



DRIVER

Message from our President

I am pleased to bring you the 2009 Fall Edition of the *Driver*!! I hope everyone has had a great summer and has enjoyed vacation if you were lucky enough to take one.

I want to thank everyone for their attendance at our Summer Meeting which was held at USC. We had an awesome turnout for the webinar, which was sponsored by Gaye Sprague, and we hope to make this an annual event.

Planning for the 2009 Scholarship Golf Tournament is underway, and by now I am sure you have seen the flyers floating around. If you haven't already signed up to play or sponsor a hole, please do so. All proceeds go to our scholarship fund so this is a good way to not only support SCSITE but also our local universities.

The date has been set for October 8 for SCSITE Vendor Day and we already have commitments from around 15 vendors. The success or failure of this event is riding on the members of our section so please mark your calendars to attend and do your best to spread the word and bring others with you. Also, if you work with vendors, please encourage them to sign up.

SCSITE has been on fire the last two years. As you know, our section has won the Group Two Best Section Award for the Southern District two years in a row and Clemson University has won the District's Best Student Chapter Award and Traffic Bowl for as long as I can remember. To add to our accolades, I was notified in July that the SCSITE *Driver* was named the International ITE 2009 Best Section Newsletter for Circulation under 250 and will be recognized at the ITE Annual Meeting in San Antonio, TX this month.

The success of our section is due to the commitment of our members so please continue to do your part. I challenge you to reach out to other transportation professionals and invite them to become active in our section.

I hope to see you all in September at the golf tournament.

Y'all Drive Safely,

Jae



Jae H. Mattox, III, PE



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**2009 Dues
are now
overdue.
Please pay
Jeff
Ingham
ASAP.**

2009 SCSITE SCHOLARSHIP GOLF TOURNAMENT THURSDAY, SEPTEMBER 3RD

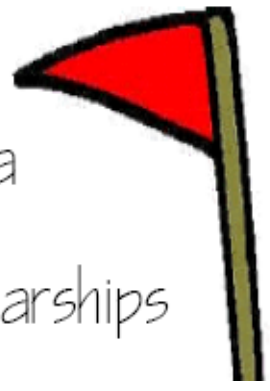
WHO: Engineers, Golfers, golfing engineers, you!

WHAT: A guaranteed great golfing event

WHEN: 12 noon Shotgun Start ~ Captains Choice
*Registration includes ITE meeting & cookout

WHERE: Northwoods Golf Club
Cardina Research Park, Columbia

WHY: Raise funds for SCSITE scholarships



Please arrive at the Golf Course at 10:45 am to complete registration. The burger and hot dog buffet style lunch around 11:00 am. We will have a short meeting and technical presentation following lunch.

Even if you are only planning to attend the cookout, please RSVP to Don Turner by August 28th.



REGISTRATION FORM

2009 SCSITE SCHOLARSHIP GOLF TOURNAMENT

Thursday, September 3rd ~ Northwoods

Hole Sponsor <i>(course sign & web link)</i>	_____	@ \$150 =	_____
Individual Golfers <i>(cookout included)</i>	_____	@ \$50 =	_____
Cookout only	_____	@ \$10 =	_____
TOTAL Enclosed			_____

Contact: _____ Firm: _____

Address: _____ City, State, Zip: _____

Phone: _____ Fax: _____

Email: _____

Player #1 (handicap): _____ (____)

Player #2 (handicap): _____ (____)

Player #3 (handicap): _____ (____)

Player #4 (handicap): _____ (____)

Complete registration and return with payment to:

SCSITE Golf
c/o Don Turner, SCDOT
PO Box 191
Columbia, SC 29201-0191
803-737-1459 / 803-737-0271 (fax)
turnerd@dot.state.sc.us



Please return by Friday, August 28th

www.scs-ite.org

SCSITE Vendor Day *Liz Carpenter*

SCSITE has planned a Vendor Day for exhibitors that have a service, product or equipment dealing with traffic signals, ITS (Intelligent Transportation Systems), signing and marking applications, work zones, and safety equipment. This event is the first of its kind in South Carolina and is intended to give city and local governments, transportation consultants and SCDOT roadway and signal maintainers an opportunity to meet the vendors and see what the latest and greatest technologies are.

This local event will give an opportunity for the ones who actually use vendor services, materials or equipment to get face to face with vendors to express appreciation, concerns, give suggestions and ask questions. The event will begin at 10 a.m. and end around 2 p.m. on October 8, 2009 at Brookland Banquet and Conference Center in West Columbia, SC.

During this event, there will be an opportunity to gain PDH's with technical presentations concerning signs, signals, markings and ITS applications, by SCDOT and other technical professionals.

This event will be free for all to come out and see- lunch will be provided on site at a nominal fee.

Some vendors have already expressed an interest including Temple; Horizon Signal Technologies, Inc; Southeastern Safety Systems, Inc; B.C. Cannon Company, Inc; Davidson Traffic Control Products; EPOPLEX; Econolite; Matlock Sales & Marketing; RAI Products; 3M; Naztec; Quixote; Carolina Traffic Devices; Protection Sevice; & Walker Brothers.

If you are a vendor that is interested in exhibiting your product, equipment or service, please contact Liz Carpenter carpenteeh@scdot.org for a registration form. The expo fee is \$100 per booth.



Liz Carpenter, PE



VENDOR DAY 2009
Save the date!

Work Zones Safety Equipment Signs & Marking

Signals / ITS Equipment and Software

Great opportunity for field personnel to see what equipment is available and ask vendors questions!

Free Admission

Inexpensive lunch provided on site

ON | October 8th, 10 AM to 2 PM
AT | Brookland Banquet & Conference Center, West Columbia, SC

Calling all vendors ...

Work Zones Safety Equipment Signs & Marking

Signals / ITS Equipment and Software

Present your products to ...

South Carolina City and Local Governments

Transportation Consultants SCDOT

ON: October 8th, 10 AM to 2 PM
AT: Brookland Banquet & Conference Center, West Columbia, SC
Vendor Fee: \$100
Registration Deadline: August 15th

DRIVER

WINS INTERNATIONAL ITE NEWSLETTER AWARD!

The ITE Section Newsletter Award recognizes the sections that during a specific period of time produce the best newsletter. Since 1986, the awards have been presented in three categories, based on size of circulation.

The Spring 2009 Edition of the *Driver* (Volume III, Issue 1) was named the 2009 Best Section Newsletter for circulation under 250. This is the first time our section has received this honor. SCSITE will be recognized at the Honorees Banquet at the 2009 ITE Annual Meeting in San Antonio, Texas on August 11, 2009.

