



### Waco Blends the Charm of History with the Latest Twists in Technology

By Emily Braswell, Editor

Whether you're walking across the Lake Brazos on a pedestrian bridge that was designed and built 135 years ago as a means of getting wagons and cattle across the Brazos River on the Chisholm Trail, taking advantage of Waco's Multimodal Transit Center that was just recently built, or looking over the designs for the new fixed weir dam that will replace the existing movable gate low water dam on the Brazos River, you get a clear sense of a City that knows where it has been and knows where it is going.



Waco's historic suspension bridge is 135 years old.

**Rick Charlton**, long-time TexITE member, has been with the City of Waco for twenty-nine years and serves as the Traffic Program Manager over the traffic operations division of the Public Works Department. He oversees some two dozen staff members who keep the City moving and who are as innovative as they are dedicated.

The Traffic Operations Division is responsible for street lighting, signal design and operations, signs and markings, public safety radio system, special events coordination and development review that includes input on zone change requests, subdivision plats, site plans and the review of traffic impact analyses.

**Norman Hogue, E.I.T.**, is a graduate engineer at the City and has had the opportunity to turn his hand to almost every aspect of traffic operations since he joined the City in January 2003. Since he joined the staff barely two years ago, he has done signal design and now reviews the signal designs done by the traffic analysts. He serves on the special events committee, the safety committee and is currently serving as the interim supervisor over the signs and markings section. He's had the opportunity to do some site plan review and to review some traffic impact analyses. When asked which part he likes best, he says it is the ability to solve problems before they get started and are out on the street.

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### SuperTech David Dokupil Makes His Mark

By Emily Braswell, Editor

SuperTech **David Dokupil** makes his mark in traffic operations with a spread spectrum wireless system that replaces the former dialup modems and hardwire interconnects.

When it came time for the City of Waco to replace the old copper wire system for controlling signals, the problem was replacing the old wire without trenching new conduit, which would have been impossible in the historic CBD area.

Old technology used copper wire, coaxial or fiber optic cable that had to be buried or hung overhead to connect each traffic signal controller to configure a

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# Message from the International Director

By Jim Carvell

I attended the Fall ITE Board of Direction Meeting in Washington D.C. November 5-7. The Board is made up of representatives from each of the ten ITE Districts and the current international officers: President **Steve Hofener**; Vice President **Tim Harbst**; and Immediate Past President, **Jack Freeman**. In addition, the candidates for International Vice President for the coming year also attend so that they can stay current and can be more effective if he/she is elected. The Board meets three times year: (1) just prior to the Annual Meeting; (2) the last week in November; and (3) just prior to the Annual Spring Technical Conference. ITE members are always welcome to attend.

Highlights of the meeting include:

- The Board approved a request from the TexITE Board that the District 9 Charter be amended to clearly state the District is a non-profit organization and thus not subject to federal income tax. (On a separate issue, District Administrator **Jim Williams** is working to get TexITE declared exempt from state sales tax.)
- The Board approved the formation of a Northern Mexico (Monterrey) section. The organizational meeting was held during the "Intersection Traffic Control Seminar" in Monterrey in November with 20 potential members in attendance. This offers a great opportunity for TexITE to reach out through our South Texas Section and involve this new section in our District activities.
- This year was the first time ITE International voting electronically was an option for ITE elections. Overall savings in printing and postage was in excess of \$10,000 but voting participation was down somewhat. ITE staff is currently evaluating the process to determine why voting was down.
- The number of Student Chapters continues to grow. Plans for a chapter at the University of Pittsburgh were put on hold when the University dropped its transportation courses. This was seen as a wakeup call to all members to stay in touch with their own alma maters to assist in keeping transportation education alive and well.
- ITE has been certified as an Authorized Provider for the International Association for Continuing Education and Training.
- I received many compliments on our 50<sup>th</sup> Anniversary DVD and CD which I furnished to each Board member. Just a reminder, ITE will celebrate its 75<sup>th</sup> Anniversary in 2005. We will incorporate some of that celebration into our district meetings.

## International Officer Nominations

I serve on the ITE international officer nominating committee. We interviewed four candidates and I consider myself a friend of each, making the decision particularly difficult. I am pleased to report we have selected two excellent candidates for International Vice President/President Elect for 2006. I have served on the Board with each of these candidates and am sure either one will do an excellent job.

- **Earl Newman**, Assistant Director of Public Works and city traffic engineer for Springfield, Missouri
- **Alfred Guebert**, Principal Engineer-ITS, Earth Tech Canada, Inc., Manitoba, Canada.

Both candidates plan on attending the TexITE Winter meeting in Waco. Make sure you meet each of them and give them a good Texas welcome.

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# President's Message

By John Friebele

Way back in 1978, my close friend, former boss and partner, **Hal Jones**, made it the theme of his TexITE Presidency to maximize involvement of the membership in TexITE and he successfully attained significantly increased involvement to the betterment of TexITE. My tenure hasn't been as noble in intent and result but, what the hey, didn't we have a great party in Austin?

