

# Illinois Interchange



Illinois Technology Transfer Center

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## INTERACTIVE HIGHWAY SAFETY DESIGN MODEL (IHSDM)

The 2008 Public Release (Version 5.0.0) of Interactive Highway Safety Design Model (IHSDM) is now available for free downloading at [www.ihsdm.org](http://www.ihsdm.org). The existing 2007 IHSDM is a suite of software analysis tools for evaluating safety and operational effects of geometric design decisions on two-lane rural highways. It includes five evaluation modules namely - Policy Review, Crash Prediction, Design Consistency,

Intersection Review, and Traffic Analysis. This 2008 release includes the addition of a fully-functioning beta version of a Driver/Vehicle Module (DVM), as well as significant enhancements to: output/reporting capabilities, the evaluation process/wizard, the graphical user interface (GUI), data handling, the Highway Editor, accessibility features, help/documentation, and the Administration Tool.

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Please pass this on to other interested parties in your office.

## FROM THE DESK OF...

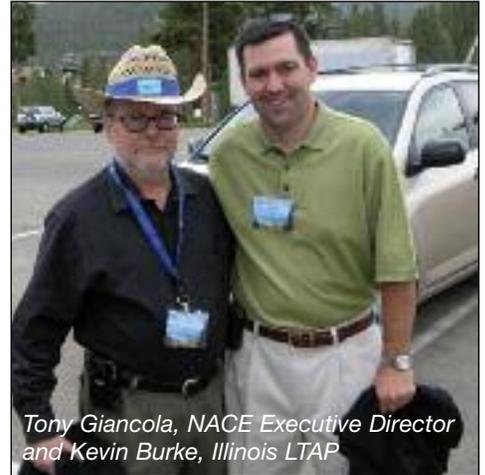


I recently returned from the Local Technical Assistance Program (LTAP)/ Tribal Technical Assistance Program (TTAP) annual conference held in Breckenridge, CO. This conference provided an opportunity for the Illinois Technology Transfer Center (IL T2 Center) to learn, interact, and discuss with the other states and several international centers. The conference opened with a business meeting that was followed by two days of educational seminars. Topics ranged from “Dealing with Incidents, Disasters, and Emergencies” to “Powerful, Effective Presentations”.

The Federal Highway Administration’s (FHWA) Office of Safety provided an overview of several safety guidebooks that are under development. I recom-

mend you visit their website at <http://safety.fhwa.dot.gov>. Several national partners also attended including the National Association of County Engineers (NACE) and the American Public Works Association (APWA). These partner organizations are key advocates for the importance of the local transportation and infrastructure in the United States. With the assistance of FHWA, NACE, and APWA, the National LTAP Association strives to assist LTAP/TTAP Centers in meeting our mission of serving local highway agencies.

The most interesting item was not a formal presentation; it was the people who attended the conference. Every center stressed the importance of providing their state local officials with the training and information which are vital to a successful highway agency. Every Center has a unique structure and set of skills; furthermore, every Center is willing to share their expertise with others across the world. LTAPs and TTAPs have the resources available to provide timely and innovative solutions to many problems local highway agencies



*Tony Giancola, NACE Executive Director and Kevin Burke, Illinois LTAP*

may encounter. With a network of 58 centers across the country, many solutions for your problems may already have been solved by others.

When you contact the IL T2 Center, not only are you relying on IL T2 Center staff and the department’s experts; you are also relying on LTAP and TTAP experts. As always, please do not hesitate to contact us with any questions.

*Kevin Burke III, P.E.  
T2 Program Manager*



*View of downtown Breckenridge*

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## Release Notes for the IHSDM 2008 Public Release

This document lists major changes from the 2007 IHSDM public release (v. 4.00) to the 2008 public release (v. 5.0.0). This information is provided mainly for users of the 2007 release, rather than new users of IHSDM.

## Summary of Changes to IHSDM Software

(from 2007 Release to 2008 Release)

Significant improvements were made to the IHSDM software in the following areas:

- Evaluation Modules
- Output/Reporting
- Evaluation Process/Wizard
- Appearance/Graphical User Interface (GUI)
- Data
- Highway Editor
- Accessibility Mode
- Help/Documentation
- Administration Tool

## Evaluation Modules

A fully-functioning beta version of a Driver/Vehicle Module (DVM) was added. The DVM is the first new Module added since the first IHSDM public release in 2003. The DVM simulates driving behavior and vehicle dynamics on a two-lane highway, providing predicted time histories of speed and other response variables, along with statistical measures of safety-related performance metrics, via a simulation of a single driver/vehicle combination.

