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President's Message



**ASCE SunCoast
Branch President
Amjid Hussain**

Dear Members and Friends of ASCE

I would like to thank FES for their contribution to our successful joint meeting in January. We had record participation! We will continue to arrange occasional joint meetings with FES and other professional organizations. I would also like to recognize our Board members and all those who participated in outreach activities with Middle and High School students last month as judges in the science fair and providing Toothpick Bridge assistance.

The SunCoast Branch has a busy upcoming schedule with many opportunities for members to participate. The 2012 National Engineers Week will be celebrated from February 19th through the 26th. The SunCoast Branch has chartered a Sunset Cruise to celebrate Engineers Week. This will be a social event for you as well as your family and friends. I invite ASCE members and members of our fellow professional organizations to join us at LeBarge Cruise on Friday February 24th. For sponsorship opportunities and RSVP, please visit our website or contact one of your Branch officers.

ASCE has teamed up with fellow professional organizations to offer several events during Engineers Week.

The Proclamations for Engineer's Week will be read at the Sarasota County Commission meeting on February 21st at 9 am and at the City of Sarasota City Commission meeting at 6 pm. All engineers are requested to be there to be recognized.

The First Annual Poker Run will be Friday February 24th in the afternoon prior to the LeBarge Cruise at 5:30 pm.

The annual Toothpick Bridge Building Contest will be on February 25th at G.WIZ Science Museum. Volunteer opportunities are available! You can find the details for this and other events in the Newsletter.

In our survey, you asked for field trips. We are planning one for the spring. If you did not have the opportunity to put in a request through the survey and have a specific project site in mind, please share it with us.

This month's lunch meeting is an inaugural meeting for ASCE EWRI SunCoast. Mike Britt from City of Winter Haven will be our guest speaker and we are offering PDH's. If you have not submitted your RSVP for this meeting yet, please visit www.ascesuncoast.weebly.com and register for the meeting. I look forward to seeing you at the meeting on February 16th. Thank you for your continued support.

Amjid Hussain, P.E., M.ASCE



**ENGINEERS
WEEK® 2012**
February 19-25

February Luncheon Meeting Details

The Inaugural Meeting of EWRI and the ASCE SunCoast Branch meeting is scheduled on Thursday February 16th, 2012 from 12 - 1 pm with registration starting at 11:30 am.

When: February 16, 2012 Check in at 11:30 AM

Where: Dutch Heritage,
3713 Bahia Vista Street, Sarasota, FL

Speaker: Mike Britt, City of Winter Haven

Topic: Sustainable Water Resource Management

Please RSVP: <http://ascsuncoast.weebly.com/monthly-meetings.html>

EWRI is a Technical Institute with ASCE. PDH credit is being offered.



**3713 Bahia Vista Street,
Sarasota, FL, 34232**

Upcoming Meeting Information

March 15, 2012

Speaker: Joe Krauss

Sarasota County Water Resources

Wednesday, April 11, 2012 Joint Meeting with FES

Speaker: Dr Kirk Hatfield, University of Florida
University of Florida Breakthrough Projects

May 7, 2012

Speaker: TBD

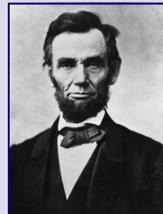
Scheduled EWRI Meeting

Saturday, May 19, 2012

ASCE Golf Tournament

At Stoneybrook Golf and Country Club

This Month We Celebrate



ASCE will be sponsoring a Laws and Rules Session in July 2012 for a nominal fee. Details to follow.



Project Profile

Significant Nutrient Removal by Swale Drainage

By Brett Cunningham, Jones Edmunds; John Ryan, Sarasota County; Alan Willis, Atkins

Sarasota County has been actively managing nutrient loading to its waterbodies for decades. The result has been one of the State’s environmental success stories, with the County’s bay systems showing improved seagrass coverage and meeting State water quality standards. The County is using ongoing watershed planning to continue building on this success, with watershed and pollutant-loading modeling being key components of that process.



Pollutant-loading modeling for non-point sources relies on an estimator for predicting concentrations associated with direct runoff and baseflow volumes. Land use is typically chosen as the estimator based on the large quantity of water quality sampling data that was compiled for single land uses. Since non-point source concentrations are highly variable, the data are generally pooled into a relatively small number of land use categories and some form of central tendency is taken as representative for each land use.

