



# eNewsletter

## National Capital Section

FOUNDED 1916

January 2016 Volume 62, Number 4

Visit ASCE-NCS on the web: <http://asce-ncs.org>

### The Anacostia River: Past, Present, and Future

Presented by Jeff Seltzer, PE, Associate Director for the Stormwater Management Division District Department of Energy & Environment

The Anacostia River Watershed covers portions of the District of Columbia, Prince George's, and Montgomery County in Maryland.

The Watershed is approximately 176 square miles in area and approximately 18 percent of its land area lies in the District. The river is entirely tidal in the District while the upstream land area in Maryland is primarily non-tidal.

The Anacostia River, once a pristine river is now degraded, mainly due to its highly urbanized character and decades of industrial and urban activities throughout the watershed. The river is the focus of large-scale restoration efforts by District government. The District Department of Energy & Environment (DOEE) has taken the lead on restoration efforts and is working to transform the Anacostia River into a fishable and swimmable river.

Please join the American Society of Civil Engineers-National Capital Section (ASCE-NCS) on **Tuesday, January 19**, for the first Section Meeting of 2016 as Jeff Seltzer of DOEE, presents on:

- The history of the Anacostia River and issues that have impacted its health.
- Current conditions of the Anacostia River
- Modeling performed to determine the required level of effort to restore the river.



DOEE Boat on the Anacostia

- Current public initiatives to restore the river.
- The outlook for accelerated restoration efforts leveraging public and private investments.

**About the Speaker:** Jeff Seltzer is the Associate Director for the Stormwater



Management Division at the DOEE. In this role, he is responsible for the District's stormwater management initiatives that improve the quality of the District's tributaries and rivers, and ensure compliance with federal stormwater requirements. He manages an annual budget of approximately \$18M that is used for capital

projects as well as the administration of the District's stormwater program.

Jeff is a Professional Civil Engineer with over twenty years of experience. Prior to joining DOEE, Jeff worked as a Program Manager for the District Department of Transportation where he was responsible for water quality initiatives and capital projects under the District's Anacostia Waterfront Initiative. Additionally, Jeff was the manager of Capital Projects for the Anacostia Waterfront Corporation that was charged with redeveloping over 2,000 acres along the Anacostia River. ■

Join us **Tuesday, January 19, 2016**, at the Hilton Arlington, 950 North Stafford Street, Arlington, VA, on the second floor in the Gallery Ballrooms. Parking is available at the hotel (\$10), at the Ballston Mall garage (\$1 after 6 pm), and on the street (free after 6 pm). The Hilton is on the same block as the Ballston Station on Metro's Orange and Silver Lines. Registration and networking will be from 6–6:45 pm, followed by dinner. The program will end by 8:30 pm. The cost is \$45 for those preregistering, \$10 for students, and \$55 for walk-ins, as space allows. One Professional Development Hour is available to attendees. For questions, please contact [D. Scott Wolf](#). Please click [HERE](#) to register by **January 14**.

*Note that no-shows will be charged the full registration fee. We welcome walk-ins, including any registrations made after the guaranteed number of guests is provided to the hotel. However, the cost for walk-ins is higher because the Section is charged accordingly by the hotel for late registrations.*



Storm drains

## President's Corner

Happy New Year! I hope all of you enjoyed time with family and friends making for a memorable holiday season. I certainly enjoyed the mild weather, though the arctic winds and snow are likely just around the corner.



Thanks to the Younger Members Forum and all who attended the annual NCS Toys for Tots event in early December. Members of all ages enjoyed networking, appetizers, and libations, and more importantly were generous in donating civil engineering themed toys for less fortunate children in the Washington, DC metropolitan area.

While our Centennial commemorative activities began in October with the start of our fiscal year, 2016 marks the official 100<sup>th</sup> anniversary of the formation of the ASCE-NCS. There are numerous Centennial themed meetings, tours, events, and celebrations for our members to be excited about in the year ahead. This month's

dinner meeting will feature a presentation on the detailed history and status of the Anacostia River cleanup. In February, we will learn about the Federal Highway Administration's Turner-Fairbank Highway Research Center and emerging transportation technologies. The release of our Centennial

Commemorative Book highlighting over a century of local civil engineering accomplishments is just around the corner. In addition, plans are coming together for our Centennial Conference on June 3, which will feature more than a dozen speakers from some of our most recognized local civil engineering organizations. The Centennial Committee updates in each newsletter will let you know about the coming events and opportunities for you to participate.

