



# FINAL PROGRAM



22nd Annual

## **Transportation Research Conference**

May 24-25, 2011

Crowne Plaza St. Paul Riverfront Hotel  
St. Paul, Minnesota

UNIVERSITY OF MINNESOTA



CENTER FOR  
TRANSPORTATION STUDIES



Center for Transportation Studies

# 22nd Annual Transportation Research Conference

May 24-25, 2011

St. Paul, Minnesota

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## Welcome to the Conference

The University of Minnesota's Center for Transportation Studies is pleased to present its 22<sup>nd</sup> Annual Transportation Research Conference, which acts as a forum for researchers and practitioners from Minnesota and the Upper Midwest to share their research findings in a variety of transportation-related areas. Concurrent sessions are focused in four categories that match the Center's research emphasis areas – Transportation Safety and Traffic Flow, Transportation Infrastructure, Transportation and the Economy, and Transportation Planning and the Environment – with a fifth category covering Education and Outreach Issues.

## Reception

A reception with hors d'oeuvres and a cash bar will take place following the final concurrent sessions on May 24 offering attendees a further opportunity to socialize with fellow participants and presenters.

## Abstracts and Conference Presentations Online

The abstracts and PowerPoint presentations, for which we receive permission from the presenters, are available in PDF format at the following Web site: [www.cts.umn.edu/Events/ResearchConf/](http://www.cts.umn.edu/Events/ResearchConf/).

## Conference General Sessions

### **P3s—Public-Private Partnerships? Or Peripatetic Pain in the Pants?**

*Adrian Moore*, Vice President of Research, Reason Foundation, Los Angeles, California

Panelists: *Senator Scott Dibble*, Minnesota Legislature; *Lee Munnich*, Humphrey School of Public Affairs, University of Minnesota; *Jay Lindgren*, Dorsey & Whitney LLP; *Brad Larsen*, Minnesota Department of Transportation

As state governments struggle to meet growing transportation infrastructure needs, leveraging existing resources through the use of public-private partnerships (P3s or PPPs) has become increasingly attractive. PPPs are agreements that allow private companies to take on traditionally public roles in infrastructure projects while keeping the public sector accountable for a project and the overall service to the public.

Adrian Moore will discuss the role P3s might play in Minnesota's transportation future. He will review trends in transportation P3s and what drives them, examine the pros and cons of P3s, describe current innovations and evolutions in P3s, and discuss how P3s are being used and what crucial elements help them succeed.

Following his presentation, a panel of local transportation leaders will discuss the future of P3s in Minnesota.

### **Driven Apart**

*Joe Cortright*, President and Principal Economist, Impresa, Portland, Oregon, and Senior Adviser, CEOs for Cities

What's the real reason Americans spend so much time in traffic? In *Driven Apart*, a recent report prepared for CEOs for Cities and funded by the Rockefeller Foundation, Joe Cortright offers a new view of the relationship between transportation performance and urban development patterns. This work provides an alternative to the 25-year-old industry standard created by the Texas Transportation Institute's Urban Mobility Report (UMR), which is often used to justify expenditures for new roads and highways. The surprising analysis says the solution to congestion has much more to do with how we build our cities than how we build our roads. The report says compact cities are the real answer to reducing traffic delays and lays out an alternative set of accessibility-based measures of urban transportation performance that provide a better guide to policymakers.

Joe Cortright will share highlights from this report, *Driven Apart: How Sprawl is Lengthening Our Commutes and Why Misleading Mobility Measures are Making Things Worse*, at the conference luncheon.

