and those who manage and maintain local roadways the tools to systematically identify, prioritize, correct, and evaluate the performance of their transportation investments.

The goal of an SMS is to assist local agency engineers, managers, elected officials, and enforcement and emergency medical services personnel in their efforts to reduce both fatalities and the severity and frequency of collisions.

## Why is Safety Management a Good Idea?

Collisions cause loss of life, injuries, and property damage. An average of 115 people died each day in motor vehicle crashes in 2001—one person every 12 minutes.

A study conducted by the National Highway Traffic Safety Administration (NHTSA) estimated that the economic cost alone of motor vehicle crashes in 2000 was \$230.6 billion. In 2001, 42,116 people were killed in the estimated 6,323,000 police reported motor vehicle traffic crashes, 3,033,000 people were injured, and 4,282,000 crashes involved property damage only. "These costs reflect wage loss from injuries, medical expenses, insurance administration costs, property damage, and claims for personal and property damage."

For local agencies to mount a successful effort toward reducing motor vehicle collisions and their costs, an effective systematic approach must be taken.

## What are the Benefits?

The primary benefits of an SMS are saved lives and reduced injuries.

Recognizing that "one size does not fit all," the SMS is structured to allow each agency to implement the system within the agency's resource limitations and focus on the elements that are most appropriate for the agency's size, goals and priorities.

Although the SMS might reside with a particular agency it is not agency focused. It is a collaborative, community-focused effort that takes into consideration more than the roadway. It also includes the vehicle and driver in determining safety needs and solutions, and treats emergency services, law enforcement, and education as equal players with engineering.

The existence of a working, effective SMS tailored to local policy promotes a collaborative approach to development of sound safety practices. Looking beyond economics, an SMS provides a variety of other benefits no less important. An SMS can also increase the capability of reducing the number and severity of collisions by focusing attention on safety needs that will result in a higher payback.

Other benefits include improved maintenance of safety investments and greater certainty that the highest priority needs are identified.

## How Does the SMS Work?

The SMS has two basic components: a collaborative information exchange network and an eight-element transportation safety decision support process.

The information network centers on the SMS Committee. The SMS Committee is a standing, cross-disciplinary advisory committee that meets regularly and includes representation from all major transportation safety stakeholders in the community. The Committee provides a permanent forum to identify transportation safety needs through a collaborative process and the potential resources to meet those needs. The regular meetings provide a forum to hear all voices, and a synergistic tool to identify creative solutions and leverage resources.

The SMS process emphasizes the relationship between drivers, vehicles, and roadways by integrating engineering, education, enforcement and emergency services into a safety programs architecture. The collaboration of engineer-



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Supported through a cooperative effort of the Connecticut Department of Transportation and the Federal Highway Administration's Local Technical Assistance Program (LTAP) to provide information on the latest transportation technology to Connecticut's state and local government officials.

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ing, enforcement, emergency services and education creates a broader safety networking resource for an agency and the community it serves.

The SMS relies on an 8-step systematic needs assessment process including feedback to evaluate the results of a safety program's efforts and expenditures. The feedback system completes the loop by creating a report or series of reports used by deci-

sion makers to identify policies to be changed, safety needs to emphasize, assumptions to be modified and funding needs to be increased or shifted.

For more information about Safety Management Systems, contact Dave Sorensen of the Washington State Technology

Transfer Center at 360-705-7385. The Center developed an SMS, which they describe in their manual, "Local Agency Safety Management System," available on line at <http://www.wsdot/wa.gov/TA/T2Center/Mgt.Systems/SafetyTechnology/>.

Reprinted from *Implementing Local Agency Safety Management*, FHWA-SA-03-025, Federal Highway Administration, 2003.



**The Eight Elements of an SMS**

<b>Local Policy</b>	Policy officially authorized and adopted by elected officials. Establishes operating guidelines and goals for service providers.
<b>Data Collection</b>	Data and information used in policy development, planning, designing, construction and maintenance of transportation facilities, vehicles, and driver education.
<b>Data Analysis</b>	Data and information processing through sorting, technical analysis, study, alternative mitigation analysis, and prioritization.
<b>System Output</b>	Conclusive data products, data analysis, and application of adopted policy.
<b>Decisions</b>	Budget and program adoption by elected officials, including all efforts toward safety during the following year.
<b>Project Implementation</b>	Execution of funded work efforts resulting in safety enhancements of all kinds.
<b>Monitoring Performance</b>	Measures and analyzes results, providing information from which out-year efforts are forecast and evaluated, and the work program is developed.
<b>Annual Safety Report</b>	Reports the results of safety system work efforts and expenditures.