ASCE will be releasing the first ever *Report Card for DC's Infrastructure* later this month. This inaugural summary will provide an assessment of roads, bridges, drinking

water, energy, levees, parks and recreation, rail, schools, solid waste, transit, and wastewater infrastructure. Another impactful event for our area with national implications is the passage of the Fixing America's Surface Transportation (FAST) Act in December 2015. The FAST Act is the first law enacted in over ten years that provides long-term funding certainty for surface transportation, meaning states and local governments can move forward with critical transportation infrastructure projects, like new highways and transit lines.

In short, it is an exciting time to be a civil engineer and a member of the NCS. I look forward to seeing you at upcoming events and your engagement in making this a great and successful year.

D. Scott Wolf, PE, PLS, F.NSPE  
ASCE-NCS President (2015–2016)

## Engineering the Nation's Capital – A Century of Innovation & Promise for the Future

By L.J. Sauter, Jr., M.ASCE, NCS  
Newsletter Editor (2010–2014)

Yep, that's the title of the commemorative book the NCS Centennial Committee is busy preparing to help celebrate our centennial and to answer that age-old question, *what the heck do engineers do, anyway?* Well, the Centennial Commemorative Book will not explain what *every* engineer does, but it sure will go a long way to answer what *civil* engineers do!

Our Centennial Commemorative Book will cover 24 inspiring project that civil engineers have completed (and a few still under construction) in the DC metropolitan area since 1916. Full of great photos, both historic and contemporary, this volume will be a joy for all civil engineers in the DC area to own and can be proudly displayed in your office's reception area. As mentioned in the Centennial Celebration Committee update in this edition of the NCS

eNewsletter, we plan to rely heavily on this book during our outreach activities to both students and the general public to show what we do.

Watch for more information about how to order a copy of the NCS Centennial Commemorative Book in future issues of the eNewsletter. ■

### Newsletter

Rachel Schneider, Editor

**February 2016 Issue Deadline:** January 15, 2016

**To Submit Articles:** [newsletter@asce-ncs.org](mailto:newsletter@asce-ncs.org)

**NCS eNewsletter Archives:** go to [www.asce-ncs.org](http://www.asce-ncs.org) and click on the Newsletters tab.

**Address Changes:** Call 1-800-548-ASCE, e-mail [member@asce.org](mailto:member@asce.org), visit [www.asce.org](http://www.asce.org), or write: ASCE – Membership, 1801 Alexander Bell Drive, Reston, VA 20191. Include your membership number.

### National Capital Section

#### Officers (2015–2016)

**D. Scott Wolf**, President

**Jordan Pitt**, Vice President

**Brian Barna**, Secretary and Webmaster

**Emily Dean**, Treasurer

**Rachel Schneider**, Newsletter Editor

**Kelly Cronin**, YMF President

**Piers Causton**, Director

**Alex Rosenheim**, Director

**Shri Yamijala**, Director

**Victor Crawford**, Director

**Christian Manalo**, Past President

**Ranjit S. Sahai**, Previous Past President

#### Committee Chairs

Please refer to the [NCS website](http://www.asce-ncs.org) for a current list of NCS committees and chairs.

## Want to Participate in the DC Report Card Release Event on January 14? Email Us!

By Ranjit S. Sahai, PE, F.ASCE, Chair, DC Infrastructure Report Card Subcommittee, ASCE-NCS



ASCE releases on January 14, 2016, the inaugural edition of the *Report Card for D.C.'s Infrastructure*. As a member of the NCS of ASCE, you have an opportunity to participate in the Release Event. Want to join ASCE Government Relations staff along with members of your Section who developed the Report Card as they release it at a news conference attended by members of the press and local government? Email [reportcard@asce.org](mailto:reportcard@asce.org).

This signature ASCE event intends to raise awareness about District of Columbia's infrastructure needs by providing a comprehensive assessment

of current infrastructure conditions and needs by assigning grades using a simple A to F school report card format and by making recommendations for raising the grades. Infrastructure categories being reported in the DC Report Card are: bridges, drinking water, energy, levees, parks and recreation, rail, roads, schools, solid waste, transit, and wastewater.