# PROGRAM AT A GLANCE

## TUESDAY, MAY 24, 2011

	Track 1: Safety and Traffic Flow KELLOGG III	Track 2: Education and Outreach STATE I
7:30-8:30 a.m.	<b>Registration and Buffet Breakfast</b>	
8:30-10:00 a.m. MINNESOTA BALLROOM	<b>Welcome</b> – <i>Laurie McGinnis</i> , Director, Center for Transportation Studies, Univ <b>P3s–Public-Private Partnerships? Or Peripatetic Pain in the Pants?</b> <i>Adrian Moore</i> , Vice President of Research, Reason Foundation, Los Angeles, Ca Panelists: <i>Senator Scott Dibble</i> , Minnesota Legislature; <i>Lee Munnich</i> , Humphrey <i>Jay Lindgren</i> , Dorsey & Whitney LLP; <i>Brad Larsen</i> , Minnesota Department of T	
10:00-10:30 a.m.	<b>Break and Poster Session</b>	
10:30-11:45 a.m.	<b>Session 1</b> <b>Rural Roadway Safety Through ITS</b>	<b>Session 2</b> <b>The Benefits and Challenges of Building Successful Collaborations</b>
11:45 a.m.-1:30 p.m. MINNESOTA BALLROOM	<b>Luncheon and Presentation</b> <b>Keynote Presentation–Driven Apart</b> <i>Joe Cortright</i> , President and Principal Economist, Impresa, Portland, Oregon, ar	
1:30-1:45 p.m.	<b>Break and Poster Session</b>	
1:45-3:00 p.m.	<b>Session 6</b> <b>Freeway Analysis and Planning</b>	<b>Session 7</b> <b>Communicating Traffic Safety Messages to Teens and Young Adults</b>
3:00-3:15 p.m.	<b>Break and Poster Session</b>	
3:15-4:30 p.m.	<b>Session 11</b> <b>Traffic Analysis Tools</b>	<b>Session 12</b> <b>Transportation: Its Impact on Quality of Life</b>
4:30-5:30 p.m.	<b>Reception with Hors d’oeuvres and Cash Bar</b>	

## WEDNESDAY, MAY 25, 2011

8:00-8:30 a.m.	<b>Continental Breakfast</b>	
8:30-10:15 a.m.	<b>Session 16</b> <b>Expose Yourself to Traffic Safety</b>	<b>Session 17</b> <b>If You Build It They Will Come – Communicating to the Public During Major Construction Projects</b>
10:15-10:30 a.m.	<b>Break</b>	
10:30 a.m.-Noon	<b>Session 21</b> <b>New Developments in Traffic Monitoring and Performance Improvements</b>	<b>Session 22</b> <b>Effective Communication Brings Value to Transportation Projects</b>
Noon	<b>Adjourn</b>	

<b>Track 3: Economy GOVERNORS II</b>	<b>Track 4: Planning and the Environment KELLOGG I</b>	<b>Track 5: Infrastructure STATE II</b>
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University of Minnesota

California

School of Public Affairs, University of Minnesota;  
Transportation

**Session 3**  
**Measuring the Freight System**

**Session 4**  
**Regional Planning**

**Session 5**  
**Public-Private  
Partnerships**

and Senior Adviser, CEOs for Cities

**Session 8**  
**Transportation, Land Use, and  
the Economy**

**Session 9**  
**Innovative Transit**

**Session 10**  
**Pavement Research**

**Session 13**  
**Integrating Sustainability into  
Transportation Planning and  
Decision-Making Processes**

**Session 14**  
**Regional Governance  
and Collaboration**

**Session 15**  
**Pavement and Road  
Operations  
Management**

**Session 18**  
**The Future of User Charges**

**Session 19**  
**Preparing for Complete Streets:  
New Planning Methods to  
Accommodate All Modes**

**Session 20**  
**We'll Cross That Bridge  
When We Come to It**

**Session 23**  
**Moving Energy for  
Transportation**

**Session 24**  
**Evaluating Transit and Trail Use**

**Session 25**  
**Stormwater Management**

# PROGRAM SCHEDULE

TUESDAY, MAY 24, 2011

**7:30-8:30 a.m.**

**Registration and Buffet Breakfast**

**8:30-10:00**

**Welcome**

**MINNESOTA BALLROOM**

*Laurie McGinnis*, Director, Center for Transportation Studies, University of Minnesota

**P3s–Public-Private Partnerships?  
Or Peripatetic Pain in the Pants?**

*Adrian Moore*, Vice President of Research, Reason Foundation, Los Angeles, California

Panelists: *Senator Scott Dibble*, Minnesota Legislature; *Lee Munnich*, Humphrey School of Public Affairs, University of Minnesota; *Jay Lindgren*, Dorsey & Whitney LLP; *Brad Larsen*, Minnesota Department of Transportation

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Following his presentation, a panel of local transportation leaders will discuss the future of P3s in Minnesota.