## Output/Reporting

Improvements to Output/Reporting include:

- A Report Template Editor was added to assist users in accessing and customizing Evaluation Reports. “System” (default) templates are provided for each evaluation type. Users can select and order result components to create customized templates for producing reports. The customized templates can be saved as desired by the user.
- An option to Create/View Evaluation Reports in different formats (HTML, PDF, RTF) was added via Evaluation Operations (Show Report).
- Diagnostic Spreadsheets are now accessible from the user interface (via Evaluation Operations > Show Spreadsheet) for the Crash Prediction, Design Consistency and Driver/Vehicle evaluations (Note: Crash Prediction spreadsheets are only generated when the “Debug” option is selected via Edit > Preferences > Data Display > Output Level > Debug). The new DVM also provides an option to create detailed output files.
- A “Bookmark” capability for Evaluation results was added. A “Bookmarks” folder on the IHSDM Navigation Tree serves as a container for Evaluation Results (from which Evaluation Reports, Graphs, Spreadsheets can be generated) that users wish to Bookmark for easy retrieval. This capability allows users to organize results from multiple projects in one location. Users can add names/titles, comments and descriptions to bookmarked reports. The bookmarked results, reports, graphs are retained when the underlying project/highway/intersection/evaluation is deleted.

## Evaluation Process/Wizard

Changes to the Evaluation Process/Wizard include:

- The “Report and graph attributes” screen was removed from the Crash Prediction evaluation wizard. Users can now specify report contents via the Report Template Editor, and manipulate graphs via the Edit Interactive Graph Properties” dialog.
- “Set graph settings” screens were removed from the TAM evaluation wizard (users can manipulate graphs via the Edit Interactive Graph Properties” dialog).
- The option to “Bookmark on Run Completion” was added to the Evaluation Settings Summary screen for each evaluation type. (See “Output/Reporting”)
- A “Run” panel was integrated into the Evaluation Wizard for all evaluation types.
- Crash Prediction evaluation: An error in calculating AMF 4 (Superelevation) for AASHTO 2004 English policy was fixed.  
An error that allowed crash prediction evaluations with crash history data to be performed with only one year of data (rather than a minimum of 2 years) was fixed.

## Appearance/Graphical User Interface (GUI)

Changes to the GUI include:

- Addition of an optional “Accessible” menu item (see “Accessibility Mode”)
- Access to the new Report Template Editor via Edit > Report Template Editor from the main menu
- The following Evaluation Operations items were added and/or modified:
  - Show Report
  - Show Graphs
  - Show Spreadsheet
  - Bookmark

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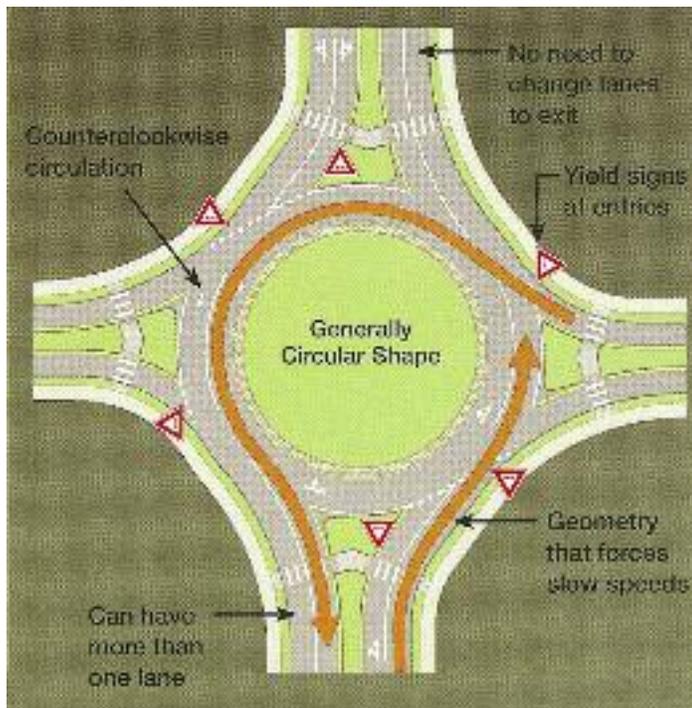
## ROUNDBABOUTS A SAFER CHOICE

### What is a Roundabout?

A roundabout is a type of circular intersection with yield control of entering traffic, islands on the approaches, and appropriate roadway curvature to reduce vehicle speed.

