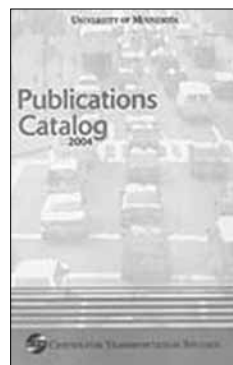


# Publications Catalog

## Update

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This 2012 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

Following are transportation-related research reports by University of Minnesota researchers, published by CTS, the Minnesota Department of Transportation (MnDOT), the Minnesota Local Road Research Board, and other sponsors, from January 2011 through December 2011. 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

**Advancing Public Interest in Public-Private Partnership of State Highway Development**  
Zhirong Zhao, Emily Saunoi-Sandgren, Avital Barnea  
Report no. MnDOT 2011-09  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1500>  
(2 MB) 66 pp.

**From Fuel Taxes to Mileage-Based User Fees: Rationale, Technology, and Transitional Issues**  
David D. Coyle, Ferrol Robinson, Zhirong Zhao, Lee Munnich, Adeel Lari  
Report no. CTS 11-16  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1560>  
(507 KB) 91 pp.

**Funding China's Urban Infrastructure: Revenue Structure and Financing Approaches**  
Zhirong Zhao, Chengxin Cao  
Report no. CTS 11-10  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1534>  
(1015 KB) 33 pp.

**How Affordable is Transportation? A Context-Sensitive Framework**  
Yingling Fan, Arthur Huang  
Report no. CTS 11-12  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1532>  
(1 MB) 48 pp.

**Optimal Contract Mechanism Design for Performance-Based Contracts**  
Diwakar Gupta, Aditya Vedantam, Justin Azadivar  
Report no. MnDOT 2011-18  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1562>  
(2 MB) 53 pp.

**Update of a Web-Based Economic Impact Calculator for Small and Medium-Sized Airports and a Study of the Economic Impact of Minnesota Airports**  
William C. Gartner, Brigid Tuck, Daniel L. Erkkila  
Report no. CTS 11-01  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1482>  
(357 KB) 33 pp.

#### Transportation Safety and Traffic Flow

**Analysis of Unmanned Aerial Vehicles Concept of Operations in ITS Applications**  
Demos Gebre-Egziabher, Zhiqiang Xing  
Report no. CTS 11-06  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1512>  
(1 MB) 43 pp.

**Counting Empty Parking Spots at Truck Stops Using Computer Vision**  
Pushkar Modi, Vassilios Morellas, Nikolaos P. Papanikolopoulos  
Report no. CTS 11-08  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1530>  
(955 KB) 31 pp.

**Data-Driven Support Tools for Transit Data Analysis, Scheduling and Planning**  
Chen-Fu Liao  
Report no. CTS 11-15  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1556>  
(1 MB) 125 pp.

**Development of Mobile Accessible Pedestrian Signals (MAPS) for Blind Pedestrians at Signalized Intersections**  
Chen-Fu Liao, Mick Rakauskas, Avani Rayankula  
Report no. CTS 11-11  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1552>  
(2 MB) 135 pp.

**Development of the Next Generation Stratified Ramp Metering Algorithm Based on Freeway Density**  
Nikolas Geroliminis, Anupam Srivastava, Panos Michalopoulos  
Report no. CTS 11-05  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1510>  
(3 MB) 94 pp.

**Dual Frequency, Carrier Phase Differential GPS Augmentation**

Edmund Arpin V, Bryan Newstrom, Craig Shankwitz  
Report no. CTS 11-09  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1526>  
(1 MB) 43 pp.

**Enhancement and Field Test Evaluation of New Battery-Less Wireless Traffic Sensors**

Sean Pruden, Krishna Vijayaraghavan, Rajesh Rajamani  
Report no. CTS 11-22  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1590>  
(3 MB) 110 pp.

**Field Testing and Evaluation of a Wireless-Based Transit Signal Priority System**

Chen-Fu Liao, Gary A. Davis  
Report no. CTS 11-25  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1600>  
(1 MB) 96 pp.

**A High Accuracy Vehicle Positioning System Implemented in a Lane Assistance System when GPS Is Unavailable**

Edmund Arpin V, Craig Shankwitz, Max Donath  
Report no. CTS 11-18  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1570>  
(2 MB) 82 pp.

