



## Coffee Shop Trip Generation Study

By Mike Spack, PE, NCITE President and Brian Bergquist, Traffic Data Inc.

Coffee shops are being built at a prodigious rate. Unfortunately for transportation professionals, there is limited trip generation data on coffee shops in ITE's *Trip Generation, 7<sup>th</sup> Edition*. There are two studies of coffee shops without drive-through windows and there is one study of a coffee/bread/sandwich shop with a drive-through window in *Trip Generation*. This lack of data makes it difficult for transportation professionals to confidently assess the traffic impacts of a proposed coffee shop.



The purpose of this article is to present the results of new trip generation data collected for coffee shops with and without drive-through windows. This data will help planners and engineers assess the traffic impacts of proposed coffee shops. It will also help them design appropriate driveways, drive-through lanes, and parking lots for the coffee shops.

### Trip Generation

Trip generation data was collected manually by undergraduates of the University of Minnesota's College of Civil Engineering for their senior design project. Morning and evening trip generation data was collected at four coffee shops with drive-through windows and four coffee shops without drive-through windows in the Minneapolis-St. Paul metropolitan area of Minnesota. Data collection was performed from 6:00 to 9:00 a.m. and 4:00 to 6:00 p.m. on typical weekdays in 2005. The data was collected in accordance with ITE's *Trip Generation User's Guide, 7<sup>th</sup> Edition* and *Trip Generation Handbook, 2<sup>nd</sup> Edition*.

The coffee shops with drive-through and sit down service range in size from 1,200 square feet to 1,900 square feet. The coffee shops with only sit down service range in size from 1,300 square feet to 2,800 square feet. Three of the coffee shops in this category are greater than 2,700 square feet. **Table 1** presents the trip generation rates for coffee shops with drive-through windows, and **Table 2** presents the trip generation data for coffee shops without drive-through windows. Also presented are the trip generation rates for the appropriate fast food service as published in ITE's *Trip Generation*. The peak hours of trip generation for the coffee shops occurred between 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.

### INSIDE THIS EDITION

Events Calendar.....	2
President's Message.....	3
Meetings and Events.....	4
An Honor to Introduce Edward Bather, Past NCITE President.....	5
Roundabouts.....	6
2006 Executive Board Election....	7-8
Committee Updates.....	9
Membership.....	11
Student Updates.....	11
NCITE Award Nominations.....	14

### JOB OPENINGS

Current job openings can be seen on the NCITE website at <http://www.nc-ite.org/jobs.html>.

continued on page 10

**NORTH CENTRAL SECTION OF THE INSTITUTE OF TRANSPORTATION ENGINEERS - 2005**

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<i>District 4 Director</i>	<b>Ken Voigt</b> , Traffic Associates, LLC 262.786.4176 khvoigt@earthlink.net

**EVENTS CALENDAR**

<i>October 25, 2005</i>	NCITE Section Breakfast Meeting
<i>November 10, 2005</i>	NCITE Board Meeting
<i>November 18, 2005</i>	NCITE Annual Meeting
<i>December 10, 2005</i>	NCITE Joint Board Meeting
<i>January 13, 2006</i>	NCITE Board Meeting
<i>January 25, 2006</i>	NCITE Section Lunch Meeting
<i>March 19-22, 2006</i>	ITE Technical Conference & Exhibit, San Antonio, Texas
<i>June 14-16, 2006</i>	ITE District 4 Meeting, Rochester, Minnesota

**TECHNICAL COMMITTEE**

<i>Traffic Signal</i>	<b>Bryant Ficek</b> , Bonestroo 651.636.4600 bficek@bonestroo.com
<i>Planning Methods &amp; Applications</i>	<b>Greg Gaides</b> , Parsons 612.370.2624 gregory.t.gaides@parsons.com
<i>Pedestrian and Traffic Safety Committee</i>	<b>Marc Culver</b> , City of Maple Grove 763.494.6364 mculver@ci.maple-grove.mn.us
<i>Geometric Design Committee</i>	<b>Chris Chromy</b> , Bolton & Menk 952.890.0509 chrisch@bolton-menk.com
<i>MCUTUCD</i>	<b>Wayne Sandberg</b> , Washington County 651.430.4339 sandberg@co.washington.mn.us