Modern roundabouts are different from rotaries and other traffic circles. For example, roundabouts are typically smaller than the large, high-speed rotaries still in use in some parts of the country. In addition, roundabouts are typically larger than neighborhood traffic circles used to calm traffic.

A roundabout has these characteristics:



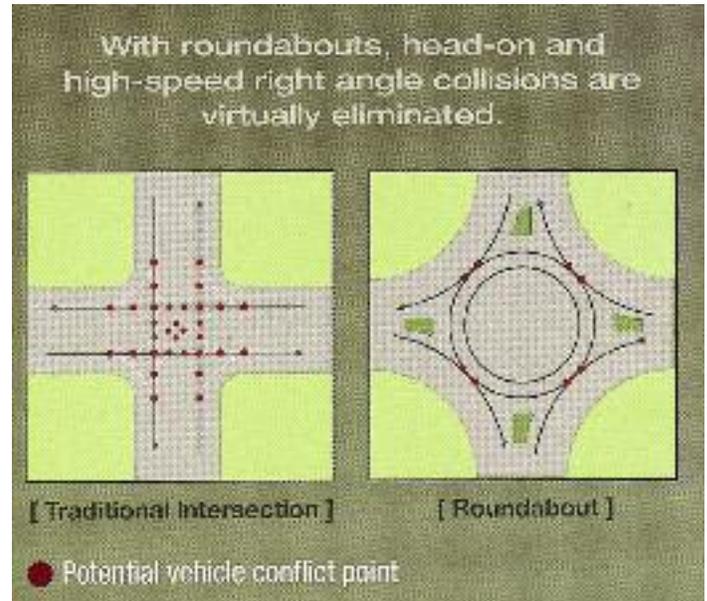
### Why consider a roundabout?

Compared to other types of intersections, roundabouts have demonstrated safety and other benefits.

#### Roundabouts:

##### Improve safety

- More than 90 % reduction in fatalities\*
- 76% reduction in injuries\*
- 35% reduction in all crashes\*\*
- Slower speeds are generally safer for pedestrians



#### Reduce Congestion

- Efficient during both peak hours and other times
- Typically less delay

#### Reduce pollution and fuel use

- Fewer stops and hard accelerations, less time idling

#### Save money

- Often no signal equipment to install, power, and maintain
- Smaller roundabouts may require less right-of-way than traditional intersections
- Often less pavement needed

#### Complement other common community values

- Quieter operation
- Functional and aesthetically pleasing

#### Education is key

Education is vital to the acceptance and success of a roundabout. Navigating a roundabout is easy. But because people can be apprehensive about new things, it's important to educate the public about roundabout use.

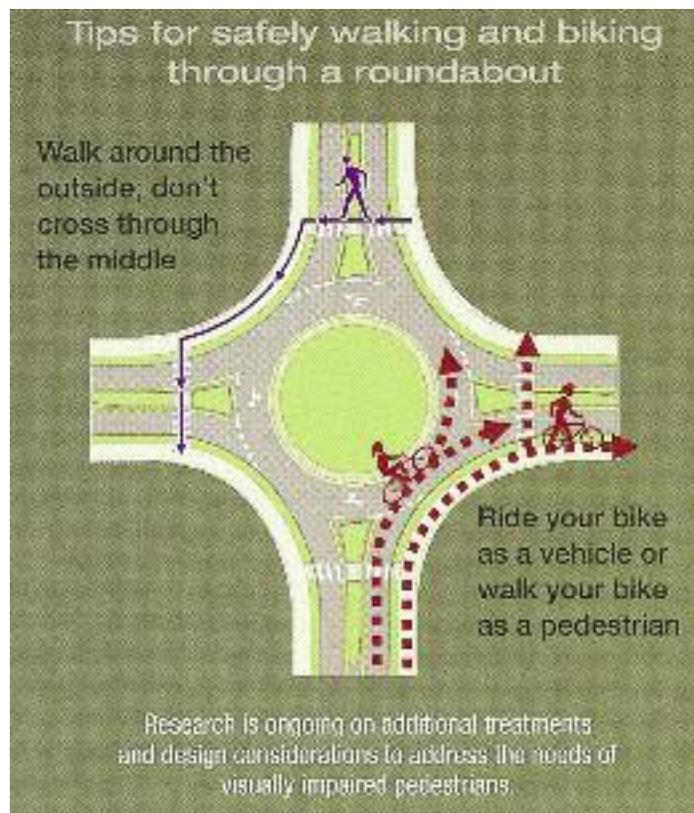
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There are just a few simple guidelines to remember when driving through a roundabout:

