Welcome to the Conference

The University of Minnesota’s Center for Transportation Studies is pleased to present its 23rd 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 23 offering attendees a further opportunity to socialize with fellow participants and presenters.

Abstracts and Conference Presentations Online

The abstracts are available in PDF format at the following website: www.cts.umn.edu/events/conference/2012/. PowerPoint presentations, for which we receive permission from the presenters, will be available online one week after the conference.
Conference General Sessions
The Role of Transitways in Our Region’s Economic Competitiveness
Yingling Fan, assistant professor, Humphrey School of Public Affairs, University of Minnesota

Panelists: Patrick Born, regional administrator, Metropolitan Council; Lee Sheehy, program director, McKnight Foundation; Mariia Zimmerman, deputy director, Office of Sustainable Housing and Communities, U.S. Department of Housing and Urban Development; and Matt Kramer, president, Saint Paul Chamber of Commerce

By 2030, the Minneapolis–Saint Paul region is expected to have a network of 14 transitways. Will these lines spur economic growth, and where? How well will they connect jobs to workers? What impacts will the lines have on neighborhoods and social change? Yingling Fan has been studying these issues for several years. In her most recent work, Fan led a team that analyzed the labor supply to “competitive clusters” of industries such as medical manufacturing and publishing. The team says that to improve job access by transit, it’s more effective to centralize jobs than housing—and recommends integrated policies to encourage employers to locate near transit corridors. The study was funded by the McKnight Foundation, Surdna Foundation, and the Jay and Rose Phillips Foundation of Minnesota and builds on previous work Fan conducted under the Transitway Impacts Research Program.

Following Fan’s presentation, a panel of state and national leaders will discuss the policy implications of the study and whether the findings can lead to greater economic competitiveness.

The Big Roads
Earl Swift, author and journalist

A man-made wonder, a connective network, an economic pipeline, a bringer of blight and sprawl, and the possibility of escape—the U.S. interstate system transformed America. Author and journalist Earl Swift will chart the creation of this landmark system, which turned dirt tracks into an organized framework of expressways in the space of a single lifetime. Swift will share highlights from his book, *The Big Roads: The Untold Story of the Engineers, Visionaries, and Trailblazers Who Created the American Superhighways*. The book brings to light the visionaries who created these essential highways as well as the critics and citizens who questioned their headlong expansion throughout the country—from a group of engineers who planned the interstates years before Eisenhower reached the White House to the ordinary citizens who found their homes and communities targeted by the expanding system.
# PROGRAM AT A GLANCE

## WEDNESDAY, MAY 23, 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 1</th>
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<tbody>
<tr>
<td>7:30-8:30 a.m.</td>
<td>Registration and Buffet Breakfast</td>
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<tr>
<td>8:30-10:15 a.m.</td>
<td>Welcome — Laurie McGinnis, director, Center for Transportation Studies, University of Minnesota</td>
<td>The Role of Transitways in Our Region’s Economic Competitiveness Yingling Fan, assistant professor, Humphrey School of Public Affairs, University of Minnesota</td>
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<td>Assessing Crash Factors</td>
<td>Rivers and Roads: Transportation Hydraulics</td>
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<tr>
<td>11:45 a.m.-1:30 p.m.</td>
<td>Luncheon and Presentation</td>
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<tr>
<td>1:30-1:45 p.m.</td>
<td>Break and Book Signing</td>
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<td>1:45-3:00 p.m.</td>
<td>What Counts: Collecting Data</td>
<td>Maintenance and Operations in All Seasons</td>
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<tr>
<td>3:00-3:15 p.m.</td>
<td>Break</td>
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<tr>
<td>3:15-4:30 p.m.</td>
<td>Roadway Assessments to Improve Safety</td>
<td>Managing Highway Runoff Water Quality</td>
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<tr>
<td>4:30-5:30 p.m.</td>
<td>Reception with Hors d’oeuvres and Cash Bar</td>
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## THURSDAY, MAY 24, 2012

