

# The Voice

JUNE 2009



THE VOICE OF TENNESSEE'S ENGINEERING COMPANIES

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## Modern Roundabouts: A Growing Trend

by Robert P. Murphy, PE, PTOE, RLS  
President, RPM Transportation Consultants  
Brentwood, TN

and Daniel J. Spann, PE, PTOE  
Project Manager, RPM Transportation  
Consultants, Brentwood, TN

**M**odern roundabout design is a growing national trend. The modern roundabouts that are now being designed differ substantially from the large traffic circles constructed in the early 1900s such as Columbus Circle in New York City and Dupont Circle in Washington, D.C. The modern roundabout is a one-way, unsignalized, circular intersection, with specific design characteristics including a raised center island, entry deflection, and splitter islands.



Robert Murphy

The first modern roundabout completed in the United States was in Nevada in 1990. By comparison, in 1993, France completed its 10,000th



Daniel Spann

roundabout. Since 1990, over 1,000 roundabouts have been completed in the United States, while over 30,000 have been completed in France.<sup>[1]</sup>

States leading the way in roundabout construction include Colorado (200), North Carolina (200), Maryland (160), Washington (146), and Kansas (137) while communities such as Carmel, Indiana, have implemented over 50 roundabouts.

### Roundabouts in Tennessee

It's estimated Tennessee has over 20 roundabouts completed. The City of Chattanooga leads the way with approximately 12 completed and four (4) more in design. One of the first modern roundabouts completed in Tennessee was the Music Row Roundabout in Nashville in 2001. The two-lane modern roundabout on the campus of Middle Tennessee State University is one of the most recently completed roundabouts in Tennessee.

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Completed in 2008, the two-lane modern roundabout on the campus of Middle Tennessee State University is one of the most recently completed roundabouts in Tennessee. (Designed by RPM Transportation Consultants, LLC and Lose and Associates, Inc.)

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# Annual Meeting, June 18-19, Will Cap Year of Insights

by Lillard Teasley, PE  
President, ACEC of Tennessee

At the ACEC of Tennessee and TSPE Joint Annual Meeting, June 18 - 19, I hope to have the opportunity to express these thoughts to many of you in person. The honor of serving as president of ACEC of Tennessee for the past year has given



Lillard Teasley

me increased insights into what it takes to make our organization work and be successful.

I saw close-up the resources of our organization, how things really work, and why our efforts are so worthwhile. This recognition occurred during both local and national gatherings. At the Annual National Convention and Legislative Summit, I saw the tremendous influence that ACEC has developed through its legislative efforts and PAC resources. The tremendous need for our involvement and contributions was obvious. During officer orientation in Washington D.C., I was introduced to the ACEC national staff and gained exposure to the various subgroups of ACEC such as the Small Firm Council. At these events, I

also had the opportunity to hear a variety of speakers with widely varying opinions. During an election year, it was especially helpful to hear a breakdown on the issues of importance. At the annual ACEC Fall Conference in Montreal, Quebec, I especially enjoyed the presentation of keynote speaker, Bob Ballard, who discovered the Titanic. Closer to home, I will always value the opportunity to be involved in ACEC of Tennessee's special events including the 40th Anniversary celebration and the *Engineering Excellence Awards* reception and banquet.

**People Power**

However, it is the time and involvement of many people that really make our organization successful. My greatest satisfaction as president came through becoming acquainted with the multitude of colleagues who make up this organization. I gained an increased understanding and appreciation of the many talented, diverse personalities in the Tennessee engineering community. Impressive!

I encourage all of you to get involved and stay involved. Begin by attending the Annual Meeting in June. Give your time; it is truly important to our profession. Thank you for the opportunity to serve as your president.

## Roundabouts *(continued from page 1)*

This roundabout, which received a recent ACEC of Tennessee *Engineering Excellence Honor Award*, was designed to improve safety, traffic flow, and aesthetics for the main entrance of campus.

**Safe, Efficient & Cost-Effective**

This trend towards roundabouts can be attributed in part to a growing awareness of their proven track record with regard to safety and efficiency. Over the years, roundabouts have produced compelling statistics. Recent statistics released by the Federal Highway Administration (FHWA) report roundabout intersections reduced injury crashes by up to 76%, pedestrian crashes by up to 30-40%, and fatalities by up to 90% when compared to traditional signalized and stop controlled intersections.

The reasons for improved safety are simple. Roundabouts have 75% fewer conflict points. A typical intersection has 32 potential conflict points while a typical roundabout has only eight.<sup>[2]</sup> Roundabouts are designed to operate at slow speeds. This creates more time for motorists to react to other vehicles and pedestrians. Furthermore, right turns are the only movement allowed upon entry and exit of a roundabout, lessening the severity of crashes which do occur.

