South Section

Volume V, Issue III—Fall 2011

DRIVER

Message from our President

Merry Christmas and Happy Holidays to all! As I'm writing this it seems a bit early to say that, but I'm sure the New Year will be here before we know it.

First of all, I want to thank all of you for giving me the opportunity to serve the South Carolina Section over the past 3 years.



Jeff Ingham, PE, PTOE

THOMAS & HUTTON

I especially want to thank all the current and past officers of the SC Section that continue to make ITE a great organization. Much of the effort that goes on behind the scenes is done by a core group of people, many of whom have already served as section officers at some point in their career. It seems that once people really get involved in ITE, see the benefits that this organization provides, and enjoy the friendships that are made, they want to stay active.

Even though my time as President is ending, I look forward to continued participation in section activities and to many more years serving ITE in some capacity. I'd like to encourage each of you to actively reach out to other transportation professionals and invite them to participate.

I wish you all best of luck in the coming year and look forward to seeing you at our annual Christmas party in Columbia on December 1.



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2011 dues are now over due. Please pay Jennifer Bihl ASAP.



SC Section News

SCSITE 2011 CHRISTMAS PARTY



The SCSITE Annual Christmas Party will be held on Thursday December 1st at the Tin Roof in The Vista (1022 Senate Street, Columbia, SC) from 6:00pm to 9:00pm.

Social hour will begin at 6pm followed by a short program which will commence with the presentation of the student scholarships around 7pm. The cost of the party will be \$5 per Student Member, \$10 for gov't employees, and \$15 for members. Bring your spouse for an additional \$5. This cost includes food and drinks (tea, soft drinks, and beer).

6:00 PM Tin Roof

The menu will include chicken, steak, and veggie quesadillas, chicken tenders, jalapeno poppers, and chips and salsa/queso dip.



YOU MUST RSVP for the party by Wednesday, November 23 by emailing Jennifer Bihl at Jennifer.Bihl@kimley-horn.com or calling her at 843-379-1582.

Christmas Party Dessert Contest

Our hosts at the Tin Roof have agreed to let us bring in desserts for the party so we can continue the tasty dessert contest tradition. Please bring a HOMEMADE dessert to enter into our competition. Four lucky attendees along with last year's winner Susan Ruinen will be chosen at random for judges. A point system will be developed to award the winning dessert. A \$25 Wild Wing gift card will be given to the winner and a \$10 gift card will be given to the runner-up. After the winner has been determined we will devour the wonderful buffet of desserts.





If you are interested in playing golf before the party, please contact Mike Ridgeway at 803-252-1799 or mridgeway@srsengr.com



SCHOLARSHIP GOLF TOURNAMENT WRAP-UP Mike Ridgeway

A great time was had by all on September 9th at Northwoods. The weather was perfect and I truly believe this was the best tournament yet. We had the course to ourselves, which was great. We raised approximately \$6,300 for the scholarship fund this year. This is remarkable for a section our size and truly shows that we have dedicated members and sponsors that continue to make this event successful year after year. Many thanks to Ladd Gibson for being our guest speaker and doing a great job. I would like to personally thank Don Turner, Byron Hood, Jae Mattox, Liz Carpenter, Susan Ruinen, Jennifer Bihl & Lori Mahany for their hard work related to the tournament. If you helped out and I forgot you; Thank You too!!

Many thanks to our section leaders, who helped with some of the expenses related to the tournament this year. This helped us raise the large amount that we did for the scholarships. Also, I would like to give a special Thank You to Wilbur Smith Associates and Roger Dyar for sponsoring beverage/snack carts on the course. I will speak for everyone and say that we were well taken care of.

This year's tournament winners were:

First Place: Roger Burroughs, Greg Freel, Jody Gilden, & Andy Hackney **Second Place**: Bob Horner, Kip Gearheart, Pat Connelly, & Troy Maciaszek

Joey Rhodes won the long driveagain.

One last shout-out for our hole sponsors. THANK YOU!!!!! As always, please consider these firms when you do business as year-in/year-out they shell out the cash for the scholarship fund. I look forward to seeing you all at the Christmas Party in December.













Thanks to our Sponsors!

Traffic Data Connection



























Campco Engineering

Thanks to our Sponsors!











Coleman-Snow





Howard Chapman, PE









Kimley-Horn and Associates, Inc.

