



Legislators attend transportation seminars

Transportation promises to be an item of debate in the new legislative session. To lend University research and expertise to the debate, CTS offered two half-day seminars for legislators last month on the Minneapolis campus. The purpose of the seminars was to give legislators an overview of transportation trends and an opportunity to discuss policy implications with University and other experts.

"The seminars were a fact-based, non-partisan opportunity for legislators to engage in active learning," said moderator **Robert Johns**, director of CTS. More than 25 legislators attended both sessions, including the full House Transportation Finance Division Committee, led by chair **Bernie Lieder** and vice chair **Ron Erhardt**.

The seminars were sponsored by CTS in cooperation with the Minnesota Senate and House Transportation Committees, the Minnesota Department of Transportation (Mn/DOT), and the Metropolitan Council. The seminars were a pilot effort, Johns said, and are open to format and other changes in the future.



Legislators at January 10 seminar

The first portion of the January 10 seminar examined the historical development of funding formulas and described current sources and allocation of funds for roads, transit, and other uses. Presenters were **John Williams**, former legislative analyst with the House Research Department; **Norman Foster**, executive budget officer with the Minnesota Department of Finance; and **Natalio Diaz**, former director of transportation planning with the Met Council. The second session looked at future approaches for transportation finance: **Lee Munnich**, director of the State and Local Policy Program

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CTS redesigns Web site

Capping a 10-month effort, CTS launched its redesigned Web site: www.cts.umn.edu.

"The revamped site offers a number of improvements," said CTS information manager **Arlene Mathison**, who led the redesign. "Based on findings from usability testing, the site was changed to have clearer and consistent navigation options," she explained. "The home page is richer in content, with news of research and upcoming events. And our search engine is easily accessible throughout the site."



The structure is adapted from the University of Minnesota's Web templates, establishing a closer tie-in to the University. The site also has a "cleaner" look, with new photos and graphics.

Powering the site is an expanded use of database-generated pages. The site is modular and expandable, with simplified style sheets and templates. "The robust framework will facilitate the redesigns of sites for other CTS programs," Mathison says.

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CEO forum proceedings online

State department of transportation (DOT) chief executive officers (CEOs) and their top staff came together in Minneapolis last fall to share their experiences on three critical issues: roles and partnerships, customers and stakeholders, and funding and finance.

CTS conducted this third CEO Leadership Forum September 24 through 26, 2006, in association with the American Association of State Highway and Transportation Officials (AASHTO), the Federal Highway Administration (FHWA), and the Transportation Research Board (TRB). Funding support was provided by the National Cooperative Highway Research Program (NCHRP).

Titled "Advancing Practice in State DOTs from Good to Great," the forum built on the success of two previous forums held in 2000 and 2003.

Prior to the 2006 event, current practices from select state DOTs related to the three themes were synthesized in white papers, which were then discussed in various sessions throughout the forum. Participants also were provided the chance to offer their recommendations, based on the discussions, for needed research and other actions.

CTS director **Robert Johns**,

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Freight symposium highlights environmental innovations

Managing the supply chain today means protecting tomorrow's environmental resources. Mandates, such as the Environmental Protection Agency's (EPA) requirement for low diesel emissions on trucks in 2007, are greatly influencing the nation's freight and transportation market.

Research into renewable fuels continues in order to reduce harmful emissions and conserve petroleum-based fuel.

In the keynote speech at the Tenth Annual Freight and Logistics Symposium held in Minneapolis on December 1, 2006, **Larry Lair**, vice president of 3M's Traffic Safety Systems Division, outlined sweeping initiatives by 3M in packaging, manufacturing, and transportation. The moves are reducing 3M's transportation costs while minimizing damage to the environment. "We recognize packaging opportunities are almost limitless and resources are not," Lair told more than 80 freight and logistics professionals, policymakers, and researchers.

3M is systematically making design changes to packaging on most of its product. In part, the changes arise from new requirements by Wal-Mart for suppliers to reduce packaging by at least 5 percent over a five-year period. "For 3M, when you talk about thousands and thousands of boxes and packages and pallets, pretty soon it adds up and the savings are very significant," Lair said, noting that savings on packaging supplies will run into the millions of dollars annually.

Next, a panel discussion described "green" moves by supply-chain partners. For many years, the Port of Tacoma, Washington, has been cleaning up its waterways and making other significant environmental remediation efforts at its 2,400-acre site. **Vince Sullivan**, Midwest sales manager for the Port of Tacoma, said the shift from regular diesel to ultra-low sulfur diesel (ULSD) on its container-handling equipment has reduced emissions. Similar initiatives by shipping lines serving the port also have contributed to the lower emissions.