# AASHTO Strategic Highway Safety Plan

By Ken Epstein, P.E., Office of Safety, FHWA

In 1998, the American Association of State Highway and Transportation Officials (AASHTO) released its Strategic Highway Safety Plan. This plan provides a comprehensive, multimodal approach to reducing vehicle-related fatalities and injuries on our nation's highways, with a goal to reduce highway-related deaths by 5,000-7,000 annually, as well as reduce health care costs.

The Strategic Highway Safety Plan addresses Drivers, Special Users (pedestrians and bicyclists), Vehicles, Highways, Emergency Medical Services, and Management. These 6 elements are subdivided into 22 emphasis areas. Each emphasis area contains two or more strategies, which are further broken down by specific actions. Additional information on the AASHTO Strategic Highway Safety Plan is available on <http://safety.transportation.org>.

To assist states and localities in the implementation of the strategic plan, a National Cooperative Highway Research Program (NCHRP) project was initiated to develop a series of guidebooks containing proven countermeasures. A total of 18 guidebooks will be developed. To date, the following guidebooks are available as part of NCHRP Report 500, *Guidance for Implementation of the AASHTO Strategic Highway Safety Plan*:

Volume 1, *Aggressive-Driving Collisions*

Volume 2, *Collisions Involving Unlicensed Drivers and Drivers with Suspended or Revoked Licenses*

Volume 3, *Trees in Hazardous Locations*

Volume 4, *Head-On Collisions*

Volume 5, *Unsignalized Intersection Collisions*

Volume 6, *Run-Off-Road Collisions*

These guidebooks can be viewed on the Transportation Research Board's web site, <http://gulliver.trb.org/publications>, by clicking NCHRP Project Reports under National Cooperative Highway Research Program and scroll-

ing down the Printed Report Series to NCHRP Report 500.

Additional guidebooks are scheduled to be released this year. These will include Truck-Involved Crashes, Pedestrian-Involved Crashes in Large Urban Areas, Utility Pole Crashes, Crashes on Horizontal Curves, Signalized Intersections, Older Drivers, and Unbelted Drivers and Occupants.

There are also plans to develop supplemental guidance based on these guidebooks that would specifically address the needs of municipalities.

Reprinted with permission from *Inside LTAP*, LTAP Clearinghouse, October 2003.

## Roadway Safety Tools for Local Agencies

Improving the safety of local roads is crucial for reducing highway deaths and injuries. Fatal crash rates are the highest on local roadways. A new National Cooperative Highway Research Program (NCHRP) Synthesis 321, *Roadway Safety Tools for Local Agencies*, provides practical and flexible approaches to improve safety at the local level. To be successful, safety practices should be tailored to the problems and resources of each agency. There is no one-size-fits-all safety solution. The goal is to assist local agencies to become more effective safety organizations by applying the best and most appropriate tools to meet their needs. Its guiding principle is to examine tools and procedures that are practical, relatively easy to apply, and can be implemented by

agencies with limited financial resources. Tools are defined as any ideas, practices, procedures, software, activities or actions beneficial in aiding local agencies to improve the safety of their roads and streets. User-friendly appendixes provide detailed information on each tool, its application, and references to additional information.

An electronic version of the Synthesis is available on the Transportation Research Board's NCHRP web site at [http://trb.org/publications/nchrp/nchrp\\_syn\\_321.pdf](http://trb.org/publications/nchrp/nchrp_syn_321.pdf), or you may request a printed version from Stephanie Merrill at the Technology Transfer Center, phone 860-486-6446, e-mail [smerrall@engr.uconn.edu](mailto:smerrall@engr.uconn.edu).



Reprinted from *FHWA Safety Activities Newsletter*, Federal Highway Administration, March/April 2004.



## Technology Transfer Profile: Lisa Aultman-Hall



**Connecticut Transportation Institute  
Director  
Dr. Lisa Aultman-Hall**

Since August when she was named Director of the Connecticut Transportation Institute succeeding Christian Davis, Lisa Aultman-Hall has been vigorously enhancing and promoting the activities of the CTI's varied academic, research and service programs. She is an avid proponent of the Institute's outreach initiatives and many of you may already have met her at Technology Transfer Center events, such as the Technology Transfer Expo or the bicycle and pedestrian design workshops that she co-taught with Norman Garrick last year.

In 2001, Dr. Aultman-Hall joined the University of Connecticut as Associate Professor in the Civil

and Environmental Engineering Department's transportation systems group. She was a member of the University of Kentucky faculty for five years before coming to Connecticut and subsequent to that received her Ph.D. from McMaster University in Canada.