The first edition of the *Driver* was published under the direction of the editor Jae Mattox in the Fall of 2007. Since then, the newsletter has been published quarterly. All past editions of the *Driver* have been archived on the SCSITE website at www.scs-ite.org.

Many thanks to all those members who have contributed articles for the *Driver*. The *Driver* has been instrumental in the growth and success our section has experienced in the last few years so please continue to lend your support.



Message from our President

Wow, time flies! It seems like just yesterday I was sitting in the barracks at The Citadel as a Junior writing my essay for the SCSITE Scholarship only to get beat out by a structural engineer who now lives in Texas. Sorry, Gary, I couldn't resist! After completing my undergraduate work I pursued graduate studies in Transportation Engineering at Clemson and became very active in the ITE Student Chapter. Wayne Saruszka's passion for the organization and the success of the Clemson Student Chapter really fueled my desire to become active in the state section and since my graduation I have been given the opportunity to serve as Secretary / Treasurer, Vice President, and now President.



Jae H. Mattox, III
SCSIT

As we begin 2009, we have the opportunity to reflect on our achievements in 2008 and look forward to the many new and exciting challenges this year holds. Last Spring, our section hosted the Southern District Meeting in Charleston. Many volunteers from our section under direction of Local Arrangements Committee Chairs Jeff Davis and Colin Kinton, labored intensely for months to plan the meeting which turned out fabulously. To top off a great meeting, the Clemson Student Chapter won the Traffic Bowl and our section was named the Group C Section of the Year for 2007. In June, our Usstate crew planned a really great meeting where we were given a trolley tour in downtown Greenville of two segments of roadway that brought together many current traffic engineering best practices. In the fall, we had our scholarship golf tournament and raised a record \$6,000 for our scholarship funds. Because of the success of the golf tournament we were able to award three undergraduate scholarships at our Christmas Party in Columbia. The Christmas Party was a blast and we had the best attendance we have seen in years. All in all, 2008 was an amazing year for SCSITE, and I believe it has given us new life.

A few weeks ago, the SCSITE Board of Directors and Committee Chairs met to discuss our plan for 2009. After this meeting, I realized how truly blessed our section is to have such strong visionaries. As you read further into the newsletter there will be some discussion of some of the activities we have planned for this year.

I am really excited about 2009 and what it holds for our section. I encourage new and old members to get involved and I applaud those who are currently serving. This edition of *The Driver* is loaded down with information so many thanks to all who contributed. Enjoy reading and I hope to see you all in Orangeburg next month!

Drive Safe!

Jae

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2009 Dues are now due. Please pay Jeff Ingham ASAP.

SCSITE Summer Meeting Held USC *Bryan Webb*



Bryan Webb, PE, PTOE



SCSITE Summer Meeting Held at the University of South Carolina

The SCSITE Summer Meeting was held June 16th at the University of South Carolina’s Swearingen Engineering Center in Columbia, South Carolina. The meeting included a catered luncheon and a technical presentation. We had a great turnout for the meeting with over 40 members in attendance!

The technical presentation for the Summer Meeting was an ITE web-based seminar on the “Operational Effects of Geometric Design”. This seminar, sponsored by Sprague and Sprague Consulting Engineers, was led by Robert K. Seyfried, PE, PTOE, FITE and covered a variety of topics including the functional classifications of roadways, horizontal and vertical design controls, sight distance, roadside obstacles, and intersection channelization. The seminar was very informative and great way to earn those all important professional development hours.

Thanks again to Gaye Sprague for sponsoring this event and to Nathan Huynh and USC for their hospitality. Without their support, this event would not have been possible.



Thank you Gaye Sprague and USC!!

Treasurer’s Report *Jeff Ingham*



Jeff Ingham, PE, PTOE

We had 44 people attend the Summer meeting at USC in Columbia. Thanks to Gaye Sprague for sponsoring the webinar at the Summer meeting. With her covering the cost of the presentation, we were able to turn a small profit at the meeting and add to the scholarship funds.

Only a few members still have International dues outstanding. If you’ve not paid your section dues (\$20 for non-National ITE members), please plan to pay at the fall meeting before the Golf tournament.

Thanks to all those that have paid dues and to those that have contributed toward the scholarship funds, either through the golf hole sponsorships or other means. The status of our accounts is currently:

- Rowe Scholarship fund - \$16,600
- Stafford Clark Scholarship fund - \$19,500
- Checking accounts - \$14,500



ITE Southern District (5) Report *William J. Davis*

Highlights from the 57th Annual Southern District (5) meeting held in Birmingham, AL included great representation of SC ITE, with a 23-member delegation, (shown below answering the role call of States during the opening session) and Bryan D. Webb (SC ITE Vice President) accepting the 2008 Group II, Outstanding Section Award on behalf of SC ITE during the Awards Banquet. These are but a few of the many annual meeting highlights. Lots and lots of additional photos are posted on the conference website at <http://www.ncsu.edu/project/southerndite/>.

The District website has been redesigned with a great new informative format. Please take time for a visit at <http://www.sdite.org/>. The website contains a link to the District's most recent Newsletter, provides an interesting overview the District's History, summarizes recent district award recipients via the 2008 SDITE yearbook, and includes the latest edition of the student publication "The Chevron" highlighting student accomplishments, including Clemson's recent award for 2008 Best Student Chapter.

The 2010 Annual Meeting will be hosted by the Virginia Section and will be held April 11-14, 2010, at Renaissance Portsmouth Hotel & Waterfront Conference Center in Portsmouth, Virginia. For more information please refer to the annual meeting website at <http://www.sdite2010.org/>. Their annual meeting theme of "Trails, Rails, and Sails...Turning the Tide on Multi-Modal Transportation" will be interwoven throughout the program of events, presentations and conference forums.

I am honored to serve as your SC Section representative to the ITE Southern District (5) Board. Our next meeting will be in Lafayette, Louisiana, December 13-14, 2009. Please let me know if you have any issues or ideas you would like me to bring before the board on behalf of SC Section ITE.



William J. Davis, PhD, PE
The Citadel





Call for Traffic Bowl Questions

The Institute is assembling a database of questions that will be able to be used by ITE International, districts and sections in conducting student traffic bowl competitions. The Institute in the coming years is planning to conduct an Institute wide competition among the student chapters culminating with a competition among the district winning student chapters. Individual members, companies, or student chapters may submit questions.

More information at <http://www.ite.org/news/CallforTrafficBowlQuestions.pdf>

Results of Elections for 2010 SDITE Officers and Bylaws Change

Election of officers for 2010 SDITE Officers was held at the Annual Business Meeting in Birmingham on April 21st. The results of the election were as follows:

President - Jim Westmoreland (North Carolina)
Vice President - Tim White (Virginia)
Secretary/Treasurer - Becky White (Alabama)

Also, the ballots contained an amendment to the [SDITE Bylaws](#) to allow electronic voting. The amendment was approved by the membership.

