



Second Access to Destinations conference mixes research with practice

Like its predecessor, the second Access to Destinations Conference held this past August featured research findings from around the world. This time, however, speakers also shared examples of how accessibility measures are being put into practice.

This CTS-sponsored conference came nearly three years after the inaugural gathering, explained **Robert Johns**, CTS director, in his opening remarks. That event helped launch the Access to Destinations Study, an interdisciplinary research and outreach effort led by **David Levinson** and **Kevin Krizek** to measure accessibility for the Twin Cities region. Levinson is an associate professor and Braun/CTS Chair of Transportation Engineering at the University of Minnesota; Krizek is an associate professor at the University of Colorado (previously with the Hubert H. Humphrey Institute of Public Affairs). CTS is coordinating the study with support from sponsors including the Minnesota Department of Transportation, Hennepin County, the Metropolitan Council, and the McKnight Foundation. (For more, see www.cts.umn.edu/access-study.)

The public portion of this year's conference began with international perspectives on acces-



David Levinson



Kevin Krizek

sibility, moderated by **John Adams**, associate dean of the Humphrey Institute. Adams was a key researcher in the Transportation and Regional Growth Study, an earlier CTS-led effort.

The first presenter was **Kay Axhausen**, professor with the Institute for Transport Planning and Systems at the Swiss Federal Institute of Technology. Throughout recorded history, he said, societies have sought to improve accessibility in order to capture the lower costs and greater prosperity it generally brings. The story of the last 50 years in Switzerland is no different, as it rebalanced its investments toward suburbs and Alpine areas. This policy has started to run its course, however, as marginal gains are decreasing as the country reaches accessibility "saturation," he said. "Shrinking Switzerland further is becoming an increasingly costly way of supporting economic growth."

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Researchers receive grants for research related to I-35W bridge collapse, share insight with media

Two new research projects are under way in response to the August 1 collapse of the I-35W bridge in Minneapolis.

Faculty in the Department of Civil Engineering (CE) secured funding from the National Science Foundation (NSF) for academic research of the bridge, which will supplement official investigations. The team includes **Roberto Ballarini** (CE department head), **Taichiro Okazaki** (assistant professor), **Ted Galambos** (professor emeritus), and **Arturo Schultz** (associate professor). Their

analysis began with a site visit by Okazaki and other CE faculty on August 7.

Another team of CE faculty, led by **Henry Liu** (assistant professor) and **David Levinson** (associate professor), has secured a small grant from the NSF to analyze traffic patterns after the loss of this key section of metro freeway.

University experts also provided insight and background to the media immediately after the collapse. CTS fielded requests the evening of the tragedy for information about a research report published in 2001. The Mn/DOT-funded

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Federal UPA grant to fund ITS Institute research

Minnesota has been awarded \$133.3 million through the U.S. Department of Transportation's Urban Partnership Agreement (UPA) program for strategies to reduce traffic congestion in the Twin Cities. The Twin Cities metro is one of five communities nationwide to receive UPA designation and resources.

A coalition led by the Minnesota Department of Transportation and the Metropolitan Council applied for the UPA funding in April 2007. CTS hosted two workshops that allowed stakeholders to provide input for Minnesota's UPA proposal. Mn/DOT state traffic engineer **Bernie Arseneau** presented the draft proposal in Chicago at the Transportation Research Board summer conference in July.

As part of the funding, the Cedar Avenue Bus Rapid Transit (BRT) system between downtown Minneapolis and Lakeville will be built ahead of schedule. The system uses technology developed and tested by researchers in the Intelligent Transportation Systems (ITS) Institute at CTS. The UPA grant provides funds for additional research and deployment.

The technology, which helps

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As space “shrinks,” Axhausen continued, the reach of individuals expands. His recent research looked at the distances between the homes of “social network members.” The distribution shows a large portion of people close by, he said, but with a “very long tail” of others. Leisure—including travel for maintaining social networks—is the fastest growing market in transportation and now makes up 40 percent of total travel in the United States and other industrialized nations.

“We have globalized our social life and we are acting on it to meet our friends,” Axhausen said.

The second speaker was **Hong K. Lo**, professor in the Department of Civil Engineering at the Hong Kong University of Science and Technology. Transit attracts more than 90 percent of the 11 million daily trips in Hong Kong. All transit services are operated by private companies according to commercial principles and without direct government subsidies. “This is a very important fact and key result,” he said.