Lisa Aultman-Hall is a nationally recognized researcher whose fields of specialization include travel route choice behavior, freight transportation planning, transportation safety, bicycle transportation planning, and Geographic Information Systems (GIS) applications. She is Chair of the Transportation Research Board's Committee on Bicycle Transportation and member of several other national and

state transportation committees and professional organizations.

Faculty experience and know-how are just a few the many informational resources available to state and local agencies through the CTI's Technology Transfer Center. For additional information on our affiliated transportation faculty, please visit the CTI web site at <http://www.cti.uconn.edu/ti/Faculty/faculty.htm>.

## From Our Resource Library

*To request any of the following materials,  
please call us at 860-486-6446, send us the request form on the back page of this newsletter,  
or use our on-line information request form at [http://www.cti.uconn.edu/ti/Technology/Info\\_request.htm](http://www.cti.uconn.edu/ti/Technology/Info_request.htm).  
Publications are free while supplies last, unless otherwise noted.  
Videotapes may be borrowed free of charge for two weeks.*

### Publications

**United States Pavement Markings**, Federal Highway Administration, FHWA-OP-02-090 and  
**United States Road Symbol Signs**, Federal Highway Administration, FHWA-OP-02-084

These brochures are outreach tools to educate transportation professionals and the general public about the proper design and use of many pavement markings and road symbol signs on the nation's highways.

**Traffic Control Handbook for Mobile Operations at Night: Guidelines for Construction, Maintenance and Utility Operations**, Federal Highway Administration, FHWA-SA-03-026

This report is a synthesis of current practices for performing mobile operations at night. The information presented is based on a review of work zone manuals from a selection of state and local highway agencies, discussions with highway officials, and field observations of a select number of nighttime highway mobile work zone operations.

### Videotape

**On Again, Off Again: A Guide to Mounting and Dismounting Heavy Equipment**, Association of County Commissioners of Oklahoma, 18 minutes

This video, designed as a training tool for Oklahoma counties, addresses the problem of increasing injuries from mounting and dismounting heavy equipment and teaches operators proper safety techniques.

## Snowplow Simulator Demonstration

On February 11, more than a dozen municipal and Connecticut DOT employees stood beside a modified motorhome eagerly awaiting a turn to plow snow—though there were no clouds in the sky nor flakes on the pavement.

What they were looking forward to was the opportunity to sit behind the wheel of a state-of-the-art simulator designed to test drivers' plowing ability and improve their skills in a totally risk-free virtual winter environment.

Designed by GE Driver Development in Salt Lake City, the simulation training technology is currently being evaluated by the Utah Department of Transportation in a pilot program that will measure the real world performance of drivers

who have participated in the training against those who have not.

The biggest advantage of the simulation training is that drivers can navigate and react to any number of hazardous and difficult situations in complete safety; another is that the software can be customized to reflect individual vehicle dynamics and the unique landscape of a particular region.

*The GE Driver Development snowplow simulator gives operators the experience of real-life challenges without the real-life risks.*



GE Driver Development representatives have been showcasing the technology across the country and assessing its future potential. The Technology Transfer Center coordinated the demonstration, which ConnDOT hosted at their research facility in Rocky Hill.

## A Cost-Effective Solution for Soft or Loose Soils

When working on roadway projects, do you occasionally run across situations where the underlying soft soil is too soft and compressible to carry designed loads, or the estimated time-rate of settlement of an embankment exceeds acceptable standards? Have costly corrective fill measures still resulted in significant settlement or decreased stability over time? Do you deal with failing slopes, excessive culvert loads, or problems with high lateral loads behind retaining structures? Expanded Polystyrene Geofoam (EPS Geofoam) could be your answer!

EPS Geofoam is a rigid foam plastic engineered with a unit density as low as 1 pound per square foot, thus delivering a material that is 100 times lighter than most soils. In particular situations this extreme difference in density makes EPS Geofoam an attractive

fill option. A lightweight manufactured molded block, EPS Geofoam can be easily cut to any size or shape at the job site. Additionally, as an embankment soil alternative, EPS Geofoam can be covered to look like a normal slope embankment or finished to look like a wall. This technology, when properly applied in the appropriate situation is a field-tested, budget-friendly winner.