1. Slow down.
2. If there is more than one lane, use the left lane to turn left, the right lane to turn right, and all lanes to go through, unless directed otherwise by signs and pavement markings.
3. Yield to pedestrians and bicyclists.
4. Yield at the entry to circulating traffic.
5. Stay in your lane within the roundabout and use your right-turn signal to indicate your intention to exit.
6. Always assume trucks need all available space—don't pass them!
7. Clear the roundabout to allow emergency vehicles to pass.

*\*\*"Safety Effect of Roundabouts Conversations in the United States: Empirical Bayes Observational Before-After Study." Transportation Research Record 1751, Transportation Research Board (TRB), National Academy of Sciences (NAS), Washington, D.C., 2001*

*\*\*NCHRP Report 572: Roundabouts in the United States. National Cooperative Highway Research Program, TRB, NAS, Washington, D.C., 2007.*



*SOURCE: Roundabouts: An Informational Guide. Federal Highway Administration, Washington, D.C., latest version, except as noted.*



**MARK YOUR CALENDAR!**  
**2009 NACE Conference**  
**April 19-23, 2009**  
**Peoria, Illinois**  
**Registration begins this Fall**

## The Local Technical Assistance Program and Tribal Technical Assistance Program LTAP/TTAP BRIEFING

### Critical Transportation Infrastructure

Over 38,000 local agencies – rural and urban counties, small and large cities, and tribal governments – build and maintain nearly 3,000,000 miles of local roads and over 299,000 local bridges. That amounts to 75% of the nation's street and highway system.

### Challenges of the Next Decade

The transportation industry predicts that nearly half the transportation workforce will retire by 2010. Combine this workforce shortage with declining revenues and aging infrastructure, and a critical picture emerges.

With 950,000 people directly employed in the transportation industry at the state, local and private contractor levels, the next decade will bring a considerable need for:

- Training
- Education
- Technology Transfer
- Implementation of Best Practices

### What is the LTAP/TTAP?

Over the past 25 years, the national Local Technical Assistance Program/Tribal Technical Assistance Program (LTAP/TTAP) has offered training, education, and technical assistance, connecting transportation best practices, research, and innovation to transportation workers and professionals at the local level. This has allowed local agencies to operate more efficiently, cost effectively, and safely.

LTAP is a nationwide network of 58 centers – one in every state, seven serving Native American tribal governments, and one in Puerto Rico.

### Focus Areas

The Local Technical Assistance Program (LTAP) has four focus areas that correspond with national transportation priorities:

- Safety
- Infrastructure Management
- Workforce Development
- Organizational Excellence

### Funding Structure

ISTEA, TEA-21, and SAFETEA-LU funding has enabled LTAP to reach only a portion of its possible audience. With additional support, the LTAP network can build on its existing base and organizational structure to address the anticipated workforce and system needs of the next decade.

- In every state, federal program funds are matched at a minimum of 1:1.
- Some state DOTs provide additional funds to their respective LTAP to help meet the numerous training needs of both state and local customers.
- Universities, local agency associations, and cost-recovery workshop fees are additional avenues through which LTAP Centers receive funding.
- In some cases these additional funds result in LTAP services that provide enhanced offerings such as Safety Circuit Riders, Construction Career Days, and Roads Scholar Programs.

### The LTAP/TTAP Mission

To foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers.