I'd like to take this last opportunity as President of TexITE to echo Hal's theme of 1978 and urge cajole and possibly even force some folks to be more involved in our professional organization. The reward as your career advances, I promise, is worth the effort. Opportunities abound in both TexITE and ITE in a number of areas that certainly fit your interests.

ITE has eleven councils that are currently available for individual membership and these can be reviewed at [www.ite.org/councils/index.asp](http://www.ite.org/councils/index.asp). The Transportation Consultant's Council is available for company membership. There are at least 311 council positions occupied by less than 300 individuals (because of multiple council memberships). This is less than one-half of our eligible membership. Get with it, folks. If you are an ITE member, you may join as many Councils in which you have an interest. Simply indicate the Council(s) you wish to join on your ITE dues form and mail it along with the Council dues payment(s) to ITE Headquarters.

TexITE and the six Sections within District 9 also have plenty of opportunities for involvement. There are several committees of the District that need active participation and even a chairperson or two. The Technical Committee of TexITE has lately been fairly dormant but this needs to change and offer our membership and ITE the fruits of current knowledge and practice. There are a number of opportunities for

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Three traffic analysts help Norman and Rick keep transportation operations smooth in the City of Waco. **Roy Ware** joined the City in the mid '90's and worked as a signal tech prior to becoming a traffic analyst. He is responsible for the street lighting program and manages the GIS Inventory for the City's traffic applications. He also manages the Polaris crash database which is the successor to Tracer. **Jeremy Hendrix** joined the staff in November 2001 and specializes in AutoCad, travel time studies, signal timing, signal design, Synchro, SimTraffic, and Passer V and serves as lead analyst for the school safety program. **Kimberly Brown** joined the staff just this last month and will be working in more areas once she gets her feet on the ground. **Eileen McCoy** is customer service representative for both Traffic and Engineering and provides secretarial services to both as well. Of course, everyone responds to citizens' traffic requests and concerns.

Because Waco is a city that is growing and developing as well as redeveloping, the transportation issues that Rick and his staff deal with are complex and varied. When he and one of his staff members were asked independently what was the best part of the job, they each answered, "You never know what kind of interesting challenge will pop up next."

Exciting developments are occurring northwest of town out toward China Spring and FM 185; southwest of town in newly annexed areas and Waco's ETJ along US 84; and out between Hewitt and Woodway. The Lake Air Mall on Bosque



*Waco Transit Center, home of Greyhound, Taxi's and McDonald Transit Service.*

Boulevard has been razed and is being rebuilt with new stores as a shopping center without a mall. At the same time, the Central Texas Marketplace, a new 103.2-acre shopping center, is being built on the northwest quadrant of the interchange of SH 6 and IH 35. This has spurred proposals for two other new commercial developments on the other quadrants of the interchange, Legends Crossing on the southwest (158 acres), and

Thanksgiving Park on the northeast (444 acres) are currently in the planning stages.

Waco has a tax increment-financing district that has already spurred development along Restaurant Row in downtown just off Franklin between University Parks and 3<sup>rd</sup> Street. In the CBD, you can see newly created loft apartments for rent and old warehouses under renovation and some just waiting to be bought and brought into the 21<sup>st</sup> century with clever adaptive re-use.

Rick gives much of the credit for the City's bustling well being to the council, to **Larry Groth, P.E.**, who is the current City Manager, and to his boss, **Joe Mayfield, P.E.**, Director of Public Works. Rick recalls that when he left school at Texas A&M in the early seventies he wanted to be part of a team that made a difference. When he talks about Larry Groth and Joe Mayfield, it is clear that he believes in what they are doing and that what they are doing is always measured by the standard: "Is it good for Waco?" When asked what gets him up every morning, he paused for a moment and said, "Making a difference, being part of a team and making a difference."

It's clear that he does. Congratulations to Rick and his staff and thanks in advance for hosting us in Waco for the TexITE Winter meeting, February 3, 2005.

coordinated system. The old method was very costly, a maintenance nightmare and very limited on the number of signals that could be grouped. Of course, a new wireless system was costly, but plenty of Waco ingenuity and a flexible approach won out.

Spread spectrum radio modems are used to pass data (communicate) from a central computer and server system to each traffic signal controller. The system is a form of wireless communication using radio modems where the frequencies used continuously change. There is not a set frequency for the radio modems and spread spectrum radios do not require site licensing, as do the fixed frequency radios. All of this made it easier and faster to install and it was possible to use the existing 900 MHz system to create the system.

When asked about his part in building and maintaining the new system, David said that he was responsible for the area mapping, the testing and setup for the system, and the on-going programming. City of Waco staff has done the installation of all the coaxial cable and antennas and the staff is still installing more spread spectrum radios and will possibly have the whole City completed next year.