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<th>Time</th>
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<tr>
<td>8:00-8:30 a.m.</td>
<td>Continental Breakfast</td>
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<td>Cheating Death: Traffic Safety Strategies and Injury Prevention</td>
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<td>10:30 a.m.-Noon</td>
<td>Technology and Design of Safety Systems</td>
<td>Bridging Gaps: Spanning the Years</td>
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<td>Noon</td>
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<td>Session 3</td>
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<tr>
<td>Destination Economics</td>
<td>Complete Streets and Beyond</td>
<td>Working on Common Ground: Public Participation and Transportation</td>
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<td>Forecasting the Future of Travel</td>
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**Panelists:** Patrick Born, regional administrator, Metropolitan Council; Lee Sheehy, program director, McKnight Foundation; Mariia Zimmerman, deputy director, Office of Sustainable Housing and Communities, U.S. Department of Housing and Urban Development; and Matt Kramer, president, Saint Paul Chamber of Commerce
PROGRAM SCHEDULE
WEDNESDAY, MAY 23, 2012

7:30-8:30 a.m. – Registration and Buffet Breakfast

8:30-10:15 – Welcome
Grand Ballrooms A-B

Laurie McGinnis, director, Center for Transportation Studies, University of Minnesota
The Role of Transitways in Our Region's Economic Competitiveness

Yingling Fan, assistant professor, Humphrey School of Public Affairs, University of Minnesota
Panelists: Patrick Born, regional administrator, Metropolitan Council; Lee Sheehy, program director, McKnight Foundation; Mariia Zimmerman, deputy director, Office of Sustainable Housing and Communities, U.S. Department of Housing and Urban Development; and Matt Kramer, president, Saint Paul Chamber of Commerce

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Following Fan’s presentation, a panel of state and national leaders will discuss the policy implications of the study and whether the findings can lead to greater economic competitiveness.

10:15-10:30 – Break
10:30-11:45 – Concurrent Sessions

1 Assessing Crash Factors
Meeting Room 6

Moderator: Will Stein, Federal Highway Administration, Minnesota Division
What’s Behind the Increase in Motorcycle Fatalities?
Enoch You, Minnesota Department of Health

Behavioral Substrates of Traffic Safety Stop and Work Zone Crashes: A Human Factors Analysis

Thomas Smith, School of Kinesiology, University of Minnesota

Using Event-Based Data to Assess Vehicle Pedestrian Crash Risk in the Absence of Clearance Interval at Signalized Intersections
Indrajit Chatterjee, Department of Civil Engineering, University of Minnesota

2 Rivers and Roads: Transportation Hydraulics
Meeting Room 5

Moderator: Nicole Danielson-Bartelt, Minnesota Department of Transportation

Investigating Lower-Cost, Shorter-Term Ways to Reduce the Frequency and Duration of Flood-Related Closures: MnDOT’s Minnesota River Flood Mitigation Study

Mark Benson and Rachel Pichelmann, SEH, Inc.

Assessment of Culverts Designed to Meet Stream Simulation Requirements
Bradley Hansen, Department of Bioproducts and Biosystems Engineering, University of Minnesota

Cleaning Stormwater with the SAFL Baffle

Kurtis McIntire, St. Anthony Falls Laboratory, University of Minnesota
3 Destination Economics
Meeting Room 4
Moderator: John Wilson, Minnesota Department of Transportation

Economic Impact of Wisconsin’s Commercial Ports, Helping to Keep the State’s Economy Afloat
Liat Lichtman-Bonneville, Wisconsin Department of Transportation

Minnesota’s Trade Center Hierarchy
Bruce Schwartau, University of Minnesota Extension

Reduction of Accessory Overdrive and Parasitic Loading on a Parallel Electric Hybrid Bus
Will Northrop, Department of Mechanical Engineering, University of Minnesota

4 Complete Streets and Beyond
Meeting Room 3
Moderator: Frank Pafko, Minnesota Department of Transportation

On the Road to Complete Streets in Minnesota
Scott Bradley and Bruce Holdhusen, Minnesota Department of Transportation

A Major Utility Project with a Complete Street Finish – East 75th and East 76th Street Reconstruction, Richfield, Minnesota
Jack Broz, HR Green, Inc.