**STANDING COMMITTEES/POSITIONS**

<i>Outreach</i>	<b>Jeff Preston</b> , Bonestroo 651.636.4600 jpreston@bonestroo.com
<i>Career Guidance</i>	<b>Brent Paulsen</b> , TKDA 651.292.4602 paulsen.bd@tkda.com
<i>Professional Development</i>	<b>Sue Groth</b> , Mn/DOT 615.634.5269 sue.groth@dot.state.mn.us
<i>Student Activities</i>	<b>JoNette Kuhnau</b> , Howard R. Green Company 651.644.4389 jkuhnau@hrgreen.com
<i>PTOE</i>	<b>Steve Manhart</b> , Howard R. Green Company 651.644.4389 smanhart@hrgreen.com
<i>MN/MUTCD</i>	<b>Wayne Sandberg</b> , Washington County 651.430.4339 sandberg@co.washington.mn.us
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# PRESIDENT'S MESSAGE

by Mike Spack

My brother-in-law, Chris races vintage motorcycles in a national amateur circuit. Chris has been racing mid-1970's Yamaha road motorcycles for about ten years now. You probably wouldn't peg Chris as a racer if you met him at a party, but he is passionate about racing and he is quite good at it. He has been the national champ in his league several times, and has won his class five years in a row at Daytona's amateur races during Bike Week.

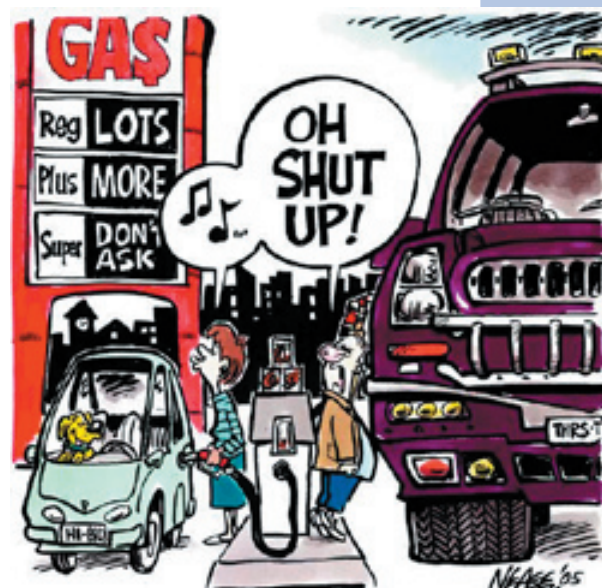
He has hit a major snag in his already expensive hobby; gasoline has become his biggest expense, and he doesn't know where it is going to plateau. He has a full size, 1975 Dodge van that he hauls his motorcycles in to tracks in Michigan, Alabama, Florida, Ohio, and Minnesota. Chris is a smart guy (honors program at the University of Minnesota's Institute of Technology and a computer programmer). Getting about 10 miles to the gallon wasn't a big deal when gas prices were hovering around a dollar a gallon, but now he needs to make a change or the price of gasoline could price him out of competition.

He is considering buying a Dodge Sprinter that has a Mercedes-Benz diesel engine in it that gets 30 miles to the gallon. These vehicles are used primarily as airport shuttles and by delivery companies like FedEx. Chris is working the numbers, but he thinks he'll have a payback from fuel cost savings on the Sprinter in about five years. Amazing, considering the \$40,000 price tag. He would love to buy a used one, but they aren't on the market. They have been wildly popular in Europe for about ten years, but Daimler-Chrysler started importing them about two years ago when gasoline prices started going up. They go 500,000 miles with just normal maintenance, so it will be a few years before they hit the used market.

People are starting to weigh the costs of transportation in how they live their lives. This, in turn, will have a large impact on the transportation planning and engineering we do. I imagine the following trends will gain momentum as gas prices increase: mass transit will gain ridership; sprawling developments on the fringe of our metropolitan areas won't be quite as appealing; and mixed-use, dense urban development will gain in popularity. Maybe some day we'll even see alternative modes of transportation like Personal Rapid Transit (PRT).



"People are starting to weigh the costs of transportation in how they live their lives."





# MEETINGS AND EVENTS

## September

This year's Fall Joint Event between NCITE, WTS and ITS MN included a presentation by Tom Brahms, CEO and Executive Director of the Institute of Transportation Engineers. Preceding the main presentation, Bernie Arseneau, Mn/DOT Director of Traffic, Safety and Operations, gave a brief update of Minnesota's progress on the Statewide Comprehensive Safety Plan and the Towards Zero Death initiative. Some of the results of these efforts include median barrier installation on some freeway segments and an upcoming safety project which will use \$3 million dollars for extra speed enforcement. Mr. Arseneau then introduced Mr. Tom Brahms.