"I like the technical challenges that arise day to day. The traffic signal business has changed quite a bit since I started and continues to change everyday. I also like the indoor/outdoor work atmosphere. It never gets boring."

David who grew up in West, Texas (the town not the region) has been with the City of Waco for 21 years. He and his wife **Leigh Ann** have two children—**Brady** (age 10) and **Bria** (age 7).

*Note: The Editor sincerely thanks David Dokupil, Rick Charlton, and Norman Hogue for providing input and information for these articles.*

# Section News & Activities

## Brazos Valley Section

The BV Section has had a good fall thus far. We have had two meetings since the end of summer: September 30 and October 28. For the September meeting, **Katherine Holtz** spoke to the Section about the QUANTM software package and its potential uses in the I-69 Corridor project. QUANTM is designed to aid engineers and planners during design and construction of new projects by projecting and/or calculating critical variables for earthwork, relocation, construction costs, environmental concerns, and time of completion. There were 26 people in attendance for the September meeting.

For the October meeting, we were pleased to have **John Friebele** speak to the Section about opportunities within ITE and TexITE. John discussed the advantages of being a member at each level of ITE, and described the various ITE committees and councils that are looking for new members. Eighteen people were in attendance.

The Section's annual business meeting was held on December 2. The agenda included officer elections for 2005 and proposed changes to the Section's By-Laws to be voted on next spring. We also began our 2005 membership drive at this meeting.

## Capital Area Section

The TexITE Capital Area Section Meeting on October 1 was held at the Chevy Chase offices for the Trans-Texas Corridor Project. Our speaker was **Ed Pensock**, the Director of Corridor Planning and Development with the TxDOT Turnpike Division. Ed discussed the Trans-Texas Corridor (TTC-35) Planning Project. He explained that the identified corridor from Oklahoma south to Mexico is going through the environmental

planning and public involvement phase with a Final Environmental Impact Statement anticipated in late 2005. As of October 2004, the Preliminary Corridor Alternatives are being identified and Public Involvement is ongoing. He explained that this project is being developed to meet the state's future transportation needs by providing faster, safer movement of people and goods, relieving congested roadways, providing alternative routes for hazardous materials, expanding economic growth and developing new markets and jobs. Ed discussed the purchase of ROW options created in HB3588 and the use of utilities within the corridor. Ed closed out his discussion by opening the floor to questions concerning the TTC-35 Project and other ongoing projects like the I-69 Corridor Project.

The TexITE Capital Area Section Annual Business Meeting was held on Friday, December 3, 2004. The business meeting consisted of election of officers for the next year and discussion on the direction for the Section over the next year.

## Greater Houston Section

The TexITE Houston Section's Annual Shrimp Boil was held on Saturday, October 9 at Bear Creek Park.

The **November** meeting was held on Monday, November 8, 2004. **David Saperstein**, chair of the Mayor's Office on Mobility, spoke on the City of Houston's initiatives for removing traffic bottlenecks which impede the flow of traffic and improving traffic management systems.

The Section's **December** business meeting was held on Wednesday, December 8, 2004. Agenda items included matters related to membership, officers, and next years agendas and programs.

# People News

## Brazos Valley Section

**Roelof Engelbrecht** passed away November 16, 2004, at the age of 38 after a long and courageous battle with cancer. Roelof, a native of South Africa, was a researcher with the Texas Transportation Institute in College Station, Texas. He was the 2003 winner of the ITE Traffic Engineering Council Best Paper Award. The Section's thoughts and prayers go to Roelof's wife, Loela, and to their families. He will be deeply missed.

## Capital Area Section

**Isam Bandak, PE** is now with **PBS&J** and you can contact him at [izbandak@pbsj.com](mailto:izbandak@pbsj.com). His phone number is (512) 327-6840 and fax number is (512) 327-2453.

**Joe Savage, P.E.** is now the Associate-In-Charge for the Austin office of **Wilbur Smith Associates**. Also, Wilbur Smith has moved offices within the same building.

## Greater Dallas Section

Please join **Dave Carter** and his wife, **Chelle**, in celebrating the birth of their 4th child, **Clyde Latham Carter**. Clyde was born on July 16th and shares his first name with Dave's father.

## Greater Houston Section

**Michelle Jozwiak** and **Shafee Yusuf**, both of **RS&H**, passed the Professional Engineer examination in October and are now licensed Professional Engineers. Congratulations!

Congratulations to **Dave Wright III** of **Binkley & Barfield, Inc.**, who also passed the Professional Engineer examination in October!



## ROUNDBABOUTS: AN INFORMATIONAL GUIDE

*Reprinted from FHWA-RD-00-068, "Roundabouts: An Informational Guide." Federal Highway Administration*

Although roundabouts have been in widespread use in other countries for a number of years, it is only during the past few years that their application in the United States has received increased attention by both the public and transportation professionals. A lack of sufficient information on roundabout operation and design under local U.S. conditions is one of the reasons why these roundabout intersections have seen only sporadic implementation. This national guide bridges this gap by providing a comprehensive source of information on modern roundabouts, from small mini-roundabouts to large freeway interchange roundabouts.