Routes to Rails: Pedestrian Realm Planning in the Central Corridor
Carol Swenson, District Councils Collaborative of Saint Paul and Minneapolis; Jeff Corn, Center for Urban and Regional Affairs, University of Minnesota

5 Working on Common Ground: Public Participation and Transportation
Meeting Room 2
Moderator: Karla Rains, Minnesota Department of Transportation

Leif Garnass and Sean Jergens, SRF Consulting Group, Inc.

The Role of Transportation in Quality of Life
Ingrid Schneider, Department of Forest Resources, University of Minnesota

Hear Every Voice (HEV) Case Studies
Cindy Zerger, Center for Changing Landscapes, University of Minnesota; Vanessa Levingston, Minnesota Department of Transportation

11:45-1:30 p.m. – Luncheon and Presentation
Grand Ballrooms A-B

Opening Comments – Sue Mulvihill, director, Employee and Corporate Services Division, Minnesota Department of Transportation

Keynote Presentation: The Big Roads
Earl Swift, author and journalist

A man-made wonder, a connective network, an economic pipeline, a bringer of blight and sprawl, and the possibility of escape—the U.S. interstate system transformed America. Author and journalist Earl Swift will chart the creation of this landmark system, which turned dirt tracks into an organized framework of expressways in the space of a single lifetime. Swift will share highlights from his book, The Big Roads: The Untold Story of the Engineers, Visionaries, and Trailblazers Who Created the American Superhighways. The book brings to light the visionaries who created these essential highways as well as the critics and citizens who questioned their headlong expansion throughout the country—from a group of engineers who planned the interstates years before Eisenhower reached the White House to the ordinary citizens who found their homes and communities targeted by the expanding system.

1:30-1:45 – Break and Book Signing
1:45-3:00 – Concurrent Sessions

6 What Counts: Collecting Data
Meeting Room 6
Moderator: John Houdros, Department of Civil Engineering, University of Minnesota
Xize Wang, Humphrey School of Public Affairs, University of Minnesota
ITS Data Needs: How Much Do We Really Need to Know?
Frank Douma, Humphrey School of Public Affairs, University of Minnesota
Length-Based Vehicle Classification
Scott Petersen, SRF Consulting Group, Inc.

7 Maintenance and Operations in All Seasons
Meeting Room 5
Moderator: Farideh Amiri, Minnesota Department of Transportation
Best Practices: Corridor Management/Maintenance of Paved Trails
Michael Marti and Stewart Crosby, SRF Consulting Group, Inc.
Transportation Agency Tool to Analyze Benefits of Living Snow Fences
David Smith, Department of Applied Economics, University of Minnesota
Salt Brine Blending to Optimize Deicing and Anti-Icing Performance and Cost Effectiveness
Stephen Druschel, Department of Mechanical and Civil Engineering, Minnesota State University, Mankato

8 Life in the Fast Lane: Express and Toll Lanes
Meeting Room 4
Moderator: Brad Larsen, Minnesota Department of Transportation
Estimating Value of Travel Time and Value of Reliability Using I-394 Dynamic Toll Data
Sean (Xiaozheng) He, Department of Civil Engineering, University of Minnesota
I-394 MnPASS Express Lane Performance Evaluation
Brian Kary, Minnesota Department of Transportation
Best Practices and Lessons Learned from Atlanta’s I-85 Express Lanes Public Outreach and Education Program
Steve Peterson, SRF Consulting Group, Inc.; Malika Reed Wilkins, Georgia State Road and Tollway Authority

9 Forecasting the Future of Travel
Meeting Room 3
Moderator: Biz Colburn
2010 Twin Cities Travel Behavior Inventory
Jonathan Ehrlich, Metropolitan Council
The Future of Forecasting at Metropolitan Council
Dennis Farmer and Todd Graham, Metropolitan Council
Travel Demand and Reliable Forecasts for Transit
Mark Filipi, Metropolitan Council