### Learn More About EPS Geofoam Technology

On Tuesday, June 22, 2004, the Rhode Island Department of Transportation (RIDOT) and the University of Rhode Island Transportation Center are joining with the Rhode Island Division of the Federal Highway Administration (FHWA) and the Rhode Island and Florida Local Technical Assistance Programs to present a one-day Demonstration

Showcase on EPS Geofoam and recommended field applications—what to do and what not to do.

The goal is to provide a well-rounded professional real-time learning experience that includes support for future EPS Geofoam implementation efforts—decision-makers cannot afford to miss this opportunity. CEU and PDH credits are available for this Showcase.

To register, or for more information on the Showcase, visit [www.pdshowcase.org](http://www.pdshowcase.org) or call Cathy Manchester at the Rhode Island LTAP Center, 401-874-7075.

*Editorial Note: Showcases are designed to be a total learning experience to assist decision makers in evaluating a new technology, product, or process. They are offered only as evaluation experiences and should not be interpreted as endorsements, implied or otherwise, for a particular product, service, or technology.*

## Calendar of Events

### April

- 20 **Work Zone Safety for Maintenance Operations on Local Roads, Road Master Required, Storrs**  
Contact: Connecticut Technology Transfer Center
- 21 **Work Zone Safety for Maintenance Operations on Local Roads, Road Master Required, Hartford**  
Contact: Connecticut Technology Transfer Center
- 22 **Work Zone Safety for Maintenance Operations on Local Roads, Road Master Required, Torrington**  
Contact: Connecticut Technology Transfer Center
- 22 **Erosion Control Compliance with NPDES Phase II, Click, Listen and Learn**  
Contact: American Public Works Association, phone 816-472-6100, web <http://www.apwa.net>

### May

- 16-22 **National Transportation Week**  
Contact: National Transportation Week, phone 703-235-0519, web <http://www.ntweek.org>
- 16-22 **National Public Works Week**  
Contact: American Public Works Association, phone 816-472-6100, web <http://www.apwa.net>
- 18 **All About Asphalt, Road Master Required, Storrs**  
Contact: Connecticut Technology Transfer Center
- 19 **All About Asphalt, Road Master Required, Hartford**  
Contact: Connecticut Technology Transfer Center
- 19 **Trenchless Technology and Directional Boring, Click, Listen and Learn**  
Contact: American Public Works Association, phone 816-472-6100, web <http://www.apwa.net>
- 20 **All About Asphalt, Road Master Required, Torrington**  
Contact: Connecticut Technology Transfer Center

### June

- 1-7 **Driving Safety Week**  
Contact: National Safety Council, phone 630-285-1121, web <http://www.nsc.org>
- 8 **Basics of a Good Road, Road Master Required, Waterbury**  
Contact: Connecticut Technology Transfer Center
- 9 **Basics of a Good Road, Road Master Required, Colchester**  
Contact: Connecticut Technology Transfer Center
- 10 **Basics of a Good Road, Road Master Required, New Britain**  
Contact: Connecticut Technology Transfer Center
- 22 **Surveying Methods for Local Roads, Road Master Elective, Storrs**  
Contact: Connecticut Technology Transfer Center
- 22 **Expanded Polystyrene (EPS) Geofoam Demonstration Showcase, Quonset Point, RI**  
Contact: Rhode Island LTAP Center, phone 401-874-7075, web <http://www.pdshowcase.org>
- 23 **Surveying Methods for Local Roads, Road Master Elective, Storrs**  
Contact: Connecticut Technology Transfer Center
- 29 **Powers and Responsibilities of a CT Municipal Legal Traffic Authority, LTA Required, Waterbury**  
Contact: Connecticut Technology Transfer Center
- 30 **Powers and Responsibilities of a CT Municipal Legal Traffic Authority, LTA Required, Hartford**  
Contact: Connecticut Technology Transfer Center

**For additional information on any of the training programs presented by the Connecticut Technology Transfer Center, please contact Mary McCarthy phone 860-486-1384, e-mail [mary.c.mccarthy@engr.uconn.edu](mailto:mary.c.mccarthy@engr.uconn.edu).**

**For additional information on our upcoming programs or to register on line, please visit our web site at [http://www.cti.uconn.edu/ti/Technology/workshops\\_2004.htm](http://www.cti.uconn.edu/ti/Technology/workshops_2004.htm)**

# Technology Transfer Center Request Form

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

Agency/Organization: \_\_\_\_\_

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

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

I would like to see a future newsletter article on the topic of \_\_\_\_\_

I would like to submit a newsletter article; please call me at \_\_\_\_\_

I would like to request the following informational resource materials:

\_\_\_\_\_

\_\_\_\_\_

Please fax a copy of this form to 860-486-2399 or mail to:

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