To make the information widely accessible, the guide has been structured and written to address the needs of a wide range of readers, including the general public, policy-makers, transportation planners, operations and safety analysts, and conceptual and detailed designers. Not only does the guide provide general information and planning-level analysis techniques, but it also includes evaluation procedures for assessing operational and safety performance, as well as design guidelines. Input from transportation practitioners and researchers from around the world was used in developing the guide. This book covers the needs of all travel modes and provides design guidance for incorporating these needs into final plans.

### SAFETY AND OPERATIONAL BENEFITS

Many international studies have found that one of the most significant benefits of a roundabout installation is the improvement in overall safety performance. Specifically, in the United States, it has been found that single-lane roundabouts operate more safely than two-way stop-controlled intersections. The frequency of crashes might not always be lower at roundabouts, but the injury rates are reduced. Pedestrians and bicyclists require specific design treatments to improve their safety.

On a planning level, it can be assumed that roundabouts will provide higher capacity and lower delays than all-way stop control, but less than two-way stop control if the minor movements are not experiencing operational problems. A single-lane roundabout may be assumed to operate within its capacity at any intersection that does not exceed the peak-hour volume warranted for signals. A roundabout that operates within its capacity will generally produce lower delays than a signalized intersection operating with the same traffic volumes and right-of-way

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## Waco Traffic Circle

Waco is home to one of the oldest traffic circles in continuous operation in Texas. The Traffic Circle is located just east of I-35 off Loop 396 near the Health Camp. TxDOT has maintained and operated it since before 1932. According to **Ken Roberts**, the Waco District Public Information Officer, TxDOT has schematics dating back to 1932, but that it had already been built by that time.



*Waco Traffic Circle (Circa 1935)*



*Waco Traffic Circle (Circa 1954)*



*Waco Traffic Circle (Landscape Dedication—November 20, 1995)*

## **TxDOT Waco District: Urban, Suburban, Rural & Military Transportation Issues along IH 35**

*By Emily Braswell, Editor*

The IH 35 corridor is a complex “Mother Road” that includes all the challenges of urban, suburban, rural and military transport. The current IH 35 project is an endeavor to increase the capacity and enhance the safety of IH 35 through the Waco District, which impacts Bell, Falls, McLennan, and Hill counties. The project is about 94 miles long and begins at the Bell/Williamson County line and runs to the IH 35 E/W split in Hill County.

Most of IH 35 in the Waco District was built on the old Hwy 2 route of 1917 and the US 81 route of the 1930’s. When IH 35 was built in the late 1950’s to early 1960’s, old US 81 served as one of the existing frontage roads with IH 35 paralleling old US 81 for most of the 94 miles. In fact, most of the pavement, ramps, bridges, and hydraulic structures are from the late 1950 and 1960 vintage (some slip ramps are still being used today in the more rural areas), with existing ROW widths being 350’ or less in most areas (compared to the 400 to 450’ minimum widths seen in adjacent counties).

Existing IH 35 is being renovated through reconstruction and/or rehabilitation to improve upon the outdated and deteriorating structure. The improvements include but are not limited to pavement, bridges, horizontal and vertical curvature, and traffic operations (one-way frontage roads, x-configuration ramp placement in most areas, and diamond interchanges where some trumpet intersections are currently). The IH 35 renovation involves expanding from 4 lanes (2 each direction) to 6 lanes with the additional lane being considered for use as a managed lane (toll/HOT/truck/etc.). Presently, toll studies are underway, as well as schematics in all areas.

Prior to its inception, IH 35 had been developed with completed schematics for almost all 94 miles. One section in the Hillsboro area had completed the public process and was heading for construction (it is actually under construction presently, but is being re-visited due to the toll/managed lane issue). TxDOT’s **David Neuman** stated, “The development of toll/managed lanes, especially in terms of 100% electronically performed, are proving both very interesting as well as challenging,” (see the “Managed Lanes” article for more information).

Key projects along IH 35 that have been completed include:

- Reconstruction of IH 35 at the E/W split in Hillsboro, Hill County. Final product is an 8-lane section. Presently under construction, and is being re-looked at for toll/managed lane issue. ~\$50 million.
- Reconstruction of IH 35 at LP 340/SH 6 in Waco, McLennan County. Reconstruct interchange. Project let for construction in August 2004. ~\$40 million.

Key projects going on at this time include:

- IH 35 from Salado to Williamson county line. Reconstruct to 6 lanes. Scheduled for letting July 2005. ~\$55 million.
- IH 35 at S. LP 363 in Temple. Reconstruct interchange. Presently under PS&E development, scheduled for letting August 2005. ~\$44 million.
- IH 35 from FM 310 to FM 286 in Hill County (Hillsboro). Presently under PS&E development, scheduled for letting in August 2005. ~\$40 million.
- IH 35 from FM 2063 to LP 340, McLennan County. Reconstruct to 6 lanes. Scheduled for letting January 2006. ~\$55 million.