**10:00-10:30**

**Break and Poster Session**

**10:30-11:45**

**Concurrent Sessions**

## **1 Rural Roadway Safety Through ITS**

**KELLOGG III**

Moderator: *Dennis Foderberg*, SEH Inc.

**Rural ITS Safety Solution Systems**

*Thomas Sohrweide*, SEH Inc.

**Development and Evaluation of an  
Advanced LED Warning System for Rural  
Intersections**

*Taek Kwon*, Department of Electrical and Computer Engineering, University of Minnesota-Duluth

**Using ITS to Improve Safety on Rural  
Highways**

*Wayne Fingalson*, Wright County Highway Department

## **2 The Benefits and Challenges of Building Successful Collaborations**

**STATE I**

Moderator: *Mindy Carlson*, Center for Transportation Studies, University of Minnesota

**E-Workplace: Telecommuting Reduces  
Congestion in the Twin Cities Metropolitan  
Area**

*Adeel Lari*, Humphrey School of Public Affairs, University of Minnesota

**The Benefits of the Collaborative Process  
of Compromise: A Case Study from  
Alexandria, Minnesota**

*Jack Forslund*, WSB & Associates, Inc.

**Regional Transitway Guidelines**

*Cole Hiniker* and *Mary Karlsson*, Metropolitan Council

## **3 Measuring the Freight System**

**GOVERNORS II**

Moderator: *Jonathan Ehrlich*, Metropolitan Council

**Applied GIS Analysis and Visualization of  
Mode-Based Commodity Flows Using the  
FHWA Freight Analysis Framework**

*Brad Digre*, Wilbur Smith Associates

## **Minnesota Highway Cost Allocation Study**

*Hao-Wei Chen*, Industrial and Systems Engineering Program, University of Minnesota

### **Can the Trucking Industry Benefit From Distance-Based Fees?**

*Ferrol Robinson*, Humphrey School of Public Affairs, University of Minnesota

## **4 Regional Planning**

### **KELLOGG I**

Moderator: *Connie Kozlak*, Metropolitan Council

### **2030 Regional Transportation Policy Plan**

*Carl Ohrn*, Metropolitan Council

### **Assessing Neighborhood and Social Influences of Transit Corridors**

*Yingling Fan*, Humphrey School of Public Affairs, University of Minnesota

### **Region: Planning the Future of the Twin Cities**

*Thomas Luce*, University of Minnesota Law School

## **5 Public-Private Partnerships**

### **STATE II**

Moderator: *Matt Shands*, Minnesota Department of Transportation

### **Public-Private Partnership (P3) Exploration**

*Brad Larsen*, Minnesota Department of Transportation

### **Alternative Models for Transportation Construction Procurement Auctions**

*Justin Azadivar*, Industrial and Systems Engineering Program, University of Minnesota

### **Advancing Public Interest in the Launch of PPPs**

*Emily Saunoi-Sandgren*, Humphrey School of Public Affairs, University of Minnesota

**11:45-1:30 p.m.**

## **Luncheon and Presentation**

### **MINNESOTA BALLROOM**

### **Keynote Presentation – Driven Apart**

*Joe Cortright*, President and Principal Economist, Impresa, Portland, Oregon, and Senior Adviser, CEOs for Cities

What's the real reason Americans spend so much time in traffic? *In Driven Apart*, a recent report prepared for CEOs for Cities and funded by the Rockefeller Foundation, Joe Cortright offers a new view of the relationship between transportation performance and urban development patterns. This work provides an alternative to the 25-year-old industry standard created by the Texas Transportation Institute's Urban Mobility Report (UMR), which is often used to justify expenditures for new roads and highways. The surprising analysis says the solution to congestion has much more to do with how we build our cities than how we build our roads. The report says compact cities are the real answer to reducing traffic delays and lays out an alternative set of accessibility-based measures of urban transportation performance that provide a better guide to policymakers.