Bell Company













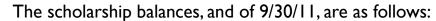
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SC Section News

Treasurer's Report

Checking Account: \$20,259.15.

The 2011 SCSITE Scholarships will be drawn from this account and a deposit to our scholarship funds at ITE HQ will be made by the end of the year.



Rowe \$23,794.44

Stafford Clark \$26,672.13



Jennifer Bihl, PE



If you have not paid dues for 2011, please mail your payment to Jennifer at the following address:

Jennifer Bihl, PE
Kimley-Horn and Associates, Inc.
710 Boundary Street, Suite 1D
Beaufort, SC 29902

SCSITE DIRECTORY—UPDATE

The directory is nearly complete and will be available on the website!

If you information has changed recently please email Jennifer and she'll update it.

jennifer.bihl@kimley-horn.com





FIND US ON FACEBOOK

Search Facebook for South Carolina Institute of Transportation Engineers.



Weston & Sampson Expands to Columbia, SC

Weston & Sampson is pleased to announce the opening a new office in the Capital Center Building located at 1201 Main Street. The office is on the 18th floor. We will be adding engineers to reach a staff level in the office of approximately 6 over the next 12 months. The Columbia office will enable us to provide better service for municipal clients located in the Midlands, Piedmont and Foothill areas of South Carolina. Weston & Sampson's primary focus includes infrastructure engineering for Water, Wastewater, Transportation, Stormwater, Architecture, Landscape Architecture, Structural Engineering and Surveying. We are very excited to be opening an office in the City of Columbia and look forward to continued growth in order to meet the needs and challenges associated with improving our regions infrastructure. Once we get the office settled, look for a grand opening announcement! We are also actively recruiting professionals who share our same vision and quest for excellence in the infrastructure engineering field.

Weston and Sampson currently has an office in Charleston.

For More Information about Weston & Sampson, Visit our website at www.westonandsampson.com or contact Amelia Burrell at 843-881-9804.





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Southern District News

Southern District ITE Winter Board Meeting

The Southern District ITE will hold its winter board meeting in Charlotte the first weekend in December. If there are any ideas or suggestions you have for improving the Southern District, please let Lori know prior to the meeting.

SDITE Workforce Development Committee

Jeff Moore, Chairman of the Workforce Development Committee, asked me to let you know that during the month of October, his committee will be surveying the Southern District membership as well as fellow transportation professionals who are not Southern District members. This survey is designed to determine the reasons why or why not our members decide to participate in or not participate in Southern District activities. The Workforce Development Committee is particularly interested in the answers provided by the public agency membership, but they encourage ALL of our Southern District membership to take a few minutes to participate in this survey. I also ask that you distribute this survey link to fellow transportation professionals who are not involved in Southern District activities. The information from this survey will be used in the discussion of future Southern District



Lori Mahany, PE, PTOE



Stantec

SDITE Annual Meeting Call for Papers/Presentations

The Southern District Annual Meeting will be held in Lexington, KY April 15-18, 2012. This is a joint meeting with the Great Lakes District of ITE and will provide an opportunity to reconnect with old friends as well as make new ones. The conference committee is currently looking for presentations and papers for the conference program.

Submit abstracts by November 15, 2011, via the submittal website: www.SDITE2012.org/Submit

Call for Abstracts

High-quality presentations are sought on a variety of topics. Abstracts should be no more than 500 words in length and may be on any topic relevant to the planning, design and operation of transportation facilities. Several presentation formats may be proposed and accommodated in the technical program including:

- Full Sessions (I hour session with multiple speakers arranged by submitter)
- Individual Presentations (20-minute presentation)
- Panel discussions (Topics and presenters arranged by submitter)
- Technical Workshops and
- Displays or posters about projects, featuring pictures, models, and computer graphics.

Southern District

Call for Papers

In addition to technical presentations, the SDITE/GLITE Conference will also be issuing a compendium of technical papers to compliment the technical program. Papers will be reviewed by the technical committee and awards for the best paper will be presented for each of two categories: Technical Knowledge and Project/Practice Highlights

Contact

Should you have any questions regarding the this call for abstracts please contact Adam Kirk (akirk@engr.uky.edu) or Eric Green (egreen@engr.uky.edu)







Advancing Transportation Knowledge & Practice ATLANTA, GEORGIA August 12-15, 2012

Join your peers August 12–15 in Atlanta, GA for the ITE 2012 Annual Meeting and Exhibit. The conference is designed to share knowledge, expertise and ideas on multifaceted approaches to addressing transportation issues and to exploring emerging trends in the industry. The meeting content will include sessions in a mix of presentation and training formats focused on state-of-the practice, advancement of the profession and emerging issues designed to benefit transportation professionals in the public and private sector and students.