Southern District 

Alabama • Deep South • Georgia • Kentucky • North Carolina • South Carolina • Tennessee • Virginia

On the web at <http://www.sdite.org/>

New Publications from ITE

Traffic Engineering and Transportation Planning Handbooks

Now in its sixth edition, the *Traffic Engineering Handbook* continues to be a must-have publication, as it has been for the past 60 years. The *Traffic Engineering Handbook* is one of the primary reference sources for study to become a certified Professional Traffic Operations Engineer. The *Transportation Planning Handbook*, 3rd Edition is a reference for practicing transportation professionals involved with the administrative, technical and legal aspects of transportation planning.



Traffic Signal Timing Manual

FHWA developed the *Traffic Signal Timing Manual* to help signal timing practitioners improve traffic signal timing. The manual, a culmination of research into practices across North America, is intended to provide a comprehensive collection of traffic signal timing concepts, analytical procedures and applications. An electronic version of the publication is available at ops.fhwa.dot.gov/arterial_mgmt/tstmanual.htm. ITE is selling a hard cover expanded publication, which includes a comprehensive index. Publication will ship at the end of April.



ITE 2009 Annual Meeting and Exhibit
August 9–12, 2009
Henry B. Gonzales Convention Center
San Antonio, TX, USA

US 278 Signal Timing Project, Beaufort County *Colin Kinton & Jennifer Bihl*

US 278 through Bluffton is a highly congested corridor with an AADT of approximately 60,000 vehicles. It is the only route to Hilton Head Island and has heavy eastbound peaking in the morning, heavy westbound peaking in the evening and overall heavy volumes around lunchtime. In addition to the local traffic, there is often high and somewhat unpredictable tourist traffic on the corridor. Working with SCDOT, Beaufort County has made significant improvements to the traffic signal operations along the US 278 Corridor.

The US 278 Corridor Signal System/ITS project, funded with federal earmarks, included upgrading signal controllers to 2070's and adding Cisco 2955 Ethernet switches. IP communication is provided between traffic signals and the central server in the County's Traffic Engineering offices via leased fiber from a local provider. The centralized control and continuous Ethernet communication allows for active monitoring and polling of the system. Email notification of signal malfunction alarms coupled with active monitoring of ITS cameras throughout the corridor provides for improved response times of maintenance personnel.

The next phase of the US 278 Corridor upgrades included the deployment of a GPS based emergency pre-emption system. The County worked with local EMS and Fire to install new traffic signal pre-emption technology into the traffic signals along the corridor in order to improve response times of emergency personnel and reduce potential conflicts as emergency vehicles travel through intersections. Emergency personnel have indicated their satisfaction with the system. Currently, sixteen vehicles have been provided the pre-emption equipment and local fire intends to outfit the remainder of their emergency vehicles.

Once the equipment upgrades and communication were completed, Beaufort County updated the signal timings for thirteen signals along the US 278 corridor from Sun City to Moss Creek Drive/Buckingham Plantation Drive just west of Hilton Head. Thirteen timing plans were developed for the various time periods throughout the day and special plans for weekends, beach conditions and evacuation conditions as US 278 is the only evacuation route from Hilton Head Island. Cycle lengths for the weekday and weekend plans range from 130 to 170 seconds with PM having the highest cycle length. Cycle lengths for specialty plans range from 200 to 420 seconds with the mandatory evacuation plan having the highest cycle length.

A before and after study was performed during the AM, Mid-day and PM peak hours showing an averages of an 11% reduction in travel time, a 58% reduction in the number of stops, and a 51% reduction in total delay for these time periods. These reductions were realized in both the peak and non-peak direction. Based on standard cost/benefit procedures assigning a dollar value to the delay reductions, the one-year cost/benefit ratio is 22:1 with the three-year cost/benefit ratio is 67:1.

The final step for this project is to install detectors in the field and implement the traffic responsive component of the project. System detectors will include both IP communication based wireless and video detection. Providing IP communications with the detectors allows for volume, speed and occupancy data to be transferred back to the County's ITS servers for improved incident/congestion management and traveler information. In addition, historical volume and speed information is logged and stored to provide permanent count station data. Once the system detectors are in place, the system will be able to automatically respond to the dynamic traffic demands of the corridor.



Colin Kinton, PE
Beaufort County



Jennifer Bihl, PE
Kimley-Horn and
Associates

Valerie Holmes Joins City of Greenville Traffic Engineering Division

Valerie joined the City of Greenville's Traffic Engineering Division in August 2008. A Greenville native, Valerie is a 1994 graduate of Clemson University, and she began her engineering career with the Florida Department of Transportation in their Engineer Trainee program. She spent most of her time working in the Traffic Operations department where she specialized in traffic studies & analysis and ITS systems. After spending over eight years in sunny Fort Lauderdale, she decided to return to her hometown and joined URS Corporation for five years, where she helped to establish their Transportation section. In the end, though, Valerie had decided that she preferred working in the public sector.



Valerie E. Holmes, PE
City of Greenville

Valerie is married with two daughters: Emily, who is 6, and Kathryn, who is a precocious 2 ½. In her spare time (what little there is), Valerie enjoys reading, spending time with her family, and bird-watching.

Jae Mattox Obtains PE License

On June 22, 2009, Jae Mattox received word that he had passed the April 2009 Principles of Practice (PE) Exam and that he had received his South Carolina PE License. Jae obtained a BS in Civil Engineering from The Citadel in 2004 and MS Degree in Civil Engineering from Clemson in 2005.



Jae H. Mattox, PE



Jae spent his first two years out of school in the SCDOT Traffic Engineering office and currently works in the SCDOT Preconstruction office in Columbia as a Program Manager.

Jae has been actively involved with ITE since his days as a student at Clemson. He currently serves as the SCSITE Section President and Newsletter Editor.

Jae has been married to his wife Erica since November 2008 and they currently live in West Columbia, SC. In his spare time, Jae enjoys being outdoors and hanging out with his family and friends. At the moment his favorite hobbies include scuba diving and whitewater kayaking.

Successful Projects *Sunny Nandagiri*



Sunny Nandagiri, PE, PMP



It may be surprising for lot of us to know that only **50% of all the projects succeed!**

Problems with rest of the projects include:

- Complete cancellation
- Project exceeds budget
- Project exceeds time
- Project is missing major functionality
- Quality of the project was not up to the mark.

Successful Project: A successful project is typically defined as the one which is completed on budget, on schedule and delivers a quality and usable product to the Client.