For details about the place and time for the release, navigate the **Special Features** section of the [Section's website](#). We look forward to hearing from you. ■

## Volunteers Wanted – Two Great Engineering Events

### Discover Engineering Family Day Returns – Become an Engineer for the Day!

Help the NCS teach budding engineers about earthquake effects on tall buildings on Saturday, February 27, at the [National Building Museum in Washington, DC](#). Contact [Dean Westman](#) for more information.

**Volunteers are needed from 10 am – 4:30 pm.** Stop by anytime and spend a few minutes or all day with fellow NCS members and friends and the next generation of civil engineers. Celebrate National Engineers Week by



participating in this free, hands-on, and fun-filled festival for all ages. Coffee and donuts will be provided by the National Building Museum in the morning and a pizza lunch and other refreshments will be served. Join NCS members for Happy Hour after the event closes.

At last year's *Discover Engineering Family Day*, volunteers and visitors alike:

- Met a test pilot, an astronaut, and engineers
- Made slime!
- Dissected household devices!
- Catapulted a Ping Pong ball!
- Tested paper airplanes in a wind tunnel!

What will you engineer this year?

### Celebrate Science at the 4th USA Science & Engineering Festival, the Largest STEM Education Event of its Kind in the United States!

On Saturday and Sunday, April 16 and 17, the NCS and ASCE World Headquarters will sponsor a booth at the [USA Science & Engineering Festival](#) at the DC Convention Center, Washington, DC. The biennial science festival includes over 1,000 leading

science, technology, engineering, and math (STEM) organizations will present hands-on science and engineering activities for people of all ages. The event is free of charge. NCS volunteers typically participate for a few hours a time starting in either the morning or

afternoon. All materials and equipment are provided by NCS. Volunteers are asked to wear comfortable clothing, stay as long as they like, and take time to enjoy the many other activities at these events. ■

## ASCE-NCS Newsletter Patrons



**Robert A. Pronier**  
Senior Vice President / Regional Manager  
[Robert.Pronier@cardno.com](mailto:Robert.Pronier@cardno.com)  
1881 Campus Commons Drive, Suite 103  
Reston, VA; **Phone: 703-391-0024**  
[www.cardno.com](http://www.cardno.com)

[www.cardnohayneswhaley.com](http://www.cardnohayneswhaley.com)

### Practicing the Art of Structural Engineering

We provide structural engineering services nationwide and internationally for a broad range of projects, including:

- > Commercial
- > Institutional
- > Public

Booz | Allen | Hamilton  
**100 YEARS**



## An Interview with LTG Thomas P. Bostick, P.E., M.ASCE: Centennial Engineer of the Month

*Editor's Note: Beginning October 2015, the NCS began publishing interviews of prominent members of our Section, asking them to reflect on their career and profession. The NCS Centennial Committee, including Dr. Phillip Melville, P.E., PhD, F.ASCE, and Ms. Lucy Menon, P.E. of the Dream Big Subcommittee, have organized the interviews. We hope you enjoy reading these interviews and gain insight from these leaders in civil engineering.*

Our Centennial Engineer of the Month for January 2016 is Lieutenant General (LTG) Thomas P. Bostick. LTG Bostick serves as the 53rd U.S. Army Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers (USACE). USACE oversees most of the nation's navigation and civil works water resources infrastructure and military construction. In this role since 2012, LTG Bostick is responsible for more than 33,000 civilian employees and 700 military personnel who provide project management, construction support, and engineering expertise in more than 130 countries around the world.

LTG Bostick graduated from the United States Military Academy



Lt. Gen. Thomas P. Bostick, USACE commanding General, visits the Far East District, tours various projects, and recognizes the District's personnel in April 2015.

in 1978 with a Bachelor of Science degree. He holds a master's degree in both Civil Engineering and Mechanical Engineering from Stanford University, and is a graduate of the U.S. Army War College. He is a registered Professional Engineer in Virginia. ASCE-NCS is proud to have such a distinguished member of our military and NCS member designated as our Centennial Engineer of the Month.

### What experience(s) have you found most memorable and/or rewarding in your career?

That is a difficult question to answer because I have enjoyed all of my experiences. From 2nd Lieutenant to Lieutenant General, I have not had a bad assignment.