*Transportation professionals  
nationwide have credited this  
program with providing the*

**BEST-BANG-FOR-THE-BUCK**

*of any federal assistance program.*

## THE LTAP STORY

The LTAP/TTAP centers provide quality training and technical assistance to local agencies nationwide. Over the past 10 years alone, the program improved the skills and increased the knowledge of transportation workers through its extensive outreach activities:

- Centers conducted over 60,000 training events.
- Over 1,500,000 local transportation professionals attended the LTAP/TTAP Trainings.
- Total number of participant hours - 9,000,000
- Nearly half of all LTAP/TTAP training included highway and worker safety content.
- Centers distributed over 2,000,000 technical publications and resources in response to requests from local agencies.

### Telling the Story:

LTAP/TTAP Centers are vital for delivering critical training for county engineers, highway superintendents and county road professionals. We need their expertise particularly in the area of safety training to identify best practices and low cost safety solutions to improve the safety on our local roads.

- **Anthony Giancola**, *Executive Director, National Association of County Engineers*

The Maine Local Roads program is administering the High Risk Rural Road Program (HRRP) from start to finish. Field reviews are being conducted by center staff and several towns have been selected to receive new safety devices.

- **Jerry Douglass**, *Program Manager, Maine Local Roads Center (LTAP)*

Through its workshops and events, Minnesota LTAP helps more than 8,000 personnel each year become more knowledgeable and proficient in the delivery of public services. What a tremendous void there would be if LTAP didn't exist to help spread all this vital information so effectively. Keep up the great work!

- **Tom Colbert**, *Director of Public Works, City of Eagan, Minnesota*

The Michigan LTAP conducted an Introduction to Asset Management training one evening for county and township elected officials. That, combined with their pavement management training, set the stage for local road tax proposals throughout the county. To date an additional \$6,000,000 has been raised for local road improvements.

- **Brian Gutowski**, *County Engineer, Emmet County Road Commission, Michigan*

Training is a great way to stretch the transportation dollar. The workshops and other programs offered by our LTAP center help maintenance workers do their job more effectively. This helps local agencies cut costs and improve safety.

- **Julie Skallman**, *MN/DOT State Aid Engineer, LTAP Steering Committee Chair*

## MRUTC FINAL REPORT

New report provides clearer understanding of how local agencies use road data and information

In the United States, more than 38,000 local road agencies are challenged with implementing road management systems. Local agencies in Wisconsin and Michigan have overcome some of the organizational and financial hurdles that stand in the way of implementation. Starting in December 2005, the Midwest Regional University Transportation Center (MRUTC) with support from the Michigan Tech Transportation Institute (MTTI) and the Michigan Transportation Asset Management Council (TAMC) began to examine the practices of local agencies in Michigan and Wisconsin in order

to gain a better understanding of the current use of management systems by local road agencies.

With the cooperation of hundreds of street and highway department personnel at counties, cities, villages and towns throughout the upper Midwest, the project was completed by September 2007. A full report of the findings was published in March 2008.

The report is available on the MRUTC web site at: [www.mrutc.org/research/0605](http://www.mrutc.org/research/0605).

### Meaningful Use of Local Roads Data and Information

- Pavement management systems used by local agencies in the U.S.
- How the management system data is being used by agencies in IL, IN, IA, MI, MN, OH and WI.
- Identification of training available in the upper midwest.
- Validation of pavement
- Deterioration curve models used in RoadSoft®.

[www.mrutc.org/research/0605](http://www.mrutc.org/research/0605)

2008-2009 Illinois Technology Transfer Center

## TRAINING PROGRAM

The Technology Transfer Center's 2008-2009 Training Program is available on-line. Visit our website at

[www.dot.il.gov/blr/training.asp](http://www.dot.il.gov/blr/training.asp)

for the training schedule. Hard copies will follow in the mail.

**Remember**

*to send in your enrollment requests early.  
Some classes fill up quickly!*



Federal Highway  
Administration



Illinois Department  
of Transportation

# RURAL HIGHWAY SAFETY

## U.S. Transportation Deputy Secretary Barrett Announces University of Minnesota as National Clearinghouse to Improve Rural Road Safety

**MINNEAPOLIS** – U.S. Transportation Deputy Secretary Thomas J. Barrett today announced that the University of Minnesota will be home to a new national clearinghouse for information about the best way to make rural roads safer. The clearinghouse is part of Transportation Secretary Mary Peters’ national strategy to bring new focus, including resources and new technology, to reducing deaths on the nation’s rural roads.