From a Consultant’s perspective, a project is a “success” if you helped a Client/Organization to do what it already does, but better; 2) improving its ability to grow; and 3) improving its ability to change.

Reasons why Projects Fail:

- Ill defined scope or client requirement
- Inadequate budget or unrealistic schedule
- Inadequate or incomplete Project Execution Plan
- Inexperienced or untrained project staff
- Poor project execution
- Inadequate monitoring, control, coordination and reaction
- Inherent project complexity/wrong technology
- Poor project manager/team selection
- Unavailability of the proper resources for the project.
- Project managers change (inherited project, staff turnover, management changes)
- Insufficient project manager influence and authority
- Poor team/client communication and/or relationships
- Inadequate communication or follow-up on issues
- Lack of control for scope creep and changes
- Poor risk identification/mitigation
- Failure to understand the contract
- Not taking timely corrective actions
- Poor quality control/quality assurance at various steps/milestones



Tips/Pointers for Successful Projects:

- Creating a vision of the “successful project” from the beginning
- Benchmarking characteristics of project success
- Establishing simple, but effective, project control systems
- Inspiring discipline into the process
- Detecting variances from established best practices
- Exerting independent, objective project accountability
- Using some of the proven project management methodologies (PMI and others)
- Breakdown project into “manageable chunks/pieces”
- Documenting success and failures of various phases/clients/types of projects
- Visiting your project sites!!
- Keeping stakeholders involved at major steps/milestones
- Communicate scope and others changes to the Clients on a regular basis
- Conduct periodic status review meetings
- Review meeting minutes, assign the responsibilities and follow up
- Properly trained project team/project manager
- No surprises for the top management
- Scope verification at the completion of various phases
- Manage risk at the beginning, and through out the project appropriately
- COMMUNICATION, COMMUNICATION AND COMMUNICATION!!!

And finally, for the project to succeed, live up to the label - **P.R.O.J.E.C.T.**

P Planned

R Rational

O Objectives &

J Justified

E Expectations

C Coordinated &

T Team Driven

Author of this article is a licensed Professional Engineer in eight states (including South Carolina) and is also a certified “Project Management Professional” (PMP)

Sources for this Article: *Project Management Institute’s “Project Management Body of Knowledge” (PMBOK), 2007 Edition, PMP Exam Prep, Rita Mulcahy, PMP, RMC Publications, 2005, www.cpm-solutions.com, <http://managementhelp.org/misc/defining-success.pdf>, <http://www.projectkickstart.com/downloads/IT-project-success.cfm> and AECOM’s Internal Project Management Training Manual .*

The New Urbanism: An alternative to modern, automobile-oriented planning and development *Robert Steuteville*

Published on www.newurbannews.com

New urbanist prototypes

Seaside, Florida, the first new urbanist town, began development in 1981 on 80 acres of Panhandle coastline. Seaside appeared on the cover of the *Atlantic Monthly* in 1988 when only a few streets were completed, and it since became internationally famous for its architecture and the quality of its streets and public spaces. Seaside proved that developments that function like traditional towns could be built in the postmodern era. Lots began selling for \$15,000 in the early 1980s and, slightly over a decade later, lots prices had escalated to about \$200,000. Today, some lots sell for close to a million dollars, and houses sometimes top \$3 million. The town is now a tourist mecca.

Seaside's influence has less to do with its economic success than a certain magic and dynamism related to its physical form. Many developers have visited Seaside and gone away determined to build something similar.

Since Seaside gained recognition, other new urban towns and neighborhoods have been designed and are substantially built — including Haile Village Center in Gainesville, Florida; Harbor Town in Memphis, Tennessee; Kentlands in Gaithersburg, Maryland; Addison Circle in Addison, Texas; Orenco Station in Hillsboro, Oregon; Mashpee Commons in Mashpee, Massachusetts; and Celebration in Orlando, Florida.

Designers are also using the principles of the New Urbanism to build major new projects in cities and towns. In the mid-1990s, the US Department of Housing and Urban Development (HUD) adopted the principles of the New Urbanism in its multibillion dollar program to rebuild public housing projects nationwide. New urbanists have planned and developed hundreds of projects in infill locations. Most were driven by the private sector, but many, including HUD projects, used public money. New urbanist projects built in historic cities and towns includes Crawford Square in Pittsburgh, City Place in West Palm Beach, Highlands Garden Village in Denver, Park DuValle in Louisville, and Beerline B in Milwaukee.

Meanwhile, leaders in this design trend came together in 1993 to form the Congress for the New Urbanism (CNU), based in Chicago. The founders are Andres Duany, Elizabeth Plater-Zyberk, Peter Calthorpe, Daniel Solomon, Stefanos Polyzoides, and Elizabeth Moule, all practicing architects and town planners. CNU has since grown to more than 2,000 members and is now the leading international organization promoting new urbanist design principles.

Disney builds a town

In June of 1996, Disney unveiled its 5,000-acre town of Celebration, near Orlando, Florida, and it has since eclipsed Seaside as the best-known new urbanist community. In some respects, the New Urbanism and Disney have been uncomfortable bedfellows. While using designers and principles closely associated with the New Urbanism, Disney has shunned the label, preferring to call Celebration simply a “town.” Meanwhile, the movement may have benefited from all of Celebration’s publicity — but not without a price. Disney has come under attack for what some perceive as heavy-handed rules and management. For those who would attack the New Urbanism as insipid nostalgia, Disney is a fat target.

The fact remains that Celebration’s urban design is generally of high quality and by most accounts serves residents very well. Ray Chiamonte, a former resident of Celebration who has since moved to a different new urban community, had this to say after his family moved to Disney’s town: “The entire focus of our lives has changed. Instead of doing everything some place other than close to home, we now can eat, do errands, celebrate special occasions and just hang out near our own home. The changes are most dramatic for our children, who now have a freedom they never had in our old neighborhood.”

In the 1991 book *Edge City*, author Joel Garreau wrote that Americans have not built “a single old-style downtown from raw dirt in 75 years.” Celebration was the first real estate project to break that trend, opening its downtown in October, 1996 (Seaside’s downtown was still mostly unbuilt at the time). Since then, scores of new urban projects have followed suit with their own downtowns and mixed-use districts.

But the new urbanists still have plenty of work to do. They must continue to design and build retail centers to compete with CSD nationwide. They must capture a broad portion of the residential market. New urbanist developers must get better at making their neighborhoods affordable. New urbanists also must prove, over time, that their ideas are superior for both revitalizing old cities and towns and building new communities.

If they can accomplish these goals — and many projects now offer hope that they can — the New Urbanism is poised to become the dominant real estate and planning trend of the 21st century.