I have a unique background in that I grew up on the combat side of the USACE, in the Engineer Regiment, and spent an equal amount of time at the strategic level. I served in the V Corps, 8th Infantry Division, 1st Armored Division, 1st Infantry Division and 1st Cavalry Division. Despite my troop experience, I have served in Washington D.C. during every rank of the Army from Lieutenant to Lieutenant General, so I have benefited from great opportunities to learn at the strategic level. I served as



a White House Fellow in the Department of Veterans Affairs, Executive Officer to the Chief of Engineers, Executive Officer to

the Army Chief of Staff, and in the National Military Command Center on the Joint Staff in the Pentagon during 9/11. I also served in personnel for nearly seven years, with four years in Recruiting Command and almost three years as the Deputy Chief of Staff for Personnel (G1), before becoming the Chief of Engineers. I have always enjoyed challenging assignments where we have accomplished the mission through great teamwork and leadership.

One of my most enjoyable assignments was my time with the 54th Engineer Battalion in Wildflecken, Germany. This was my first assignment in the Army, where I was fortunate to meet and marry my wife, Renee, an American School teacher and now Principal of Randolph Elementary School in Arlington, VA.

I have had other memorable assignments including deployments to Bosnia and Iraq. In Bosnia, we built a strategic airfield, a hospital, billets, cafeterias, conducted de-mining operations and so much more. I had the honor of conducting the 55<sup>th</sup>

Anniversary of the D-Day Invasion  
*continued on page 5*

### ASCE-NCS Newsletter Patrons



**Specializing in Design and Supply of Mechanically Stabilized Reinforced Earth® Walls and Precast Concrete Arch Structures**

**Keith Brabant**  
Mid Atlantic Regional Manager

12001 Sunrise Valley Dr., Suite 400, Reston, VA  
800-446-5700  
[www.reinforcedearth.com](http://www.reinforcedearth.com)

Highways & Roads  
Bridges  
Railways  
Industrial  
Waterways & Dams  
Protective Structures  
Commercial & Public Facilities



**A. JAMES CLARK**  
SCHOOL OF ENGINEERING

### Graduate Programs Designed for Working Engineers

- Civil & Environmental Engineering  
- Project Management  
- PE Exam Review (Fall/Spring)  
(available 100% online)

[www.advancedengineering.umd.edu](http://www.advancedengineering.umd.edu)

while at the same time deploying part of our brigade to Kosovo. Later, after deploying with the 1st Cavalry Division as the Assistant Division Commander, I transitioned to work with the US Army Corps of Engineers and commanded the Gulf Region Division. We started approximately \$11 billion of construction.

During my time as the Chief of Engineers, it was certainly rewarding to continue the completion of the Hurricane Storm Damage Risk Reduction System in New Orleans and see it perform as it was designed



Construction of the massive New Orleans Inner Harbor Navigation Canal Surge Barrier (IHNC) at Lake Borgne, the largest design-build civil works project in USACE history.

during Hurricane Isaac on August 29, 2012 – seven years to the day after Hurricane Katrina. This year we observed the 10<sup>th</sup> anniversary of Hurricane Katrina. The USACE won the ASCE Outstanding Projects and Leaders Award for the one of the key components of the system, the Inner Harbor Navigation Channel.

The Nation came together very well after Superstorm Sandy from the President, to Congress, Cabinet Secretaries, Governors and Mayors, U.S. Northern Command, the Department of Defense, the Army and the USACE, and many more. It was a very impressive response and recovery. The post-Sandy construction has been executed superbly. Together with many experts, USACE produced

a seminal document to address climate change and coastal resilience in producing the North Atlantic Coast Comprehensive Study.

### ***How did you come to decide on studying civil engineering?***

I have always enjoyed math, so engineering was a natural fit for me at West Point. Then, I had a wonderful opportunity to attend graduate school at Stanford and return to West Point to teach mechanical engineering. Although I was sent to graduate school to study mechanical engineering,

I always thought that having a civil background would be helpful. I had to overload my course schedule, but ended up completing double master's degrees in mechanical and civil engineering. I have enjoyed the opportunity to teach and use some of these skills during different parts of my career.

