

Publications Catalog

Update

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This 2011 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.

Research Reports

Following are transportation-related research reports by University of Minnesota researchers, published by CTS, Mn/DOT, the Minnesota Local Road Research Board, and other sponsors, from January 2010 through December 2010. These reports are available in PDF format at www.cts.umn.edu/Publications/ResearchReports/.

Transportation and the Economy

Funding Surface Transportation in Minnesota: Past, Present and Prospects
Zhirong Zhao, Kirti V. Das, Carol Becker
Report no. CTS 10-02
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1300>
(1 MB) 65 pp.

The Hiawatha Line: Impacts on Land Use and Residential Housing Value
Edward G. Goetz, Kate Ko, Aaron Hagar, Hoang Ton, Jeff Matson
Report no. CTS 10-09
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1390>
(8 MB) 119 pp.

I-394 Phase II Planning Study
Lee Munnich, Kenneth Buckeye
Report no. CTS 10-08
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1396>
(2 MB) 54 pp.

Impacts of the Hiawatha Light-Rail Line on Commercial and Industrial Property Values in Minneapolis
Kate Ko, Jason Cao
Report no. CTS 10-05
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1378>
(537 KB) 38 pp.

Study of Public Acceptance of Tolling with New Capacity and Credits: Concepts of FAST Miles and FEE Lanes
Adeel Lari, Sara Aultman
Report no. Mn/DOT 2010-27
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1398>
(474 KB) 57 pp.

Transportation Safety and Traffic Flow

Access to Destinations: Arterial Data Acquisition and Network-Wide Travel Time Estimation (Phase II)
Gary A. Davis, John Hourdos, Hui Xiong, Ted Morris
Report no. Mn/DOT 2010-12
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1338>
(2 MB) 49 pp.

Advanced LED Warning Signs for Rural Intersections Powered by Renewable Energy
Taek Mu Kwon, Ryan Weidemann
Report no. Mn/DOT 2011-04
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1470>
(2 MB) 101 pp.

Application of a Rural Safety Policy Improvement Index (RSPII) Framework
Keith Knapp, Brad Utech
Report no. CTS 10-07
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1392>
(769 KB) 67 pp.

Automated Vehicle Location, Data Recording, Friction Measurement and Applicator Control for Winter Road Maintenance
Gurkan Erdogan, Lee Alexander, Rajesh Rajamani
Report no. Mn/DOT 2010-07
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1310>
(1 MB) 61 pp.

Comparison of Dual-Phase and Static Changeable Message Signs to Convey Airline Information on Interstate Freeways
Kathleen A. Harder, John Bloomfield
Report no. Mn/DOT 2010-02
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1302>
(506 KB) 81 pp.

The Design of a Minimal Sensor Configuration for a Cooperative Intersection Collision Avoidance System—Stop Sign Assist: CICAS-SSA Report #2
Alec Gorjestani, Arvind Menon, Pi-Ming Cheng, Craig Shankwitz, Max Donath
Report no. CTS 10-32
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1446>
(1 MB) 61 pp.

Determination of the Alert and Warning Timing for the Cooperative Intersection Collision Avoidance System—Stop Sign Assist Using Macroscopic and Microscopic Data: CICAS-SSA Report #1

Alec Gorjestani, Arvind Menon, Pi-Ming Cheng, Craig Shankwitz, Max Donath
Report no. CTS 10-31
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1444>
(6 MB) 65 pp.

Development and Field Demonstration of DSRC-Based V2I Traffic Information System for the Work Zone

Buddhika Maitipe, M. Imran Hayee
Report no. CTS 10-15
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1478>
(609 KB) 46 pp.

Development of Algorithms for Travel Time-Based Traffic Signal Timing, Phase I—A Hybrid Extended Kalman Filtering Approach for Traffic Density Estimation Along Signalized Arterials

Henry X. Liu, Xuan Di
Report no. CTS 10-10
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1474>
(316 KB) 38 pp.

