



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Center for Transportation Studies  
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## CENTER FOR TRANSPORTATION STUDIES DECEMBER REPORT

A monthly report on transportation research, education and technology transfer activities at the University of Minnesota

### LAPPEGAARD IS ADVISORY BOARD CHAIR

Ray Lappegaard, Vice President of J.L. Shiely Company, will chair the Center's Advisory Board and its Executive Committee. Mr. Lappegaard is a long-time participant in Minnesota transportation issues, including serving as Commissioner of the Minnesota Highway Department from 1971 to 1975. A 1948 graduate of the U of M, he has retained a strong interest in research and education and has been an advocate for innovation in his many positions.

### EXECUTIVE COMMITTEE MEMBERS

The following people, Advisory Board members who indicated interest in serving, will join Lappegaard on the Executive Committee: **Roger Appeldorn**, Director, Optics Technology, 3M; **Fred Beier**, Associate Dean, Carlson School of Management, U of M; **Carol Bufton**, President, Minnesota Safety Council; **Dennis Cavanaugh**, President, Soo Line Railroad; **Douglas Carlson**, State Representative from Sandstone; **Ettore Infante**, Dean, Institute of Technology, U of M; **Curtis Johnson**, Executive Director, Citizens League; **Leonard Levine**, Commissioner, Minnesota Department of Transportation; **Steven Novak**, State Senator from New Brighton; and **G. Edward Schuh**, Dean, Hubert H. Humphrey Institute of Public Affairs, U of M.

### COLD WEATHER RESOURCE CENTER

On November 16, Governor **Rudy Perpich** received the recommendations of the Blue Ribbon Commission on Cold Weather Research, chaired by **Dick Braun**, at a final commission meeting and press conference in International Falls. The Commission recommended the establishment of a Cold Weather Resource Center at International Falls that would link current cold weather research activities in Minnesota and promote the state's resources for future research activities. Transportation-related activities include the Cold Region Pavement Test Facility to be constructed by Mn/DOT near St. Cloud.

## FAA-MINNESOTA PARTNERSHIP

The Center, along with other groups at the University, is a member of a partnership that has been established between the Federal Aviation Administration and the Minnesota Department of Transportation. The U of M offers potential resources that could contribute to the partnership's aviation research and education activities. **Dean Larson** from Mn/DOT and **Cindy Burbank** from FAA are facilitating this effort. **Dick Braun** and **Bob Johns** from the Center are participating in planning meetings, which also have involved **Edward Foster**, U of M Associate Vice President, and **Robert Williams** from the Supercomputer Institute.

## UTCP PROJECTS SELECTED

The Region 8 consortium of universities selected five U of M research projects as part of this year's federal University Transportation Center Program (UTCP):

<u>Projects</u>	<u>Principle Investigators</u>
Pavement Performance in Cold Weather	David Newcombe, CME
Rural Road Management	Jerry Fruin, Ag. Econ.
Rural Transit Service Design	Yorgos Stephanedes, CME
Techniques for Estimating Traffic Volumes	George Benson & Chris Nachtsheim, Mgt. Sci.
Transportation Issues on Native American Reservations	Tom Anding, CURA

**Amy Vennewitz** of the Center will administer these research grants.

## STUDENT ORIENTATION IN TRANSPORTATION

The Civil and Mineral Engineering Department asked the Center to conduct a transportation orientation class this fall to assist students in selecting an emphasis in civil engineering. The Center invited **Maureen Jenson**, **Steve Lund**, and **Gary Ries** from Mn/DOT and **Tom Parker** from Edwards and Kelsey to discuss potential careers in transportation. Approximately 80 students attended this session on November 10.

## FOREST ROAD RESEARCH PROJECT APPROVED

The Legislative Commission on Minnesota Resources (LCMR) has tentatively approved a research project proposed by the state Department of Natural Resources and the U of M Forest Resources Department that will study the impacts of present and potential road systems on timber, tourism, wildlife, and aesthetic resources. This will be a two-year, \$170,000 project. Funding for this project and other LCMR projects will be considered during the legislative session. Project managers include **Barry Morse** of DNR and **Dietmar Rose** and **Timothy Knopp** of Forest Resources. **Alan Ek**, Head of Forest Resources, has asked the Center to participate on the project team.