### ***What guidance or recommendations do you have for younger civil engineers or those considering entering the profession?***

Regardless of what profession one pursues, they should have a passion for that profession. There will always be difficult days in a person's career, but if they have a passion for their work, then they will be able to work through the highs and lows that will come their way.

If a person has a passion for engineering, it may not be clear which type of engineering is the best fit. I really did not know the difference between a mechanical and civil engineer when I started going down the path of engineering, and I think that was okay. By

taking different courses and perhaps visiting with a variety of engineers, a person's passion will begin to develop and become clearer. If a young person is fortunate to know exactly what they want to do, they are well ahead of where I was at that time in my life.

Regardless of the type of engineering discipline one chooses, it will require a lot of work. I always tell young people that anything worth doing is often going to be challenging, so hang in there. Discipline, hard work, and perseverance are always rewarded.

### ***What challenge(s) do you feel are most pressing for civil engineers to address in the future?***

Like any profession, our success starts with people—how they are recruited, retained, trained, developed, and ultimately retired. Taking care of our people is so important. The Nation will always need civil engineers, and part of the duty of those currently serving as engineers is to inspire others. This inspiration must start early in elementary school.

Second, I would say that our profession relies on the technical expertise of our civil engineers. We should set the bar high on expectations and the need for lifelong learning. We must be a moral and ethical profession capable of self-policing and looking inward, to ensure that our work is of the highest caliber and valued and trusted by the people we serve.

I would ask our young engineers to think of not only the short-term challenges we face, but also help the Nation think through our future. The aging infrastructure challenges identified by the ASCE and others will not be solved in the next few years, but we should work diligently each day thinking about the future and how we create an infrastructure that will be here for the next generation and the generation after that. I am confident that by working together, we can do this. ■

## ASCE 2016 Multi-Region Leadership Conference Coming to Pittsburgh, PA

The 2016 Multi-Region Leadership Conference (MRLC) for Regions 1, 2, 4 & 5 will be held in Pittsburgh, PA, February 12–13, at the Omni William Penn Hotel. I encourage the NCS, our Younger Member Group, and each of our Student Chapters to participate in the 2016 MRLC, hosted by our Region 2. For more information, visit the hyperlinks in the leadership groups below.

**Workshop for Section and Branch Leaders (WSBL):** ASCE authorizes Sections, including the NCS, to nominate two delegates to attend the WSBL. The Workshop is designed to strengthen and expand the programs and activities of Sections through the interchange of ideas, information, and experiences.

The program will also expose incoming officers to tools to help them be effective leaders.

**Eastern Region Younger Member Council (ERYMC):** 125 Younger Member Groups are divided into three Younger Member Councils (Eastern, Central and Western), which provide volunteer leadership training and a link to the ASCE Committee on Younger Members – the national committee voice for young professionals. ASCE provides reimbursement for the travel expenses, to cover lodging and meals for one delegate per Younger Member Group.

**Workshop for Student Chapter Leaders (WSCL):** The WSCL is a training session for new student officers in ASCE Student Chapters. It is sponsored by the Committee on Student Members – the national committee that oversees ASCE Student Organization activities. Faculty and Practitioner Advisors are also encouraged to attend. ASCE will reimburse up to \$500/Student Chapter to help cover the costs of registration, travel, and lodging.

Please [contact me](#) if you have questions or comments. I hope to see many of you there!

*John Casana, PE, D WRE, LEED AP,  
M. ASCE, Governor, ASCE Region 2*

## Experience the New ASCE-NCS.ORG

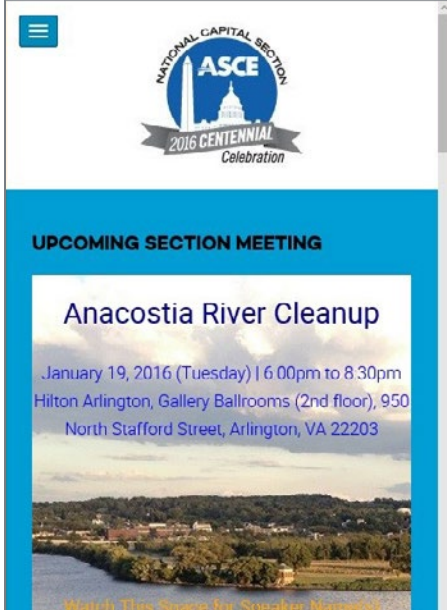
By Ranjit S. Sahai, PE, F.ASCE, Chair,  
Website Subcommittee, ASCE-NCS

To mark the National Capital Section's centennial, we redesigned our [website \(asce-ncs.org\)](#) on December 1, 2015. The website is mobile device friendly and features a clean and modern look and a responsive feel. When you bring up the website on your smartphone, it senses the presence of a mobile device and responds by adjusting the content to flow vertically and the navigation menu to collapse into the hamburger menu familiar on mobile devices.