“The only way we will cut the number of deaths and injuries on the nation’s roads is by finding a way to get officials the right information at the right time,” said Barrett, “The University of Minnesota is going to

do just that – and as a result, it is going to make our roads safer.”

Built by the University’s Center for Excellence in Rural Safety, the online clearinghouse will distribute the lessons that are being learned by researchers to transportation officials and first responders nationwide. It will also collect and distribute lessons that are being learned by transportation officials that are successfully combating rural road fatalities.

“It’s not every day that researchers and administrators get to save a life simply by talking about their work,” said Barrett, “Hundreds of drivers will one day soon owe

their lives to the faculty and staff of this great institution.”

The Department’s Rural Safety Initiative will help states and communities develop ways to eliminate the risks drivers face on America’s rural roads and highlight available solutions and resources. The new endeavor addresses five key goals: safer drivers, better roads, smarter roads, better-trained emergency responders, and improved outreach and partnerships. Approximately \$287 million in existing and new funding is available to support the effort.

For more information, please visit [www.dot.gov/affairs/ruralsafety/](http://www.dot.gov/affairs/ruralsafety/).

The screenshot shows the website interface for the Rural Highway Safety Clearinghouse. At the top, there is a search bar and a 'Go' button. The main header reads 'Rural Highway Safety Clearinghouse'. Below this, there is a descriptive paragraph: 'The Rural Highway Safety Clearinghouse is intended to be an online starting point for information about safety on our nation's rural roads.' To the left, a navigation menu lists: 'What's new', 'About the Clearinghouse', 'Browse topics', 'View Digital Tools', 'Submit a Resource', 'Contact Us', 'Clearinghouse Home', and 'Center for Excellence in Rural Safety'. Below the menu is a 'SafeRoadMaps.org' logo. The main content area is divided into sections: 'Have a resource to share? Please fill out the submission form.', 'Find resources about safety on rural roads by topic', 'The "Four E's"', 'Other Topics', 'View Organizations', and 'Additional information'. The sidebar on the right is titled 'FEATURED' and contains: 'Check out Rural Safety News, a quarterly electronic newsletter from the Center for Excellence in Rural Safety', 'Rural Road Safety News Subscribed', and 'USDOT Awards \$14.7 Million for Rural Roads Safety'.

Continued from page 3

### Data

Data-related changes include the following:

- A lane assignment option during import of LandXML data was added.
- An error in importing vertical alignment data in LandXML format from GEOPAK v8.9.5 was fixed.

### Highway Editor

Changes to the Highway Editor include:

- A Driver/Vehicle Data view was added for a total of 7 views of data ("All Data," plus views of data for each evaluation type)

### Accessibility Mode

An Accessibility Mode is now available to users with such needs. When the user installs IHSDM, an option is provided to include the Accessibility package. An "Accessible" menu option is then added to the main IHSDM menu bar, which allows the user to switch the focus between the different IHSDM interface components (Menu Bar, Navigation Tree, Button Panel, Desktop, Message Box) without requiring use of a mouse.

### Help/Documentation

Improvements to Help/documentation include:

- The documentation was updated to reflect the 2008 release, including extensive documentation related to the new Driver/Vehicle Module (e.g., DVM Engineers Manual).
- The Tutorial was updated, including the addition of a Driver/Vehicle Module lesson.

### Administration Tool

Changes to the Administration Tool include:

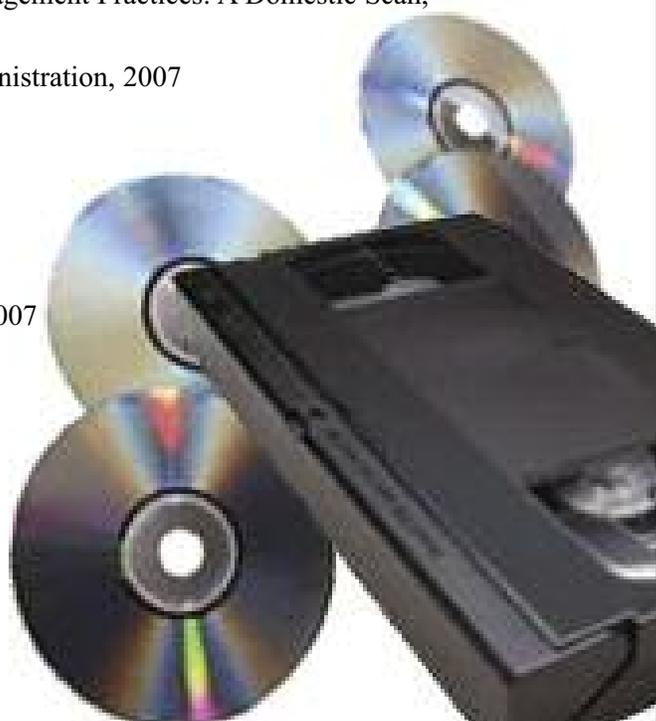
- A Driver/Vehicle Module Configuration Data Sets panel was added to the Administration Tool Graphical User Interface (GUI).

