



Oberstar Forum: transforming transportation policy

Federal transportation programs and policy are due for dramatic institutional reform and revamping, according to the recommendations of a national study commission. With SAFETEA-LU expiring next year, what is the potential for such transformation in the next surface transportation bill? National experts will offer their perspectives at the seventh **James L. Oberstar** Forum on Transportation Policy and Technology April 7 in Minneapolis.

Oberstar, chair of the U.S. House Transportation and Infrastructure Committee, will open the event with a presentation titled "Transformation of National Transportation Policy for the 21st Century." Next, Congressman **Tim Walz** from Minnesota's 1st Congressional District, who serves on the Transportation and Infrastructure Committee with Oberstar, is invited to present "Federal Transportation Policy to Meet State Needs."

The forum then turns to a panel discussion



James Oberstar

of the recommendations of the National Surface Transportation Policy and Revenue Study Commission. The commission was created by Congress under SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users), the federal surface transportation bill enacted in 2005. The results of its work are available in the recently released report *Transportation for Tomorrow*

(www.transportationfortomorrow.org). Invited panelists are **Jack Schenendorf**, the commission's vice chair, and commission members **Rick Geddes**, **Steve Heminger**, and **Matt Rose**. A second panel will assess the likelihood of policy transformation. Speakers invited will include **Pete Ruane**, president and CEO of the American Road & Transportation Builders Association; **John Horsley**, executive director of the American Association of State Highway and Transportation Officials; and **William W.**

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Future of vehicle safety lies in crash prevention

Seat belts and other safety technologies have saved hundreds of thousands of lives on U.S. roadways since 1960. Tomorrow's safety systems, particularly those that prevent crashes, will save many more, said **Ronald Medford** at the CTS Winter Luncheon. Their widespread deployment, however, hinges on a key question: What level of reliability will convince consumers the systems work and are worth the money—and persuade manufacturers to install them?

Medford is the senior associate administrator for vehicle safety with the National Highway Traffic Safety Administration (NHTSA). He was introduced by **Max Donath**, director of the Intelligent Transportation Systems (ITS) Institute, which sponsored the luncheon February 13 in Minneapolis.

Traffic crashes are the leading cause of death



Ronald Medford

for Americans between the ages of 4 to 34 and play a prominent role in mortality at almost every age. "It is a significant public health problem," Medford said.

Ninety percent of crashes in this country are related to driver behavior, with just two percent related to vehicles and eight percent to road surface. Vehicle safety systems that compensate for driver behavior—either by warning drivers of an impending crash or assuming control of the vehicle—are becoming more feasible thanks to new sensing systems and higher computational power, he said.

Some systems augment driver performance. Brake-assist technology, for example, detects how quickly a driver actuates the brake, evaluates the force applied, and adds more force in crash situations (which require more force

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CTS Scholar receives federal research funding

Assistant Professor **Henry Liu** of the University of Minnesota's Department of Civil Engineering will receive \$111,000 as part of a research project funded by the National Cooperative Highway Research Program (NCHRP).

The project—NCHRP Project 03-90, "Operation of Traffic Signal Systems in Oversaturated Conditions"—will be led by **Douglas Gettman**, Ph.D., of Kimley-Horn and Associates, Inc., the lead consultant on the proposal. Liu is a co-investigator along with **Monty Abbas** of Virginia Tech and **Alex Skabardonis** of the University of California, Berkeley.

Typical traffic control strategies do not work as efficiently as necessary under congested—or oversaturated—conditions. The majority of agencies operating and maintaining traffic signal systems are already stretched thin and are challenged to provide adequate service to drivers in their jurisdictions. Oversaturated conditions present an additional burden for practitioners who do not have adequate tools for addressing such situations.