Joe Cortright will share highlights from this report, *Driven Apart: How Sprawl is Lengthening Our Commutes and Why Misleading Mobility Measures are Making Things Worse*, at the conference luncheon.

**1:30-1:45**

### **Break and Poster Session**

**1:45-3:00**

### **Concurrent Sessions**

## **6 Freeway Analysis and Planning**

### **KELLOGG II AND III**

Moderator: *James McCarthy*, Federal Highway Administration-Minnesota Division

### **Fargo-Moorhead Interstate Operations Study**

*Paul Morris*, SRF Consulting Group, Inc.; *Katherine White*, Fargo-Moorhead Council of Governments

## **Twin Cities Congestion Management Safety Plan, Phase III**

*Todd Polum*, SRF Consulting Group, Inc.

## **A Study of the Operational Flexibility of DDIs: Real Minnesota Examples**

*Leif Garnass*, SRF Consulting Group, Inc.

## **7 Communicating Traffic Safety Messages to Teens and Young Adults**

### **STATE I**

Moderator: *Gordy Pehrson*, Minnesota Department of Public Safety, Office of Traffic Safety

### **Young Forever**

*Lt. Eric Roeske*, Minnesota State Patrol

### **Driver Distraction: Instructional Video Game for the New Driver**

*David Glick*, David B. Glick & Associates, LLC

### **Southeastern Minnesota Teen Tool Kit**

*Lt. Randy Slinger*, Minnesota State Patrol; *Nelrae Succio*, Minnesota Department of Transportation

## **8 Transportation, Land Use, and the Economy**

### **GOVERNORS II**

Moderator: *Michael Iacono*, Department of Civil Engineering, University of Minnesota

### **Minnesota's Transportation Economic Development (TED) Pilot Program**

*Matt Shands*, Minnesota Department of Transportation

### **Corridor Preservation Planning for Freeway Conversion and Airport Expansion in Rochester, Minnesota**

*Charlie Reiter*, Rochester-Olmsted Council of Governments; *Mark Schoenfelder*, Minnesota Department of Transportation; *Steve Peterson*, SRF Consulting Group, Inc.

### **The Interchange: Stage I Environmental Assessment**

*Debra Brisk*, Kimley-Horn and Associates, Inc.; *Chuck Ballentine*, Hennepin County

## **9 Innovative Transit**

### **KELLOGG I**

Moderator: *Gavin Poindexter*, URS Corporation

### **Impact of Transit Signal Priority on Bus Service Performance**

*Chen-Fu Liao*, Department of Civil Engineering, University of Minnesota

### **Arterial Transitway Corridors Study**

*Charles Carlson*, Metro Transit

### **Viability of Modern Personal Rapid Transit Applications**

*Ferrol Robinson*, Humphrey School of Public Affairs, University of Minnesota

## **10 Pavement Research**

### **STATE II**

Moderator: *Jill Thomas*, Minnesota Asphalt Pavement Association

### **Rough Roads are Expensive for Minnesota Motorists**

*Luke Johanneck*, Minnesota Department of Transportation

### **Simple Test to Determine Low Temperature Material Parameters Used in ME Pavement Design Guide**

*Augusto Cannone Falchetto*, Department of Civil Engineering, University of Minnesota

### **Non-destructive Evaluation of Pavements Using an Emerging Ultrasonic Tomography Method**

*Kyle Hoegh*, Department of Civil Engineering, University of Minnesota

**3:00-3:15**

**Break and Poster Session**

**3:15-4:30**

**Concurrent Sessions**



## **11 Traffic Analysis Tools**

### **KELLOGG III**

Moderator: *Lowell Benson*

#### **Vision-Based Bicyclist and Pedestrian Counting Systems**

*Guruprasad Somasundaram*, Department of Computer Science and Engineering, University of Minnesota

#### **Measuring Managed Highways: Emerging Tools for the Emerging Roadway System**

*Steve Wilson*, SRF Consulting Group, Inc.