**"How can a person walk away thinking they made a difference?"**

Mr. Brahms gave a very motivating presentation on Transportation Safety. His speech included some creative suggestions such as visiting hospital emergency rooms to understand what is truly at stake. He stressed several concepts that are important to ultimately making a difference in safety and mentioned some controversial or unique actions such as automatic speed enforcement, state owned auto insurance, signal timing issues, recurring training and revocation of licenses and getting the Center for Disease Control

involved in the solution. Mr. Brahms closed by saying that we as professionals need to "get a passion, get a commitment."



**Tom Brahms  
Memories of  
Canoeing in  
Minnesota**

## Summer Social

Imagine a hot day, 90 plus degrees, sunny and humid. Now imagine that day on top of a roof in downtown Minneapolis. On August 1<sup>st</sup>, 55 people from NCITE, WTS and ITS MN experienced this and had a blast doing it. This year's Joint Summer Social was held at Brit's Pub in downtown Minneapolis. The event included food and lawn bowling on the roof of Brit's. While the heat was stifling, the refreshments and bowling took the participants minds off the sweat. The event was a great success. The only problem is going to be meeting the increased expectations for next year!

## UPCOMING EVENTS

## October

Join us for our October breakfast meeting with presenter Terry Ward from Mn/DOT District 6. The session will include a discussion on the ROC 52 design build project in Rochester. Terry will give an update and lessons learned, focusing on traffic engineering through the design build process.

*Location:* South St. Paul Hotel & Conference Center, 701 South Concord Street, South St. Paul (I-494 & Concord)  
*Date:* Tuesday, October 25, 2005  
*Time:* 7:15 – 9:15 a.m.

The breakfast will be buffet style for \$15 (students \$5). For more information contact Jerry Kotzenmacher at [jerry.kotzenmacher@dot.state.mn.us](mailto:jerry.kotzenmacher@dot.state.mn.us) or 651.634.5463.

## Annual Meeting

Come and join your colleagues and friends for NCITE's annual meeting for a chance to "Win Big." This year's event will include a Casino theme, complete with blackjack, poker, WAR (you all remember that), and others. The invitations will be in the mail soon, but for now mark your calendars. The meeting will be held as follows:



*Location:* Bandana Square, 1021 Bandana Blvd, Suite 220, St. Paul, MN  
*Date:* Friday, November 18, 2005  
*Time:* 5 – 10 p.m.  
*Dress:* Business Casual



# AN HONOR TO INTRODUCE EDWARD BATHER, PAST NCITE PRESIDENT

## Personal Information

*Nickname:* Ed or Fast Eddie to close friends

*Current Residence:* Maple Grove, Minnesota

*Birthplace:* Sheldon, Iowa

*Family:* Wife – Neoma; Four Children – Ted, Pete, Anna, Sara; Ten Grandchildren

*Current Hobbies:* Tennis and Golf (Previously also skied and played handball)

*Favorite Motivational Phrase or Quote:* Don't Fritter the Day Away

*Favorite Book:* Lonesome Dove / WWII Books

## Work History

*Company or Agency:* Bather Ringrose Wolsfeld (BRW)

*Position:* President

*Years of Service with Company or Agency:* 15 years (1959 -1974)

*What did you like most about your job?* Growing to a multi-discipline firm and being the first local "traffic" consultant

*Company or Agency:* Bather Belrose Boje, Inc. (BBB)

*Position:* President

*Years of Service with Company or Agency:* 8 years (1980-1988)

*What did you like most about your job?* Working with talented and smart engineers and planners

*What did you like least about your job?* Having to lay people off

*Company or Agency:* Westwood Professional Services, Inc.

*Position:* President

*Years of Service with Company or Agency:* 5 years (1988-1993)

*What did you like most about your job?* Working

## Professional History

*College & Degree:* University of Minnesota BSCE

*Area of Professional Emphasis:* Traffic

*ITE Offices/Positions Held:* 4<sup>th</sup> President of NCITE and 1<sup>st</sup> District 4 Director

*Other Professional Organizations and Positions Held:* MN Professional Society of Professional Engineers, Minnesota Consulting Engineers, and American Society of Civil Engineers

*What is the project or accomplishment that you are the most proud?* City of Columbia Heights Traffic Report – First job as a Minnesota traffic consultant in 1960