Henry Liu

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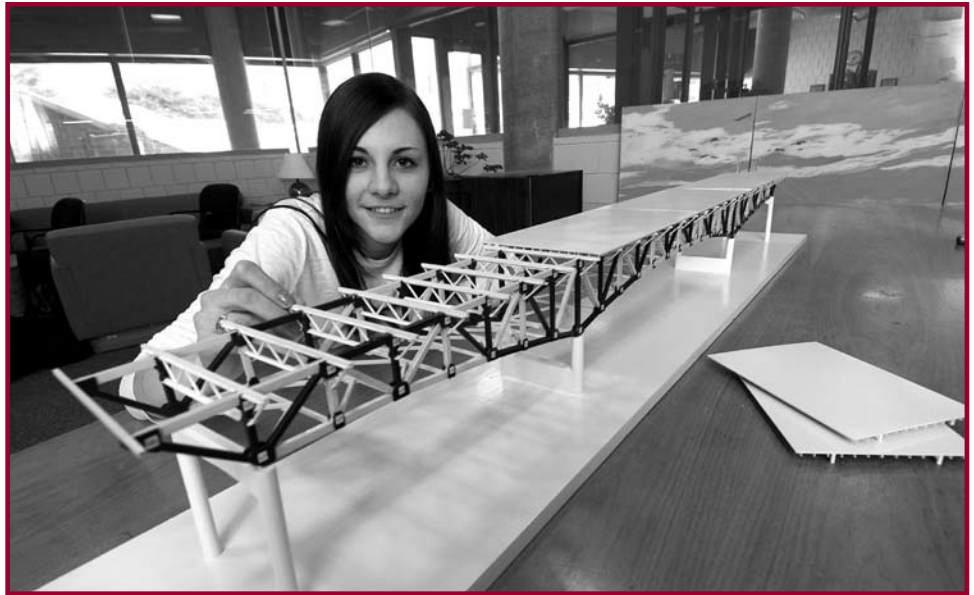
U of M student creates bridge model for NTSB

A model of the former I-35W bridge, built by civil engineering junior **Rachel Gaulke**, was sent to Washington, D.C., in February. Engineers at the National Transportation Safety Board (NTSB) will use the 1/200th-scale model to help visualize and explain information related to the bridge collapse and its causes. NTSB contracted with the University to produce the model because of its familiarity with the bridge.

A news release and a video about the model are online (see www.cts.umn.edu/news).

In the video, CE professor and CTS Scholar **Carol Shield** said the project allowed Gaulke to apply classroom learning to real-world problems.

KSTP-TV aired a segment about the model on its February 19 newscast. **CTS**



Junior Rachel Gaulke with her model of the former I-35W bridge

Photo courtesy Patrick O'Leary, University Relations

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than a driver may realize). Other examples being deployed and refined include night vision systems, area-specific warnings (such as for blind spots), and drowsy-driving monitoring systems. (Lexus uses a camera that monitors the driver's eyes, while Volvo's approach monitors driving behavior and compares it against the driver's recorded baseline.)

Other systems take control of the vehicle. A major development in this area is electronic stability control (ESC) for preventing rollovers. Rollovers account for 3 percent of all passenger vehicle crashes but 35 percent of occupant fatalities and 59 percent of SUV occupant deaths. "When [a rollover] happens, it's severe and significant," Medford said.

Mandated by Congress, NHTSA studied rollovers and enacted a regulation requiring ESC for all new vehicles by 2012. (Nine percent of SUVs sold today have ESC.) Manufacturers were supportive of the regulation, Medford said.

NHTSA's preliminary analysis of ESC, using data from five states between 1997 and 2002, found a 35 percent reduction for single vehicle crashes for passenger cars and a 67 percent crash reduction for SUVs.

When crashes do occur, automatic collision notification (ACN) systems such as OnStar are increasingly available. Advanced ACN assesses crash severity and angle, providing better data to emergency responders and improving triage, Medford explained.

In longer term initiatives, NHTSA is working on ITS safety initiatives with the USDOT's Research and Innovative Technology Administration. One research initiative is the Cooperative Intersection Collision Avoidance Systems (CICAS) program, of which the ITS Institute at CTS is a participant. CICAS brings together federal agencies, automobile manufacturers, and university transportation centers with the goal of developing new technologies to prevent collisions. The ITS Institute's focus is on preventing crashes at rural highway intersections (see www.its.umn.edu).

Another research area is vehicle-infrastructure integration, which is intended to allow communication between the infrastructure and vehicles, and from vehicles to other vehicles.

For all these advanced technologies, Medford said, a continuing question is this: How much of the "safety function" can be taken from drivers without causing false reliance? "We have the capability to completely eliminate crashes...but we're not ready for that," he noted. Until we are, NHTSA will continue to evaluate technology effectiveness, help ensure minimum performance, educate consumers, encourage the car market where appropriate, and regulate where appropriate.