Robert Steuteville is editor and publisher of New Urban News. This article was updated July 8, 2004

See www.newurbannews.com for the complete article

ITE and the Technology of Traffic Signals

*by John Vines, Dialight Corporation
and edited for length by John Rosenblatt*

Changes to enhance safety have always been at the forefront of traffic signal specifications. From the introduction of the Semaphore to control horse drawn traffic in London in 1868 to complex automated traffic controls today, technology has played a key role in improved traffic safety. While the purpose of the Semaphore was simply to protect pedestrians at crosswalks, today's traffic systems are designed to both provide pedestrian safety and promote safe and smooth traffic flow in a wide range of traffic volumes and weather conditions.

Red, yellow and green colored signals were first used around 1920 in Detroit, yet it was not until 1935 that they became standard for all traffic signals. Since its formation in the early 1930's, ITE has always relied on collaboration from representatives in all phases of traffic engineering to develop recommended practices for traffic control and to regularly review those practices to ensure that standards keep pace with advancing needs and technology. A prime example is the transition of the early traffic signal from a 4-inch diameter to a standard 8 or 12-inch signals for improved visibility in adverse weather conditions.

Since the advent of the modern traffic signal, the traditional light source had been the incandescent light bulb. It was inexpensive and relatively easy to replace. However, in the early 1990's a dramatic change in the light source for traffic signaling started with the introduction of the LED traffic ball. Because LEDs represented new technology, specifications had not been developed that took into consideration characteristics, features, and benefits of using this light source. Initial LED traffic signals were designed based on older specifications written around performance of the incandescent light bulb.

As LEDs gained popularity, it became obvious that specifications were needed specifically for LED traffic signal modules. Previous specifications were modified based on operating characteristics of LEDs and were issued as an interim purchasing specification for LED traffic balls. This interim specification provided an initial standard for industry use and allowed time for the ITE to perform in-depth studies of LEDs. Their goal was the release of a final VTCSH specification for LED signals. Much of the study focused on a combination of human factors and the wide variety of anticipated operating conditions that LED signals would be expected to survive. After several years of extensive studies and consultations with various discrete LED manufacturers, LED module manufacturers, traffic systems manufactures and a large number of users, the final VTCSH Light Emitting Diode (LED) Circular Signal Supplement was released. Around the same time, a specification for Pedestrian Traffic Control Signals was also drafted. This pedestrian specification is being revised and will be released shortly. These were followed shortly by the VTCSH Light Emitting Diode Vehicle Arrow Traffic Signal Supplement, the first ITE specification to exclusively address arrows.

One important consideration for using products in compliance with the latest revision of ITE specifications is a direct result of living in a mobile society, which necessitates having a uniform standard for performance and appearance across the country. The technological importance can best be explained by looking at issues reviewed in the development of the specification as it relates to LED operation. When reviewing the features of the latest LED specification some changes that stand out vs. the interim specification are:

Broader light distribution – Since LEDs are directional light sources, products provided based on the interim specification in certain applications may not have been ideal. If the lamp were mounted in a manner that there could be excessive movement under windy conditions, it could appear to the driver as a flashing signal. Additionally, not all approaches to signals are on flat ground; and when approaching from a steep grade, signals may not have been visible from a distance.



Photometry requirements – Less light became more light. One common complaint about early LEDs, especially the green products, was that they were too bright when viewed head on, but difficult to see from off angles. To address this concern, ITE modified the photometry requirements. Some observers expressed initial concern as the on axis photometry requirements decreased. However, because the light distribution pattern had been expanded, some of the total light output requirements actually increased significantly.

Failed state impedance - Most traffic signal incorporate circuits constantly monitor lamp status to determine if the lamp has failed by monitoring the current flow to the signal head. Their design was based on the fact that the failure mode of the incandescent lamp was an open circuit; thus, upon failure no current would flow. LED traffic signals cannot be driven directly from 120 VAC. To properly drive the signal head, a power supply is incorporated directly into the signal module. Unless properly designed, the LED portion of a signal head could fail, but the monitor would not detect an open circuit because the power supply could remain operational. The latest revision of the ITE specification accounts for this by incorporating a failed state impedance requirement. It required the power supply to have a minimum input impedance of 250 kV should the LEDs in the signal head fail catastrophically.

High temperature operating – Operating temperatures were not an issue with incandescent traffic signal as they relied on heat to emit light. However, the light output of LEDs diminishes as temperature increases. The impact of this reduced light output was not fully understood when the interim LED specification was introduced. In preparing the current LED specification, the ITE studied the self- heating operating characteristics of LEDs under a wide variety of environmental conditions that would affect their output, including solar loading. This resulted in the incorporation of a minimum intensity specification at elevated temperatures.

Transient voltage protection – Traditional light sources were relatively immune to transients. However, like any other electronic system, an LED signal is very sensitive to damage occurring from transient. Additionally, LEDs are constantly outdoors and can be subjected to significant transient generated from several sources such as direct or nearby lightning strikes. Therefore, the ITE incorporated minimum transient voltage requirements into their specification.

Uniform “incandescent” appearance - Prior to the release of the current ITE specification, LED traffic balls could be manufactured with a wide variety of LED units. The most common approach was to use an array of several hundred small 5 mm diameter LEDs. These 5 mm LEDs were designed in the mid 1970’s for indoor protected environment application. Their use in a rugged outdoor environment led to the premature failure of some LEDs resulting in “string outs”, where small groups of LED would not be illuminated thus leaving dark patches across the signal face. To alleviate this problem, the ITE added both color and uniformity requirements to their specifications. Most manufacturers address this new requirement by designing LED traffic signal modules using a relatively low number of high power LEDs designed for rugged applications, thus eliminating the pixilated appearance and “string out” failure modes.

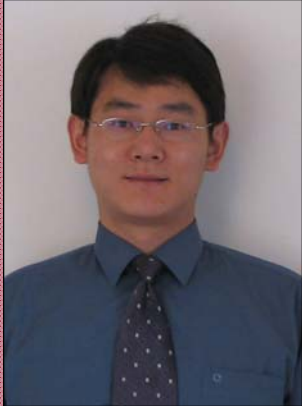
Additional features – Other features that the ITE has incorporated into the current specification include

- A low voltage turn off to ensure the light would not be illuminated in the event of a faulty load switch
- Minimum turn on and turn off time to eliminate any potential latent signal issues.
- Improved definitions of the product qualification process to ensure the products are designed properly to survive the rigor of the application.

In summary, the use of LED products based on the latest revisions of ITE specification provides users with products that are specified, designed, developed, and produced to standards backed by extensive research and collaboration from all facets of the industry. If questions arise regarding why specific LED lamps were used at an installation, a user can always point out that their installation uses products compliant with the latest industry accepted national standards.