10 Communicating with and Engaging the Public
Meeting Room 2
Moderator: Nick Peterson, Hennepin County
Kathryn Quick, Humphrey School of Public Affairs, University of Minnesota
Panel Discussion
Randy Newton, City of Eden Prairie; Wayne Sandberg, Washington County; John Griffith, Minnesota Department of Transportation

3:00-3:15 – Break
3:15-4:30 – Concurrent Sessions

11 Roadway Assessments to Improve Safety
Meeting Room 6
Moderator: Lowell Benson
Carver County Non-Motorized Facilities Assessment
Carla Stueve, SRF Consulting Group, Inc.; Jesse Reinhardt, Carver County
Congestion Management and Safety Program: Overview and Technical Perspective  
Mike Sobolewski, Minnesota Department of Transportation; Paul Morris, SRF Consulting Group, Inc.

Update on Minnesota’s County Roadway Safety Plans  
Howard Preston, CH2M HILL, Inc.

12 Managing Highway Runoff Water Quality  
Meeting Room 5
Moderator: Bruce Holdhusen, Minnesota Department of Transportation
Performance of Drainage Ditches in Infiltrating Stormwater Runoff  
Farzana Ahmed, St. Anthony Falls Laboratory, University of Minnesota
The Minnesota Filter: A Tool for Capturing Stormwater Dissolved Phosphorus  
Andrew Erickson, St. Anthony Falls Laboratory, University of Minnesota
Characterization of Concrete Sediments from Construction Operations for the Protection of Storm and Surface Waters  
Stephen Druschel, Department of Mechanical and Civil Engineering, Minnesota State University, Mankato

13 Preparing for a Rail Transit Future with Today’s Reality  
Meeting Room 4
Moderator: Craig Lamothe, Metro Transit
A Wise Investment–Accommodating Future Uses on Today’s Streets  
Luke Olson, HDR Engineering, Inc.
Mixing Fast Trains on Freight Rail Corridors  
Dan Krom, Minnesota Department of Transportation
Transit Project Development in Uncertain Times  
Reed Lee, HDR Engineering, Inc.

14 Transportation System Management: Yesterday, Today, and Tomorrow  
Meeting Room 3
Moderator: Chris Hiniker, SEH, Inc.
20-Years of the Twin Cities “A” Minor Arterial System: Looking Back and Positioning to Look Ahead  
Mary Karlsson, Metropolitan Council; Steve Peterson, SRF Consulting Group, Inc.
US 10 and CSAH 83: A Right-Sized Solution  
Jack Corkle and Brandi Popenhagen WSB and Associates, Inc.
MnDOT’s Corridor Investment Management Strategy: A New Transportation Planning Approach  
Brad Utecht, Minnesota Department of Transportation
Minneapolis Transportation Infrastructure Study  
Heidi Hamilton, City of Minneapolis

15 Online Learning Across Generations  
Meeting Room 2
Moderator: Ann Johnson, Department of Civil Engineering, University of Minnesota
Online Learning: What’s Current and Where Are we Heading?  
Kim Ballard, Degree and Credit Programs, College of Continuing Education, University of Minnesota
STREET (Simulating Transportation for Realistic Engineering Education and Training) Program for Undergraduate Education: Motivations and Objectives  
Arthur Huang, Department of Civil Engineering, University of Minnesota
Gravel Roads: Developing Online Learning for Non-Traditional Adult Learners  
Mindy Carlson, Center for Transportation Studies, University of Minnesota
Distraction Dodger: Teaching High School Students Through New Tools and Methods  
Shawn Haag, Center for Transportation Studies, University of Minnesota