Many dealers don't understand the technologies on their own lots, Medford added. Only 10 percent of salespeople know what



Electronic stability control significantly reduces the number of rollover crashes.

Photo courtesy of AAA Foundation for Traffic Safety

ESC is, "even though it's the most important technology after seat belts," he said.

Medford also described a recent agreement that NHTSA signed with the Automotive Coalition for Traffic Safety to develop advanced alcohol-sensing technology. The five-year research and development effort is designed to create the capability to detect driver impairment before the vehicle can be operated. "It's a tough effort and will need a lot of time and money, with a significant technical and public acceptance challenge," he said.

Potential areas of promise include breath alcohol ignition interlock devices (used today for repeat offenders), tissue spectroscopy, transdermal detectors, ethanol vapor detectors, and ocular measures. Accuracy is key: any system must be reliable and accurate over the life of a vehicle. "We can't have false positives," Medford said. "The public won't accept it." **CTS**

Metro project demonstrates equity aspects of public transit decisions

New public transit projects affect people unevenly, particularly minorities and those with low incomes who may not have the option to drive. These groups historically are not active in the planning process for public transportation, although they often provide the most reliable ridership numbers and rely most heavily on public transportation.

A proposed transit project in the Twin Cities metro area demonstrates these equity issues, say **Carrie Ann Fathman**, a master's candidate in landscape architecture, and **Kristine F. Miller**, associate professor in landscape architecture. They described their findings in an article in the Center for Urban and Regional Affairs fall 2007 *CURA Reporter*.

The Bottineau Boulevard Bus Rapid Transit (BRT) project is a joint effort of Hennepin County, the seven municipalities along the boulevard, and Metro Transit. The primary goal is to connect north-west suburban communities to downtown Minneapolis. Although BRT offers clear benefits for commuters from these suburbs, the researchers write, there are questions about its effects on West Broadway, the main commercial corridor of North Minneapolis.

Their study, funded by a CURA Faculty Interactive Research Program grant, examined the potential impacts of the proposed

Bottineau Boulevard BRT on the West Broadway neighborhood. The study was developed in collaboration with Juxtaposition Arts, a youth-focused, minority-directed, urban visual arts center based in the West Broadway neighborhood.

The article documents the researchers' methods and findings, the potential positive and negative impacts of BRT, and the experiences of their community partner.

Key aspects of the BRT project were in flux during the course of the study, and the entire project is now uncertain. The biggest change happened when Hennepin County announced that the BRT project might be dropped so that a light-rail transit (LRT) project could be pursued. The LRT route would not run on West Broadway.

"Both BRT and LRT have implications for transportation equity in the metro area because the goal of both kinds of transit is to entice drivers to become riders rather



A U of M project examined the potential impact of bus rapid transit on a Minneapolis neighborhood.

Photo copyright Steve Schneider, 2007

than to increase transit options for existing riders or to increase transportation equity," Fathman and Miller write. Regardless of whether or not BRT or LRT is built in the corridor, they believe the public participation process is essential. "Riders must be involved, information must be made available as changes occur, and community organizations that advocate for transit riders and for Northside residents must be included," they say.

To read the article, go to www.cura.umn.edu. **CTS**

Findings published from collaborative leadership initiative

Findings are available from a pilot initiative designed to provide training and facilitation skills for local agencies.

The initiative—"Developing a Collaborative Leadership Approach to Managing Conflict and Consensus Building During Local Agency Transportation Project Development"—was sponsored by the National Local Technical Assistance Program Association (NLTA) and the Federal Highway Administration (FHWA). Mn/DOT State Aid for Local Transportation, in cooperation with the FHWA and CTS, guided the project.

The goal of the initiative was to strengthen local transportation practitioners' knowledge and skills in collaborative leadership. It involved four main tasks: developing and conducting pilot training; applying the skills in an actual project;

creating a recommended framework for national application; and assessing pilot effectiveness and sharing lessons learned.

The project team was led by **Tom Sorel**, FHWA Minnesota division administrator; **Julie Skallman**, Mn/DOT State Aid director; and **Cheri Marti**, former CTS associate director of education and outreach. Their report concludes that with some modification, a training-mediation program has strong potential to be useful for other transportation projects.

