

# Publications Catalog

## Update

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This 2014 update supplements the *CTS Publications Catalog* published in 2004 and subsequent annual updates. A listing of all publications available from CTS along with ordering information are online at [www.cts.umn.edu](http://www.cts.umn.edu).

### Research Reports

Transportation-related research reports by University of Minnesota researchers, published by CTS, MnDOT, the Minnesota Local Road Research Board, and other sponsors in 2013. These reports are available in PDF format at [www.cts.umn.edu/Publications/ResearchReports/](http://www.cts.umn.edu/Publications/ResearchReports/).

#### Transportation and the Economy

##### *Case Studies of Transportation Investment to Identify the Impacts on the Local and State Economy*

Michael Iacono, David M. Levinson  
 Report no. MnDOT 2013-03  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2242](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2242)

##### *Mitigating Highway Construction Impacts Through the Use of Transit*

Carol Becker  
 Report no. MnDOT 2013-13  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2286](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2286)

##### *Understanding the Economic Effects of Flexibility through Three Employer Case Studies*

Emily Saunoi-Sandgren, Adeel Lari  
 Report no. MnDOT 2013-07  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2256](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2256)

#### Transportation Infrastructure

##### *Design and Construction Guidelines for Thermally Insulated Concrete Pavements*

Lev Khazanovich, Mark Watson, Nicholas J. Santero, John Harvey, Jose T. Balbo, Luke Johanneck, Rita Lederle, Mihai O. Marasteanu, Priyam Saxena, Derek Tompkins, Mary Vancura, James Signore

Report no. MnDOT 2013-02  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2230](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2230)

##### *Friction Measurement System for Hennepin County: Technical Report*

Lee Alexander, Rajesh Rajamani  
 Report no. CTS 13-03T  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2224](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2224)

##### *Friction Measurement System for Polk County*

Lee Alexander, Rajesh Rajamani  
 Report no. MnDOT 2013-26  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2320](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2320)

##### *Implementation of Pavement Evaluation Tools*

Shuling Tang, Bojan Guzina, Joseph F. Labuz  
 Report no. MnDOT 2013-29  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2324](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2324)

##### *Improved Approach to Enforcement of Road Weight Restrictions*

Lee Alexander, Gridsada Phanomchoeng, Rajesh Rajamani  
 Report no. MnDOT 2013-27  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2322](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2322)

##### *Performance-Based Measurement of Optimum Moisture for Soil Compaction*

Bradley J. Hansen, John L. Nieber  
 Report no. MnDOT 2013-28  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2326](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2326)

##### *Wakota Bridge Thermal Monitoring Program Part I: Analysis and Monitoring Plan*

Christopher J. Scheevel, Krista M. Morris, Arturo E. Schultz  
 Report no. MnDOT 2013-11  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2288](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2288)

##### *Wakota Bridge Thermal Monitoring Program Part II: Data Analysis and Model Comparison*

Krista M. Morris, Arturo E. Schultz  
 Report no. MnDOT 2013-12  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2290](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2290)

#### Transportation Planning and the Environment

##### *Access Across America*

David M. Levinson  
 Report no. CTS 13-20  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2270](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2270)

##### *Achieving System-Level, Transit-Oriented Jobs-Housing Balance: Perspectives of Twin Cities Developers and Business Leaders*

Yingling Fan, Andrew Guthrie  
 Report no. CTS 13-24  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2300](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2300)

##### *Bike, Bus, and Beyond: Extending Cyclopath to Enable Multi-Modal Routing*

Loren Terveen  
 Report no. MnDOT 2013-19  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2294](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2294)

***Complete Streets from Policy to Project The Planning and Implementation of Complete Streets at Multiple Scales***

Carissa Schively Slotterback, Cindy Zerger  
Report no. MnDOT 2013-30  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2336](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2336)

***A Fast, Auction-Based Algorithm for Paratransit Vehicle Assignment***

John Gunnar Carlsson, Jason Houle  
Report no. CTS 13-28  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2316](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2316)

***Feasibility of Using GPS to Track Bicycle Lane Positioning***

Greg Lindsey, Steve Hankey, Xize Wang, Alec Gorjestani, Junzhou Chen  
Report no. CTS 13-16  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2264](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2264)

***The Minnesota Bicycle and Pedestrian Counting Initiative: Methodologies for Non-motorized Traffic Monitoring***

Greg Lindsey, Steve Hankey, Xize Wang, Junzhou Chen  
Report no. MnDOT 2013-24  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2328](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2328)