What government does, however, is regulate a hierarchy of public transit services, control land use, and discourage auto ownership. Growth is directed to high-density neighborhoods, typically around stations along major rail or subway lines. New private cars are subject to a first registration tax from 35 to 100 percent of the vehicle cost. And the fuel tax for unleaded gas in 2002 was almost eight times higher than in the United States.

The third speaker, **Robert Bruegmann**, professor of art history, architecture, and urban planning at the University of Illinois at Chicago, took a historical tack on sprawl and accessibility.

Sprawl is as old as cities themselves, he began, and for good reason. From the earliest times until very recently, living



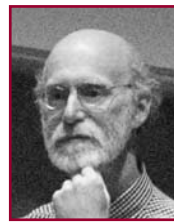
Kay Axhausen



Hong K. Lo



Robert Bruegmann



Sam Seskin



Anne Canby

at the center of most cities meant congestion, pollution, and highly unsanitary living conditions for most residents. “As every new group could afford to move out, [it] did so,” Bruegmann said, whether in ancient Rome or 18th century Paris.

The advent of the railroad—and public transportation—made it possible to vastly increase the outward migration. “For the working class, it was heaven,” Bruegmann said. “For a smaller amount of money they had something like the choice of affluent urban dwellers.”

Every city in the world with political freedom and any kind of land market follows this pattern, Bruegmann continued, regardless of transportation mode. What’s more, there is a strong and growing convergence within and among countries: cities are becoming more like suburbs, Europe more like the United States, and developing countries more like developed ones.

To Bruegmann, changing the built environment for the transportation system is the “tail wagging the dog”—land patterns remain for 100 years but transportation technology is likely to change in a decade. “We can’t see that these urban landscapes are the middle-class settlement of the world because we put this denigrating name [sprawl] to it,” he concluded.

The three researchers then participated in a panel discussion of the implications for research and practice, moderated by Johns. They were joined by Levinson and Krizek, co-organizers of the conference, and two national experts: **Sam Seskin**, transportation planning director with consultant CH2M Hill, and **Anne Canby**, president of the Surface Transportation Policy Project.

Levinson shared some early accessibility findings from his analysis of traffic patterns since the August 1 collapse of the I-35W bridge. With the loss of just this one key link, regional accessibility is dropping by one to two percent, although much will depend on how well drivers adapt

over time. “The accessibility and economic potential of the region are severely affected,” he said.

Krizek said many planning initiatives increase mobility at the expense of accessibility. His research will provide a detailed analysis of transit, bicycling, and walking, in particular regarding origins and destinations. For example, 95 percent of shoppers bypass the closest grocery store for another, but details are limited about the reasons why. “Travel time is not the be-all and end-all,” he said.

Seskin said the challenge for planners is to communicate the significant and changing nature of accessibility to policymakers and the public. “We are often caught up in mistaken emotional debates, such as transit versus highway or bus versus rail, which distract us from the real issues regarding accessibility,” he said. The debate shouldn’t be about individual projects, he said, but about balancing a series of interests: new projects versus maintenance, real access versus virtual, regional and local access versus global and national, and benefits to the individual versus the costs to society as a whole, such as pollution.

Canby encouraged expanding our thinking beyond the work trip to include other travel, such as shopping on Saturdays or freight shipments at night. External issues such as energy consumption, greenhouse gases, health care costs, and economic impacts are also important. And the nation’s changing demographics, with increasing numbers of immigrants and older households needing access to a variety of activities, will have “huge implications,” she said.

The conference continued with a day and a half of technical presentations for invited participants. A summary of the conference will be available from CTS later this year (www.cts.umn.edu/access-study). Selected conference papers will be published in the *Journal for Transport and Land Use*, a new journal under development by Levinson and Krizek with assistance from CTS (www.jtlu.org). **CTS**



Ninety percent of daily trips in high-density Hong Kong are made by public transit.

Evacuation research nets additional federal funds

Shashi Shekhar, a McKnight Distinguished University Professor of computer science and CTS Faculty Scholar, in collaboration with **Henry Liu**, a civil engineering assistant professor, recently received a grant titled “Spatio-temporal Network Databases for Transportation Science” from the National Science Foundation (NSF). The grant is to further research into scalable computational methods for determining routes, schedules, and traffic management plans for evacuating metropolitan areas.