Development of a Low-Cost Interface between Cell Phone and DSRC-Based Vehicle Unit for Efficient Use of IntelliDriveSM Infrastructure

Beau Roodell, M. Imran Hayee
Report no. CTS 10-14
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1464>
(1 MB) 42 pp.

Evaluation of Workforce Perceptions as a Means to Identify and Mitigate the Causes of Musculoskeletal Disorders

Todd Loushine
Report no. Mn/DOT 2010-01
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1312>
(264 KB) 32 pp.

Evaluation of the SafeLane™ Overlay System for Crash Reduction on Bridge Deck Surfaces

John F. Evans
Report no. Mn/DOT 2010-13
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1340>
(753 KB) 33 pp.

Macroscopic Review of Driver Gap Acceptance and Rejection Behavior at Rural Thru-Stop Intersections in the US—Data Collection Results in Eight States: CICAS-SSA Report #3

Alec Gorjestani, Arvind Menon, Pi-Ming Cheng, Bryan Newstrom, Craig Shankwitz, Max Donath
Report no. CTS 10-33
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1448>
(5 MB) 77 pp.

Models for Predicting RWIS Sensor Misalignments and Their Causes

Prafulla Bhalekar, Carolyn Crouch, Donald Crouch, Richard Maclin
Report no. CTS 10-01
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1272>
(1 MB) 58 pp.

Optimal Workforce Planning and Shift Scheduling for Snow and Ice Removal

Diwakar Gupta, Elif Tokar-Erdemir, Dustin Kuchera, Arun Kumar Mannava, Wei Xiong
Report no. Mn/DOT 2011-03
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1480>
(2 MB) 250 pp.

Practical Methods for Analyzing Pedestrian and Bicycle Use of a Transportation Facility

Guruprasad Somasundaram, Vassilios Morellas, Nikolaos P. Papanikolopoulos
Report no. Mn/DOT 2010-06
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1306>
(1 MB) 41 pp.

Real-Time Nonintrusive Detection of Driver Drowsiness—Phase II

Xun Yu
Report no. CTS 10-16
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1476>
(626 KB) 137 pp.

Sign Comprehension, Considering Rotation and Location, Using Random Gap Simulation for a Cooperative Intersection Collision Avoidance System—Stop Sign Assist: CICAS-SSA Report #4

Janet Creaser, Michael Manser, Michael Rakauskas, Max Donath
Report no. CTS 10-34
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1450>
(5 MB) 202 pp.

TH-36 Full Closure Construction: Evaluation of Traffic Operations Alternatives

John Hourdos, Feili Hong
Report no. Mn/DOT 2010-04
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1314>
(5 MB) 156 pp.

Transportation Infrastructure

Air Voids Testing for MnROAD Cells

Mugurel Turoș, Ki Hoon Moon, Mihai O. Marasteanu
Report no. Mn/DOT 2010-28
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1402>
(991 KB) 52 pp.

Allowable Axle Loads on Pavements

Peter Bly, Derek Tompkins, Lev Khazanovich
Report no. Mn/DOT 2011-02
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1468>
(1 MB) 52 pp.

Bridge Scour Monitoring Technologies: Development of Evaluation and Selection Protocols for Application on River Bridges in Minnesota

Matthew Lueker, Jeff Marr, Chris Ellis, Vincent Winsted, Shankar Reddy Akula
Report no. Mn/DOT 2010-14
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1372>
(2 MB) 193 pp.

Development of an Advanced Structural Monitoring System

Arturo E. Schultz, David Thompson
Report no. Mn/DOT 2010-39
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1458>
(2 MB) 66 pp.

Discrepancies in Shear Strength of Prestressed Beams with Different Specifications

Ozer Dereli, Carol K. Shield, Catherine E. French
Report no. Mn/DOT 2010-03
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1304>
(12 MB) 242 pp.