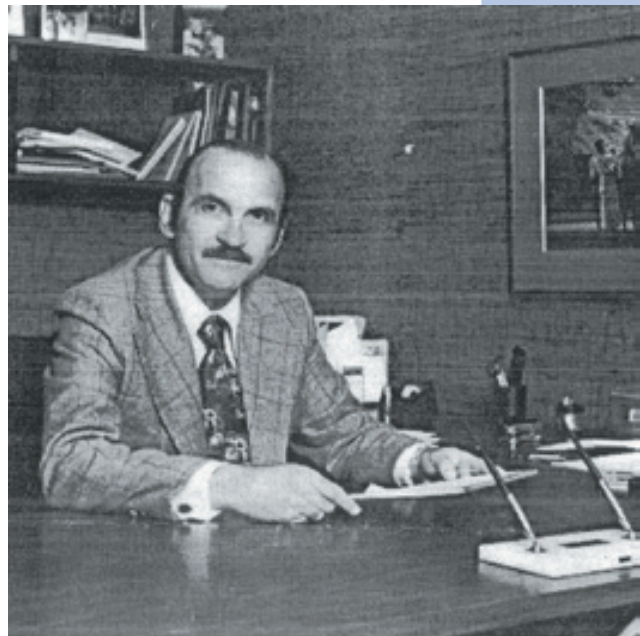
*What project do you wish you would have worked on?* I-35W and Crosstown

*What is the toughest career decision that you ever had to make?*

Retiring, so still working at Yorktown Office in real estate and building management

*Who is the professional that you respect the most in your field and why?* Deanne Wegner – Smart! Helped me get started in traffic. Matt Huber – Great educator and friend.

*What advice would you offer others in the industry?* Get involved in NCITE and National ITE



"Don't Fritter the Day Away."



# Roundabouts About Wisconsin

By Lynn Kiesow, PE, NCITE Newsletter Editor

The Wisconsin Department of Transportation (WisDOT) has been a promoter of roundabouts with 14 roundabouts constructed and three more in construction in the state. The most recent construction, with an anticipated completion date later this month, is just a short drive across the border in Hudson. The following article was taken from the WisDOT website.

## WIS 35/Hanley Road Roundabout

The Wisconsin Department of Transportation (WisDOT) is currently constructing modern roundabouts in St. Croix County where Hanley Road intersects with the WIS 35 exit and entrance ramps.



Road intersects with the WIS 35 exit and entrance ramps.

Traffic on WIS 35 north of the roundabout is projected at 24,600 vehicles in late 2005 and 48,950 in 2025. South of the roundabout, traffic is projected at 20,100 vehicles in late 2005 and 37,000 in 2025. Traffic projections on Hanley Road west of the roundabout are 6,750 in late 2005 and 20,300 in 2025. The projections are 2,850 east of the roundabout in late 2005 and 8,550 in 2025.

WisDOT determined an interchange with modern roundabouts at the WIS 35/Hanley Road intersection would best preserve the public's safety.

A modern roundabout's circular design directs all traffic in a one-way, counter-clockwise flow, allowing each motorist to turn onto his or her destination street with a simple right turn.



Roundabouts provide an orderly, safe, low-speed flow of intersecting traffic with less waiting time and fewer conflict points. Research shows that roundabouts reduce overall accidents 39 percent, accidents involving injuries 76 percent, and fatal crashes up to 90 percent.

Roundabouts have already improved dangerous intersections nationwide and around Wisconsin.

This cartoon was taken from the October 5, 2005 edition of the Woodbury Bulletin in regards to the new roundabout Washington County is proposing at Radio Drive/Bailey Road.



# NCITE EXECUTIVE BOARD ELECTION FOR 2006



Congratulations to the nominees for the 2006 NCITE Executive Board. In early November, all members and affiliates will be receiving your NCITE Board Election Ballot. The ballots can be submitted via mail or at the NCITE annual meeting on November 18, 2005.

The NCITE Executive Board is made up of a President, a Vice-President-President Elect, a Secretary/Vice-President Elect, a Treasurer, and three Member Directors. You will be required to vote for the Secretary/Vice-President Elect, a Treasurer, and three Member Directors. The other positions will be filled by the following members:

- **Past-President** – Mike Spack
- **President** – Carla Stueve
- **Vice-President** – Marc Culver

The bios of the members running for the Secretary/Vice-President Elect, the Treasurer, and Member Directors are shown below along with a photo.

## Secretary/VP Elect (Unopposed)



### **Wayne Sandberg, P.E., PTOE**

Wayne began his career in transportation with the Mn/DOT Metro District in Traffic Engineering and Studies. He continued with the City of Saint Paul as a Construction Inspector, then at Alliant Engineering as a Project Engineer. Wayne became the Washington County Traffic Engineer in 1999 and is now the Deputy Director / Assistant County Engineer focusing on the transportation related issues of this high growth county.