#### **Weekday Peak Hour Mean Flow Estimation Using Two-Day Short-Count Data**

*Hui Xiong*, Department of Civil Engineering, University of Minnesota

## **12 Transportation: Its Impact on Quality of Life**

### **STATE I**

Moderator: *Brian Smalkoski*, Kimley-Horn and Associates, Inc.

#### **Transportation and Quality of Life: Assessing and Comparing Dimensions**

*Kent Gustafson*, Department of Forest Resources, University of Minnesota

#### **It's a Two-Way Street: Transportation and Public Health Intersect**

*Joanne Moze*, Minnesota Department of Health; *Amber Dallman*, Minnesota Department of Health

#### **Measuring What Matters: An Online Accessibility Mapping Tool**

*Gina Baas*, Center for Transportation Studies, University of Minnesota

## **13 Integrating Sustainability into Transportation Planning and Decision-Making Processes**

### **GOVERNORS II**

Moderator: *John Doan*, SRF Consulting Group, Inc.

#### **Mn/DOT's Framework for Achieving Sustainable Transportation**

*Cindy Carlsson*, Minnesota Department of Transportation

## **Developing a Model Framework for Regional Sustainability Planning and Implementation**

*Carissa Schively Slotterback*, Humphrey School of Public Affairs, University of Minnesota

## **Air Quality and Urban Form in U.S. Urban Areas**

*Lara Clark*, Department of Civil Engineering, University of Minnesota

## **14 Regional Governance and Collaboration**

### **KELLOGG I**

Moderator: *Chris Hiniker*, SEH Inc.

#### **Evaluation of Governance of Transit in the Twin Cities Region**

*Judy Randall*, Office of the State Legislative Auditor

#### **Overview of Minnesota's Area Transportation Partnerships, Metropolitan Planning Organizations, and Regional Development Commissions**

*Philip Schaffner*, Minnesota Department of Transportation

## **15 Pavement and Road Operations Management**

### **STATE II**

Moderator: *Farideh Amiri*, Minnesota Department of Transportation

#### **Pavement Management Tools for Minnesota**

*Michael Marti*, SRF Consulting Group, Inc.

#### **Highway Systems Operation Plan Update**

*Sue Lodahl*, Minnesota Department of Transportation; *Andrew Mielke*, SRF Consulting Group, Inc.

#### **Waste Shingles Help Address Low Volume Road Needs**

*Alan Forsberg*, Blue-Earth County

### **4:30-5:30**

#### **Reception with Hors d'oeuvres and Cash Bar**

**WEDNESDAY, MAY 25, 2011**

**8:00-8:30 a.m.**

**Continental Breakfast**

**8:30-10:15**

**Concurrent Sessions**

**16 Expose Yourself to Traffic Safety**

**KELLOGG III**

Moderator: *Carla Stueve*, SRF Consulting Group, Inc.

**Update on Mn/DOT's County Roadway Safety Plans**

*Howard Preston*, CH2M Hill, Inc.

**Using High-Resolution Detector and Signal Data to Support Crash Identification and Reconstruction**

*Indrajit Chatterjee*, Department of Civil Engineering, University of Minnesota

**The Predictive Power of Differences in Exposure and Individual Driver Characteristics for Accidents Among Tractor-Trailer Drivers**

*Stephen Burks*, Division of Social Science, University of Minnesota-Morris

**Rural Safety, Health, and Emergency Response**

*Tom Horan*, Center for Excellence in Rural Safety, University of Minnesota

**17 If You Build It They Will Come – Communicating to the Public During Major Construction Projects**

**STATE I**

Moderator: *Michael Marti*, SRF Consulting Group, Inc.