Atlanta began as a transportation mecca. It still is, but with a 21st-century global approach. Hartsfield-Jackson Atlanta International Airport is the busiest airport in the world. Atlanta is America's most accessible city with direct, non-stop service to more than 155 US destinations – 80 percent of those within a two-hour flight. It's also the second busiest for international flights. And with the MARTA trains, visitors can roll into town without a car. Visit such hot spots as Centennial Olympic Park, the World of Coca-Cola and the fabulous Fox Theatre while soaking in Atlanta's number one attraction—its southern hospitality.

Stay tuned. More information is coming soon.

Meeting Registration and Information

Sallie Dollins: sdollins@ite.org

Telephone: +1 202-785-0060 ext. 149 Fax: +1 202-785-0609

Exhibit Registration and Information

Telephone: +1 202-785-0060 ext. 128 Fax: +1 202-785-0609

E-mail: Christina Garneski, cgarneski@ite.org



SCSITE SHIRTS FOR SALE

Please contact Liz if you are interested in ordering an ITE Logo Shirt

Elizabeth.Carpenter@aecom.com



NEWSLETTER ARTICLES WANTED!

Advertise job opportunities, announce new hires / promotions, discuss interesting projects, or tell the section of something interesting you have going on outside of work. Send all articles, questions, or comments to Jae Mattox at mattoxjh@scdot.org.

This newsletter is for the benefit of our section so please do your part to make it a success!

Member News

SOUTH CAROLINA

Edmonds Transfers to SCDOT Rail and Research

Melissa Edmonds has been transferred to SCDOT's Rail and Research group in Traffic Engineering. She started her career with SCDOT in 2001 as part of the School Operations group. Since then she has worked with the Hazard Elimination group, Special Projects and Operations, and the Traffic Signals and Systems group. Upon moving to the Rail and Research group, Melissa's new responsibilities include evaluating high priority crossings, assessing the type of safety improvements that would most benefit these crossings, and coordinating the activities of the railroad inspection program. Also, she will continue to review railroad preempted signalized locations in her new position, a responsibility she brought with her from the Traffic Signal and Systems group.



Melissa Edmonds, PE



Melissa and her husband Mike were blessed with their second child, a daughter named Emma, in May of this year. They also have a 19 month old son, Austen, who has been busy teaching his new sister how to keep their parents on their toes.

Anna Salvagin Joins AECOM

AECOM is pleased to announce the hiring of SCSITE's 1999 President, Anna Salvagin. Anna has worked as a consultant in Traffic Engineering and Toll Operations for companies in California, New England and the southern states since 1989. Additionally she worked for Central Midlands Regional Planning Council for three years and moved on to SCDOT for eight years heading up SCDOT's toll operations and working in the Chief Engineer's Operations office. Anna comes to AECOM from HNTB and will be working as a Senior Program Manager with the toll operations group pursuing projects in North America and internationally.

Anna is a graduate from West Virginia University with a Bachelors and Masters of Science in Civil Engineering. She lives in Lexington SC with her husband, Todd and their two children, Conrad and Kristina. Anna is a member of Corpus Christi Catholic Church in Lexington. She enjoys spending time supporting her children's activities and socializing with friends.





Project Management



Sunny Nandagiri, PE, PMP

AECOM

Work Break Down Structure Sreekanth Nandagiri, P.E., PMP

Work Break Structure or WBS is an integral part of the project scope management and according to the Project Management Body of Knowledge (PMBOK) is "a process necessary for sub dividing the major project deliverables and project work into smaller, more manageable pieces". WBS is a deliverable-oriented hierarchical decomposition of the work to be executed by the project team, to accomplish the project objectives and create the required deliverables.

The WBS subdivides the project work into smaller, more manageable pieces of work, with each descending level of the WBS representing an increasingly detailed definition of the project work. The planned work contained within the lowest-level WBS components, which are called work packages, can be scheduled, cost-estimated, monitored, and controlled.