Versus

One of the questions that the County asked at the beginning of this process was if any differences within a land use type would be important to understand and quantify to improve the accuracy and reliability of the results. The project team –the County, SWFWMD, and Jones Edmunds – concluded that potential differences in medium-density residential areas served by curb and gutter versus conveyance swales was worth investigating. Medium-density residential is the largest urban land use in Sarasota County, and over 50,000 acres of medium-density residential land are served by conveyance swale drainage.



A critical factor in this investigation was to select sites in such a way that differ-

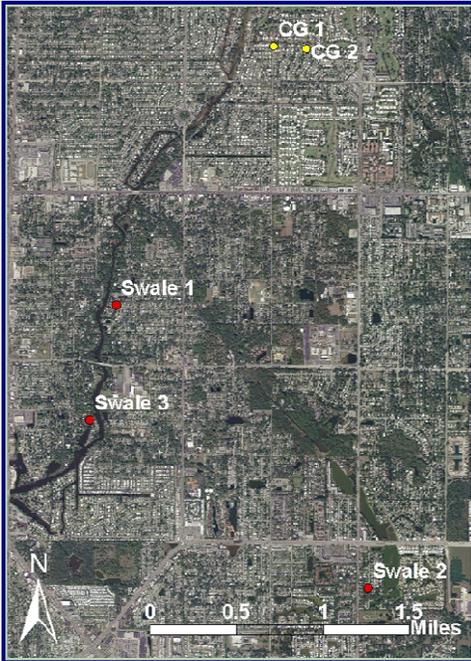


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Project Profile (continued)



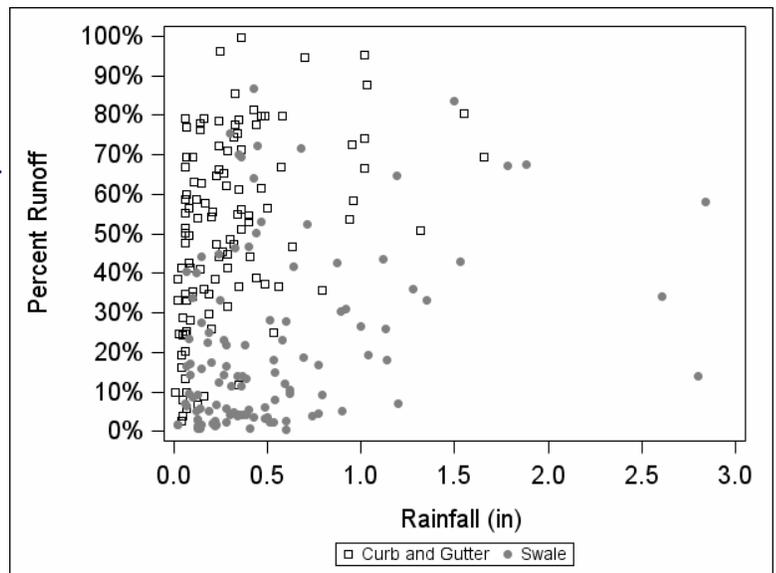
ences in results could be attributed almost exclusively to the type of drainage being used. Therefore, the site-selection process considered similarities in proximity, soils, age of development, density/imperviousness, lawn-care intensity, and other factors. Five sites (two curb and gutter and three conveyance swale) within the Phillippi Creek watershed were selected, and Atkins (formerly PBS&J) monitored the sites over 7 months that included wet and dry periods and an exceptionally heavy oak pollen period. Twenty events were captured with flow-weighted monitoring at each type of site and total flow and rainfall were monitored continuously for the entire period.

The results were markedly different between the two types of sites. As the table shows, total nitrogen

Constituent	Swale Mean Conc. (mg/l)	Curb and Gutter Mean Conc. (mg/l)	Percent Difference in Mean
Total Nitrogen	1.98	6.17	68%
Total Kjeldahl Nitrogen	1.54	5.62	72%
Nitrate + Nitrite Nitrogen	0.43	0.55	22%
Total Phosphorus	0.77	0.99	22%
Ortho Phosphorus	0.44	0.52	15%
Total Suspended Solids	27.8	127.7	78%
Biochemical Oxygen Demand	4.45	15.35	71%

and total suspended solids mean concentrations were nearly 70% and 80% lower, respectively, in the sites served by conveyance swales versus those served by curb and gutter. The high nitrogen values appeared to be affected by the heavy pollen period. Once the pollen receded, the values fell within a more typical range. Additionally, the runoff generated by the conveyance swale sites was considerably lower than that of the curb and gutter sites, as the figure below shows. The figure does not show the additional difference in the number of rain events that produced no runoff between the two types of sites, with the conveyance swale sites having a much greater number of rain events that produced no runoff than the curb and gutter sites.