When asked about the biggest challenge and greatest reward of his job, David said that the biggest challenge in any complex transportation system is trying to design a highway system (IH 35) and explain the concepts being developed to the public in a rapidly changing environment. He went on to say that when it works, it is really rewarding:

“Being able to produce a design that incorporates features that do what they are intended (improve safety, mobility, etc.) provide a communication link to the public that generates a cooperative understanding and input, and then seeing that design get built and operate. Once completed and seeing the final product in operation is always a thrill.”

*Note: The editor would like to thank **David Neuman** for providing input and information for this article.*

### **Managed Lanes**

*By Beverly Kuhn and Ginger Goodin*

Like other transportation agencies nationwide, the Texas Department of Transportation is looking to the managed lane operational approach to offer peak period free-flow travel to certain user groups, which might be high occupancy vehicles (HOV), trucks, toll-paying vehicles, transit, low-emitting vehicles, or some combination of these and other groups. However, little is known about the complexities of designing a practical, flexible, safe, and efficient facility that may have multiple operating strategies throughout the course of a day, week, year, or beyond.

Working in support of the research sponsors, TxDOT and the Federal Highway Administration, the Texas Transportation Institute (TTI), assisted by Texas Southern University, is investigating the

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Traffic Services  
City of Waco  
P. O. Box 2570  
Waco, Texas 76702-2570  
254/750-6634  
Fax: 254/750-6641  
E-mail: ricke@ci.waco.tx.us

Dear TexITE Member:

Please make your plans now to attend the Winter 2005 TexITE Meeting at the Hilton Hotel / Waco Convention Center, February 3-5, 2005. We have a great meeting planned, and are eager to have you join us. Connie Clark has assembled outstanding dual track technical sessions for the meeting.

The Hilton Hotel has blocked rooms for us at \$80 single, and \$110 double occupancy. These rates are available only until **January 3, 2005**, so place your reservation today. Simply call **Hilton Worldwide Reservations at 800-445-8667 or the Waco Hilton Hotel at 800-234-5244**, and be sure to indicate that your reservation is for the *TexITE Conference*.

Two technical tours will start things off Thursday. You can choose to tour the Waco Transit Multimodal Terminal with its adjacent Maintenance Facility, or visit the TTI Detection Control System test site traffic signal. Of course, if you'd rather, you can compete in the golf tournament at Cottonwood Creek Golf Course. The Highway Products Group will have all the latest traffic products available for you to look over at their reception in the Hilton meeting rooms Thursday night and Friday morning.

Bring the family along to enjoy the many fun and exciting things for them to do at the Cameron Park Zoo, Mayborn Museum, Texas Ranger Museum, and Dr Pepper Museum. Our Friday night social will be held at the Texas Sports Hall of Fame, where we will be able to visit among the displays of Texas' sports greats. Bus transportation will be available.

We look forward to your visit, so please register early. Early registrants (by January 14) not only receive a significant savings, but also are eligible for the drawing at the kickoff luncheon. We hope you will register on-line at [www.texite.org](http://www.texite.org), but you can also mail your completed registration and payment to the address on the form.

I look forward to seeing you at the meeting in Waco!

Sincerely,

**Rick Charlton**  
Local Arrangements Chair

Make your room reservations  
at the Waco Hilton Hotel  
**Before January 3, 2005**  
Hilton Worldwide Reservations  
800-445-8667 or  
Waco Hilton Hotel  
800-234-5244  
Specify *TexITE Conference*  
when booking reservations.



2005 Winter Meeting  
Hilton Hotel / Waco Convention Center  
Waco, TX.  
February 3-5, 2005

## REGISTRATION FORM

Mail Form and Payment to:

Eileen McCoy  
City of Waco Traffic  
P. O. Box 2570  
Waco, TX. 76702

If you have any questions  
please call Eileen McCoy at  
(254) 750-6634

### Registrant:

Name:

Address:

Name for Badge:

Phone:

Fax:

Email:

Organization:

Spouse name:

Vegetarian Meal: ☐ yes ☐ no

### Meeting Registration:

Meeting registrations include: Technical Sessions, Kickoff Luncheon, Friday Night Social, and Business Luncheon. All early registration entries will be eligible for a drawing at the Kickoff Luncheon in addition to the lower registration amount.