**I-35W Bridge**

*Kevin Gutknecht*, Minnesota Department of Transportation

**Crosstown Commons**

*John Griffith*, Minnesota Department of Transportation

**Twins Stadium**

*Chuck Ballentine*, Hennepin County

**Central Corridor**

*Robin Kaufman*, Metropolitan Council

**2010 SE Minnesota Flood**

*Kaye Bieniek*, Olmsted County

**18 The Future of User Charges**

**GOVERNORS II**

Moderator: *Kenneth Buckeye*, Minnesota Department of Transportation

**Innovative Parking Pricing Study**

*Frank Douma* and *Adeel Lari*, Humphrey School of Public Affairs, University of Minnesota

**MnPASS System Study Phase 2**

*Michael Sobolewski*, Minnesota Department of Transportation

**Mileage-Based User Fee Demonstration and Policy Study**

*Lee Munnich*, Humphrey School of Public Affairs, University of Minnesota; *Cory Johnson*, Minnesota Department of Transportation

**19 Preparing for Complete Streets: New Planning Methods to Accommodate All Modes**

**KELLOGG I**

Moderator: *Merry Daher*, Minnesota Department of Transportation

**Mn/DOT's Complete Streets Policy**

*Merry Daher*, Minnesota Department of Transportation

**A New Route to Complete Streets? Using the TCAPP Model in Grand Rapids, Minnesota**

*Matt Shands*, Minnesota Department of Transportation; *Laura Eash*, Humphrey School of Public Affairs, University of Minnesota

**Planning with Parks and Trails in Mind: Overview of and Implications from the 2011 Parks and Trails Planning Framework**

*Mary Vogel* and *Cindy Zerger*, Center for Changing Landscapes, University of Minnesota

## **Cyclopath and Cycloplan: Collaborative Bicycle Planning and Routing**

*Loren Terveen*, Department of Computer Science and Engineering, University of Minnesota; *James Andrew*, Metropolitan Council

## **20 We'll Cross That Bridge When We Come to It**

### **STATE II**

Moderator: *Paul Rowekamp*, Minnesota Department of Transportation

## **Blatnik and Bong Bridges Suspender Replacement: Maintaining Minnesota's Unique Bridge Inventory**

*Laura Amundson*, Parsons Brinckerhoff

## **Historic Approval of the Dunn Bridge Replacement**

*Brandi Popenhagen*, WSB & Associates, Inc.

## **Historic Bridge Rehabilitation Strategies – Three Project Examples**

*Steven Olson*, Olson & Nesvold Engineers, P.S.C.

## **Segmental Bridge Abutment Design Using Solid Finite Elements**

*Barritt Lovelace*, WSB & Associates, Inc.

## **10:15-10:30**

### **Break**

## **10:30-Noon**

### **Concurrent Sessions**

## **21 New Developments in Traffic Monitoring and Performance Improvements**

### **KELLOGG III**

Moderator: *Brian Kary*, Minnesota Department of Transportation

## **Traffic Performance Measurements Using Event-Based Detector Data – Recent Developments on the SMART-SIGNAL System**

*Henry Liu*, Department of Civil Engineering, University of Minnesota

## **Statewide Traffic Flow Data: Probe Vehicle Study for Iowa DOT**

*Erik Minge*, SRF Consulting Group, Inc.

## **Arterial Travel Time Characterization and Real-Time Traffic Condition Identification Using GPS-Equipped Probe Vehicles**

*Yiheng Feng*, Department of Civil Engineering, University of Minnesota

## **22 Effective Communication Brings Value to Transportation Projects**

### **STATE I**

Moderator: *Shannon Tyree*, City of St. Paul

## **An Engineering Approach to Writing: A Pilot Program for Civil Engineering Graduate Students**

*David White* and *Christianna White*, Institute for Transportation, Iowa State University

## **E-Jam and Tech Connections: Mn/DOT Crowdsourcing, Collaboration, and Social Media for Research and Innovation**

*Kris Schulze* and *Jacob Akervik*, Minnesota Department of Transportation

## **Best Practices: Managing Interaction Between Local Authorities and Major Traffic Generators**

*Michael Marti*, SRF Consulting Group, Inc.