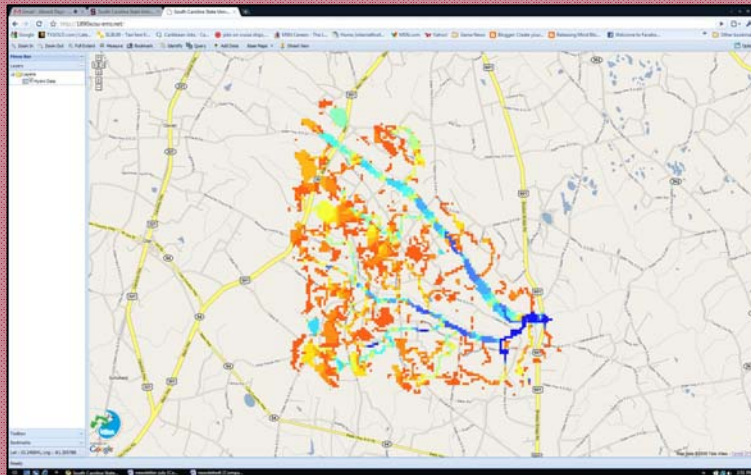
 <p>RAI Products Since 1964</p> <p>John Rosenblatt Vice-President</p> <p>office: 704.525.1852 cell: 704.904.1481 fax: 704.525.1859 john@raiproducts.com www.raiproducts.com PO Box 240772 Charlotte, NC 28224</p>	<ul style="list-style-type: none"> • Broadband Video • Broadband WI-FI • Broadband Wireless Backhaul • Serial Interconnect • Contact Closure • Traffic & Pedestrian Signals • LED Signal Modules • Signal & Sign Hardware 	<ul style="list-style-type: none"> • Audible Pedestrian Pushbuttons • LED Blankout Signs • Piezo Axle Sensors • Overspeed Detection • Solar Assemblies • Flashing Beacons • Wire & Cable • Loop Detectors • Loop Sealant • Quartzite® Pullboxes 
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SCSU ITE Student Chapter News *Yuanchang Xie*



Yuanchang Xie, PhD
SCSU ITE Student
Chapter Advisor

The SCSUITE student chapter has been relatively quiet during the summer. Most members are either conducting research on campus or doing internships across the country. Mr. Shaun Hemingway spent his summer doing an internship with the Federal Highway Administration at the Department of Transportation Headquarters in Washington, D.C., working mainly in the Office of Safety. Mr. Edward Starks did his internship with the Oregon Department of Transportation. His primary project was to develop a User Manual for collecting approach road (driveways and intersections) data on state highways in Oregon using TranGIS. The purpose of the Manual is to provide instruction for a sustained program to collect basic inventory data using computer resources. A complete inventory of approach roads will help prioritize financial resources to improve safety, reduce congestion, and improve traffic operations. This assignment allowed Mr. Starks the opportunity to learn about the transportation field first-hand.



Online GIS Flood Warning System

Mr. Dirk Francis spent his summer working on a research project entitled “Development of a Real-Time GIS/Hydrology Flood Warning System for First Responders in Rural Areas in South Carolina,” which was funded through SC State’s 1890 Research & Extension. The system is designed to use precipitation data, digital terrain data, and hydrology models to predict flooding in rural areas in South Carolina. Mr. Francis’ role was to ensure the functionality of the system as an online GIS application. By logging on to the projects website, authorized users would be able to run the hydrology model installed on the server and publish the predicted flooding result on a webpage, while other users would be able to see the predicted flooding information through the Firefox web browser or even cell phones. The online GIS system (<http://www.1890scsu-ems.net/>) is still in the testing stage and will be finalized by next summer.

Citadel ITE Student Chapter News *W. Jeff Davis*

This summer Citadel ITE student members, Alex Wilson, Phillip Marino, Bruce Rasmussen, Preston Dukes and Joe Robertson, have been involved in a number of transportation research projects including:

- Data collection for SC DOT's research project on "Guidelines for Longitudinal Pavement Marking Applications," being conducted via a partnership with Clemson University, involving a sample-based study of pavement marking retroreflectivity on primary and secondary roads located across South Carolina.
- Research study being conducted with MUSC, Department of Pediatrics, entitled "Evaluation of Childhood Obesity & Built Environment Factors Surrounding Elementary Schools in Charleston County, SC" involving a case study analysis of 9 local schools.
- Multi-Use trail user counts, manual classification counts, (e.g., bikers, walkers, runners, etc.) and intercept surveys, being conducted in Charleston on the West Ashley Greenway, Ashley River Road Bike Path and in Durham, NC on the American Tobacco Trail. The purpose of the research is develop a better understanding of daily trail use and optimal design elements for multi-use paths in urban areas.



W. Jeff Davis, PE, PhD
Citadel ITE Student Chapter Advisor

Lastly, students are continuing their work on the Isle of Palms Marina Traffic Study. Critical feedback from the Mayor and City Council was received during a presentation to the Property Committee on May 5, 2009. Students plan to develop three preliminary site improvement layouts for presentation to the public at a City Council meeting this Fall.



Cadets Alex Wilson, Bruce Rasmussen and Preston Dukes collect pavement retroreflectivity data on rural road near Barnwell, SC



Cadets Joe Robertson and Phillip Marino place counter on West Ashley Greenway



Students relax after Isle of Palms Marina presentation to Mayor and City Council



Driver Feedback Sign Technology Helps Make Streets Safer

Charlie Robeson – Managing Partner, Radarsign, LLC

While you may be familiar with the radar trailers of the past, traffic calming has never seen a better tool than today's permanent mount radar speed signs.

The number one complaint in many cities and towns today is that of speeding traffic. Considering that every ten mph of speed doubles the force of impact in a collision, this is a complaint to be taken very seriously. A cost effective solution now available is the Driver Feedback Sign. A great example of the technology is the TC-500 Series from Radarsign, LLC. The TC-500 series is available with AC power, batteries that will run the sign for 2 weeks per charge, or with a solar panel.

Why the signs work long term

Most drivers are in the 'alpha' brain state when driving. This means they are less aware of their surroundings and not paying much attention to details. Have you ever taken a routine drive only to barely remember the trip upon arrival? This is an 'alpha' state effect. The Driver Feedback Sign, when flashing, activates the brain's 'beta' state. This puts the driver into a heightened state of awareness, a more responsible state of mind. Noticing that they are speeding with help from the radar sign, many drivers adjust their behavior, and slow down, helping to make the streets safer for children, pedestrians, cyclists, and pets.