Wayne has been active in NCITE throughout his career. He has served as both the Co-Chair and Chair of the NCITE Traffic Signal Committee and has served two years on the NCITE Board both as a Director in 2004 and as the current Treasurer. Wayne has enjoyed serving the members of NCITE and looks forward to the possibility of continuing that service as Secretary. As Secretary, Wayne will continue to promote the benefits of membership through monthly

meetings and professional development.

## Treasurer (Vote for one)



### **Bryant Fieck, P.E., PTOE**

Bryant is a project manager for the traffic/transportation team at Bonestroo, Rosene, Anderlik, and Associates, Inc. where he enjoys working with cities, counties, and the Minnesota and Wisconsin DOTs. His primary projects focus on traffic studies and signal design. He has been a member of ITE throughout his career, and is currently serving as Chair of the NCITE Signal Committee.

A 1998 graduate of the University of Minnesota, he worked for two years with Benshoof and Associates, Inc before moving to Bonestroo. He received his P.E. in 2003 and his PTOE in 2004.

Bryant looks forward to continuing his involvement in NCITE through this position. As Treasurer, he will work to continue NCITE's tradition of success in membership development.



### **Randy Newton, P.E., PTOE**

Randy is the Traffic Engineer for the City of Eden Prairie. A registered Professional Engineer and certified Professional Traffic Operations Engineer, Randy has over 10 years of experience in traffic and transportation engineering. Prior to joining the City of Eden Prairie, Randy worked for both the Chicago and Minneapolis offices of BRW / Dames & Moore. Randy earned his Civil Engineering degree from Northwestern University in 1994.

Randy has been an active member of NCITE since 1998. He regularly attends NCITE Section Meetings and is a member of the Pedestrian and Traffic Safety Committee. Randy also serves on the Minnesota Committee on Uniform Traffic Control Devices. Randy served on the 2003 NCITE Board as a Director and would like the opportunity to further serve NCITE in the coming year as Treasurer.

NCITE has been a major part of Randy's growth as an engineer. As Treasurer he will work to maintain its fiscal stability and promote efforts to enhance the experiences NCITE provides its members.

# NCITE EXECUTIVE BOARD ELECTION FOR 2006



## Director (Vote for 3)



### **Lynn Kiesow, P.E.**

Lynn has been active in NCITE since 2001 when she moved to the Twin Cities. Lynn has served as the Newsletter Editor for the last year, working to provide more consistency and a better quality product. She previously served as co-chair of the Pedestrian and Traffic Safety Committee.

As a Senior Project Engineer at WSB & Associates, Lynn's resume includes transportation planning, travel demand modeling, traffic signal and signing design, construction traffic control and detour plans, traffic signal timing/operations, and simulation modeling. Previously, she spent four years at the Howard R. Green Company and three years in the public sector working for the Fargo-Moorhead Metropolitan Council of Governments and the City of Moorhead, MN. Lynn is a graduate of North Dakota State University in Fargo, ND.

The executive board has done a great job teaming with WTS and ITS MN over the last year in an effort to provide quality speakers. I would like to continue these relationships, while striving to find educating and interesting topics for both the section meetings and the newsletter.



### **JoNette Kuhnu, P.E.**

JoNette has been active in NCITE since 2002, and currently serves as the chairperson for the Student Activities Committee. In this role, she works with the ITE student chapters at the University of Minnesota and North Dakota State University to recruit new members, find speakers for their meetings, and encourage students to attend NCITE meetings. Each spring the committee presents the NCITE scholarship and paper awards to student applicants from the University of Minnesota, North Dakota State University, and South Dakota State University.

JoNette is a Project Engineer in the Transportation Services unit of Howard R. Green Company. Prior to joining HRG, she spent three years in the Traffic Engineering group at URS Corporation. Her experience has been in the areas of traffic operations, signal and lighting design, simulation, transportation planning, and travel demand modeling. JoNette has a B.S.

in Civil Engineering from Iowa State University in 2000 and an M.S. in Civil Engineering from The Pennsylvania State University in 2001. She would welcome the opportunity to serve NCITE as a Director.