4:30-5:30 – Reception with Hors d’oeuvres and Cash Bar
THURSDAY, MAY 24, 2012

8:00-8:30 a.m. – Continental Breakfast
8:30-10:15 – Concurrent Sessions

16 Cheating Death: Traffic Safety Strategies and Injury Prevention
Meeting Room 6
Moderator: Donna Berger, Office of Traffic Safety, Department of Public Safety
Is it Time for Minnesota Bicycle Helmet-Use Law? What Data Suggests
Jon Roesler, Minnesota Department of Health
CrashHelp: An Innovation to Improve Traffic Crash Emergency Medical Response
Thomas Horan, Center for Excellence in Rural Safety, University of Minnesota
Identifying Issues Related to Deployment of Automated Speed Enforcement
Frank Douma, Humphrey School of Public Affairs, University of Minnesota; David Thorpe, Humphrey School of Public Affairs, University of Minnesota; Joe Loveland, Loveland Communications
Occupant Restraint Usage in Minnesota
Hal Campbell, Office of Traffic Safety, Department of Public Safety

17 Tools to Support Pavement Sustainability
Meeting Room 5
Moderator: Ben Worel, Minnesota Department of Transportation
Development of a Portable Weigh-in Motion System for Rural Highways
Taek Kwon, Department of Electrical and Computer Engineering, University of Minnesota Duluth
Concrete Paving and Texturing for Sustainability
Bernard Izevbekhai, Minnesota Department of Transportation
Thermally Insulated Concrete
Lev Khazanovich, Department of Civil Engineering, University of Minnesota

18 A Test Drive for Mileage-Based User Fees
Meeting Room 4
Moderator: Lee Munnich, Humphrey School of Public Affairs, University of Minnesota
Overview of the Minnesota Department of Transportation Connected Vehicle Safety, Mobility, and User Fee Project
Cory Johnson, Minnesota Department of Transportation
Minnesota Road Fee Test: Mileage-Based User Fee Rate Structure Concept
Daryl Taavola, URS Corporation
Evaluation of the Minnesota Road Fee Test: Preliminary Data
Christopher Armstrong, Science Applications International Corporation

19 Twin Cities Transitways: Planning and Implementation
Meeting Room 3
Moderator: Connie Kozlak, Metropolitan Council
Guidelines on Bus Rapid Transit Development in the Twin Cities: Overview and Best Practices
Cole Hiniker, Metropolitan Council
Arterial Transitway Corridors Study: Results and Conclusions about Arterial Bus Rapid Transit
Charles Carlson, Metro Transit; Katie Roth, SRF Consulting Group, Inc.
Red Line/Cedar Avenue Bus Rapid Transit Development
Sam O’Connell, Dakota County
Transportation Impacts of Transitways: A Case Study of the Hiawatha Line
Jessica Schoner, Humphrey School of Public Affairs, University of Minnesota

Low-Temperature Cracking-Development of Fracture Tests
Mihai Marasteanu, Department of Civil Engineering, University of Minnesota
Doing Business Around Transitways: Survey Research on Business Perceptions of Twin Cities Transit Projects
Andrew Guthrie, Humphrey School of Public Affairs, University of Minnesota

20 Visions for the Future of Transportation
Meeting Room 2
Moderator: Jim Grothaus, Center for Transportation Studies, University of Minnesota
American Public Works Association 2050 Vision
Dan Gage, Minnesota Public Works Association; Kathleen O'Donnell and Lucy Swift, Twin Cities Public Television, Inc.
Minnesota GO
Lynne Bly, Minnesota Department of Transportation
2040 Minnesota's Roadmap to the Future
Margaret Donahoe, Minnesota Transportation Alliance

10:15-10:30 – Break
10:30-Noon – Concurrent Sessions

21 Technology and Design of Safety Systems
Meeting Room 6
Moderator: Jon Jackels, Minnesota Department of Transportation
Development of Guidelines for the Design of Turn Lanes
Howard Preston, CH2M HILL, Inc.
Smartphone-Based Decision Support for the Visually Impaired at Signalized Intersections
Chen-Fu Liao, Department of Civil Engineering, University of Minnesota
Safe Intersections
Thomas Sohrweide, SEH Inc.
46th Street Pilot Lighting Project
Dave Hirsch, Stonebrooke Engineering, Inc.