MnROAD Data Mining, Evaluation and Quantification—Phase I

Randal J. Barnes
Report no. Mn/DOT 2010-26
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1400>
(3 MB) 250 pp.

Transportation Planning and the Environment

Access to Destinations, Phase 3: Measuring Accessibility by Automobile

David Levinson, Bernadette Marion, Michael Iacono
Report no. Mn/DOT 2010-09
<http://conservancy.umn.edu/bitstream/97609/1/2010-09.pdf>
(115 MB) 312 pp.

Framework for Measuring Sustainable Regional Development for the Twin Cities Region

Kaydee Kirk, Jody Tableporter, Andrew Senn, Jennifer Day, Jason Cao, Yingling Fan, Carissa Schively Slotterback, Edward Goetz, Laurie McGinnis
Report no. CTS 10-04
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1328>
(638 KB) 43 pp.

Hydrodynamic Separator Sediment Retention Testing

David A. Saddoris, Kurtis D. McIntire, Omid Mohseni, John S. Gulliver
Report no. Mn/DOT 2010-10
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1320>
(8 MB) 130 pp.

Impact of Twin Cities Transitways on Regional Labor Market Accessibility: A Transportation Equity Perspective

Yingling Fan, Andrew Guthrie, Rose Teng
Report no. 10-06
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1414>
(6 MB) 141 pp.

Improved Automatic Sampling for Suspended Solids

Greg DeGroot, John S. Gulliver
Report no. Mn/DOT 2010-38
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1462>
(1 MB) 37 pp.

The Interactions between E-Shopping and Store Shopping: A Case Study of the Twin Cities

Jason Cao, Frank Douma, Fay Cleaveland, Zhiyi Xu
Report no. CTS 10-12
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1420>
(1 MB) 67 pp.

Statistical Analysis of the Soil Chemical Survey Data

Sauptik Dhar, Vladimir Cherkassky
Report no. Mn/DOT 2010-22
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1386>
(5 MB) 202 pp.

Tank to Wheel Emissions of Ethanol and Biodiesel Powered Vehicles as Compared to Petroleum Alternatives

Christopher Tessum, Julian D. Marshall, Jason Hill
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1408>
(770 KB) 10 pp.

Traffic Flow and Road User Impacts of the Collapse of the I-35W Bridge over the Mississippi River

Shanjiang Zhu, David Levinson, Henry Liu, Kathleen Harder, Adam Danczyk
Report no. Mn/DOT 2010-21
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1494>
(28 MB) 210 pp.

Transitway Data Management Project

Jason C. Borah, William J. Craig
Report no. CTS 10-03
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1298>
(1 MB) 59 pp.

Research Summaries

Automated Enforcement of Red-Light Running and Speeding Laws in Minnesota: Bridging Technology and Public Policy

CTS Research Brief 2010-01
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1326>
(161 KB) 2 pp.

The Hiawatha Line: Impacts on Land Use and Residential Housing Value

CTS Research Brief 2009-02
<http://www.cts.umn.edu/Research/Featured/Transitways/documents/hiawatha.pdf>
(180 KB) 2 pp.

How Light-Rail Transit Improves Job Access for Low-Wage Workers

CTS Research Brief 2010-02
<http://www.cts.umn.edu/Research/Featured/Transitways/documents/lowincome.pdf>
(214 KB) 2 pp.

Impacts of the Hiawatha Light-Rail Line on Commercial & Industrial Property Values in Minneapolis

CTS Research Brief 2010-03
<http://www.cts.umn.edu/Research/Featured/Transitways/documents/property.pdf>
(149 KB) 2 pp.

Measuring What Matters: Access to Destinations

Report no. CTS 10-11
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1426>
(724 KB) 12 pp.

Annual Reports

2010 CTS Annual Report

<http://www.cts.umn.edu/Publications/AnnualReports/documents/CTS2010.pdf>
(2.7 MB PDF) 40 pp.