Because this reaction to the sign is physiological, the sign remains effective indefinitely. Studies from multiple vendors and independent parties confirm that the signs work as well as the first week of operation even 4, 5, or 6 years later.

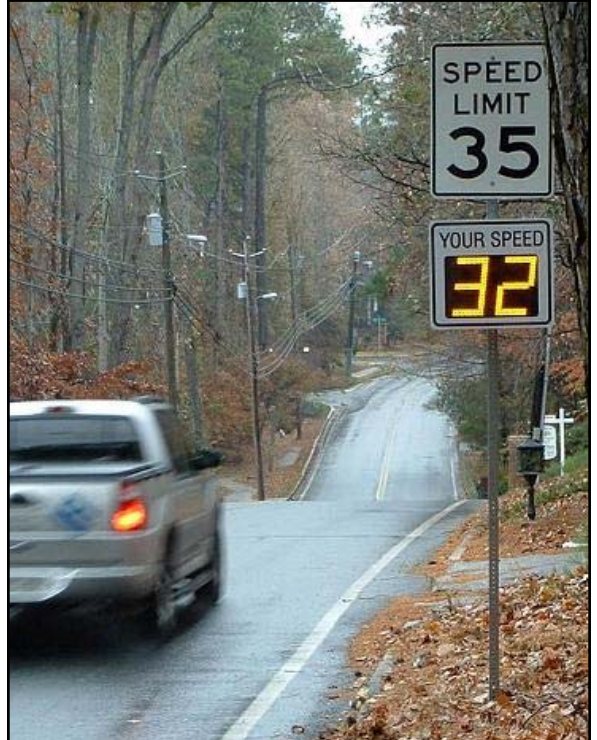
Technology provides reliability

With solid state radar, and 'built for purpose' design, the TC-500 series provides an effective traffic calming solution at an affordable price point. The unique power management techniques in the product produce the 'greenest', energy efficient sign on the market today. While many radar signs require large 80, 100, or 120 watt solar panel to guarantee 7x24 operation, the TC-500S requires only a small 40 watt panel. Battery backup needed to ensure continuous operation again is less than 1/2 the industry average.

The TC-500 series has a weatherproof powdercoated aluminum housing more than 1/8" thick. In addition, the Bashplate™ cover behind the standard Lexan™ front of the display provides the ultimate in vandal resistance. The Bashplate is 3/8" thick aluminum and beveled, which protects the LEDs & electronics from blunt force attacks, including bullets.

Data Collection is a breeze

The modern radar sign will offer the ability to collect traffic statistics. Using wireless Bluetooth technology, the TC-500 series can download daily data in about 15 seconds, directly into a laptop while you are seated in the comfort of your vehicle up to 30 feet away from the sign. No more climbing poles to access a memory card that could also be subject to vandalism. The data can confirm the baseline speeding problem (collected in stealth mode with display off), show the effectiveness of the sign (using 'before and after' comparisons), and provide law enforcement specific times to deploy an officer for intelligent use of resources.



Radarsign, LLC is one of the country's premier providers of Driver Feedback Signs. Located near Atlanta, GA, the company has been in business for 5 years, and has product installed in 38 states and Canada. For more information, please call 678-965-4814, email to info@radarsign.com or visit our website: www.radarsign.com



Assistant Beaufort County Traffic and Transportation Engineer

Provides technical traffic and civil engineering skills for planning, design, operation and management of traffic signals, signing, pavement marking and signal system projects for Beaufort County.

MINIMUM REQUIREMENTS:

- Bachelor of Science degree in Civil Engineering from an accredited college with concentration in traffic and transportation engineering
- Masters of Science degree in Engineering preferred
- Three years experience in traffic engineering or traffic signal systems
- Passing grade from Fundamentals of Engineering (FE) Exam
- Must possess and maintain valid driver's license

Interested applicants should contact Colin Kinton for more information.

ckinton@bcgov.net

Phone: (843) 470-2631

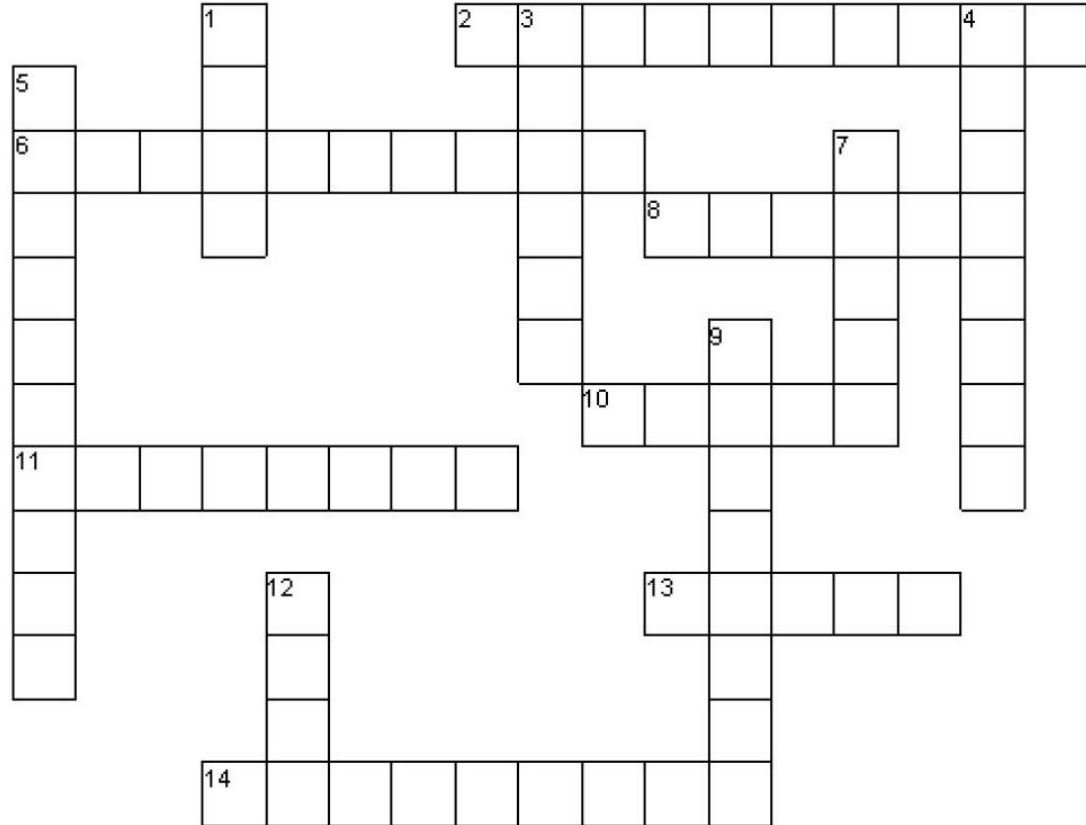
Traffic Engineer—AECOM, Raleigh, NC

Job responsibilities include: traffic capacity analysis, feasibility studies, signal design, signal timing, signal systems, ITS, traffic operations, traffic impact analyses, safety analysis, pavement management and other related traffic engineering work. Qualified candidates must have a BS in Civil Engineering and an EIT certification. MS Degree with transportation engineering emphasis and a Professional Engineer Registration in North Carolina will be considered as advantages.