***Quality of Life: Assessment for Transportation Performance Measures***

Ingrid E. Schneider, Tian Guo, Sierra Schroeder  
Report no. MnDOT 2013-05  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2236](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2236)

***Transport of Perfluorochemicals to Surface and Subsurface Soils***

Feng Xiao, John S. Gulliver, Matt Simcik  
Report no. CTS 13-17  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2274](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2274)

***Transportation Impact of Transitways: A Case Study of Hiawatha Light Rail Transit in Minneapolis***

Jason Cao, Jessica Schoner  
Report no. CTS 13-13  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2266](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2266)

**Transportation Safety and Traffic Flow**

***Analysis of Single Frequency, Carrier Phase Based GPS Positioning Performance and Sensor Aiding Requirements***

Demoz Gebre-Egziabher, Hamid Mokhtarzadeh  
Report no. CTS 13-01  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2218](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2218)

***Bus Driver Intersection Task Analysis: Investigation of Bus-Pedestrian Crashes***

Chia Wei, Ensar Becic, Christopher Edwards, Michael Manser  
Report no. CTS 13-04  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2222](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2222)

***Detection of Water and Ice on Bridge Structures by AC Impedance and Dielectric Relaxation Spectroscopy Phase II***

John F. Evans  
Report no. CTS 13-25  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2306](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2306)

***Detection of Water and Ice on Bridge Structures by AC Impedance and Dielectric Relaxation Spectroscopy, Phases III and IV: Continued Field Testing and Refinement of Novel Water and Ice Sensor Systems on Bridge Decks***

John F. Evans  
Report no. CTS 13-26  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2310](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2310)

***Developing an Intelligent Decision Support System for the Proactive Implementation of Traffic Safety Strategies***

Hongyi Chen, Fang Chen, Chris Anderson  
Report no. CTS 13-12  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2260](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2260)

***Development of Hybrid DSRC-PCMS Information Systems for Snowplow Operations and Work Zones***

Umair Ibrahim, M. Imran Hayee  
Report no. CTS 13-08  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2250](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2250)

***Development of a Multiple-Camera Tracking System for Accurate Traffic Performance Measurements at Intersections***

Hua Tang  
Report no. CTS 13-10  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2254](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2254)

***Development of an Innovative Prototype Lane Departure Warning System***

Jiann-Shiou Yang  
Report no. CTS 13-14  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2258](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2258)

***Effectiveness of Urban Partnership Agreement Traffic Operations Measures in the I-35W Corridor***

John Hourdos, Seraphin C. Abou, Stephen Zitzow  
Report no. CTS 13-22  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2302](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2302)

***Field Study of Driver Behavior at Permitted Left-Turn Indications***

Gary A. Davis, Abhisek Mudgal  
Report no. CTS 13-18  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2268](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2268)

***Hand Images in Virtual Spatial Collaboration for Traffic Incident and Disaster Management***

Daniel Drew, Caroline Hayes, Mai-Anh Nguyen, Xuan Cheng  
Report no. CTS 13-15  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2272](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2272)

***Improving Freeway Traffic Speed Estimation Using High-Resolution Loop Detector Data***

Henry Liu, Jie Sun  
Report no. CTS 13-21  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2280](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2280)

***Improving Traffic Signal Operations for Integrated Corridor Management***

Henry Liu, Heng Hu  
Report no. MnDOT 2013-17  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2292](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2292)

***Improving the Safety and Efficiency of Roadway Maintenance Phase II: Developing a Vision Guidance System for the Robotic Roadway Message Painter***

Ryan G. Rosandich  
Report no. CTS 13-09  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2244](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2244)

***Instrumentation of Navistar Truck for Data Collection***

Lee Alexander, Gridsada Phomchoeng, Rajesh Rajamani  
Report no. MnDOT 2013-01  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2226](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2226)

***Monitoring the Use of HOV and HOT Lanes***

Eric Holec, Guruprasad Somasundaram, Nikolaos P. Papanikolopoulos, Vassilios Morellas  
Report no. CTS 13-07  
[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2238](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2238)

### ***A Pilot Study on Mitigating Run-Off-Road Crashes***

Christopher Edwards, Nichole Morris, Michael Manser  
Report no. CTS 13-23

[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2296](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2296)

### ***A Prototype System for Chemical Hydrogen Generation and Storage for Operating ITS Devices***

Steven P. Sternberg, A. Rashid Hasan, Venkatram R. Mereddy

Report no. CTS 13-11

[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2276](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2276)

### ***Research Implementation of the SMART SIGNAL System on Trunk Highway (TH) 13***

Henry Liu, Jianfeng Zheng, Heng Hu, Jie Sun

Report no. MnDOT 2013-06

[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2246](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2246)