22 Bridging Gaps: Spanning the Years
Meeting Room 5
Moderator: Paul Rowekamp, Minnesota Department of Transportation
Bridge Approach Panel Expansion Joints
Farhad Reza, Department of Mechanical and Civil Engineering, Minnesota State University, Mankato
Minnesota Department of Transportation's Inverted Tee Bridge Superstructure System
Max Halverson, Department of Civil Engineering, University of Minnesota
Structural Monitoring of the Cedar Avenue Bridge
Arturo Schultz, Department of Civil Engineering, University of Minnesota

23 Wanted: A Fair and Flexible Funding Source for the Future
Meeting Room 4
Moderator: Lee Munnich, Humphrey School of Public Affairs, University of Minnesota
Mileage-Based User Fee Task Force Findings
Lee Munnich, Humphrey School of Public Affairs, University of Minnesota
Impacts of Mileage-Based User Fee Scenarios on the Trucking Industry
Daniel Murray, American Transportation Research Institute
Mileage-Based User Fee Panel Discussion
Chaired by: Former Representative Bernie Lieder, Minnesota State Legislature
Panelists: John Hausladen, Minnesota Trucking Association; Representative Michael Beard, Minnesota State Legislature (invited); Senator Scott Dibble, Minnesota State Legislature (invited); Jim Hovland, MBUF Task Force Co-chair; Representative, Minnesota Department of Transportation
24 Understanding the Use and Impacts of Non-Motorized Transportation
Meeting Room 3
Moderator: Fay Simer, Minnesota Department of Transportation
Smartphone-Based Travel Experience Sampling and Behavior Intervention
Yingling Fan, Humphrey School of Public Affairs, University of Minnesota

Pre-Treatment Evaluation and Assessment of Experimental Bicycle Facilities in Minneapolis, Minnesota
Christianne Roach, School of Architecture, University of Minnesota; Rebecca Hughes, City of Minneapolis

Estimating Use of Non-Motorized Infrastructure: Models of Bicycle and Pedestrian Traffic in Minneapolis, Minnesota
Steve Hankey, Humphrey School of Public Affairs, University of Minnesota
Sharing to Grow: A Case Study of Local Economic Activity Around NiceRide Minnesota Bike Share Stations
Jessica Schoner, Humphrey School of Public Affairs, University of Minnesota

Noon – Adjourn

Professional Development Hours (PDHs)
This conference awards up to 10.5 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: 3, 4, 5, 8, 9, 10, 13, 14, 19, and 24.

CTS Will Be Covering This Year’s Research Conference on Twitter!
You can join the conversation in three ways:
2. Go to the feed directly: http://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
24th Annual Transportation Research Conference
May 22-23, 2013
Saint Paul RiverCentre, Saint Paul, Minnesota

Toward Zero Deaths Conference
October 22-23, 2012
DoubleTree by Hilton, Bloomington-Minneapolis South
Planning Committee

Farideh Amiri, Minnesota Department of Transportation
Lowell Benson
Ken Buckeye, Minnesota Department of Transportation
Dorothy Cheng, University of Minnesota
Biz Colburn
Will Craig, University of Minnesota
Jessa Dauer, Hennepin County
Frank Douma, University of Minnesota
Jonathan Ehrlich, Metropolitan Council
Jerry Fruin, University of Minnesota
Ken Hansen, Minnesota Department of Transportation
Chris Hiniker, SEH Inc.

Bruce Holdhusen, Minnesota Department of Transportation
Michael Iacono, University of Minnesota
Ann Johnson, University of Minnesota
Connie Kozlak, Metropolitan Council
Mihai Marasteanu, University of Minnesota
Karen Neinstadt, Minnesota Department of Transportation
Frank Pafko, Minnesota Department of Transportation
Paul Rowekamp, Minnesota Department of Transportation
Carla Stueve, SRF Consulting Group, Inc.
Shannon Tyree, City of Saint Paul

Assisted by Center for Transportation Studies staff

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