WBS templates and decomposition are the two tools and techniques used to develop WBS. Although each project is unique, a WBS from a previous project can often be used as a template for a new project, since some projects will resemble another prior project to some extent. Decomposition is the subdivision of project deliverables into smaller, more manageable components until the work and deliverables are defined to the work package level. The work package level is the lowest level in the WBS, and is the point at which the cost and schedule for the work can be reliably estimated. The level of detail for work packages will vary with the size and complexity of the project.

The work breakdown structure has a number of benefits in addition to defining and organizing the project work. A project budget can be allocated to the top levels of the work breakdown structure, and department budgets can be quickly calculated based on the each project's work breakdown structure. By allocating time and cost estimates to specific sections of the work breakdown structure, a project schedule and budget can be quickly developed. As the project executes, specific sections of the work breakdown structure can be tracked to identify project cost performance and identify issues and problem areas in the project organization.

Project work breakdown structures can also be used to identify potential risks in a given project. If a work breakdown structure has a branch that is not well defined then it represents a scope definition risk. These risks should be tracked in a project log and reviewed as the project executes. By integrating the work breakdown structure with an organization breakdown structure, the project manager can also identify communication points and formulate a communication plan across the project organization.

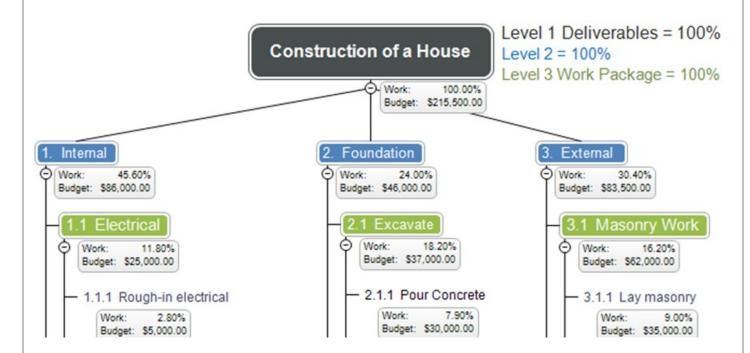
When a project is falling behind, referring the work breakdown structure will quickly identify the major deliverables impacted by a failing work package or late sub- deliverable. The work breakdown structure can also be color coded to represent sub- deliverable status. Assigning colors of red for late, yellow for at risk, green for on-target, and blue for completed deliverables is an effective way to produce a heat-map of project progress and draw management's attention to key areas of the work breakdown structure.

Project Management



The following guidelines may be considered when creating a work breakdown structure:

- The top level represents the final deliverable or project
- Sub-deliverables contain work packages that are assigned to a organization's department or unit.
- All elements of the work breakdown structure don't need to be defined to the same level
- The work package defines the work, duration, and costs for the tasks required to produce the sub-deliverable
- Work packages should not typically exceed 10 days of duration
- Work packages should be independent of other work packages in the work breakdown structure
- Work packages are unique and should not be duplicated across the work breakdown structure



Author of this article is a licensed Professional Engineer in Eight States (including South Carolina) and is also a certified "Project Management Professional" (PMP). He is an active member of the South Carolina Section of ITE (SC-ITE) and is currently serving as a Technical Committee chair for the SC-ITE.

Mr. Nandagiri works for AECOM as their Program Director.

<u>Sources for this Article:</u> Project Management Institute's "Project Management Body of Knowledge" (PMBOK), 2000 and 2007 Editions, www.workbreakdownstructure.com, and the AECOM's Project Management's internal training material.

Design

Diverging Diamond Interchanges

Joe Sturm, SCDOT Traffic Engineering

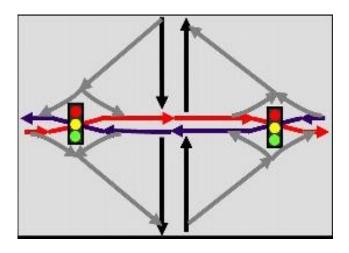
Most transportation projects have the same look and feel leaving little room for creativity, but, every now and then, something different and worth-while pops up. Many of you have probably heard of the diverging diamond interchange (DDI) by now, but you may not know some of its finer points. The DDI is a fairly simple concept that, when used in proper situations, can be an effective tool for a designer to use. Please see the information provided below from

http://www.divergingdiamond.com and Gilbert Chlewicki. If interested, the site provides much more information about the history and design.