In addition to being the safest intersection design, roundabouts can efficiently accommodate significant traffic volumes. Roundabouts improve the operations of intersections with high left turn volumes, reducing

storage lane needs, and reducing vehicle emissions.

Over time, roundabouts are also proving to be a more economic solution. FHWA estimates the typical lifespan of a traffic signal to be ten years while the service life of a roundabout is approximately 25 years. There is no signal equipment to install. The FHWA estimates a roundabout saves approximately \$5,000 per year in electricity and maintenance costs.

Proper design is critical to the success of roundabouts. Design features such as traffic deflection, geometric curvature, and proper consideration of site-specific variables are critical to the successful performance of the roundabout. Since roundabout designs are still not common, it is important that engineers designing roundabouts have a thorough understanding of these critical elements.

Simply put, a properly designed roundabout saves lives. For this reason, governing agencies across the country are beginning to make roundabouts the rule as opposed to the exception. In 2006, the New York Department of Transportation Highway Design Manual was revised to state, "When the analysis shows that a roundabout is a feasible alternative, it should be considered the Department's preferred alternative due the proven substantial safety benefit and other operational benefits." In 2008, FHWA's Proven Safety Countermeasures memo states, "Roundabouts are the preferred safety alternative for a wide range of intersections." These statements clearly show that roundabouts are not a fad, but viable solutions that are here to stay.

[1] *Some Roundabout Mileposts*, by Ken Sides, PE, PTOE, AICP, Senior Professional Engineer, City of Clearwater, FL, USA, ITE Journal, March 2009 [2] *Roundabouts: A Safe Choice*. FHWA-SA-006. Washington, DC, USA: Federal Highway Administration, May 2008

# Tennessee's Winner is the National Winner!

Ipshta Thomas, the winner of the ACEC of Tennessee 2009 scholarship, has won the ACEC national scholarship for \$10,000!

Earlier this year, Thomas received a \$1,000 scholarship from ACEC of Tennessee; this qualified her to compete in the national scholarship program with engineering students from throughout the United States.



**Ipshta Thomas**

"Ipshta's application was the clear and unanimous winner in both the state and national competition," said Everett Cowan, PE, FACEC, Gresham, Smith and Partners,

Nashville, who chaired ACEC of Tennessee's 2009 Scholarship Committee and also served on the national scholarship selection panel. "Ipshta, of course, had the requisite GPA, but her essay is what really won the day. It was very well written and clearly articulated the issues that engineers face in today's new green environment. I was definitely beaming with pride when the national scholarship results were finalized."

Thomas, 20, recently graduated from the University of Tennessee at Chattanooga (UT-C) with a Bachelor's degree in Civil Engineering. In addition to maintaining a 3.8 grade point average, she was an Environmental Compliance and Dam Safety Intern with TVA. This year, she led the UT-C team in its senior design project of an intermodal transit center for Chattanooga, a project that placed second in a National Council of Examiners of Engineering and Surveying competition. Now a Civil Engineering graduate student at UT-C, she will focus her research on infrastructure health monitoring. She anticipates receiving her Master's degree by December 2010.

Bill Johnson, PE, ARCADIS, Chattanooga, presented the state scholarship check to Ipshta. He said, "When I met her, she impressed me with her poise. She is one of the finest young people I have ever met. She knows where she wants to go and has a plan for achieving her goals. We can be proud of our choice for this award."

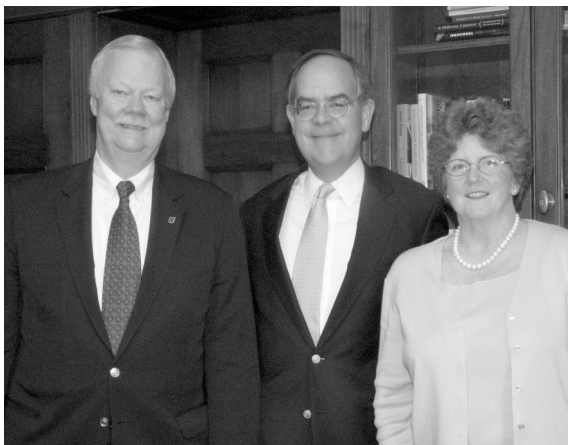
What is Ipshta's reaction to all of this? "I am very excited and honored. I can't believe this is really happening to me," she said. "I truly appreciate the scholarships that I have received which will really make financing graduate school much easier."

# Tennessee Well Represented at National Meeting

An impressive - and energetic - contingent from Tennessee participated in the ACEC national Annual Convention & Legislative Summit in Washington, D.C. in late April. In addition to participating in meetings and programs, and networking with colleagues from across the U.S., the group visited with Tennessee's legislators to discuss issues of importance to engineers.