## **RESEARCH ON THE WABASHA STREET BRIDGE**

**Roberto Leon**, a Civil and Mineral Engineering professor, recently conducted stress tests on the Wabasha Street Bridge in St. Paul. Using new fatigue analysis techniques, Leon wired the bridge's stress points with 40 strain gauges that signaled stress variations through electrical impulses detected by an on-site personal computer. **Don Flemming** of the Minnesota Department of Transportation and **Art Werthaus** of the City of St. Paul are using the analysis to determine how many years of life remain in the bridge.

## **ACTIVE PARTICIPATION IN RURAL ROAD STUDY**

**Jerry Fruin** and **Charles Eldridge**, of the Agricultural and Applied Economics Department, have formed a committee in Polk County to advise them on their analysis of the effect alternative rural road networks have on energy usage, commodity movements, the local economy, and road maintenance costs. Strong interest by local government and business leaders has resulted in a committee that includes: **Michael Rardin**, County Engineer; **Don Bakken** and **Rupert Syverson**, County Commissioners; **Clint Hendrickson** and **Steve Sing**, Crystal Sugar; **Gordon Sonsteli**, Wheat Growers Assoc.; **Lloyd Schmidt**, Potato Growers Assoc.; and **Dale Springer**, Land-o-Lakes.

## **U.S. DEPARTMENT OF ENERGY VISITS**

**Sharon Donaldson**, who administers the oil overcharge funds for the Chicago DOE office, recently attended two events sponsored by the Center. The first was a seminar organized by **Don Harper**, logistics professor, on "Cost Control and Energy in Motor Trucking Management." Approximately 50 people, many from local trucking firms, attended the seminar. Donaldson also attended a demonstration by **Panos Michalopoulos**, Civil and Mineral Engineering, to view the video detection technology that he is adapting for congestion management and energy auditing.

## **COLD REGIONS ENGINEERING CONFERENCE**

The Fifth International Cold Regions Engineering Conference will take place on February 6-8 in St. Paul. **Radoslaw Michalowski**, of the Underground Space Center in Civil and Mineral Engineering, is on the organizing committee and is editor of the conference proceedings. The conference theme is: "Civil Engineering in a Winter Environment: Building and Maintaining Infrastructure." Papers will be presented on cold region design, construction, and performance of roads, railroads, airfields, pipelines, harbors, waterways, structures, irrigation, and waste management facilities.

## **BITUMINOUS CONFERENCE PRESENTATION**

**David Newcombe**, who will begin his position of pavement engineering professor for Civil and Mineral Engineering in January, presented his findings on "New Approaches to Mix Design" at the recent

Bituminous Conference in Brooklyn Center. Dick Braun presented an update to the group on the Cold Region Pavement Test Facility.

#### **AVIATION RESEARCH OPPORTUNITIES FOR STUDENTS**

The Transportation Research Board and the Federal Aviation Administration are accepting applications from graduate students interested in conducting research on public sector aviation issues. Stipends of \$5,000 will be awarded to selected students. Interested students should contact Amy Vennewitz at 625-3019 for an application, due February 1, 1989.

#### **UPCOMING TRANSPORTATION EVENTS**

If you have an event you would like publicized, please call the Center at 626-1077.

- December 7 Regional Transit Board Annual Transit Conference. Radisson University Hotel, Minneapolis. Contact: Janice Hennings of RTB 292-8789.
- December 13 Minnesota Highway Users Federation Annual Meeting, Keynote Speaker Lester Lamm. Thunderbird Motel, Bloomington. Contact: Carol Lovro of Minnesota Highway Users Federation 290-0025.
- January 22-26 68th Annual Meeting, Transportation Research Board. Sheraton Washington Hotel and Omni Shoreham Hotel, Washington, D.C. Contact: TRB (202) 334-3218.
- Feb 6-8 Fifth International Cold Regions Engineering Conference, "Civil Engineering in a Winter Environment: Building and Maintaining Infrastructure." St. Paul. Contact: Tom Krzewinski of Lakehead Testing Laboratory (218) 628-2295 or Radoslaw Michalowski of the Underground Space Center 625-0153.
- Feb 6-8 ASCE Conference, "Application of Advanced Technologies in Transportation Engineering." San Diego, CA. Contact: K.C. Sinha (317) 494-2211 or James Scott (202) 334-2934.
- April 13-14 University of Minnesota Conference, "Art, Architecture and Engineering: A Collaboration in Urban Place Making." University Radisson, Minneapolis. Contact: Leslie Denny of U of M Conference Services 625-0727.