Joe Sturm







Safety Benefits

- Fewer conflict points (14 for DDI, 26 for conventional)
- Conflict points spread out throughout interchange
- Better sight distance at turns
- Virtually no driver confusion (FHWA study and new DDI observations in Springfield, MO)
- Traffic calming features when desired
- Wrong way entry to ramps extremely difficult
- Pedestrian crossings are shorter



Diverging Diamonds continued.

Supporting Data

- MODOT survey shows that 97% of drivers feel safer in the new Springfield DDI compared to the previous diamond interchange
- Crash data for the new Springfield DDI show a 60% reduction in collisions in a five-month comparison of the old interchange

Versailles, France DDI showed that within a five-year time span that was examined, there were only been 11 reported light crashes

Operational Benefits

- Unique phase combinations
- "Free" or simple left and right turns from all directions
- Increases left turn lane capacity without needing more lanes
- Only two phases needed, shorter cycle length
- Lanes with multiple assignments in all directions
- Better storage between the ramp terminals
- More functional during a power outage
- U-turns from highway are accommodated well Better signal network synchronization

Supporting Data

- MODOT survey shows that 95% of drivers felt that there was less congestion in the new Springfield DDI compared to the previous diamond interchange
- Daily traffic backups that sometimes had over a mile queue were eliminated once the construction of the new Springfield DDI was complete.

Cost Benefits

For a retrofit

- Existing bridge can usually be used
- Additional right-of-way rarely needed
- Construction time is reduced

Maintenance of traffic is simplified during construction

For a new interchange

- Less lanes than other interchange forms
- Less bridge structure
- Less right-of-way than a cloverleaf form





College Corner

SCSU ITE Student Chapter News Judith Mwakalonge



Judith Mwakalonge, PhD SCSU ITE Student Chapter Advisor



The SCSU ITE Student Chapter waved goodbye to the founder and first chapter advisor Dr. Yuanchang Xie and wishes him all the best in his new position at University of Massachusetts, Lowell. The chapter welcomed Dr. Judith Mwakalonge as their new chapter advisor. Dr. Mwakalonge joins the SCSU family from Prairie View A&M University where she was working as a Post Doctoral Researcher with Dr. Judy Perkins in the Department of Civil & Environmental Engineering. Dr. Mwakalonge received her Ph.D. and Master's degrees in Civil Engineering with concentration in Transportation Engineering from Tennessee Tech University and Florida State University, respectively. Dr. Mwakalonge's visions and goals for the SCSU ITE Student Chapter are (i) to increase students interaction and networking through conference attendance and workshops, (ii) to expose chapter members with topics of interests through invited guest speakers, technical presentations, and field trips, and (iii)to increase chapter involvement in the technical and social communities. The SCSU ITE Student Chapter will continue to work and contribute to the South Carolina Section of the ITE.



College Corner

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SOUTH CAROLINA

News from the Citadel ITE Student Chapter W. Jeff Davis

Citadel ITE student members have been busy participating in a number of high-profile transportation events and community service presentations related to completion of their year long Battery 2 Beach Project. The work represents over 1,500 hours of service from 25 students in civil engineering who collaborated with College of Charleston, Environmental Studies, and nonprofit organization Charleston Moves. ITE/ASCE student members OC Jason Barker, Cadets Nathan Fultz, John Tousignant, Clay Frontz, Ben Schwenk, Chris Geary and Aaron Lee participated in the following professional events:

- Bike Friendly Charleston Event: Keynote Speaker and Reception, September 7, 2011 Students participated in a professional event highlighted by a presentation by national bicycling expert Mia Burke and including Mayor Joseph P. Riley.
- Bike Friendly Charleston Event: Workshop Forum, September 8, 2011 Students presented
 Battery 2 Beach Cost Benefit Study findings and lead small group discussions to help provide
 further direction for project development and implementation. This event was attendee by 50
 politicians, community leaders, engineers, planners and the local press.
- Bike Friendly Charleston Event: Workshop Forum, September 8, 2011 Students participated
 in a community event at the Charleston Maritime Center celebrating the diversity of bicycling
 in Charleston and including a bicycle fashion show in which two Citadel cadets participated.
- Clips of Faith: Charleston Moves Non Profit Organization Fund Raiser and Community
 Awareness Event, September 22, 2011 Students staffed a display booth explaining the Battery 2 Beach project to the public at a community event and festival held in Marion Square.