Members of the ACEC of Tennessee delegation to the convention included engineers from firms located across the state. The group included Robert Campbell, Robert G. Campbell & Assoc-

iates, Knoxville; Angie and Harold Cannon, Cannon & Cannon, Knoxville; Everett Cowan, Gresham Smith and Partners, Nashville; David Davidson, Barge Waggoner Sumner & Cannon, Nashville; Lamar Dunn, Lamar Dunn & Associates, Knoxville; Ed Hargraves, Askew Hargraves Harcourt & Associates, Memphis; David Harrell, Vaughn & Melton, Knoxville; Bill Johnson, ARCADIS, Chattanooga; Steve Lane, Smith Seckman Reid, Nashville; Jim Morinec, AECOM, Nashville; and Jerry Stump, Wilbur Smith Associates, Nashville.



Thank you, Congressman Cooper - Everett Cowan, Gresham Smith and Partners, Nashville (left) and Candy Toler, executive director of ACEC of Tennessee, were among the delegation from Tennessee that met with Congressman Jim Cooper at his Capitol Hill office to thank him for his support of state and national infrastructure improvements.



Welcome, Congressman Duncan - Members of the Tennessee delegation to ACEC's national convention in Washington, D.C. greeted Congressman John Duncan at the front door of the Grand Hyatt Hotel prior to his presentation at the meeting. Pictured welcoming Congressman Duncan (center) are Angie and Harold Cannon, Cannon & Cannon, Knoxville.

## CALENDAR

**JUNE  
17**

Tennessee Engineering Foundation Golf Tournament

Vanderbilt Legends Club, Franklin

Information:  
[www.acectn.org/Events.htm](http://www.acectn.org/Events.htm)

**JUNE  
18-19**

ACEC of TN / TSPE Joint Annual Meeting

Embassy Suites, Murfreesboro

Information:  
[www.acectn.org/AMO71.htm](http://www.acectn.org/AMO71.htm)

**JUNE  
18**

Tennessee Engineering Foundation Trustees Meeting

4:00 p.m. to 6:00 p.m.

Embassy Suites, Murfreesboro

**OCTOBER  
17-20**

ACEC Fall Conference

Palm Springs, California

Tennessee Engineering Center  
800 Fort Negley Boulevard  
Nashville, TN 37203

Return Service Requested

**JUNE 2009**

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## What's on the Website?

Visit the ACEC of Tennessee website, [www.acectn.org](http://www.acectn.org), for the latest news and updates.

- Check out the flash presentation of the 2009 *Engineering Excellence Awards* winning panels! See photos from the reception. View photos of the winners with their trophies.
  - Read this newsletter and past editions that include articles of interest.
  - Visit the directory of more than 110 member firms.
  - Plan your year by checking out the calendar of events.
- And
- Register **NOW** for the Annual Meeting, June 18-19!

## FROM THE EXECUTIVE DIRECTOR

### *State Fire Marshal Adopts Dispute Resolution Rules*

by Candy Toler  
*Executive Director, ACEC of Tennessee*

Representatives of ACEC of Tennessee have met with the Commissioner of Commerce & Insurance, who is officially the State Fire Marshal, over the last several years to discuss ways to speed up the process of plans review in the State Fire Marshal's Office of Codes Enforcement. Other representatives in the design industry, including AIA and contractors, have been part of the discussions. Several things have evolved from



**Candy Toler**

those discussions:

- adoption of the 2006 International Building Code;
- adoption of the 2006 International Fire Code (as opposed to the Uniform Fire Code);
- creation of method for electronic submittal of plans (under development right now); and
- development of a dispute resolution process.

The State Fire Marshal adopted rules establish-

ing a dispute resolution process, which became effective in December 2008. The rules establish a "panel of outside parties" to hear the appeal at the 5th step in the process.

#### Outside Panel: E/A Board Request

The outside panel will be composed of three people: one each selected by the owner, the Commerce & Insurance Commissioner, and the Executive Director of the State Engineers' & Architects' Board. The E/A Board has requested the help of ACEC with identification of individuals from each part of the state who would be willing to serve on panels. **If you are interested in serving on a panel, please let me know.** An example of how the A/E Board anticipates the process will work is to have someone from East or Middle Tennessee sit on the panel for a dispute in West Tennessee.

To learn more about the dispute resolution process or read the complete rules which became effective in December 2008, go to: <http://tn.gov/commerce/sfm/documents/rulemakingIFC.pdf>

Note: Nothing in the dispute resolution process prohibits the owner from filing a lawsuit.