Must be familiar with the traffic engineering software like Synchro, HCS, Sidra, and have CADD experience (AutoCAD and Microstation). Familiarity with traffic modeling (Ex: VISSIM) and transportation planning software (Ex: TransCAD) would be an advantage. Experience in preparing proposals and marketing/business development is also desired.

AECOM offers excellent benefits package including, but not limited to, medical, dental, 401K savings plan, and a professional development program. Please read the detailed job description and apply online at the careers section of the AECOM's website (www.aecom.com; Requisition Number: 34247BR)





www.CrosswordWeaver.com

Across		Down	
2	increase speed	1	money paid as a penalty
6	circular turning point	3	transmission device in vehicles
8	fuel for vehicles	4	long line of traffic
10	operate a vehicle	5	intersection
11	go past another vehicle	7	slow down
13	rapidity	9	sign indication directions
14	light in front of vehicle	12	division of road for traffic



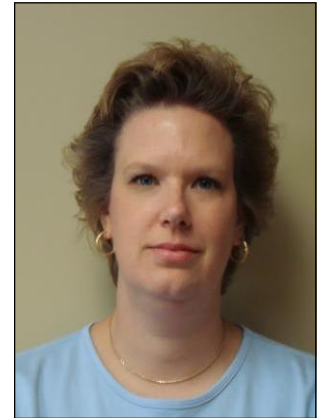
Alan S. Davis, EI

Be the first to solve the puzzle and you will be recognized in the winter newsletter and receive a \$5 discount at the next meeting. Email your answer to davisas@scdot.org.



Last Issue's Challenge

Congratulations to Valerie Holmes for winning the cryptic message challenge in the last issue. She solved 31 out of 36.



Valerie E. Holmes, PE

City of Greenville

1. 26 L of the A - 26 letters of the alphabet
2. 7 D of the W - 7 days of the week
3. 7 W of the W - 7 wonders of the world
4. 12 S of the Z - 12 signs of the zodiac
5. 66 B of the B - 66 books of the bible
6. 52 C in a P (WJs) - 52 cards in a pack (without jokers)
7. 13 S in the USF - 13 stripes in the united states flag
8. 18 H on a G C - 18 holes on a golf course
9. 39 B of the O T - 39 books of the old testament
10. 5 T on a F - 5 toes on a foot
11. 90 D in a R A - 90 degrees in a right angle
12. 3 B M (S H T R) - 3 blind mice (see how they run)
13. 32 is the T in D F at which W F - 32 is the temperature in degrees Fahrenheit at which water freezes
14. 15 P in a R T - 15 players in a rugby team
15. 3 W on a T - 3 wheels on a tricycle
16. 100 C in a R - 100 cents in a rand
17. 11 P in a F (S) T - 11 players in a football (soccer) team
18. 12 M in a Y - 12 months in a year
19. 13=UFS - 13 is unlucky for some
20. 8 T on a O - 8 tentacles on a octopus
21. 29 D in F in a L Y - 29 days in February in a leap year
22. 27 B in the N T - 27 books in the new testament
23. 365 D in a Y - 365 days in a year
24. 13 L in a B D - 13 loaves in a baker's dozen
25. 52 W in a Y - 52 weeks in a year
26. 9 L of a C - 9 lives of a cat
27. 60 M in a H - 60 minutes in a hour
28. 23 P of C in the H B - 23 pairs of chromosomes in the human body
29. 64 S on a C B - 64 squares on a chess board
30. 9 P in S A - 9 provinces in South Africa
31. 6 B to an O in C - 6 balls to an over in cricket
32. 1000 Y in a M - 1000 years in a millennium
33. 15 M on a D M C - 15 men on a dead man's chest
34. 80 G C in a M - 80 Gunter's Chains in a Mile
35. 46 C in S C - 46 counties in South Carolina
36. 8 S in the S D - 8 steps in the Shag dance



2009 Section Officers

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<p>Hesha Gamble, PE, PTOE</p> <p>Infrastructure Engineer Greenville County 301 University Ridge Suite 3800 Greenville, SC 29601 Office: 864.467.4612 HGamble@greenvillecounty.org</p>	<p>W. Jeff Davis, PhD, PE</p> <p>Professor The Citadel—Civil Engineering 171 Moultrie Street Charleston, SC 29409 Phone: 843-953-7687 Jeff.davis@citadel.edu</p>	<p>Don Turner, PE</p> <p>State Traffic Safety and Design Engineer SCDOT 955 Park Street Columbia, SC 29201 Phone: 803.737.1455 turnerd@scdot.org</p>

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Membership: Carol Jones, SCDOT, jonesvc@scdot.org

Nominations/Awards: Hesha Gamble, Greenville County, HGamble@greenvillecounty.org

Scholarship: Gaye Sprague, Sprague and Sprague, gayerprague@cs.com

Social: Don Turner, SCDOT, turnerd@scdot.org

Clemson Student Chapter Advisor: Wayne Sarasua, sarasua@clemson.edu

The Citadel Student Chapter Advisor: Jeff Davis, jeff.davis@citadel.edu

Newsletter: Jae Mattox, mattoxjh@scdot.org

About ITE

The Institute of Transportation Engineers is an international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs. ITE facilitates the application of technology and scientific principles to research, planning, functional design, implementation, operation, policy development and management for any mode of transportation. Through its products and services, ITE promotes professional development of its members, supports and encourages education, stimulates research, develops public awareness programs and serves as a conduit for the exchange of professional information.

JOIN SCSITE TODAY!!

Membership forms are available on our website. Dues are \$20.00 yearly.

Update your Information on the website. Your username is your last name followed by your first initial and your default password is "traffic". Make sure you capitalize the first letter of your last name and first initial to login.

We are on the web at
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Newsletter Information

"DRIVER" is the official publication of the South Carolina Section Institute of Transportation Engineers, the professional society for transportation engineers in South Carolina. It is affiliated with Southern District 5 ITE, as well as the International ITE.

Any suggestions on format or content are welcome. News on members, the section, or the profession should be submitted to Jae Mattox at mattoxjh@scdot.org.