### ***SMART-Signal Phase II: Arterial Offset Optimization Using Archived High-Resolution Traffic Signal Data***

Henry Liu, Heng Hu

Report no. CTS 13-19

[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2278](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2278)

### ***Snow Rendering for Interactive Snowplow Simulation - Supporting Safety in Snowplow Design***

Peter Willemsen

Report no. CTS 13-02

[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2220](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2220)

### ***Thermal Image-Based Deer Detection to Reduce Accidents Due to Deer-Vehicle Collisions***

Debao Zhou

Report no. CTS 13-06

[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2228](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2228)

### ***Using Detailed Signal and Detector Data to Investigate Intersection Crash Causation***

Gary A. Davis, Indrajit Chatterjee

Report no. CTS 13-05

[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2240](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2240)

### ***Video Detection and Classification of Pedestrian Events at Roundabouts and Crosswalks***

Ted Morris, Xinyan Li, Vassilios Morellas, Nikolaos P. Papanikolopoulos

Report no. CTS 13-27

[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2314](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2314)

## **Research Summaries**

### ***Ridership and Pedestrian Impacts of Transitways: A Case Study of Hiawatha Light-Rail Transit in Minneapolis (Research Brief)***

Jason Cao, Jessica Schoner

Report no. CTS Research Brief 2013-01

[www.cts.umn.edu/Publications/researchsummaries/documents/final\\_impacts\\_cao3.pdf](http://www.cts.umn.edu/Publications/researchsummaries/documents/final_impacts_cao3.pdf)

### ***Spurring Private-Sector Development Along Transit Corridors (Research Brief)***

Yingling Fan, Andrew Guthrie

CTS Research Brief 2013-02

[www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2298](http://www.cts.umn.edu/Publications/ResearchReports/reportdetail.html?id=2298)

### ***Transforming Community: Transitway Impacts Research Program (Research Synthesis)***

Report no. CTS 13-29

[www.cts.umn.edu/Publications/researchsummaries/documents/TIRP\\_synthesis.pdf](http://www.cts.umn.edu/Publications/researchsummaries/documents/TIRP_synthesis.pdf)

## **Annual Reports**

### ***2013 CTS Annual Report***

[www.cts.umn.edu/Publications/annualreports/documents/CTS2013.pdf](http://www.cts.umn.edu/Publications/annualreports/documents/CTS2013.pdf)

## **Newsletters**

CTS publishes print and electronic newsletters covering many facets of transportation. Subscribe online at [www.cts.umn.edu/Publications/subscribe/](http://www.cts.umn.edu/Publications/subscribe/).

### ***CTS Catalyst***

A monthly publication on the latest transportation innovations at the University of Minnesota. Available in both print and electronic formats.

### ***Minnesota LTAP Exchange***

A newsletter of the Minnesota Local Technical Assistance Program (LTAP) (quarterly)

### ***AirTAP Briefings***

News and how-to information for personnel operating, maintaining, and administering Minnesota's public-use airports (periodic) Available in print and e-mail.

### ***CTS Freight & Logistics E-News***

News and events from the community of freight and logistics professionals (periodic).

### ***Roadway Safety Institute News***

E-mail news update about research and educational activities at the Roadway Safety Institute (quarterly).

### ***Minnesota LTAP Exchange Express***

New publications and resources from various sources, plus other items of interest to local agencies (periodic).

### ***TERRA E-News***

A newsletter for the Transportation Engineering and Road Research Alliance (quarterly).

## **Journals**

### ***Journal of Transport and Land Use***

An open-access, peer-reviewed online journal publishing original interdisciplinary papers on the interaction of transport and land use.

[www.jtlu.org](http://www.jtlu.org)

## **Videos**

These and other videos are available at [www.cts.umn.edu/Publications/videos/](http://www.cts.umn.edu/Publications/videos/) and on the CTS YouTube channel: [www.youtube.com/ctsumn](http://www.youtube.com/ctsumn).

### **2013-14 CTS Research Highlights Video**

Highlights of 2013-14 include the new Accessibility Observatory, "super hybrid" buses, a study of what manufacturers in southwest MN value in the state's transportation system, developers desires for transit-oriented development, a portable roadside traffic information system to warn drivers of upcoming congestion, and quality of life performance measures for MnDOT.

### **2013-14 CTS Education Highlights Video: Where Are They Now? University of Minnesota Transportation Graduates**

Four recent graduates from the University of Minnesota discuss how their transportation-related classes and activities helped them find their current positions and advance their careers.