**In-Vehicle Decision Support to Reduce Crashes at Rural Thru-Stop Intersections**

Caroline Hayes, Daniel Drew  
Report no. CTS 11-17  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1558>  
(3 MB) 247 pp.

**ITS and Transportation Safety: EMS System Data Integration to Improve Traffic Crash Emergency Response and Treatment - Phase II Report**

Ben Schooley, Tom Horan, Roni McClintock, Yoonmi Lee  
Report no. CTS 11-19  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1580>  
(2 MB) 52 pp.

**ITS and Transportation Safety: EMS System Data Integration to Improve Traffic Crash Emergency Response and Treatment - Phase III Report**

Ben Schooley, Tom Horan, Brian Hilton  
Report no. CTS 11-26  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1598>  
(1 MB) 73 pp.

**Low-Cost Portable Video-Based Queue Detection for Work-Zone Safety**

Ted Morris, Jory A. Schwach, Panos Michalopoulos  
Report no. CTS 11-02  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1518>  
(1 MB) 53 pp.

**Snow Rendering for Interactive Snowplow Simulation—Supporting Safety in Snowplow Design**

Peter Willemssen  
Report no. CTS 11-23  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1594>  
(1 MB) 61 pp.

**Usability Evaluation of a Smart Phone-based Teen Driver Support System (TDSS)**

Janet Creaser, Alec Gorjestani, Michael Manser, Max Donath  
Report no. MnDOT 2011-13  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1528>  
(513 KB) 65 pp.

**Transportation Infrastructure**

**Innovative Technologies for Lifetime Extension of an Aging Inventory of Vulnerable Bridges**

Andrew Gastineau, Steven Wojtkiewicz, Arturo E. Schultz  
Report no. CTS 11-27  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1612>  
(634 KB) 28 pp.

**Response Modification for Enhanced Operation and Safety of Bridges**

Andrew Gastineau, Arturo E. Schultz, Steven Wojtkiewicz  
Report no. CTS 11-14  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1566>  
(938 KB) 54 pp.

**Synthesis of Performance Testing of Asphalt Concrete**

Eshan V. Dave, Philip Koktan  
Report no. MnDOT 2011-22  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1584>  
(678 KB) 90 pp.

**Transportation Planning and the Environment**

**Assessment and Recommendations for the Operation of Standard Sumps as Best Management Practice for Stormwater Treatment (Volume 1)**

Adam Howard, Omid Mohseni, John S. Gulliver, Heinz G. Stefan  
Report no. MnDOT 2011-08

<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1506>  
(1 MB) 109 pp.

**Development of the Next Generation Metro-Wide Simulation Models for the Twin Cities' Metropolitan Area: Mesoscopic Modeling**

Henry Liu, Adam Danczyk, Xiaozheng He  
Report no. CTS 11-03  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1486>  
(863 KB) 55 pp.

**Development of Techniques to Quantify Effective Impervious Cover**

Ben Janke, John S. Gulliver, Bruce Wilson  
Report no. CTS 11-20  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1578>  
(4 MB) 31 pp.

**Evaluation of Buffer Width on Hydrologic Function, Water Quality, and Ecological Integrity of Wetlands**

John L. Nieber, Caleb Arika, Chris Lenhart, Mikhail Titov, Kenneth Brooks  
Report no. MnDOT 2011-06  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1502>  
(3 MB) 182 pp.

**ITS and Locational Privacy: Suggestions for Peaceful Coexistence**

Frank Douma, Sarah Aue  
Report no. CTS 11-21  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1592>  
(315 KB) 42 pp.

**Nonmotorized Transportation Pilot Program Evaluation Study, Phase 2**

Thomas Gotschi, Kevin Krizek, Laurie McGinnis, Jan Lucke, Joe Barbeau  
Report no. CTS 11-13  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1586>  
(3 MB) 30 pp.

**Performance Assessment of Oversized Culverts to Accommodate Fish Passage**

Brad Hansen, John L. Nieber, Sara Johnson, Jeff Marr  
Report no. MnDOT 2011-19  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1576>  
(4 MB) 92 pp.