## **Developing a 50-Year Vision for Transportation in Minnesota**

*Philip Schaffner*, Minnesota Department of Transportation

## **23 Moving Energy for Transportation**

### **GOVERNORS II**

Moderator: *Christina Connelly*, Minnesota Department of Agriculture

## **Determining Costs and Environmental Performance of Conventional and Alternative Vehicles**

*Douglas Tiffany*, Department of Applied Economics, University of Minnesota

## **Transporting Solid, Liquid, and Gaseous Forms of Energy in North America**

*Jerry Fruin*, Department of Applied Economics, University of Minnesota

**Transporting Electrons for Vehicles:  
Adapting the North American Grid for  
Electric Vehicles**

*Bruce Wollenberg*, Department of Electrical  
and Computer Engineering, University of  
Minnesota

**24 Evaluating Transit and Trail Use**

**KELLOGG I**

Moderator: *Biz Colburn*

**2010 Twin Cities Transit On-Board  
Survey Results**

*Jonathan Ehrlich*, Metropolitan Council

**Measures of Urban Trail Use in  
Minneapolis**

*Kristopher Hoff* and *Greg Lindsey*,  
Humphrey School of Public Affairs,  
University of Minnesota

**The Greater Minnesota Transit  
Investment Plan**

*Noel Shughart*, Minnesota Department  
of Transportation

**25 Stormwater Management**

**STATE II**

Moderator: *Frank Pafko*, Minnesota  
Department of Transportation

**Performance of Swale in Infiltrating  
Stormwater Runoff and Rapid  
Infiltration Measurements in Swale**

*John Nieber*, Department of Bioproduct  
and Biosystem Engineering, University of  
Minnesota

**Environmental Constructability in  
Motion**

*Dwayne Stenlund*, Minnesota Department  
of Transportation

**Pervious Concrete Pavement**

*Mary Vancura*, Department of Civil  
Engineering, University of Minnesota

**Don't Hurt the Turtle: Resolving  
Conflicts of Natural Resource  
Regulations**

*Peter Leete*, Minnesota DNR, Minnesota  
Department of Transportation Office of  
Environmental Services

**Noon**

**Adjourn**

## **Professional Development Hours (PDHs)**

This conference awards Professional Development Hours (PDHs).

## **AICP Maintenance Credits**

AICP maintenance credits have been approved for the opening plenary presentation, luncheon plenary presentation, and the following concurrent sessions: 2, 3, 4, 6, 8, 9, 12, 13, 14, 15, 18, 19, and 24.

## **CTS Will Be Covering This Year's Research Conference on Twitter!**

You can join the conversation in three ways:

1. Go to **www.twitter.com** and search for our feed (**#ctsresconf**).
2. Go to the feed directly: **twitter.com /#search?q=ctsresconf**.
3. If you have Twitter SMS on your cellular phone or a Twitter app installed on your 3G phone, feel free to join the conversation! Just be sure to include the hashtag **#ctsresconf** in your post.

## **Mark Your Calendars**

### **Toward Zero Deaths Conference**

November 16-17, 2011

Duluth, Minnesota

## **Planning Committee**

*Farideh Amiri*, Minnesota Department of Transportation

*Lisa Austin*, Minnesota Department of Transportation

*Lowell Benson*

*Kenneth Buckeye*, Minnesota Department of Transportation

*Biz Colburn*

*Jessa Dauer*, SRF Consulting Group, Inc.

*John Doan*, SRF Consulting Group, Inc.

*Jonathan Ehrlich*, Metropolitan Council

*Jerry Fruin*, University of Minnesota

*Matt Gjersvik*, Image Sensing Systems

*Chris Hiniker*, SEH Inc.

*Bruce Holdhusen*, Minnesota Department of Transportation

*Michael Iacono*, University of Minnesota

*Connie Kozlak*, Metropolitan Council

*Michael Marti*, SRF Consulting Group, Inc.

*James McCarthy*, Federal Highway Administration-Minnesota Division

*Gavin Poindexter*, URS Corporation

*Paul Rowekamp*, Minnesota Department of Transportation

*Brian Smalkoski*, Kimley-Horn and Associates, Inc.

*Thomas Sohrweide*, SEH Inc.

*Carla Stueve*, SRF Consulting Group, Inc.