Roger Poyer, manager of hub and facility operations at BNSF's intermodal facility in St. Paul, Minnesota, called lowered emissions and fuel consumption a byproduct of corporate-wide moves to reduce costs and increase operating efficiencies. Poyer described how BNSF has recently changed its loading techniques to haul



Alfred Marcus, David Kittelson



Larry Lair

more freight on longer trains. The St. Paul rail yard has also improved safety involving the many truck moves in and out of its facility such as by instituting an anti-idling policy.

Buddy Polovick, shipper coordinator with the EPA's SmartWay program, outlined the voluntary partnership consisting of nearly 500 trucking companies, shippers, and manufacturers formed to reduce fuel consumption and emissions through smarter logistics practices and better technology. Partnership members benefit from government and private-sector research and other tools. For example, SmartWay monitors research into advanced aerodynamics and promotes the use of renewable fuels.

A second panel shifted discussion to the future role of energy sources for transportation. **Bob Clarke**, president of the Truck Manufacturers Association, said the EPA's low-emission requirements to reduce particulate matter emissions on diesel engines for trucks and buses have forced big changes in the industry, affecting truck manufacturers and shippers alike.

Clarke praised the research efforts of academia along with the Department of Energy in supporting advancements toward lowered emissions. "The engineering work required to get vehicles to this state has been nothing short of monumental," he said. Emission specifications for new trucks will continue to tighten through 2010 for lowered nitrogen oxide (NOx) emissions, an area where much of the work remains on developing technology.

David Kittelson, professor of mechanical engineering at the University of Minnesota, said biodiesel fuel, widely used in freight transportation, is a viable renewable fuel. Biodiesel produces particulate matter and carbon emissions up to 60 percent less than petroleum diesel, but it increases NOx emissions because it burns hotter. Like Clarke, Kittelson said that a reduction in truck NOx emissions needs further research. "The technology that is going to be used for NOx emission control

is still up in the air. That actually is a tougher problem than the particle problem," Kittelson said.

Alfred Marcus, Edison Spencer Chair in strategy and technological leadership at the Carlson School of Management at the University of Minnesota, stressed a need for the stabilization of energy prices and a stable policy environment to encourage advancements in renewable fuels and vehicle technology.

Looking toward the future, **Jerry Nagel**, president of Northern Great Plains, Inc. (NGP), described a number of issues concerning renewable fuel production in the region, which includes Minnesota, Iowa, Nebraska, North Dakota, and South Dakota. "We're hearing that biofuels are going to be the most disruptive thing to happen in agriculture since the opening of global markets in the 1970s," Nagel said, suggesting renewable biofuels made from feedstocks like corn and soybeans may serve to significantly raise food and land prices. He also warned that the nation is unprepared. "There is no strategic thinking going on now about the implications of massive large-scale biofuels development in the region," he said. NGP has started a dialogue with communities in the region to create a better future, he reported.

Kittelson added that fuel produced from prairie grasses is an attractive alternative. (U of M research indicates that a field of diverse prairie grasses produces twice the bioenergy of land planted with a single species such as corn. The research was featured on the local CBS news affiliate on January 22.)

Overall, panelists agreed upon the value of diversity in fuel sources, even discussing diesel-electric hybrid engines for light-duty vehicles. But Clarke stressed that the disparity in fuel types makes it difficult to bring market-viable technologies into widespread use. "It's about getting enough volumes to bring the costs down where people will pay for them," he concluded.

Finally, CTS director **Robert Johns** closed the symposium by remarking on the innovations presented by panelists. "These small changes are making a big impact," he said, citing a multiplier effect of the actions of all parties in the supply chain.

A proceedings of the conference will be published early this year. To receive a copy, call CTS at 612-626-1077 or visit the CTS publications page. **CTS**

Biking, walking increase with ‘destination exercise’

Creating more options to bike or walk to destinations could have positive effects on obesity trends and energy use, said Dr. **Dan Halvorsen**, adjunct assistant professor in the University’s Department of Physiology. He made his comments at the November 8 meeting of the CTS Planning and Environment Research Council.

Halvorsen, who also directs the Kohl’s PowerCubed Exercise Medicine Clinic at Children’s Hospitals and Clinics, said three “cooperative problems” are emerging in the United States: an obesity epidemic, rising medical costs, and fossil fuel costs and supplies. “One solution for all three,” he said, “may be more systematic ‘destination exercise’ for children and adults.”