To help you navigate the growing content on the website and to alert you of activities and events that may be of interest to you, we use modules like

the **Upcoming Events** calendar, **NCS Newsletters** document links, **Civil Engineering News** feeds, **Relevant Articles** article links, and informational call outs.

Be sure to check out the **Centennial Celebration** and the **Special Features** sections of our website as the excitement builds around our 2016 Centennial themed events and the DC Infrastructure Report Card that releases this month. My special thanks to Dr. Vagelis Prevlis and Zach Fitzwater for helping me with the site redesign by moving content from the old website and to Dirk Bouma for volunteering to help develop and maintain upcoming Centennial content. ■



The screenshot shows the ASCE National Capital Section 2016 Centennial Celebration logo at the top. Below it, a blue banner reads "UPCOMING SECTION MEETING". The main content area features a photo of a river and a text box with the following details:

- Anacostia River Cleanup**
- January 19, 2016 (Tuesday) | 6:00pm to 8:30pm
- Hilton Arlington, Gallery Ballrooms (2nd floor), 950 North Stafford Street, Arlington, VA 22203

At the bottom of the text box, it says "Watch This Space for Speaker Materials".

### ASCE-NCS Newsletter Patrons

Where **Experience**  
Meets **Vision**



[mcmjac.com](http://mcmjac.com)



**NICHOLSON**  
[www.nicholsonconstruction.com](http://www.nicholsonconstruction.com)

**Mark Rothbauer, P.E.**  
Mid-Atlantic Regional Manager  
[mark.rothbauer@nicholsonconstruction.com](mailto:mark.rothbauer@nicholsonconstruction.com)  
412-221-4500

ANCHORS  
AUGERCAST PILES  
DIAPHRAGM WALLS  
DRILLED SHAFTS  
GROUTING  
MICROPILES  
SECANT PILE WALLS  
SOIL MIXING  
SOIL NAIL WALLS  
SOLDIER PILE WALLS

**BUILD ON US**



## NCS Committee News and Updates



### Younger Members Forum

**Monthly Happy Hours.** The NCS Younger Members Forum (YMF) holds monthly happy hours in Arlington, VA or Washington, DC. Happy hours are usually the first Wednesday of each month unless a holiday falls during that week. The next monthly happy hours will take place on **January 6 at The Green Turtle** Arlington, VA and on **February 3, at Blue Jacket Brewery**, in Washington, DC. Join younger members from the area for free appetizers and drink specials. Look for emails with specific locations for future monthly happy hours!



The NCS YMF's December happy hour and YMF annual holiday party was held at the Front Page Restaurant in Arlington, VA, with approximately 30 members in attendance. Members donated new toys, many engineering and construction themed, for the Toys-for-Tots Program to benefit less fortunate children in the Washington metro area.



**AlexRenew Tour.** On November 17, YMF members toured Alexandria Renew Enterprises (AlexRenew) wastewater treatment facility. Members learned about the innovative odor control and reclaimed water program, and had a chance to view the biological reactor basins, UV disinfection systems,

and the new nitrogen upgrade program up close.



**Stay Connected!** Check out photos and stay up-to-date with YMF events by visiting the new [YMF Facebook page](#). Also, follow us on [Twitter](#) (@asce\_ncsYMF).

**Get Involved!** Are you interested in getting involved with more Younger Members activities? Do you have ideas for social events or volunteering activities? Would you like to be a board member? The NCS Younger Members Group is always looking for new members! Let us know if you are not already on our mailing list! If you would like to become more active with the YMF or would like more information on our events, please email the [YMF President](#).