	Cost:	Qty:		Ext. Cost:
TexITE Member – Early Registration (by January 14, 2005)	\$100.00	X	=	\$
Nonmembers or Late Registration (after January 14, 2005)	\$140.00	X	=	\$
Student	\$20.00	X	=	\$
Vendor (name badge only)	\$15.00	X	=	\$

### Additional Meal Tickets:

	Cost:	Qty:		Ext. Cost:
Friday Kickoff Luncheon	\$20.00	X	=	\$
Friday Night Social	\$25.00	X	=	\$
Saturday Business Luncheon	\$20.00	X	=	\$

### Golf Tournament:

	Cost:	Qty:		Ext. Cost:
Golf Tournament (lunch provided) To be held at Cottonwood Creek Golf Course	\$60.00	X	=	\$

### Technical Tours:

	Cost:	Qty:		Ext. Cost:
Waco Transit Multimodal Terminal & Maintenance Facility (transportation from hotel provided).	Free	X	=	\$
TTI Detection Control System Test Site (transportation from hotel provided).	Free	X	=	\$

### Total:

\$

Please make checks payable to TexITE

Go to the TexITE website <http://www.texite.org> for on-line registration (preferred)

Late registration does not guarantee meal availability – register early!



## Winter 2005 TexITE Meeting Meeting Schedule

### Thursday, February 3

10:00 am – 2:00 pm	Golf Tournament, Cottonwood Creek Golf Course
1:00 pm – 4:00 pm	Technical Tours, Buses leave at 1:15 pm <ul style="list-style-type: none"> <li>• Waco Transit</li> <li>• TTI D-CS Test Site</li> </ul>
4:00 pm – 6:00 pm	Executive Board Meeting
6:00 pm – 8:00 pm	Highway Products Group Reception

### Friday, February 4

8:00 am – 10:00 am	Committee Meetings
8:00 am – Noon	Highway Products Group Display
10:00 am – 11:30 am	Future Engineers Contest Judging
10:00 am – Noon	Executive Board Meeting (if necessary)
Noon – 1:30 pm	Kickoff Luncheon
2:00 pm – 5:00 pm	Technical Sessions
6:00 pm – 9:00 pm	Friday Night Social – Texas Sports Hall of Fame

### Saturday, February 5

8:30 am – Noon	Technical Program (Student Presentations and Technical Sessions)
Noon – 2:30 pm	Business Luncheon

## Winter 2005 TexITE Meeting Technical Sessions

### Session I. Safety Tools for Traffic Engineering

- Speaker: John Mounce, Ph.D., P.E., Center Director, Center for Transportation Safety, TTI
- Crash Records Information System. Speakers: Catherine Cioffi, CRIS Project Manager; Carol Rawson, P.E., Traffic Engineering Division, TxDOT

### Session II. Designing and Operating Safe Intersections

Sponsored by the ITE Traffic Engineering Council. Moderator: Beverly T. Kuhn, PhD., PE, TTI

- Urban Intersection Design Guide. Kay Fitzpatrick, PhD., PE, TTI
- Resources Available on Urban Intersection Safety. Gary Thomas, Ph.D., P.E.
- Right-Turns on Red. James C. Cline, Jr., P.E.

### Session III. Roadway Economics - Traffic and Toll Road Revenue Modeling

- Mark Burris, PhD., PE, Texas A&M University
- Bill Stockton, PE, TTI
- Jianling Li, PhD., University of Texas at Arlington

### Session IV. Special Projects

- Predicting Bike and Pedestrian Demand - A Practical Model. Randy Schulze, Walter P. Moore, Inc.

### Session V. Traffic Engineers and Their Best Ethics

Moderator, Robert Wunderlich, P.E.

## Winter 2005 TexITE Meeting Technical Tours

### Technical Tour 1: Intermodal Bus Transfer Terminal and the Maintenance and Administration Facility.

Waco Transit's new Maintenance and Administration facility is a 5.6 million dollar project under construction across from the current Intermodal Bus Transfer Terminal. The primary benefit of the new facility will be the necessary room for future expansion of service. The maintenance portion of the facility features six pull through bays for bus maintenance. The layout of the new facility, fueling island, and wash bays will greatly reduce post service operations for the next day. The proximity of the facility to the Intermodal Bus Transfer Terminal will allow immediate response to mechanical road calls and allow for quick vehicle line changes. The administration side of the building will contain the necessary professional space for the office staff along with other support areas for operator preparation, training, and recreation. The combination of these two facilities will provide Waco Transit with the necessary foundation to provide effective and efficient public transportation well into the future.

### Technical Tour 2: TTI D-CS (Detection-Control System) Test Site.

D-CS is similar to a multiple advance detector system in that it uses information from detectors located upstream from the intersection to extend the green. However, it differs from the traditional multiple advance detector system because it employs an external computer to process vehicle speed and length information to predict the best time to end the major-road through phase. This prediction is continuously evaluated and updated in real time. It is based on the number of vehicles in the dilemma zone in the immediate future as well as the number of minor movements waiting for service. D-CS attempts to identify when: (1) the fewest passenger cars will be in the dilemma zone, and (2) no heavy vehicles will be in the dilemma zone while weighting these considerations by the delay to vehicles in conflicting phases. D-CS uses two detectors in each major road traffic lane (in a speed trap configuration). These detectors are located 800 to 1000 ft upstream of the intersection on both of the high-speed approaches.