2010 ITS Institute Annual Report

<http://www.its.umn.edu/Publications/AnnualReport/2010/documents/ITS-AnnualReport-10.pdf>
(2.85 MB PDF) 56 pp.

Proceedings

Minnesota Pavement Conference Session Summaries

February 11, 2010, St. Paul, Minnesota
<http://www.terreroadalliance.org/publications/documents/2010PaveConSummary.pdf>
(818 KB PDF) 24 pp.

Personal Rapid Transit Workshop: A Summary Report

August 18, 2010, Minneapolis, Minnesota
<http://www.cts.umn.edu/Events/prt/2010/documents/proceedings.pdf>
(2650 KB PDF) 20 pp.

Cost Estimating and Cost Management Capacity Building Workshop

August 11 – 13, 2010, Minneapolis, Minnesota
<http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=1442>
(376 KB PDF) 29 pp.

14th Annual Freight and Logistics Symposium

December 3, 2010, Minneapolis, Minnesota
<http://www.cts.umn.edu/Events/FLOGSymposium/2010/documents/proceedings.pdf>
(400 KB PDF) 8 pp.

Newsletters

CTS publishes print and electronic newsletters covering many facets of transportation, including research, public policy, and engineering. Subscribe online at:
<http://www.cts.umn.edu/publications/newsletters>

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)

ITS Institute Update

Brief e-mail news update about research and educational activities at the Intelligent Transportation Systems Institute (periodic)

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 (periodic)

TAG-line

Newsletter for members of the Transportation Alumni Group (periodic)

Community Transportation E-News

Events and initiatives involving non-traditional transit and services (periodic)

Minnesota LTAP Hot Topics

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

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 inter-disciplinary papers on the interaction of transport and land use (three times/year) www.jtlu.org

Videos

CTS Transportation Seminar Series—Fall Semester 2010

Available for viewing online at www.cts.umn.edu/Events/ResearchSeminars/2010

September 9

"Intelligent Decision Support Systems Inside the Vehicle: Can They Help Drivers to Make Safer Driving Decisions?"

Caroline Hayes, Professor, Department of Mechanical Engineering, University of Minnesota

September 16

"Simulating Transportation for Realistic Engineering Education and Training"

Henry Liu, Assistant Professor, Civil Engineering, University of Minnesota

September 23

"A Causal Model of Traffic Crashes and Conflicts"

Gary Davis, Professor, Department of Civil Engineering, University of Minnesota

September 30

"Economic Impact of Airports and Update of Economic Impact Calculator"

William Gartner, Professor, Department of Applied Economics, University of Minnesota

October 7

"Vehicular Communications for Cooperative Safety Systems"

Luca Delgrossi, Senior Group Manager, Driver Assistance & Chassis, U.S. Mercedes-Benz Research & Development, North America, Inc.

October 14

"Itasca County Area Transportation Study"

Frank Douma, Research Fellow, Humphrey Institute of Public Affairs

October 21

"Avoiding the Matrix: How to Build Privacy into Intelligent Transportation Systems"

Dorothy Glancy, Professor of Law, Santa Clara Law

October 28

"Performance of Pervious Concrete Pavement in a Cold Weather Climate"

Lev Khazanovich, Associate Professor, Department of Civil Engineering, University of Minnesota

November 4

"Camera Networks for Security and Traffic Applications"

Nikolaos Papanikolopoulos, Professor, Department of Computer Science and Engineering, University of Minnesota

November 18

"Automation Mania in the Time of Reason: Considerations for Complex Transportation Problems"

Stephen Popkin, Director, Human Factors Research and System Applications Center of Innovation, Volpe Center, Research and Innovative Technology Administration (RITA), U.S. Department of Transportation

December 2

"Visualization and Assessment of Arterial Progression Quality Using High-Resolution Signal Event Data and Probe Vehicle Travel Time Data"

Darcy Bullock, Professor, Department of Civil Engineering, Purdue University

How to Obtain These Publications

This 2011 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 (Mn/DOT), 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

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