### **Tom Peters, P.E.**

Tom is the Tort Claims and Traffic Standards Engineer in the Office of Traffic, Security and Operations with the Minnesota Department of Transportation. He also is the training coordinator for the office. He has previously worked in Regional Traffic Management Center, Transportation Operation and Communications Centers (TOCC) and Intelligent Transportation System programs over the past 8 years. He currently chairs the Minnesota MUTCD Committee and is a member of ITS Minnesota, Minnesota Surveyors and Engineers Society and the Minnesota Government Engineers Council. Prior to Mn/DOT, Tom worked for the Federal Highway Administration, Minnesota Division for 10 years and the U.S. Army Corps of Engineers for 4 years. Tom has been a member of ITE since 1999. Tom has a Bachelor's of Science in Civil Engineering from North Dakota State University. He would like to become a NCITE Director to better serve and help advance the

professional development of its members.



### **Jeff Preston, P.E.**

Jeff is currently a Project Engineer in Bonestroo, Rosene, Anderlik & Associates' Transportation Group. A licensed Professional Engineer, he has been with the group since 2001 working primarily in preliminary and final design. Jeff enjoys NCITE activities and has chaired the Outreach Committee since 2002. He looks forward to meeting more members, learning from new and interesting topics at Section meetings, and taking advantage of the great new experiences NCITE has to offer.

Prior to joining Bonestroo, Jeff spent four years with the City of Woodbury Engineering Division working on traffic-related issues and public improvement projects. He received a Bachelors Degree in Civil Engineering from Iowa State University in 1997.



### **Chad Smith, P.E.**

Chad began his career in transportation as a undergraduate research assistant at Iowa State University. Upon graduation in 1991 (B.S.C.E.), he continued transportation work with the JBM and Associates and Snyder and Associates. In 1998, he moved to an engineering position with the Iowa DOT. He has been Traffic and Transportation Engineer for the City of Bloomington since March, 2002. Prior to moving to Bloomington, Chad was a MOVITE director. He is currently a registered Professional Engineer in Minnesota and is a member of the Minnesota Committee on Uniform Traffic Control Devices. He is enrolled in the Public Administration Master's Degree program at Minnesota State University – Mankato.

# COMMITTEE UPDATES



## Geometric Design Committee

*Committee Chair:* Chris Chromy

*Contact Information:* [chrisch@bolton-menk.com](mailto:chrisch@bolton-menk.com)

*Recent Agenda Items:* Roundabouts, Left Turn Bypass Lanes, Michigan Left Turns, Free Right Turn Lanes, and Dual Right Turn Lanes, Roundabouts

*Future Agenda Items:* Review of 3rd International Symposium on Highway Geometric Design held June 26 - July 2, 2005 in Chicago, and Minnesota Bikeway Design Manual Review

*Next Meeting Date:* November 16, 2005, 8 a.m. -10 a.m.

*Next Meeting Location:* To Be Announced



## Pedestrian and Traffic Safety Committee

*Committee Chair:* Marc Culver

*Contact Information:* [mculver@ci.maple-grove.mn.us](mailto:mculver@ci.maple-grove.mn.us)

*Recent Agenda Items:* Pedestrian Crossing Warrants and Treatments

*Future Agenda Items:* Development of draft guidelines on when and where to install marked crosswalks, and provide suggestions on crosswalk treatments

*Next Meeting Date:* November 17, 2005, 8 a.m. -10 a.m.

*Next Meeting Location:* SEH Office



## Traffic Signal Committee

*Committee Chair:* Bryant Ficek

*Contact Information:* [bficek@bonestroo.com](mailto:bficek@bonestroo.com)

*Recent Agenda Items:* Types of signal detection, battery back-up systems and cabinet design, signal head placement, and Mn/DOT maintenance agreements with cities/counties and the potential need for changes or updates to reflect new realities, specifically with the introduction of LED signal heads

*Future Agenda Items:* Bus priority and bicycle detection/coordination

*Next Meeting Date:* November 2, 2005, 8 a.m. -10 a.m.

*Next Meeting Location:* Mn/DOT - Water's Edge



## Planning Methods & Applications

*Committee Chair:* Greg Gaides

*Contact Information:* [gregory.t.gaides@parsons.com](mailto:gregory.t.gaides@parsons.com)

*Recent Agenda Items:* Research comparison of household trip generation rates between the ITE Trip Generation Manual and local data collected from the 2000 Travel Behavior Inventory.

*Future Agenda Items:* Continue research and develop a report by early 2006. Review Mn/DOT's Travel Demand Forecasting Guidelines.

*Next Meeting Date:* November Meeting To Be Announced, 11:30 a.m. - 1:30 p.m.