Walking and biking are the easiest lifetime sports, Halvorsen explained, and thus are commonly prescribed by doctors as “exercise medicine” for a range of health issues. In his research, more than 67 percent of patients adhere to their daily walking or biking exercise program if it includes a destination like school or work. When the walking and biking routes are efficient, safe, fun, and easily accessible, their adherence rises to 81 percent.

Schools present an important opportunity for destination exercise, especially with the rise in childhood obesity. Currently, however, “there is a disconnect between school campus planning and transportation planning,” Halvorsen said. Intersections and roads near schools need

to be designed with student accessibility in mind. “What’s it like in rush hour for kids? How accessible are paths? In January or February? City council members, school staff, and school boards need to see some of this physiological data,” he said.

To demonstrate how the three societal problems come together, Halvorsen compared the caloric expenditures of various activities. A 150-pound student burns 70 to 100 calories by walking a mile to school, for example, or 25 to 65 calories by biking. In contrast, making the trip in a Toyota Prius burns 585 calories of gasoline, or 2,375 with a Cadillac Escalade.

“You in this room are part of our medical cost containment system,” he said. “When you realize that that is what you are providing as a society, we will be able to roll up our sleeves and tackle these issues together.”

Seminar attendees included representatives from the Rails-to-Trails Conservancy, BlueCross BlueShield, the Federal Highway Administration, and the Nonmotorized Transportation Pilot Program (NTPP). CTS is leading the program evaluation for NTPP, which was authorized by Congress in the 2005 transportation bill (see the October *CTS Report* at www.cts.umn.edu/publications).

Halvorsen’s presentation was part of the CTS Research Seminar Series (www.cts.umn.edu/education/seminars). **CTS**

TZD credited for drop in state fatalities

Last year, 475 Minnesotans died on state roadways—the lowest number of annual traffic deaths recorded in the state since 1945.

Officials attributed the significant decrease in traffic deaths in part to the Toward Zero Deaths program, which combines the resources of state and local agencies, county engineers, and community organizations to address traffic safety issues through the “Four Es”: enforcement, engineering, education, and emergency trauma care.

Coverage of the progress—and calls for further improvement—appeared in newspapers and other media around the state.

Toward Zero Deaths is a multiagency partnership that includes representatives from Mn/DOT, the Minnesota Department of Public Safety, the Minnesota State Patrol, the Federal Highway Administration, and CTS.

For more about TZD, see www.tzd.state.mn.us. **CTS**



University of Minnesota presenters at TRB Annual Meeting

Transportation system planning, emergency evacuation, traffic simulation, and pavement design were among the topics covered by presenters from the University of Minnesota, the Metropolitan Council, and Mn/DOT at the Transportation Research Board’s 86th annual meeting, January 21–25, 2007.

The University was represented at a variety of panels and poster sessions throughout the five-day event in Washington, D.C., that brings together researchers, students, and professionals from around the world.

For a complete list of presentation topics for University, Mn/DOT, and Met Council presenters, download the *Minnesota Guide to TRB Annual Meeting Presentations*: www.research.dot.state.mn.us/MnTRBGuide.pdf (836 KB PDF).

University faculty, staff, and student presenters included:

- ITS Institute: **Max Donath, Chen-Fu Liao, Ted Morris**
- HumanFIRST Program: **Nic Ward, Janet Creaser, Arvind Menon, Bryan Newstrom**
- Intelligent Vehicles Program: **Craig Shankwitz, Pi-Ming Cheng, Alec Gorestani**
- Northland Advanced Transportation Systems Research Laboratories (NATSRL): **Eil Kwon**
- CTS: **Robert Johns, Laurie McGinnis, Cheri Marti**
- Department of Civil Engineering (faculty and researchers): **Gary Davis, Lev Khazanovich, Joseph Labuz, David Levinson, Henry Liu, Mihai Marashteanu, Panos Michalopoulos, Rania Wasfi, Feng Xie**
- Department of Civil Engineering (graduate students): **Xiaozheng He, Saif Jabari, Woosung Kim, Xinjun Li, Wenteng Ma, Raul Andres Velasquez, Rania Wasfi, Qiang Wang, Thomas Westover, Ryan D. Wilson, Xinkai Wu, Feng Xie, Wuping Xin, Shanjiang Zhu, Adam Zofka**
- Hubert H. Humphrey Institute of Public Affairs (staff and students): **Frank Douma, Ahmed El-Geneidy, Michael Iacono, Adam Kokotovich, Kevin Krizek, Lee Munnich, Steven Peterson, Kristin B. Thompson, Elizabeth J. Wilson, Ryan Wilson**
- University of Minnesota, Morris–Division of Social Science: **Stephen V. Burks**
- Minnesota State University, Mankato: **W. James Wilde, Michael Hamilton Krause** **CTS**

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“We’ve set our sights high,” said **Gina Baas**, CTS director of communications and outreach. “Our goal is to be known as one of the top resources for transportation information in the world. We believe this redesign is a huge step in that direction.”

