



Research Newsletter

Research Services Section
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Office of Investment
 Management

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2005 TRB Update

Many Minnesota university investigators, Mn/DOT staff, and local government representatives attended the 84th Annual Transportation Research Board meeting in Washington D.C., from Jan. 9 to Jan. 13. The spotlight theme for this year's conference was, "Transportation From the Customer's Perspective: Providing a Safe, Secure, and Integrated System."

The annual meeting attracted approximately 9600 transportation professionals from all over the world. The five day program included almost 500 sessions on all aspects of transportation. Specialty workshops, committee meetings, exhibits and meet-the-author poster sessions provided a variety of opportunity for information sharing.

The meet-the-author poster sessions provided an opportunity to interact with authors in a more personal setting. One poster session entitled, "What's the Picture? Graphics to Communicate Performance Measures and Data" had an exceptional visual depiction of Mn/DOT's Tools to Track Snow and Ice Event Response. Yes, I presented this poster session on behalf of the author, Mark Larson, from the Office of Investment Management. The poster session in general was very popular and the display attracted many visitors.

The next Annual TRB meeting will be held in Washington D.C., from Jan. 22 to Jan. 26, 2006 and will celebrate the 50th Anniversary of the Interstate System. Next year we hope to be able to provide a Minnesota Guide to the TRB meeting. The guide will include presentation descriptions, days, times, and meeting room locations for research supported by Mn/DOT and being presented at TRB. - **Sue Lodahl, Director Research Services Section.**

Calendar of Events

MARCH

9	Intelligent Transportation Systems Minnesota Annual Meeting and Information Exchange, Minneapolis. Contact Katie Kjeseth, (612) 624-3708, kkjeseth@cce.umn.edu
16-17	44th Annual Concrete Paving Workshop, Minneapolis. Contact Concrete Paving Association of Minnesota, (763) 561-0402.
30	4th Annual Road Salt Symposium, St. Cloud. Contact Jeanne Prok, (763) 478-3606, jeanne@freshwater.org

APRIL

17-21	National Association of County Engineers 2005 Annual Conference, Bismarck, North Dakota. Contact NACE, (202) 393-5041, nace@naco.org
18	Fourth Oberstar Forum on Transportation Technology, Minneapolis. Contact Teresa Washington, (612) 624-3745, twashing@cce.umn.edu
20-21	Spring Maintenance Training Expo, St. Cloud. Contact Teresa Washington, (612) 624-3745, twashing@cce.umn.edu
26-27	16 th Annual CTS Transportation Research Conference, RiverCenter, St. Paul Contact Katie Kjeseth, (612) 624-3708, kkjeseth@cce.umn.edu

MAY

11-13	Minnesota Public Works Association Spring 2005 Conference, Nisswa, Contact Heather Dorr, (612) 625-5267, hdoor@cce.umn.edu
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Evaluating Taconite Waste Materials for Roadway Construction "MnROAD 2004 ARM Award"

Mn/DOT's Minnesota Road Research program test two new pavement sections constructed last year using taconite aggregates. See the article in Mn/DOT's Feb. 2, 2005, issue of Newslines. <http://www.newsline.dot.state.mn.us/archive/05/feb/2.html#9>

Toward Zero Deaths



Toward Zero Deaths is a Minnesota interagency partnership led by the Department of Public Safety and the Department of Transportation, in cooperation with the State Patrol, the Federal Highway Administration, Minnesota county engineers and the Center for Transportation Studies at the University of Minnesota.

The goal of this multi-agency partnership is to raise awareness of traffic safety issues and develop tools that can be used to reduce crashes in Minnesota. TZD's mission is: "To move Minnesota toward zero deaths on our roads, using education, enforcement, engineering, and emergency services."

The Towards Zero Death program initially developed out of the momentum created by the North Star workshop. The members of the TZD program team realized that moving toward a goal of zero deaths would require cooperation among state agencies, as well as a way to build connections between state agencies and local organizations.

Goals of the TZD program:

- To make Toward Zero Deaths a statewide priority for the administration and the legislature
- To create partnerships with community groups
- To strengthen the involvement of other transportation stakeholder groups in order to achieve our collective vision
- To enhance the general public's awareness of the traffic safety problem in Minnesota and what can be done to stop it
- To implement practical, innovative ideas and best practices developed from research at the University of Minnesota and state agencies



KEEPING AHEAD OF GOOGLE

If you follow developments in Internet search engines, you've no doubt been reading quite a bit about Google. One of their announcements that has generated, ironically, a lot of ink is their effort to digitize the collections of a number of large libraries. Included in the project are libraries at Harvard, Stanford, the University of Michigan and Oxford University, as well as the New York Public Library ("Google and Research Libraries Launch Massive Digitization Project" <http://www.infotoday.com/newsbreaks/nbo41220-2.shtml>).

Some of the comments made about the project suggest it "could mark the beginning of the end of brick-and-mortar libraries." While it may be the beginning, that end, for those who think it's a desirable one, is still a long way off. A recent check of TL Cat* showed that there are more than 144,000 items in that catalog that aren't in the collections of the libraries listed above. Nor, for that matter, are they held by any other library except the TL Cat participant that cataloged the item. Also, a recent Mn/DOT library study (<http://www.dot.state.mn.us/library/mtkn.html>) demonstrated that 63 percent of recent transportation-related reports cataloged by TL Cat libraries can't be located by using Google.