*Next Meeting Location:* Parsons Transportation Group Office



# Coffee Shop Trip Generation Study

...continued from page 1

## Findings

- Coffee shops with drive-through windows have a significantly higher a.m. peak hour trip generation rate than fast food restaurants with drive-through windows as well as coffee shops without drive-through windows.
- The a.m. peak hour trip generation rates for coffee shops are two to four times larger than the p.m. peak hour trip generation rate.
- P.M. peak hour trip generation rates for coffee shops are similar to the trip generation rates for fast food restaurants, both with and without drive-through windows.
- ITE's *Trip Generation* a.m. and p.m. peak hour data for a coffee shop without a drive-through window is consistent with the data collected for this study.
- ITE's *Trip Generation* a.m. peak hour data for a coffee/bread/sandwich shop with a drive-through window is approximately 50% higher than the data collected for this study.
- ITE's *Trip Generation* p.m. peak hour data for a coffee/bread/sandwich shop with a drive-through window is consistent with the data collected for this study.

**Table 1. Trip Generation Rates for Coffee Shops with Drive-Through Windows<sup>a</sup>**

Facility		Morning Peak Hour Rate <sup>b</sup>			Afternoon Peak Hour Rate <sup>c</sup>		
Number	Size (sq ft)	In	Out	Total	In	Out	Total
1	1200	77.5	80.8	158.3	11.7	14.2	25.9
2	1900	80.5	78.9	159.4	17.9	16.3	34.2
3	1760	67.6	67.6	135.2	22.7	22.7	45.4
4	1840	34.8	35.3	70.1	15.8	15.8	31.6
<b>Average</b>	<b>1675</b>	<b>65.1</b>	<b>65.7</b>	<b>130.8</b>	<b>17.0</b>	<b>17.3</b>	<b>34.3</b>
<i>ITE Average Rates<sup>d</sup> for Fast Food with Drive-Through</i>		27.1	26.0	53.1	18.0	16.6	34.6
<i>ITE Average Rates<sup>d</sup> for Coffee/Bread/Sandwich Shop</i>		97.0	86.1	183.1	18.3	20.6	38.9

**Table 2. Trip Generation Rates for Coffee Shops without Drive-Through Windows<sup>a</sup>**

Facility		Morning Peak Hour Rate <sup>b</sup>			Afternoon Peak Hour Rate <sup>c</sup>		
Number	Size (sq ft)	In	Out	Total	In	Out	Total
1	1330	57.9	54.9	112.8	18.8	20.3	39.1
2	2730	25.3	24.5	49.8	13.2	13.2	26.4
3	2760	33.7	34.1	67.8	10.9	11.6	22.5
4	2800	27.9	24.6	52.5	9.3	8.9	18.2
<b>Average</b>	<b>2405</b>	<b>36.2</b>	<b>34.5</b>	<b>70.7</b>	<b>13.1</b>	<b>13.5</b>	<b>26.6</b>
<i>ITE Average Rates<sup>d</sup> for Fast Food without Drive-Through</i>		26.3	17.5	43.9	13.3	12.8	26.1
<i>ITE Average Rates<sup>d</sup> for Coffee Shop</i>		37.2	35.8	73.0	15.0	13.8	28.8

Notes:

<sup>a</sup> Trips per 1,000 sq ft of gross floor area.

<sup>b</sup> 6:00 a.m. - 9:00 a.m., occurred between 7:00 a.m. - 9:00 a.m.

<sup>c</sup> 4:00 p.m. - 6:00 p.m.

<sup>d</sup> From ITE *Trip Generation*, 7th Edition.

## Conclusions

The practice of using trip generation rates for fast food restaurants without a drive-through window will yield acceptable results when estimating trip generation for a coffee shop without a drive-through window. Using trip generation rates for fast food restaurants with a drive-through window will also yield acceptable results when estimating trip generation for a coffee shop with a drive-through window in the p.m. peak hour. However, it will not yield acceptable results when estimating trip generation for the a.m. peak hour. The a.m. peak hour trip generation rate for a coffee shop with a drive-through window is approximately 2.5 times higher than the a.m. peak hour trip generation rate for a fast food restaurant with a drive-through window.

Using the limited data in ITE's *Trip Generation* for either the coffee shop without a drive-through window or a coffee/bread/sandwich shop with a drive-through window will result in accurate forecasts except during the a.m. peak hour for a coffee shop with a drive-through window. The a.m. peak hour trip generation rate for a coffee/bread/sandwich shop with a drive-through window is approximately 50% higher than the trip generation rate of a coffee shop with a drive-through window.