William J. Davis, PE, PhD Citadel ITE Student Chapter Advisor



In addition, students were recently recognized for their monumental effort on the Battery 2 Beach project when they received the 2010 ASCE South Carolina Section Award for 2010 based on their outstanding service during the past year.

ITE/ASCE Student Meeting was held September 20, 2011. Ms. Jennifer Bihl, Kimley Horn Associates and Mr. Derrick Bellamy, SC State Port Authority, provided a presentation on the Union Pier project in downtown Charleston involving a 60-acre renovation and design of a \$40m cruise ship passenger terminal. Current staus of improvement plans were discussed with regard to the public review process, engineering issues and proposed construction. This project will re-define the Charleston waterfront near the Historic Market area and U.S. Customs Building. 105 students, four-faculty and two-guests, attended the meeting.



C of C & Citadel B2B team during presentation at workshops held at the Charleston Maritime Center.





Ms. Jennifer Bihl, Kimley Horn Associates and Mr. Derrick Bellamy, SC State Port Authority, with cadet leaders after technical presentation on the Union Pier Passenger Terminal expansion located in downtown Charleston.



College Corner

Nathan Huynh, PhD Student Chapter Advisor



News from the Student Chapter Daniel Baker

For the ITE student chapter at the University of South Carolina, the fall 2011 semester has been about building membership and getting students move involved with ITE. New student day kicked off our schedule allowing us to meet with incoming freshmen to get them excited about transportation engineering. Following that, our first meeting, sponsored by LPA with speaker Fred Kicklighter, was a success, increasing our membership drastically. Our second meeting was November 8 and was sponsored by Florence and Hutcheson, Consulting Engineers. At this meeting, we elected new officers, continued recruiting members, and heard about the Pros and Cons of working in State Government, Access Management, and how ITE can influence our professional lives from guest speaker Jae Mattox of the SCDOT.

We are also planning an unofficial field trip to the traffic control center for Columbia, South Carolina. This will give students a hands on look at transportation engineering not found in our classes.



Update from Tiger Town Jennifer Johnson

The Clemson Chapter of the Institute of Transportation Engineers started off the year with tons of enthusiasm and drive. To kick the year off right, the Clemson ITE chapter held its annual Fall Social at Dr. Wayne Sarasua's house in order to spend some time grilling out and tubing on Lake Hartwell. With a great start to the football season, the Clemson ITE chapter is also looking forward to their ITE tailgate fundraiser for the upcoming Wake Forest game. The group is also excited to have the opportunity of fellowshipping with SCSITE members at the upcoming Christmas party in Columbia, SC, on December 1st!

Transportation Studies

Clemson ITE has participated in several transportation studies for the University this Fall, including: a parking occupancy survey, bicycle utilization study, and intersection level of service determination. In addition, we have several more studies being completed that will benefit the surrounding community including traffic counts at Tri County Technical College, an intercity bus survey for Greenville, SC, and a parking lot refurbishment project at a local Clemson church

Technical Tours and Conferences

Not only have the students networked amongst themselves, they were also afforded the opportunity to take separate tours of the Proterra Electric Bus Plant in Greenville, SC and the BMW facilities in conjunction with SCSITE. In addition, several of our members traveled to Orlando, Fl in October for the ITS World Congress where they received the People's Award for the USDOT's Connected Vehicle Technology Challenge. Clemson ITE has sponsored a weekly seminar series to coincide with our fall meetings. We have had several guest speakers including: Dan Hoffman (Clemson University's new parking director), and Clemson ITE Alumni Hesha Gamble (Greenville County) and Jae Mattox (SCDOT).







Wayne Sarasua, PhD, PE Student Chapter Advisor



Jennifer Ogle, PhD Student Chapter Advisor



Service Projects

One of the most exciting projects that Clemson always looks forward to is the Adopt-A-River project. During this project, students paddled down the Saluda River picking up trash, old tires, broken televisions, and much more. While cooking out on the river, the students had a blast getting our hands dirty and fellowshipping with one another outside of the classroom. We are also planning a large outreach project for the spring so stay tuned for more updates!