Shashi Shekhar

Two years ago Shekhar’s research team completed a system to coordinate local emergency evacuation plans in multiple communities. The system is designed to minimize potential congestion on major roadways, speed up the evacuation pro-

cess, and maximize safety for citizens.

The goal was to create a tool that would run more efficiently than the standard linear programming approach and allow users—such as transportation professionals and first responders—to quickly find the best escape routes, even for large scenarios. The result was a capacity-constrained route planning system with a simple, Web-based user interface.

Mn/DOT used the software to develop a metro evacuation traffic management plan for the Twin Cities area. Seventy public and private agencies in the nine-county metro area were invited to create the plan. Their effort was honored with the CTS Research Partnership Award in 2006.

Since then Shekhar has been refining his capacity-constrained routing software to make it more accessible and easy to use for the private sector. To learn more about his research, visit the CTS Research page at www.cts.umn.edu/research. **CTS**

U of M course explores impacts of bridge collapse

Like nothing else, the collapse of the I-35W bridge made clear its connections to the Mississippi River and the community, including the University of Minnesota east bank campus less than a mile away.

Prompted by the collapse, the River Life Program of the University’s new Institute on the Environment, in conjunction with the Urban Studies Program, the Water Resources Center, and the Institute for Advanced Study, created a program exploring the particular dimensions of the river/bridge/community nexus. The multifaceted program—“The River, the Bridge, the Community”—includes an undergraduate course, a lecture series, and a Web site.

The course, “Topics in Urban Studies URBS 3800,” is being held Monday afternoons this semester. Students will explore

a number of questions: What does the Mississippi River mean to the community as a transportation system? What does I-35 mean as a transportation system? What are the implications of the collapse for Mississippi River water quality?

The course instructor is **Patrick Nunnally**, a research associate with the Institute on the Environment. Nunnally is the coordinator for “River Life: The Mississippi and U,” a program of the institute. The course will also feature speakers from outside campus as well as campus experts. For more about the course, see www.ias.umn.edu/Nunnally.php.

An associated lecture series on Tuesday afternoons will be open to the public as well as enrolled students (see www.ias.umn.edu/Bridgeseries.php). Speakers and topics include **John Adams**, associate

dean of the Humphrey Institute of Public Affairs, “The New Bridge as a Transportation Link” (November 6); **Tom Fisher**, dean of the College of Design, “The Design of a New Bridge” (November 13); and **Lance Neckar**, professor of landscape architecture, “Integrated Design: Sustainable Community” (November 20). **CTS**



The I-35W bridge over the Mississippi River collapsed August 1.

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bus drivers navigate narrow freeway shoulders used as part of a BRT system, is the product of the Institute’s Intelligent Vehicles (IV) Lab, led by **Craig Shankwitz**. His team worked with the Minnesota Valley Transit Authority last year to deploy the technology on one of its buses, with a goal of field-testing a small fleet of instrumented buses on the Cedar Avenue corridor. (For more about the IV Lab, please visit www.its.umn.edu/labs/ivlab.html.)

Another improvement eligible for the UPA funding is the addition of priced dynamic shoulder lanes, similar to the I-394 MnPASS lane, on I-35W from 46th Street to downtown Minneapolis. The University’s State and Local Policy Program, led by **Lee Munnich**, completed a study of the I-394 MnPASS lane in 2006 that included education, outreach, and evaluation efforts. The project, sponsored by Mn/DOT and involving a range of partners, received the 2007 CTS Research Partnership Award. Current University research is exploring ways of increasing access and throughput on I-394 as well as improving transit advantages in the corridor. (To learn more about MnPASS, see www.mnpass.org.) **CTS**



Craig Shankwitz

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report, by the late CE associate professor **Robert Dexter** and researchers **Heather O’Connell** and **Paul Bergson**, recommended focused inspection of the bridge rather than premature replacement. The report is on the CTS Web site at www.cts.umn.edu/Research/ProjectDetail.html?id=1999014.

In the days following the tragedy, local and national media interviewed a number of researchers. Those cited included Professor **Catherine French**, Ballarini, and Galambos of CE; **Lee Munnich**, director of the State and Local Policy Program at the Humphrey Institute of Public Affairs; and **Robert Johns**, CTS director.