When the concentration and flow volume results are combined to compute loads, the difference in total nitrogen loading is 93% lower for direct runoff and 87% lower for total flow, respectively, for the conveyance swale sites versus curb and gutter sites. Similarly, differences in total phosphorus loading are 83% and 69% lower, respectively, for the conveyance swale sites. Applying the total nitrogen findings across the County results in a difference of over 500,000 lb/year, which emphasizes the importance of the original goal of the study of quantifying potential differences within the medium-density residential land use type. A more detailed reporting of these findings will be published in an upcoming release of the *Florida Scientist*.



ENGINEERS WEEK EVENTS



**ENGINEERS
WEEK® 2012**
February 19-25

Local Proclamations:

City of Palmetto - 2/6/12

Manatee County - 2/7/12

City of Bradenton - 2/8/12

City of North Port - 2/13/12 at 1 pm

City of Venice - 2/14/12 at 9 am

Sarasota County - 2/21/12 at 9 am

City of Sarasota - 2/21/12 at 6 pm

Winter Social aboard LeBarge Sunset Cruise Friday, February 24 at 5:30 pm



Proclamation
Board of County Commissioners
Manatee County, Florida

WHEREAS, February 19-26, 2012, is designated as National Engineers Week and will be celebrated throughout the local engineering community; and

WHEREAS, this proclamation will be on display at all public events celebrating National Engineers Week, which include various middle and high school outreach programs and presentations throughout the week; the 23rd Annual Toothpick Bridge Building Contest, at G. Wiz - the Science Museum, Saturday, February 25, 2012; Introduce a Girl to Engineering Day, February 24, 2012; and

WHEREAS, engineers help design, construct and maintain the infrastructure and facilities that contribute to a high quality of life for all residents of Florida; its growth depends on engineers executing innovative, creative, high-quality solutions to technical problems; and

WHEREAS, the stated purposes of engineers are: To advance the public welfare, promote the professional, social and economic interests of the engineering profession, and stimulate and develop professional concepts among all engineers through education and in practice; and

WHEREAS, members of the Florida Engineering Society, Florida Water Environment Association, American Society of Civil Engineers, American Water Works Association, American Public Works Association and the Florida Institute of Consulting Engineers are making strides to interact with the engineering education sector to prepare future engineers to maintain our economic leadership and quality of life, and it is fitting that we recognize and honor the continuing contributions of America's engineers by observing Engineers Week with the motto: "7 billion people. 7 billion dreams. 7 billion chances for engineers to turn dreams into reality."

NOW, THEREFORE, BE IT PROCLAIMED by the Board of County Commissioners of Manatee County, Florida, that the week of February 19-26, 2012, shall be known, designated, and set aside as

ENGINEERS WEEK

in Manatee County, Florida.

ADOPTED, with a quorum present and voting this 7th day of February 2012.

BOARD OF COUNTY COMMISSIONERS
MANATEE COUNTY, FLORIDA

By: *John R. Charney*
John R. Charney, Chairman

ATTEST: *R. B. "Chips" Sharek*
Clerk of Circuit Court

By: *Wendi Johnson*
Deputy Clerk



Poker Run



**ENGINEERS
WEEK® 2012**
February 19-25



**ENGINEERS
WEEK® 2012**
February 19-25

Celebrate E-week 2012

First Annual Poker Run!!!

Parade to five different locations in your company vehicle to build your hand then ante up on the LeBarge cruise!!!

For Sponsorship and Participation Contact
Chris Sharek, chris.sharek@atkinglobal.com



Building Our Community

Celery Fields Regional Stormwater Facility Phase 3

By Peter Peduzzi
Sarasota County Project Manager

The Celery Fields were previously used for agriculture, with celery being the primary crop. In 1995, Sarasota County purchased a 300-acre tract, which it now uses as a flood retention area. The area consists of open marshlands, deep ponds, shallow pools, and canals.