**Potential Viability of Automated Rapid Transit at the Minneapolis-St. Paul Airport**

Ferrol Robinson, Matt Schmit, Lee Munnich  
Report no. MnDOT 2011-14  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1536>  
(577 KB) 32 pp.

**Rationale for Funding a Feasibility Study for an Automated Rapid Transit Application in the Twin Cities**

Ferrol Robinson  
Report no. MnDOT 2011-17  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1582>  
(390 KB) 24 pp.

**Suggested Design and Management Techniques for Enhancing Public Engagement in Transportation Policymaking**

Kathryn S. Quick, Zhirong Zhao  
Report no. CTS 11-24  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1616>  
(1 MB) 52 pp.

**The Urban Partnership Agreement: A Comparative Study of Technology and Collaboration in Transportation Policy Implementation**

John M. Bryson, Barbara C. Crosby, Melissa M. Stone, Emily Saunoi-Sandgren, Anders S. Imboden  
Report no. CTS 11-07  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1514>  
(398 KB) 74 pp.

**Research Summaries**

**Funding Surface Transportation in Minnesota: Past, Present and Prospects**

CTS Research Brief 2011-01  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1650>  
(144 KB) 2 pp.

**A New Approach to Understanding and Measuring Transportation and Land Use: An Access to Destinations Study Research Brief**

CTS Research Brief 2011-02  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1682>  
(221 KB) 2 pp.

**Nonmotorized Transportation Pilot Program Community-Wide Evaluation Study**

CTS Research Brief 2011-03  
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1596>  
(212 KB) 2 pp.

**Annual Reports**

**2011 CTS Annual Report**

<http://www.cts.umn.edu/Publications/AnnualReports/documents/CTS2011.pdf>  
(2.6 MB PDF) 40 pp.

**2011 ITS Institute Annual Report**

<http://www.its.umn.edu/Publications/AnnualReport/2011/documents/ITS-AnnualReport-11.pdf>  
(2.71 MB PDF) 58 pp.

**Newsletters**

CTS publishes print and electronic newsletters covering many facets of transportation, including research, public policy, and engineering. Subscribe online at [www.cts.umn.edu/Publications/](http://www.cts.umn.edu/Publications/).

**Print Newsletters**

Print newsletters are also posted online.

**CTS Report**

A monthly report on transportation research, education, and outreach at the University of Minnesota (monthly)

**ITS Institute Sensor**

Research advances from the Intelligent Transportation Systems (ITS) Institute (periodic)

**Minnesota LTAP Exchange**

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

**E-mail Newsletters**

**CTS Research E-News**

The latest announcements and findings in transportation research (monthly)

**Rural Safety News**

The latest research and resources concerning rural safety from the Center for Excellence in Rural Safety, or CERS (quarterly)

**CTS Freight & Logistics E-News**

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

**Transportation Education E-News**

Informs university faculty of tools, initiatives, and activities for improving transportation education, especially in the field of transportation engineering (semiannual)

**Minnesota LTAP Hot Topics**

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

**AirTAP Briefings**

News and how-to information for personnel operating, maintaining, and administering Minnesota's public-used airports (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  
<http://www.jtlu.org>

**Videos**

**2010-11 CTS Highlights Video: Sowing the seeds of collaboration**

Highlights of research, education, and outreach initiatives in 2010-11.

**CTS Seminar Series—Fall 2011**

Available for viewing online at [www.cts.umn.edu/Events/SeminarSeries/2011/index.html](http://www.cts.umn.edu/Events/SeminarSeries/2011/index.html)

September 15

**"The Role of Transportation Researchers in Rehabilitation Hospitals to Keep Patients Mobile"**

Advanced Transportation Technologies Seminar  
Johnell Brooks, Assistant Professor, Department of Psychology, Clemson University

September 29

**"An Observational Study of Pedestrian and Bicycle Crossing Experience in Two Modern Urban Roundabouts"**

Advanced Transportation Technologies Seminar  
John Hourdos, Director, Minnesota Traffic Observatory, and Adjunct Assistant Professor, Department of Civil Engineering, University of Minnesota

October 6

**"Exploring Models of Regional Sustainability Planning and Implementation"**

CTS Research Seminar  
Carissa Schively Slotterback, Associate Professor, Humphrey School of Public Affairs, University of Minnesota