### References:

1. Institute of Transportation Engineers. *Trip Generation*, 7<sup>th</sup> ed. Washington D.C.: ITE, 2003.
2. Institute of Transportation Engineers. *Trip Generation Handbook*, 2<sup>nd</sup> ed. Washington D.C.: ITE, 2004.

## Membership

*If you or a friend has changed jobs or moved, we would like to stay in touch. Members, please update your information by visiting <http://www.ite.org/directories/membersarea.asp>. You will need to know your membership number to access this area. The "username" is your membership number; and the "password" is the first 5 letters of your last name (e.g. Johnson=Johns). Non-members please contact Craig Rasmussen via phone 763.591.5442 or email [craig.rasmussen@hdrinc.com](mailto:craig.rasmussen@hdrinc.com). Please provide name, title, employer, complete street address (if Mn/DOT, also include mailstop), telephone/fax numbers and e-mail address.*

### Movin' & Shakin'

Brian Sorenson, Traffic / Transportation Engineer in Scott County, has recently joined NCITE.

Joe Gustafson of Scott County has recently joined NCITE. Joe is a Graduate Engineer.

WSB & Associates, Inc. was recognized on ZweigWhite's list of 100 fastest-growing A/E/P and environmental firms.

## Student Organizations

### North Dakota State University ITE

by Chris McKenzie, NDSU ITE President

---

The North Dakota State University chapter of ITE is doing very well this semester. We are averaging 25 people at our meetings which range from freshman to graduate students. We have also continued to have some very good speakers, including speakers from Kiewit Western out of Denver to talk about the \$1.67 Billion T-Rex Project that is wrapping up in Denver. We are planning on having the North Dakota DOT commissioner for our upcoming November meeting.

We also recently finished up a field trip to Duluth on October 13 & 14. It was a two day excursion that included Port Authority presentations, harbor tours, Lift Bridge tours and some time at the Lake Superior Railroad Museum. All of our activities provided us with a behind the scenes glimpse of the inner workings of how the Duluth transportation system operates as well as its history. Things went better than could have been expected and a good time was had by all.

Thanks to all of the people from Duluth for all of their help and excellent presentations! Congratulate all of the December graduates!

### Interdisciplinary Student Transportation Organization

by Nathan Aul, ITSO President

---

ITSO members returned to classes on September 6, and the 2005-2006 board members were elected on September 23. The new board includes: Nathan Aul, President; Norah Montes de Oca, Vice President; Tyler Patterson, Secretary; Xiaozheng He, Treasurer; and Phil Cici, Communications Director. The organization is going to continue to hold TransTalks once a month as well as to plan group tours at least once a semester. There will again be a student paper conference in the spring. NC-ITE is always encouraged to contact ITSO at [itso@umn.edu](mailto:itso@umn.edu) with ideas for speakers as well as possible student tours. Also, students enjoy attending NC-ITE events and appreciate the hospitality.

A new feature of ITSO this year is the posting of members' resumes on the website. This feature will be available in the coming weeks. Visit <http://www.tc.umn.edu/~itso> for links to these resumes as well as to view an events calendar and photos from past events. Again, the organization greatly appreciates NC-ITE's support in its activities.

### E-Learning

ITE offers affordable, convenient learning opportunities for transportation professionals that can be accessed from office or home computers. For a catalog of courses, visit [http://www.deakinprime.com/Clients/ITE/ITE\\_tool/index.html](http://www.deakinprime.com/Clients/ITE/ITE_tool/index.html).



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On behalf of NCITE, I am requesting nominations for the 2005 Past Presidents Award and the Young Transportation Professional of the Year Award.

The Past Presidents Award is given annually to an individual who, over the last year, has made outstanding contributions to NCITE, ITE and/or the transportation profession. Last year's recipient was Fred Dock of Iteris.

The Young Transportation Professional of the Year Award is given annually to an individual who has provided outstanding service to NCITE, ITE and/or the transportation profession over the last year. Nominees must be 35 or younger. Last year's recipient was Wayne Sandberg of Washington County.



Successful candidates may have shown extraordinary involvement in NCITE or ITE, authored an article or paper that is published by ITE, presented a paper at the District or International Level, conducted innovative research, completed a unique project, or otherwise contributed to the enhancement of the transportation field in our section.

Please submit nominations to Mike Spack at [mspark@trafficdatainc.com](mailto:mspark@trafficdatainc.com) or 952.926.0916 by Monday, October 31<sup>st</sup>. Winners will be announced at the Annual Meeting on Friday, November 18th.

Fall 2005



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