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Technology Corner

Horizon Signal Develops Wireless Interface Module

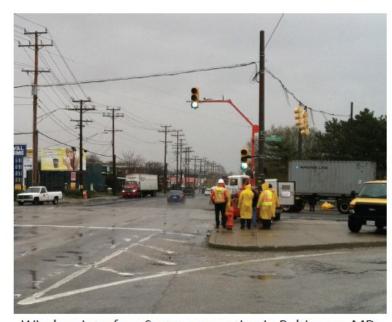
Scott Heydt

Horizon Signal Technologies has developed a new Wireless Interface Module that allows a temporary traffic signal to be wirelessly connected to an existing street corner traffic control cabinet. By using 900Mhz radio communication, the existing permanent traffic controller can completely control and monitor signal lamps and voltages from the remote signals. The new

device is designed to be used with the Horizon SQ3TS trailer-mounted portable traffic signal.

"We began development of the Wireless Interface about two years ago, working closely with the city of Norfolk, Virginia." Jay Hunter of Horizon Signal explains.

The device was originally designed for use in signal "knockdown" situations, in which part of a permanent intersection is temporarily disabled due to an accident or damage. The user can tow the temporary signal out to the location and position it in place of the damaged signal or missing phase of traffic so that traffic may continue to flow as normal. Since its initial release, the de-



Wireless Interface System operating in Baltimore, MD.

vice has also been used for traffic pattern reconfigurations in work zones, and to add additional signal indications to existing intersections. Setup of the system takes only minutes. A 12" x 12" square enclosure is powered from the street corner cabinet, and signal field wires are connected in the traditional manner. Once the Horizon Signal trailer is powered on, the permanent controller takes over.

"Because the system is wirelessly relaying lamp information, the intersection will still have full conflict monitoring," Hunter explains. The loss of a lamp or conflicting signal indication will be detected by the existing Malfunction Management Unit, which will transfer the controller the fault condition.

The Horizon SQ3TS can also be used as an independent system to control traffic through construction zones or intersections.

Job Opportunities

2 I



Lead Bridge Engineer & Roadway Design Engineer—PB, Columbia, SC

HDR is seeking a lead Bridge Engineer and mid-level roadway design engineer in Columbia, SC

Read the detailed job descriptions and apply online at http://www.pbworld.com/



Resident Construction Engineer/Project Manager — Greenville, SC

F&H is seeking a Construction Project Manager, CE&I Project Manager, and Civil Engineer in Greenville

Read the detailed job description and apply online at

http://www.flohut.com/index.php/careers



Bridge and Roadway Engineer —Fort Mill, Greenville, SC

Stantec is seeking two sutructural engineers for their Charleston office.

Read the detailed job description and apply online at http://www.stantec.com



Roadway and Bridge Engineers —Greenville & Fort Mill, SC

URS is seeking two engineers in South Carolina

Read the detailed job description and apply online at www.urs.com





Puzzle Mania

Question 1:



Dave and Anne moved into their new home and then went to the hardware store to make an important purchase. "How much is one?" asked Dave. "\$3," came the reply. "What about 20?" "That'll cost you \$6." "OK, well we need 2042."

What were Dave and Anne buying and how much did it cost them?

Question 2:

In the early 18th century Mrs. Abigail Eischrank of Cambridge, Massachusetts, gave birth to thirteen children. Exactly half of them were girls.

Explain.



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



Alan S. Davis, PE



Puzzle Mania



Last Issue's Challenge

Kurt Walters was the winner of the last issue's challenge.



Question 1:

Albert Coley is a fishmonger. He stands 6 feet 6 inches tall in his socks, takes size XXL in clothes and wears size 14 shoes.

What do you think he weighs?

A: Fish





Kurt Walters

City of Greenville

Question 2:



An old fashioned 78 vinyl record has a diameter of 12 inches. The outside border is a 1/2 inch wide and the distance from there to the central hole is 5 1/2 inches. If you put the stylus down at the very edge of the playing area how far will the needle have travelled by the time the music stops? You can assume that there are 83 grooves to the inch.

A: 5 inches to the middle



Section Leadership



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Vice President Liz Carpenter, PE

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Affiliate Director Rick Reiff, PE

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Rick.reiff@stantec.com

2011 Committee Chairs

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