* TL Cat is a project initiated by the Midwest Transportation Knowledge Network and coordinated by the National Transportation Library. It brings together the catalogs of, at present, 20 transportation-related libraries. It includes Mn/DOT library as well as the library at the University of Minnesota's Center for Transportation Studies. To see what things you might find in TL Cat that you won't find on Google nor anywhere else, go to www.mtkn.org or ntl.bts.gov to link to it.

By combining forces with new and existing efforts across the state, the TZD program team is gathering information for use by the local groups. Information is available on a variety of topics covering each of the "four E's" of traffic safety: engineering, emergency services, enforcement and education.



There have been many success stories both the state and local levels. Safe Communities of Wright County is an example of a local corridor group that has successfully implemented specific programs to identify and address problems with traffic safety. The Highway 65/Highway 95 corridor coalition is the second area to join the Toward Zero Death program. Minnesota Highway 52 is the most recent addition to the Toward Zero Death project family.

The groundbreaking TZD conference sponsored by the Minnesota Department of Public Safety, Minnesota Department of Transportation, Minnesota Towards Zero Death program and hosted by the Center for Transportation Studies, University of Minnesota took place in September 2004. A summary report on the conference is now available online at:

http://www.tzd.state.mn.us/publications/TZDConference04_Report.pdf (0.78 MB).

More information about the TZD program can be found at: <http://www.tzd.state.mn.us/index.html> or contact **Loren Hill** at Loren.Hill@dot.state.mn.us

The following are some of the completed research projects that contributed toward the development of the TZD program



Evaluation Report Volume 2: Benefit Analysis Intelligent Vehicle Initiative Specialty Vehicle Field Operational Test

Download report on Web! <http://www.lrrb.gen.mn.us/pdf/200408.pdf> (0.7 MB)

Assessment report on the potential benefits of the Driver Assistive System for winter maintenance activities, the potential market for DAS and the commercial viability of DAS. Expected benefits of DAS include reduction in travel times, less disruption to travel behavior and improved safety for the traveling public during winter weather events.

System Performance and Human Factors Evaluation of the Driving Assistive System: Supplemental Track Test Evaluation - IVI

Download report on Web! <http://www.lrrb.gen.mn.us/pdf/200412.pdf> (1.0 MB)

This study attempted to determine the usefulness of the Driver Assistive System in the context of plowing roads during low-visibility conditions.

Driver Assistive Systems for Snowplows

Download report on Web! <http://www.lrrb.gen.mn.us/pdf/200313.pdf> (2.21 MB)

A comprehensive driver assistive system which utilizes dual frequency, carrier phase real time kinematic differential global positioning system, high accuracy digital geospatial databases, advanced automotive radar and a driver interface with visual, haptic and audible components has been used to assist specialty vehicle operators perform their tasks under these low visibility conditions.

Differential GPS Based Control of a Heavy Vehicle

Download report on Web! <http://www.lrrb.gen.mn.us/pdf/200005.pdf> (0.44 MB)

This report describes development of technologies that can assist a driver with safe lane keeping in the event that the driver is incapacitated due to fatigue.

Radar Based Longitudinal Virtual Bumper Collision Avoidance System Implemented on a Truck

Download report on Web! <http://www.lrrb.gen.mn.us/pdf/200007.pdf> (1.74 MB)

This report describes results from a series of experiments using the virtual bumper collision avoidance algorithm implemented on a Navistar tractor cab. Results from the virtual bumper longitudinal experiments were favorable.

Evaluation Report Volume I: System Performance and Human Factors Intelligent Vehicle Initiative Specialty Vehicle Field Operational Test

Download report on Web! <http://www.lrrb.gen.mn.us/pdf/200407.pdf> (2.8 MB)

Human factors and benefit cost analyses are reported for the Driver Assistive System. The DAS improves safety for specialty vehicle operators by providing necessary cues for lane keeping and collision avoidance normally unavailable during poor visibility conditions.

Announcement

Watch for the listings of currently active Mn/DOT pooled fund studies for calendar year 2005 and Mn/DOT research projects for fiscal year 2006 in our March newsletter.

Mn/DOT Research Services recently published twelve research reports in December and eleven more in February. They are available through the Research Services web site, <http://www.research.dot.state.mn.us/>, or the LRRB web site, <http://www.lrrb.org> in PDF format. We hope you find the online products useful and convenient.

Check out the latest updates to the Research web site!

- Research Newsletters are posted in PDF format which are linked from the main page.
- Minnesota Interagency Partnership, Toward Zero Deaths (TZD) cover story
- New version of Electronic Publishing Process from the Electronic Publishing Guidelines
- New links to the Office of Maintenance, MN State Colleges and Universities (MNSCU) and the National Rural Transportation.

Check out the latest updates to the LRRB web site!

- Calendar of Events
- 2005/2006 RIC Current Tasks List
- Traffic Calming cover story

We're on the Web!

<http://www.research.dot.state.mn.us/>