The goals of creating this multiyear-multiphase project were to increase flood control, improve water quality as well as maintain existing and passive recreational use.

The project flood control, lake excavation and wetland mitigation planting were substantially complete as of March 2010. A total cost of \$7.2M was awarded to Brooks & Freund, Inc., a Fort Myers construction company and also subcontracted with Lee Mar Construction for the earth work and Earth Balance, Inc. for the mitigation plantings.



Sarasota County, Stanley Consultants, Inc., and VHB, Inc. are in the water quality monitoring process now. The upstream drainage basin takes in more than 1,500-acres of runoff to the 360-acre flood control system of wetland and lakes. This 2-year study began April 2011 and will measure in-flow and out flow of nutrient removal rates of phosphorus, nitrogen and total suspended solids.



Ardaman & Associates, Inc. has been working on the reporting and permitting with FDEP related to the regional effect of arsenic in the surrounding soils. Five (5) monitoring wells are in place around the observation mound, checking the chemical analytical lev-

Building Our Community (continued)

els of the ground water. Results have been favorable.

In addition, sightseers can enjoy the natural bird habit, walking trails and scenic overviews of this area. The recreational trails and fitness trail at the observation mound are open to the public. Two boardwalks are planned, and the northern walk, constructed October 2011 is open to the public. We have future plans for educational and interpretive signage planned around the walking trail system, all part of the project.



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Science and Engineering Fair



The 57th Annual State Science Fair will be in Lakeland from April 3-5, 2012. The committee is currently seeking volunteers on April 4th to help judge projects for the ASCE category.

Please contact Adnan Javed at ajaved@scgov.net for volunteer opportunities at the local and state level or visit <http://www.floridassef.net/current-fair/> for additional information.

2012 Winter Social Aboard LeBarge



February 24, 2012

Registration begins at 4:30 pm (following the Poker Run) and the cruise departs at 5:30 pm, returning at 7:30 pm. Please RSVP <http://acesuncoast.weebly.com/announcements.html>.

Sponsorship opportunities are available; please contact Gary Downing at 941.342.2709 or gary.downing@hdrinc.com

Toothpick Bridge Competition

Toothpick Bridge Building Contest Events

For Teachers, Students & Parents
Presented by the engineers and education professionals of the Toothpick Bridge Building Contest Committee

In Recognition of National Engineers' Week
February 19 – 25, 2012

Workshop and contest open to all students and teachers in Manatee and Sarasota Counties with separate divisions for Elementary, Middle, High School & Teachers.

<p>Bridge Building Workshop January 14, 2012 10:00 am</p>	<p>23rd Annual Toothpick Bridge Building Contest February 25, 2012 10:00 am – 2:00 pm</p>	<p>Awards Ceremony March 20, 2012 6:00 pm</p>
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All events located at G.WIZ - The Science Museum
The Blivas Science and Technology Center
1001 Boulevard of the Arts Sarasota, FL 34236
(941) 309-4949 www.gwiz.org

Sponsored Locally By:

- Society of Manufacturing Engineers (SME)
- American Society of Civil Engineers
- Florida Engineering Society
- American Public Works Association

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FFMA Annual Conference 2012

MANAGING THE FLOW AND BEING IN THE KNOW FOR THE
2012 ANNUAL MEMBERS MEETING



St. Augustine, Florida

March 28-30, 2012



WHO SHOULD ATTEND

- Community leaders who are concerned about their community's floodplain mapping, the National Flood Insurance Program, flooding, or stormwater issues
- Building inspectors, zoning administrators, engineers, drain commissioners
- Consulting engineers, resources management consultants, and others
- Certified Floodplain Managers, Professional Emergency Managers, building inspectors and community officials in need of continuing education credits
- * CFM's are eligible to receive up to 12 CEC's for attending the Annual Meeting and Training Sessions
- * PE's are eligible to receive 6 CEC's or more (classes pending)

HOTEL ACCOMMODATIONS

This year hotel accommodations will be held at the Renaissance World Golf Resort, at



500 Legacy Trail, in St. Augustine, Florida. Group rates will start at \$119 per night. To reserve your room online today [CLICK HERE](#) or to reserve by phone dial toll-free 1-800-266-9432 or dial locally 1-506-474-2009.