October 13

**"Advanced Transportation Technologies Seminar: Detection of Road and Bridge Surface Conditions"**

Advanced Transportation Technologies Seminar  
John Evans, Professor, Department of Chemistry and Biochemistry, University of Minnesota Duluth

October 20

**"Implementing Distance-Based User Fees as a Replacement for the Fuel Tax"**

CTS Research Seminar  
Lee Munnich, Senior Fellow, Humphrey School of Public Affairs, University of Minnesota

October 27

**"Development of a Traffic Information and Dissemination System for Work-Zone Environments"**

Advanced Transportation Technologies Seminar  
M. Imran Hayee, Professor, Department of Electrical

and Computer Engineering, University of Minnesota Duluth

November 3

***“Response Modification for Enhanced Operation and Safety of Bridges”***

CTS Research Seminar

Arturo Schultz, Professor, Department of Civil Engineering, University of Minnesota

Steven Wojtkiewicz, Assistant Professor, Department of Civil Engineering, University of Minnesota

November 10

***“Cyclopath: Personalized Routing and Open Collaboration for Bicyclists”***

Advanced Transportation Technologies Seminar

Loren Terveen, Professor, Department of Computer Science and Engineering, University of Minnesota

December 1

***“Transportation Safety Issues and Priorities in Minnesota”***

Advanced Transportation Technologies Seminar

Brad Estochen, Assistant State Traffic Engineer, Minnesota Department of Transportation

December 8

***“Toward Universal Access to Seamless Travel of Indoor and Outdoor Spaces With and Without Vision”***

Advanced Transportation Technologies Seminar

Nicholas Giudice, Assistant Professor, Department of Spatial Information Science and Engineering, University of Maine

**Research and training videos**

These and other videos are available at [www.cts.umn.edu/Publications/Videos/](http://www.cts.umn.edu/Publications/Videos/).

***MnDOT Snowplow Driver Simulator Training***

The Minnesota Local Technical Assistance Program (LTAP) offers a workshop by the Minnesota Department of Transportation to train snowplow drivers in a driving simulator.

***Safe Teen Car System***

Researchers from the HumanFIRST Program at the University of Minnesota’s ITS Institute and the private

research company Westat have developed a prototype system for new cars, called the Safe Teen Car System. It gives teens feedback to help them develop safer driving habits. Sponsored by the National Highway Traffic Safety Administration, the project is an extension of a national focus on teen driving safety.

***Teen Driver Support System (TDSS) project***

The ITS Institute at the University of Minnesota, with the support from MnDOT and USDOT, has developed a new version of the Teen Driver Support System (TDSS). The system is a GPS-enabled smart phone mounted on the dashboard to provide the driver real-time visual and audio feedback about driving performance. The TDSS is intended as a tool for parents to encourage teens to build safe driving habits in their early years on the road.

***U of M HumanFIRST Lab tour*** (a component of the *Distraction Dodger* online game)

This tour of the University of Minnesota HumanFIRST Lab gives viewers insight into research aimed at reducing distracted driving, a factor in many crashes. HumanFIRST lab director Michael Manser provides a narrated overview of the lab and information on why distracted driving is such an important issue. This video is a segment of the *Distraction Dodger* online game. The *Distraction Dodger* game (<http://www.its.umn.edu/DistractionDodger/>) is designed to help teens and young adults understand the importance of concentrating on driving.

***U of M bus driver-assist project***

A partnership made up of University of Minnesota researchers and local, state, and federal government agencies hopes to tackle the congestion challenge by implementing cutting-edge technologies along the first bus rapid-transit corridor in the Twin Cities metro area. The project includes new express lanes, electronic signage, and 10 futuristic buses are being tested to improve transit times and traffic flow

**How to Obtain These Publications**

This 2012 update supplements the *CTS Publications Catalog* published in 2004 and subsequent annual updates. It lists transportation-related research reports produced by faculty and researchers at the University of Minnesota and published by CTS, the Minnesota Department of Transportation (MnDOT), or the Minnesota Local Road Research Board (LRRB). This update also features publications, videos, and other materials produced by CTS and its affiliated programs.


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)

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