**Centennial Committee:  
Engineering the  
Nation's Capital  
It Has Been 100  
Years – Let's  
Celebrate.**

By Victor Crawford, P.E.,  
ASCE-NCS Centennial  
Committee Chair

This month, as we kick off 2016, we can look back to June 23, 1916, the ASCE's Annual Convention held at the William Penn Hotel, in Pittsburgh, PA. Among the resolutions and actions, the Special Committee on a National Water Law was re-organized, members were appointed as Society representatives on a Joint Committee to advise on the adoption of the Metric System, and \$2,500 was received from the Bethlehem Steel Company for the Special Committees on Stresses in Railroad Tracks, and on Steel Columns and Struts. In addition to these Board actions, another resolution was approved. For on June 23, 1916, the Constitution of the District of Columbia Association of Members, recently formed, was approved. As a result,



the Association of Members, now the NCS, has been engineering the Nation's Capital for 100 years.

In 2016, we continue our Centennial Celebration by honoring our outstanding civil engineers through our Centennial Engineer of the Month Newsletter articles. In this Newsletter, we also have an article that reports on the Centennial Celebration tour of another major civil engineering accomplishment, the C&O Canal. We are also planning a tour to evaluate a number of the DC area's major engineering accomplishments from a unique perspective. What better way to see the engineering involved in the design and construct of a bridge, than from the water as we enjoy a cruise on the Potomac.

Because these tours are one-time events, we are also developing an interactive map for use by the public interested in our engineering accomplishments in the Nation's capital. By accessing the map, anyone can obtain descriptions of our engineering achievements along with photos and fun facts. This map provides another way for us to reach parents and students in order to educate them on the benefits obtained from the work of civil engineering profession in the DC Area.

We have confirmed our participation in the Science and Engineering Festival this April, where we will have host a booth to highlight our student outreach and Science, Technology, Engineering, and Math Programs. Your help in highlighting what we do as civil engineers to the thousands of students and their parents attending the Festival will ensure our profession continues to grow. We need to show the benefits and satisfaction obtained from pursuing a degree in civil engineering to the next generation as they tour the many exhibits at the Festival. In addition to the Festival, we will be continuing as part of our Centennial Celebration the outreach to DC Area schools and participation in other engineering events throughout 2016.

We have received proclamations from the Governor's Office for Maryland, the DC Mayor, and Governor of Virginia. These proclamations recognize our Centennial and the NCS's accomplishments that have benefited the public

*continued on page 8*

for more than 100 years. Specifically, the Governor of Maryland has issued a proclamation stating, "January 1st 2016 is the beginning of...Civil Engineering Year... American Society of Civil Engineers-100th Anniversary Celebration in Maryland." The Mayor of the District of Columbia congratulated the NCS on our Centennial Anniversary in a Proclamation by the Mayor of the District of Columbia. The Commonwealth of Virginia issued a Certificate of Recognition wherein it recognizes the 100th Anniversary of the ASCE-NCS.

As Chair of the Centennial Committee, I had the opportunity to see several project write-ups for the Centennial Commemorative Book; the write-ups were excellent. This Book will be a lasting tribute to our Centennial, and will be a great way to respond to the question what do civil engineers do. The Book will show a range of engineering accomplishments over the years in the DC Area. We are so proud of the Book, we obtained a grant from ASCE Headquarters in order to publish additional copies to present to schools, and public libraries as part of our Centennial outreach.

Planning for our Centennial Conference has moved into high gear. This June 3, 2016, the Conference will include sessions covering transportation, environmental, and construction topics. We will also have a panel where senior managers from engineering firms will discuss the future of our profession in the DC Area. The Centennial Luncheon will highlight our accomplishments and future prospects, and provide recognition to those that have been instrumental in promoting civil engineering.