### **Minnesota Bicycle and Pedestrian Counting Initiative research study video**

Describes the collaborative research that has made Minnesota in the vanguard of monitoring bike and pedestrian traffic, using the data for planning bike and pedestrian facilities in cities like Minneapolis and Duluth, analyzing safety, contributing to state goals, and contributing to federal traffic monitoring standards.

### **2012-13 CTS Research Highlights Video**

Highlights of 2012-13 include a smartphone app for people with visual impairments, research on safety in roundabouts for pedestrians and bicyclists, bicycle tracking using GPS, and a filter for removing phosphates from storm water.

## CTS 2013-14 Seminar Series

Available for viewing online at [www.cts.umn.edu/Events/SeminarSeries/](http://www.cts.umn.edu/Events/SeminarSeries/)

February 27

### "Achieving Transit-Oriented Jobs-Housing Balance at the System Level"

CTS Research Seminar

Yingling Fan, Assistant Professor, Humphrey School of Public Affairs, University of Minnesota.

[www.cts.umn.edu/events/seminars/2014/022714/](http://www.cts.umn.edu/events/seminars/2014/022714/)

February 13

### "Effects of Signing and Striping on the Safety of a Two-Lane Roundabout"

CTS Research Seminar

John Hourdos, Director, Minnesota Traffic Observatory, University of Minnesota.

[www.cts.umn.edu/events/seminars/2014/021314/](http://www.cts.umn.edu/events/seminars/2014/021314/)

February 6

### "Scour Monitoring Technology Implementation"

CTS Research Seminar

Jeff Marr, Associate Director of Engineering and Facilities, St. Anthony Falls Laboratory (SAFL), University of Minnesota.

[www.cts.umn.edu/events/seminars/2014/020614/](http://www.cts.umn.edu/events/seminars/2014/020614/)

October 31

### "Determining the Reliability of Asphalt Structures at Low Temperatures"

CTS Research Seminar

Jia-Liang Le, Assistant Professor, Department of Civil Engineering.

[www.cts.umn.edu/events/seminars/2013/103113/](http://www.cts.umn.edu/events/seminars/2013/103113/)

October 24

### "A New Approach to Evaluating Intersection Safety Using High-Resolution Traffic Signal Data"

CTS Research Seminar

Henry Liu, Associate Professor, Department of Civil Engineering, University of Minnesota.

[www.cts.umn.edu/events/seminars/2013/102413/](http://www.cts.umn.edu/events/seminars/2013/102413/)

October 10

### "Manufacturers' Perspectives on the Transportation System: A Pilot Study in MnDOT District 8"

CTS Research Seminar

Frank Douma, Research Fellow, Humphrey School of Public Affairs, University of Minnesota.

Donna Koren, Market Research Director, Minnesota Department of Transportation.

Lee Munnich, Director of the State and Local Policy Program, Humphrey School of Public Affairs, University of Minnesota.

[www.cts.umn.edu/events/seminars/2013/101013/](http://www.cts.umn.edu/events/seminars/2013/101013/)

October 3

### "Monitoring and Modeling Nonmotorized Traffic in Minnesota"

CTS Research Seminar

Greg Lindsey, Professor, Humphrey School of Public Affairs, University of Minnesota.

[www.cts.umn.edu/events/seminars/2013/100313/](http://www.cts.umn.edu/events/seminars/2013/100313/)

September 26

### "Resilient Communities Project: A Model of Community-University Collaborative Engagement"

CTS Research Seminar

Carissa Schively Slotterback, director of the Resilient Communities Project and Associate Professor, Humphrey School of Public Affairs, University of Minnesota.

Mike Greco, program manager of the Resilient Communities Project and Communications Coordinator, Center for Urban and Regional Affairs, University of Minnesota.

[www.cts.umn.edu/events/seminars/2013/092613/](http://www.cts.umn.edu/events/seminars/2013/092613/)

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## How to Obtain These Publications

Titles of publications are listed in alphabetical order under subject area. Most publications, where noted, are available in electronic format online at no charge. Publications also may be requested from CTS. A complete listing of all publications available from CTS and ordering information may be found online at:

[www.cts.umn.edu/publications](http://www.cts.umn.edu/publications)

## Center for Transportation Studies

200 Transportation and Safety Building  
511 Washington Avenue S.E.  
Minneapolis, MN 55455-0375

Phone: 612-626-1077  
Fax: 612-625-6381  
E-mail: [cts@umn.edu](mailto:cts@umn.edu)  
Web: [www.cts.umn.edu](http://www.cts.umn.edu)

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