Other staff contributing to the redesign were **Charlie Grussing-Neitzel**, Web coordinator, who applied the latest standards in Web development; **Cadie Wright**, graphic designer; **C.J. Loosbrock**, information systems specialist; editors **Pamela Snopl**, **Peter Park Nelson**, and **Michael McCarthy**; and **Nyssa Gesch**, student intern.

The site features news articles, a subscription page for all CTS publications, research reports, educational offerings, online registration for CTS events, and much more.

Enhancements coming in the next few months include new ways to browse research by topic; RSS feeds for news, events, and job postings; and an enhanced search function integrating research projects and reports. **CTS**

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(SLPP) at the Humphrey Institute of Public Affairs, reviewed financing in other states and countries, and **Adeel Lari**, director of innovative financing at SLPP, presented transportation financing options.

The January 16 seminar touched on two main themes: transportation and growth, and alternative modes and fuels. **John Adams**, geography professor and Humphrey Institute faculty member, presented societal changes affecting transportation, the impacts of congestion, pressures on the transportation system, the link to land development, and other trends. In the final session, **Kevin Krizek**, associate professor in the Humphrey Institute, reviewed non-auto travel and land use, accessibility to destinations, and innovations in transit-oriented development. **David Kittelson**, professor in the Department of Mechanical Engineering, presented future

fuel scenarios.

In addition to the instructors, a number of topic experts were on hand for questions: **Ken Buckeye**, program manager, Mn/DOT Office of Investment Management; **Mark Fuhrmann**, deputy general manager, Metro Transit; **Connie Kozlak**, manager of transportation systems planning, Metropolitan Council; **Abigail McKenzie**, director of statewide planning and analysis, Mn/DOT Office of Investment Management; **Vince Pellegrin**, chief operating officer, Metro Transit; **Scott Peterson**, director, Mn/DOT Office of Finance; **Peggy Reichert**, director of statewide planning and analysis, Mn/DOT Office of Investment Management; and **Amy Vennewitz**, deputy director of transportation services, Metropolitan Council.

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along with Mn/DOT deputy commissioner **Doug Differt** and AASHTO president **Harold Linnenkohl**, opened the event.

“There are a broad range of challenges facing our departments, many of them similar,” Differt said, “and it’s time for us to work on these things. We are all looking for innovation and creativity.” To do that, he added, “we need ongoing education and research. A lot of the innovative things we

do [at Mn/DOT] start as research projects, and we rely on our partnership with CTS to get them done.”

A report summarizing the main events of the forum and listing the research action plans developed during the working sessions is available for download on the AASHTO Web site: www.transportation.org/meetings/CEOLeadership. **CTS**

Upcoming events

To publicize your event, call CTS at 612-626-1077, fax 612-625-6381, or e-mail snopl001@cts.umn.edu. Visit the CTS Web site—www.cts.umn.edu—for more comprehensive event information.

Feb. 15	11th Annual Minnesota Pavement Conference, St. Paul. Contact Shirley Mueffelman , 612-624-4754, conferences2@cce.umn.edu .	March 15–16	Concrete Paving Association of Minnesota Annual Conference, St. Cloud. See www.concreteisbetter.com .	Apr. 22–25	2007 APWA North American Snow Conference, St. Paul. Contact Brenda Shaver , 816-595-5240, bshaver@apwa.net .
Feb. 28	21st Annual Mn/DOT - ACEC/ MN Consultant Conference, Brooklyn Center. Contact David Oxley , 952-593-5533, doxley@acecmn.org .	March 20–21	Northland Chapter of ATSSA “How To” Training and Education Workshop, Fargo, ND. Contact Rick Shomion , 651-296-3035, rick.shomion@dot.state.mn.us .	April 23–24	ITS Minnesota 13th Annual Meeting, Duluth. Contact Electra Sylva , 612-624-3708, conferences5@cce.umn.edu .
March 1	Transportation Career Expo, Minneapolis. Contact Mindy Carlson , 612-625-1813, carlson@cts.umn.edu .	Apr. 10–11	Spring Maintenance Training Expo, St. Cloud. Contact Shirley Mueffelman , 612-624-4754, conferences2@cce.umn.edu .	May 1–2	CTS Eighteenth Annual Transportation Research Conference, Saint Paul RiverCentre. Contact Electra Sylva , 612-624-3708, conferences5@cce.umn.edu . CTS