“CTS will continue working with University of Minnesota researchers to provide objective information to policymakers, the media, and the public,” says Johns. **CTS**

Call for Presentations: 2008 research conference

CTS has issued a Call for Presentations for its 19th Annual Transportation Research Conference. The call invites all interested individuals to submit a one-page abstract for a presentation (or poster) at the conference, to be held May 21–22, 2008, at RiverCentre in St. Paul.

If you or your organization would like to share the results of your research or innovations in transportation-related

fields, please submit an abstract by November 15.

All abstracts must be submitted electronically. Go to the CTS Web site at www.cts.umn.edu/events/rescon and follow the instructions to submit your abstract.

For further information, contact **Paula Fenstad** at cceconf5@umn.edu or 612-624-3708. **CTS**

U of M offers strategic leadership lectures

The University's College of Continuing Education is offering a Strategic Leadership Insights Speaker Series this academic year. The new series is geared toward Twin Cities area upper-management professionals. Each session offers an opportunity to hear from nationally recognized

business experts on key workforce trends, and then opens the floor for a moderated discussion on how to address these important issues.

For more information, call 612-624-4000 or see www.cce.umn.edu/leadership. **CTS**

CTS adds program coordinator

Shawn Haag became the newest member of CTS last month. In his job as program coordinator, Haag will coordinate activities for University of Minnesota students and pre-college students as well as outreach and knowledge-transfer activities for diverse audiences. He will also provide coordination support for research activities of the Intelligent Transportation Systems (ITS) Institute at CTS.

For the past two years Haag worked as an admissions counselor/recruiter for the College of Food, Agricultural, and Natural Resource Sciences on the St. Paul campus. He holds a bachelor of science degree in natural resources and environmental studies from the University of Minnesota. **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.

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| Oct. 29–31 | Minnesota Public Transit Conference, St. Cloud. Contact Tony Kellen , 320-251-1499 (x103), kellen@stcloudmtc.com , or see www.mpta-transit.org . | Dec. 5 | Minnesota Association of Asphalt Paving Technologists (MAAPT) 54 th Annual Asphalt Conference, Brooklyn Park, Minn. See www.asphaltisbest.com or e-mail jthomas@mnapa.org . | Feb. 14 | Traffic Safety Administration. Contact Paula Fenstad , 612-624-3708, cceconf5@umn.edu . |
| Nov. 1–2 | 3rd Annual Asphalt Shingle Recycling Forum, Chicago. Call 630-585-7530 or visit www.shinglerecycling.org . | Dec. 6 | 57th Annual Concrete Conference, St. Paul. Contact Kristi Fischer , 612-625-4265, cceconf4@umn.edu . | March 13–14 | 12th Annual Minnesota Pavement Conference, St. Paul. Contact Shirley Mueffelmann , 612-624-4754, cceconf2@umn.edu . |
| Nov. 13–16 | American Institute of Architects Minnesota 73rd Annual Convention and Exposition, Minneapolis. Visit www.aia-mn.org . | Jan. 22–25 | Minnesota County Engineers Association Annual Conference, Brainerd. Contact Carrie Alkins , 612-624-3492, cceconf3@umn.edu , or visit www.mncountyengineers.org . | Apr. 15–16 | Concrete Paving Association of Minnesota 47th Annual Concrete Paving Workshop, Mankato. Contact Deb LaValle , 651-762-0402, www.concreteisbetter.com . |
| Nov. 14–16 | Minnesota Public Works Association Fall Conference, Brooklyn Center. Contact Carrie Alkins , 612-624-3492, cceconf3@umn.edu , or visit minnesota.apwa.net . | Jan. 30–Feb. 1 | City Engineers Association of Minnesota Annual Conference, Brooklyn Center. Contact Carrie Alkins , 612-624-3492, cceconf3@umn.edu , or visit www.ceam.org . | May 21–22 | Minnesota Spring Maintenance Training Expo, St. Cloud. Contact Shirley Mueffelmann , 612-624-4754, cceconf2@umn.edu . |
| Nov. 30 | 11th Annual CTS Freight and Logistics Symposium, Minneapolis. Contact Paula Fenstad , 612-624-3708, cceconf5@umn.edu . | Feb. 13 | CTS Winter Luncheon, Minneapolis, featuring Ronald Medford , National Highway | | CTS 19th Annual Transportation Research Conference, St. Paul. Contact Paula Fenstad , 612-624-3708, cceconf5@umn.edu . CTS |