*Shannon Tyree*, City of St. Paul

*Mary Vancura*, University of Minnesota

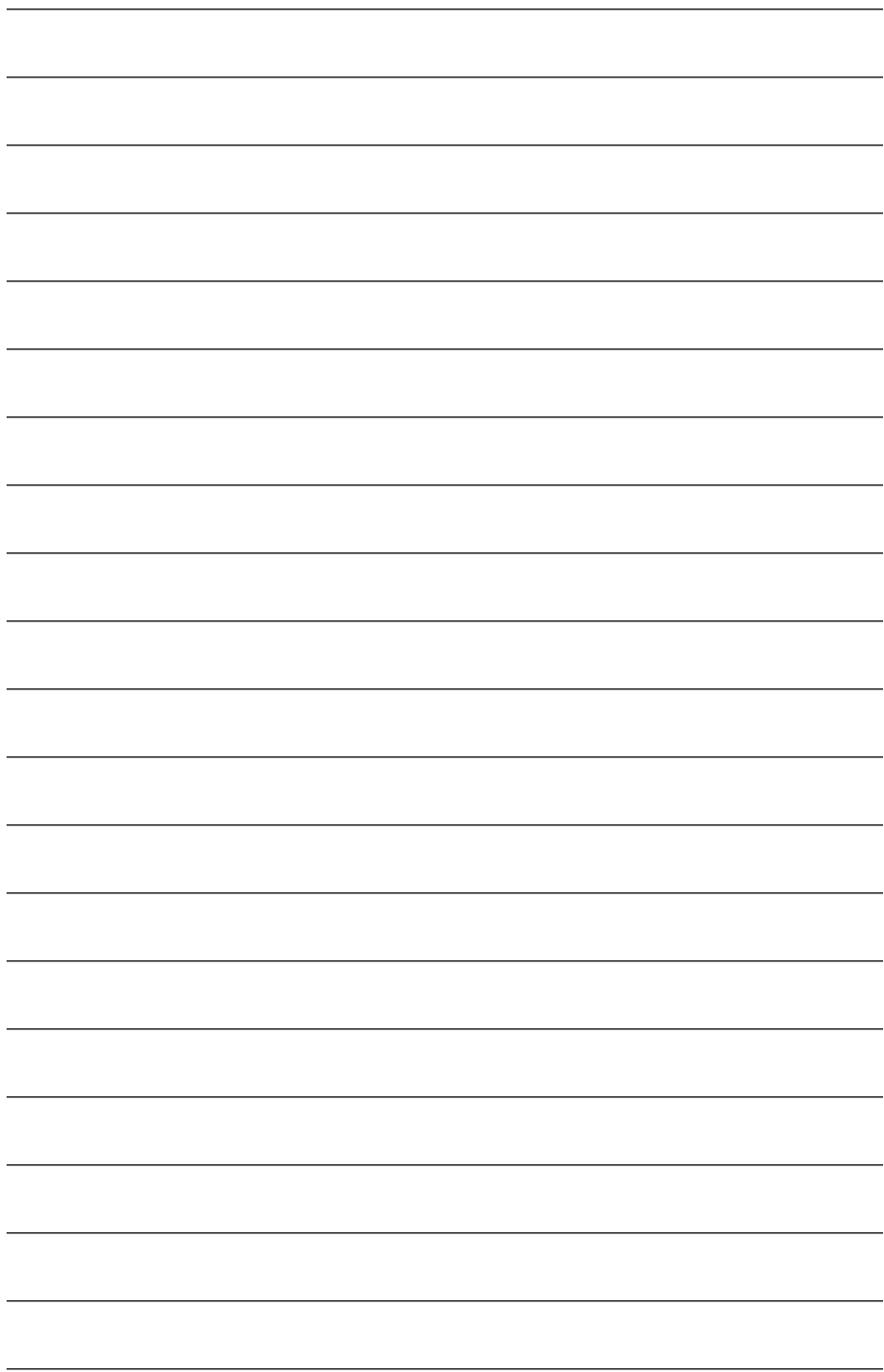
*Assisted by Center for Transportation Studies staff*

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*The University of Minnesota shall provide equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression.*





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**UNIVERSITY OF MINNESOTA**