## NEW ADDITIONS TO THE VIDEO/PUBLICATION LIBRARY

- C006** Rule on Work Zone Safety and Mobility: Implementation Guides and Other References, Federal Highway Administration, 2007
- L034** Erosion Control Treatment Selection Guide, United States Department of Agriculture, 2006
- L035** Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites, United States Environmental Protection Agency, 2007
- L036** Innovative Intersection Safety Improvement and Management Practices: A Domestic Scan, Federal Highway Administration, 2006
- P048** Asset Management Overview, Federal Highway Administration, 2007
- V577** Personal Protective Equipment, Coastal, 2007
- V578** Hazard Communication, Coastal, 2008
- V579** Confined Space Entry Investigation, Coastal, 2005
- V580** The Newcomers, Coastal, 2007
- V581** Fork Lift Maneuvers All the Right Moves, Coastal, 2007

For additional information, visit our website at

[www.dot.il.gov/blr/t2center.html](http://www.dot.il.gov/blr/t2center.html)





# SNOW PLOW SAFETY



*Courtesy of the Rhode Island Technology Transfer Center*

**DRIVING A SNOWPLOW IS HARD WORK. IT REQUIRES DRIVING FOR LONG HOURS IN THE WORST CONDITIONS. WHILE YOU ARE CONCERNED WITH PROVIDING SAFE TRAVEL FOR MOTORISTS, YOU MUST NOT OVERLOOK YOUR OWN SAFETY.**

***HERE ARE A FEW TIPS TO MAKE YOUR WORK SAFER:***

- **Start work physically and mentally rested and properly clothed.**
- **Check all equipment before each use. Inspect the lights, brakes, windshield wipers, defroster, plow bolts and chains, spreader and auger, flares and other safety equipment.**
- **Know your route. Perform pre-storm route inspection observing landmarks and the locations of possible hazards (guardrails, curbs, railroad tracks, bridge joints, mailboxes, manhole covers, etc.) which may be hidden by falling or plowed snow.**
- **Choose the speed appropriate for conditions. Resist the urge to get the job done in a hurry.**
- **Be considerate of motorists having trouble driving in the snow. Keep your temper and patience when vehicles pass or tailgate.**
- **Be brief when using the radio. Report stranded motorists and other emergencies when possible.**
- **Observe all traffic laws and signal your intentions clearly. Remember to wear your seatbelt.**
- **Before leaving the cab, set the brakes and disengage the power to the spreader and snowplow.**
- **Watch for signs of fatigue. Staring for hours at the driving snow can have a hypnotizing effect on drivers. The long hours and stress can take their toll as well. If you feel the onset of fatigue, take a short break – get out and walk around the truck and take some deep breaths. You don't want this to happen!!**



**TAKE CARE OF YOURSELF BY OBSERVING THESE FEW TIPS  
AND KEEP YOUR SHIFT A SAFE ONE.**



The Technology Transfer (T2) Program is a nationwide effort financed jointly by the Federal Highway Administration and individual state departments of transportation. Its purpose is to transfer the latest state-of-the-art technology in the areas of roads and bridges by translating the technology into terms understood by local and state highway or transportation personnel.

The Illinois Interchange is published quarterly by the Illinois Technology Transfer Center at the Illinois Department of Transportation. Any opinions, findings, conclusions, or recommendations presented in this newsletter are those of the authors and do not necessarily reflect views of the Illinois Department of Transportation, or the Federal Highway Administration. Any product mentioned in the Illinois Interchange is for informational purposes only and should not be considered a product endorsement.

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