D-CS consists of a speed trap monitored by detector amplifiers that are, in turn, monitored by an industrial computer. This computer uses the detector output to compute vehicle speed and length. It then uses these data to determine the best time to end the phase based on consideration of the number and type of vehicles on the major-road approach to the intersection as well as the length of time minor movements have been waiting for service. When the best time to end the phase is identified, D-CS communicates its decision to the signal controller using its external Ring Force Off and Phase Hold inputs.

The functional objectives of D-CS are to safely and efficiently control the high-speed approaches to the intersection. Safety is measured in terms of D-CS's ability to reduce crashes related to phase termination (e.g., right-angle and rear-end). Efficiency is measured in terms of D-CS's ability to minimize delay to all traffic movements.

limitations.

## **WHEN TO RECOMMEND ROUNDAOBOUTS: PLANNING ANALYSIS**

Roundabouts can be considered for a variety of reasons. The roundabout guide describes categories for selection that range from community enhancement and traffic calming, to safety improvements and operational benefits. The maximum daily service volume of a single-lane roundabout varies between 20,000 and 26,000 vehicles per day, depending on the left-turn percentages and the distribution of traffic between the major and minor roads. A double-lane roundabout may service 40,000 to 50,000 vehicles per day.

## **CHAPTER OVERVIEW**

The guide provides general information on roundabouts, planning-level analysis techniques, evaluation procedures for assessing operational and safety performance, and roundabout design guidelines. Additionally, the guide contains over 150 charts, diagrams, plans and photographs which illustrate the various features of roundabouts.

### **Chapter 1: Introduction**

Defines the key features and dimensions of a roundabout and describes the various types of roundabouts. It clearly highlights the differences between roundabouts and other forms of traffic circles with the generous use of photographs to depict a variety of situations.

### **Chapter 2: Policy Considerations**

Provides a broad overview of roundabout performance characteristics, including safety, delay, environmental factors, traffic calming, aesthetics, and multimodal considerations, as well as the policy considerations that pertain to their use. Costs associated with roundabouts relative to other intersection forms, legal issues, and education and public

involvement techniques are also discussed.

### **Chapter 3: Planning**

Presents planning-level guidelines for identifying appropriate intersection control options. This chapter presents daily traffic volume-based procedures for evaluating roundabout feasibility at a given location.

### **Chapter 4: Operational Analysis**

Details methods for analyzing the operational performance (capacity, delay, and queuing) of each type of roundabout. This chapter describes traffic operations at roundabouts, lists the data required for evaluating roundabouts, shows how to estimate capacity, describes measures of effectiveness, and provides a brief overview of available software tools.

### **Chapter 5: Safety**

Discusses the improvements in safety performance that roundabouts typically provide at intersections. Roundabout safety related to vehicles, bicycles, and pedestrians is discussed, and international roundabout safety experience is presented for comparison. In addition, crash prediction models are given for evaluating crashes at roundabouts.

### **Chapter 6: Geometric Design**

The chapter presents the basic design philosophy of speed reduction and speed consistency to maximize the safety of a roundabout. This chapter presents specific roundabout geometric design principles, and then discusses each design element in detail, along with appropriate parameters to use for each type of roundabout.

### **Chapter 7: Traffic Design and Landscaping**

Discusses a number of traffic design aspects that should be considered once the basic geometric design has been established. These details include signs, pavement markings, illumination, and landscaping. Chapter 7 also discusses issues

regarding work-zone traffic control at roundabouts.

### **Chapter 8: System Considerations**

Identifies specific issues and treatments that may arise within a systems context. The chapter discusses signal control at roundabouts and the issue of rail crossings through or near a roundabout. Roundabouts in series with other roundabouts are also discussed, including those at freeway interchanges and those in signalized arterial networks. Finally, Chapter 8 presents simulation models as supplementary operational tools capable of evaluating roundabout performance within an overall roadway system.

*For more information, or to obtain a copy of the report **Roundabouts: An Informational Guide** (FHWA-RD-00-067), please visit the Turner-Fairbank Highway Research Center website: <http://www.tfhrc.gov>.*

## **Student News**

### **Texas A&M University**

The chapter has had a good fall semester. They had two meetings in October, with presentations by **Nick Harris**, Houston METRO, on Houston's light rail system; and by **Robert Stuard**, TxDOT, on current toll projects in the Austin area. Chapter members also participated in Adopt-A-Highway—a great success!

For anyone looking for a few good transportation engineers, check out the resume section of the chapter's website, <http://ite.tamu.edu>

### **University of Texas at Arlington**

Congratulations to **Karan Khosla**, who graduates in December 2004 with her M.S. Her thesis was titled, "Saturation Headways for Long Green Indications."

complex and interrelated issues surrounding the safe and efficient operation of managed lanes and to develop a managed lanes manual to help TxDOT make informed planning, design, and operational decisions when considering these facilities for their jurisdiction.