HIGHLIGHTS

- ⇒ Sponsorship/exhibitor opportunities still available
- ⇒ Florida Building Code Updates
- ⇒ Guest Speakers from FDEM, FEMA Region IV
- ⇒ Networking Opportunities
- ⇒ Engaging Technical Breakout Sessions

LOCAL ATTRACTIONS



- ◆ St. Augustine Trolley and Tour
- ◆ Golf Discounts at the Resort
- ◆ Historic St. Augustine Shops and Sightseeing
- ◆ World Golf Hall of Fame
- ◆ Fountain of Youth-Archaeological Park

Contact Information

Crissy Mehle, PE, CFM

Annual Meeting Chair

cmehle@jonesedmunds.com

324 S Hyde Park Avenue, Suite 250

Tampa, FL 33606

Phone: 813.258.0703 x1786

To register online for the FFMA Conference, [CLICK HERE](#)
To view the FFMA 2012 Annual Conference flyer, [CLICK HERE](#)



Other News of Interest

Roundabouts Emerging as the Ideal Intersection

February 6, 2012 University of Wisconsin-Madison
Source: <http://www.smartbrief.com/news/ASCE/TopStories.jsp>

MADISON, WIS. — They've become the subject of myriad YouTube "how-to" videos. Entire department of transportation websites explain how to navigate them. And, they elicit more than a little anxiety and confusion in the minds of drivers entering, circling and exiting them. Yet, roundabouts are rapidly cropping up in locales ranging from city streets to rural intersections and Interstate off-ramps. In essence, they are the "next big thing" in roadway intersections .

Roundabouts provide drivers an efficient, safer alternative to traditional four-way intersections governed by stop signs or traffic signals, says David Noyce, a University of Wisconsin-Madison professor of civil and environmental engineering.

An expert in transportation safety, Noyce directs the Wisconsin Traffic Operations and Safety (TOPS) Laboratory at UW-Madison. "In typical traffic engineering, there's a tradeoff between safety and operations. Generally, 'safe' equals 'inefficient,'" he says. "Our research has shown roundabouts offer benefits in both of these."

TOPS researchers have studied not only roundabout safety and "operations," but also the inner workings of seven software packages transportation engineers use to design roundabouts. They already have presented their findings as testimony at a legislative hearing in Wisconsin and at international transportation research conferences. From Jan. 22 through 26, they discussed their roundabouts research in Washington, D.C., at the Transportation Research Board annual meeting, which draws more than 11,000 transportation professionals from around the world.

At the national and international levels, their research not only can improve roundabout design software, but also inform traffic engineers' decisions related to how to design roundabouts and where to construct them.



Milwaukee, Wisconsin

In Wisconsin, drivers can encounter any of 150 roundabouts already installed on streets and roads, with another 150 planned by the end of 2015. For one comprehensive evaluation, TOPS researchers studied 14 Wisconsin multi-lane roundabouts throughout the state. Using video shot at each location, they looked at such factors as vehicle type, driving



De Pere, Wisconsin

speed, how drivers enter a roundabout, and the time gap they needed to enter a roundabout.

"People say they're unsafe because it's hard to judge the gap," says Andrea Bill, TOPS traffic safety engineering research program manager. "But even if something happens, your risk of a fatal crash goes way down. We saw video of a driver traveling the wrong way — but everyone was driving through the roundabout so slowly, people could stop. There's time to slow down and react."

The researchers also analyzed before-and-after crash data from 24 Wisconsin roundabouts built in or prior to

2007. "The right-angle crash is one of the most severe crashes," says Bill. "Roundabouts take away this possibility because drivers are always making a right turn. The crashes are less severe."

In Wisconsin, as well as at the national level, roundabouts have emerged as being very safe, says Noyce. While some Wisconsin roundabouts showed an increase in crashes, overall the number and severity of crashes decreased and no fatal crashes occurred after a roundabout had been installed in each of the 24 intersections. "You may not like them personally, but roundabouts have significantly reduced the probability of a severe accident happening," he says. "I think that's a contribution to society."

Thank You!

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If you or your company is interested in advertising in the newsletter, please contact Kim Clayback at kclayback@jonesedmunds.com or 941.358.1440.

Did you know the number 1 social media used by ASCE members is Linked In?

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Please visit

<http://www.ascsuncoast.weebly.com>