Jim Grothaus, director of Minnesota LTAP, presented highlights from the effort at the annual conference of the Minnesota County Engineers Association in January.

A one-page summary is online at www.mnltap.umn.edu/Publications. For more information, please contact Jan Lucke of CTS, 612-625-8401, jlucke@cts.umn.edu. **CTS**

Key conclusions from the report:

- Mediation is a very effective tool in breaking deadlocks that are delaying project-level transportation decisions, particularly if the mediation can clarify areas of law or regulation that are inflexible and areas for option generation and creative problem solving.
- Because of this opportunity to break deadlocks, mediation can accelerate the pace of project decision making.
- Those with a stake in the outcome benefit from training that prepares them to participate effectively in mediation and from the expectation that they will shift from creating deadlocks to breaking deadlocks.

CE department adds transportation expertise

Nikolas Geroliminis joined the Department of Civil Engineering (CE) this semester as an assistant professor. His research is focused on developing more sustainable transportation systems by improving the use of existing facilities. Specific areas include modeling and estimation of travel times and other performance measures in arterials; location



Nikolas Geroliminis

of emergency response vehicles in transportation networks; and urban transportation. His current research focuses on the macroscopic modeling of traffic flow for overcrowded cities.

He completed his doctorate in civil and environmental engineering from the University of California, Berkeley, last year. **CTS**

CTS welcomes program coordinator

Joseph Barbeau has accepted a program coordinator position with CTS, filling a spot vacated by **Chad Rathmann**. Barbeau comes to CTS with several years of experience as a transportation planner, most recently as assistant city planner in Winona,

Minn. He holds a master's degree in urban and regional planning from the University of Iowa and a bachelor's degree in political science from University of Wisconsin-Madison. **CTS**

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Millar, president of the American Public Transportation Association.

Congressman Oberstar will provide closing remarks.

The forum is free and open to the public. Space is limited, however, so attendees are encouraged to register.

A brochure is in the mail with further details, and updates will be posted on the Oberstar Forum Web page at www.cts.umn.edu/oberstarforum. For further information, contact **Sara Van Essendelft**, 612-624-3708, cceconf5@umn.edu. **CTS**

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This research will provide performance data and guidance on effective strategies for handling oversaturated conditions. "If this research helps agencies reduce citizen complaints regarding oversaturated conditions by at least 20 percent, the project would be a major success," the researchers wrote in their proposal. Their work is scheduled for completion in 2010.

The project builds on research funded by the Minnesota Local Road Research Board and the Intelligent Transportation Systems (ITS) Institute at CTS, adds **Linda Preisen**, CTS research director. In that research, Liu and his students developed software and hardware to collect signal data and calculate real-time performance measures. The technology was installed on 11 signals in Edina and Bloomington, Minn., in a partnership with Hennepin County. The goal of the project, scheduled for completion early next year, is for the system to automatically adjust signal timing based on traffic conditions. **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.

Apr. 7 **James L. Oberstar** Forum, Minneapolis. Contact **Sara Van Essendelft**, 612-624-3708, cceconf5@umn.edu.

Apr. 7 Transportation Club Expo, Minneapolis. See www.transportationclub.com/expo.htm.

Apr. 15–16 Minnesota Spring Maintenance Training Expo, St. Cloud. Contact **Shirley Mueffelmann**, 612-624-4754, cceconf2@umn.edu.

ITS Minnesota Annual Meeting and Exchange Forum
 March 25, 2008, St. Paul
 See www.itsmn.org

Apr. 23–25 Minnesota Council of Airports Annual Conference, Bloomington. Contact **Judy Meyers**, 651-234-7232, 1-800-657-3922, judy.meyers@dot.state.mn.us.

Apr. 23–25 Minnesota Alcohol and Traffic Safety Association 34th Annual Conference, St. Cloud. See

www.MATSA.us or call 1-800-362-3667, ext. 7307 or 7309.

May 20–21 CTS 19th Annual Transportation Research Conference, St. Paul. Contact **Sara Van Essendelft**, 612-624-3708, cceconf5@umn.edu.

Oct. 7–8 Toward Zero Deaths Conference, Rochester, Minn. Contact **Shirley Mueffelmann**, 612-624-4754, cceconf2@umn.edu.

Oct. 14–15 2008 AirTAP Fall Forum, Breezy Point, Minn. **CTS**