This multi-year project has a considerable number of tasks that focus on topics within the key areas of planning, design, and operations of managed lanes facilities, all of which support the development of a managed lanes decision matrix and manual for TxDOT. These topics include: Managed lanes state-of-the-practice; legislative issues; concept marketing; funding and financing; weaving issues; geometric design and ramp issues; traveler information; traffic control devices; inoperability; enforcement; incident management; evaluation and monitoring; interim and special use; and staffing and training needs.

For more information on managed lanes, visit the project website at <http://managed-lanes.tamu.edu> or contact **Beverly Kuhn** (979-862-3558, [b-kuhn@tamu.edu](mailto:b-kuhn@tamu.edu)) or **Ginger Goodin** (512-467-0946, [g-goodin@tamu.edu](mailto:g-goodin@tamu.edu)).

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## Traffic Signal Self Operation Assessment

Many of you participated in this ITE program. Overall, there were 386 respondents nationally. Results are being tabulated and analyzed and there will be a national report card document available by the ITE Technical Conference (see below). Three weeks later there will be a national press event and each responder will be furnished a press kit.

## ITE 2005 Technical Conference And Exhibit

This conference will be held February 27–March 2, 2005 at the Flamingo Las Vegas Hotel, Las Vegas, NV. The theme of the conference is: **Mobility Now! Get Moving with Transportation Management and Operations**. See details at the ITE web site: <http://ite.org/meetcon/>

I appreciate the opportunity to represent TexITE in the International Board of Direction. I am open to invitations to speak at your Section meetings in more detail about ITE and its workings. If you get down to the lick log and need a speaker, I can usually come on fairly short notice.

As always, feel free to contact me on any ITE issue.

### Jim Carvell

[jcarvell@tamu.edu](mailto:jcarvell@tamu.edu)

### P.S.

Please see my column in the previous Newsletter for opportunities to learn and serve:

- ITE Councils, <http://ite.org/councils/>
- Professional development program courses on CD-ROM (Traffic Signal Clearance Intervals; MUTCD 2000 and 2003 Revisions; Engineering Intersections to Reduce Red-Light Running; Managing High Technology Projects in Transportation)
- On-Line Learning, <http://ite.org/education/OLGcatalog.pdf>

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## Future Engineers Committee Webpage Competition

At the Winter meeting in Waco, the Future Engineers Committee will be hosting a webpage competition for 11<sup>th</sup> and 12<sup>th</sup> grade students. This competition will encourage high school students to explore and present concepts related to transportation safety. In addition, the students will have an opportunity to interact with TexITE membership.

We have disseminated the competition information to 11 schools in the Waco area. The deadline for entry is December 17, 2004 and judging of the entries will take place on the morning of Friday, February 4, 2005 (before the kick-off lunch). The top three winners will attend the business luncheon at which time their awards will be presented.

We need YOU to make this event a success! We would like to encourage everyone to come view the entries and interact with the students. In addition, we will need volunteers to judge the entries. If you would like to help out, please contact **Melisa Finley** at 979-845-7596 or m-finley@tamu.

## New Membership Committee Leadership

After many years of dedicated service, **Ginger Goodin** has retired as Membership Committee Chair. If you see her, please thank her for her years of dedicated and often thankless service.

**Bill Thorpe** and **Gary Thomas** are the new Membership Committee Co-chairs. You can reach them with ideas and prospects at the following locations:

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### President's Message (Continued from page 2)

involvement and if you're not inclined to seek them out, don't be surprised if someone you can't say no to volunteers your involvement.

So, if you're the person who always goes to the end of the book or the last section of the report or the last paragraph of this message to find whodunit or the "bottom line" or the summary, you, as a member of TexITE should be involved in your organization for everyone's benefit, particularly your benefit.

...and thanks in advance for your cooperation and willingness to participate.



Don't ever let anyone tell you that truck-turning radius is not an important design criteria. **Martin Rodin** of LopezGarcia Group snapped this picture in Dallas at the Galleria Mall. The Frito-Lay driver has driven completely on top of the bridge rail and his wheels are hanging off the edge of the bridge!



## Job Postings

The Texas Transportation Institute (TTI) is seeking to fill transportation research positions in College Station, Texas. TTI is a member of the Texas A&M University System and is the largest university-based transportation research agency in the United States. The major duties of the jobs are to write proposals, conduct research, prepare reports, and present findings. An entry-level position (050217) requires a Master's degree in Civil Engineering or equivalent discipline with a specialty in transportation engineering. A mid-level position (050223) requires a Master's degree in engineering or behavioral science discipline and five years of experience or a Ph.D. and part-time experience. For more information or to apply, go to <http://tamujobs.tamu.edu>. AA/EOE.

**To submit job postings or  
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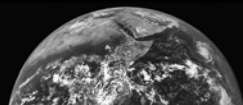


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