As the representative of the ASCE, the NCS strives to promote our civil engineering profession and honor the civil engineers from our area that have not only played key roles building infrastructure in the Washington, DC area but also around the world. Therefore, please join us on the Centennial Committee, where your participation will allow promoting our profession, steering students into civil engineering, and recognizing our members' accomplishments since that day in Pittsburgh, PA, when ASCE approved our formation. We have many activities where your assistance will help make the Centennial Celebration a success. **Whether you are a Young Member, a Life Member, or somewhere in between, we need you**

**help. Please join us by contacting the Centennial Committee at [vicris51@verizon.net](mailto:vicris51@verizon.net).**

### Construction Committee

By Jeff Tan, PE, PMP,  
Chair of ASCE-  
NCS Construction  
Committee



### Construction Committee Meeting.

The NCS Construction Committee held its kickoff meeting at Dolley Madison Library in McLean, VA, on Thursday, November 12, 2015. Committee members in attendance are pictured below (L-R): Jeff Tan, Abdullah Hijazi, Dennis Quinn, Ivan Carrasco, Gerald Himes, Ryan Witters, and Alex Rosenheim (not pictured). Members discussed the purpose of the committee, ideas for future professional development sessions, and scheduled the next meeting. The Construction Committee will meet next on January 7, 2016 at 6:30 pm at the la Madeleine Country French Café (7960 Tysons Corner Center, McLean, VA 22102). NCS members interested in participating in the Construction Committee and highly encouraged to attend. Please email [Jeff Tan](mailto:Jeff.Tan@asce.org) if you are interested or would like further information.



The Construction Committee will hold its second education session around noon at George Washington University in February/March and attendees will receive 1 professional development hour certificate. With the help of Director of ASCE Construction Institute, Mr. Paul Sgambati, Mr. Bill Nash has kindly offered to discuss the topics listed in the below [survey](#) for members to choose. Please take a few minutes and complete this survey, it would help your Construction Committee plan for 2016.

**Golf Outing.** We are interested in starting our first golf event and we are looking to provide our members an enjoyable, quality experience. Therefore, we would like to request your feedback regarding the Golf Outing. Please contact [sunjeffsun@gmail.com](mailto:sunjeffsun@gmail.com) if you are interested, or if you need further information.

### Virginia's Student ASCE Competition March 31-April 2

This April, George Washington University will be host to the 2016 Virginia's regional Student ASCE competition. Fourteen schools from DC, Virginia, and West Virginia will travel to Foggy Bottom to compete in the Steel Bridge and Concrete Canoe regional competitions. Months of preparation, analysis, design, and construction culminate in timed trials to see which teams addressed these technical challenges most effectively. Participants will also engage various other activities and tasks related to civil engineering in fields such as transportation, geotechnical, and environmental, highlighting the well-rounded education delivered at each participating school. Other conference events will include a business meeting, banquet, and career fair. All events will take place in Foggy Bottom or in the immediate neighborhood. For additional information, contact Julian Olin at [joliin94@gwmail.gwu.edu](mailto:joliin94@gwmail.gwu.edu).

### Water Resources and Centennial Committee

#### Washington Aqueduct Walking Tour

By Piers Causton, PE, PMP, M.ASCE

To kick-off the ASCE Centennial Celebration, on October 28, the NCS members had the opportunity to attend a walking tour of the Washington Aqueduct Dalecarlia Water Treatment Plant. Mr. Thomas Jacobus, P.E., General Manager of the Washington Aqueduct, and Mr. Nathan Cole, P.E., Chief of



Planning and Engineering, hosted the event. The event started with a light lunch and networking in the old pumping station followed by an excellent presentation by Mr. Jacobus on the history and engineering behind the Aqueduct. The presentation was followed by a tour of the facilities including the laboratory, the production facilities, and the residuals collection and processing.

The Washington Aqueduct produces drinking water for approximately one

*continued on page 9*



million citizens living, working, or visiting in the District of Columbia, Arlington County, and a portion of Fairfax County, and the City of Falls Church, VA. The Aqueduct is a federally owned and operated, by U.S. Army Corps of Engineers (USACE), public water supply that produces an average of 155 million gallons of water per day at two treatment plants located in the District of Columbia.

Construction of the system began in 1853 under the supervision of Montgomery C. Meigs; completed and in operation since 1859. It is listed as a National Historic Landmark, and the Union Arch Bridge within the system is listed as a Historic Civil Engineering Landmark. Since its construction, the USACE has substantially expanded and improved the capacity and function of

the Aqueduct from its original mission of supplying raw river water to a sparsely populated District of Columbia to today's mission of providing safe drinking water to a much larger and more populous service area.

The NCS is very grateful to Mr. Jacobus and Mr. Cole for their excellent insight into the workings of the Aqueduct. ■

## 200 Years of Transportation History in One Afternoon

By Ed O'Malley, PE, M.ASCE, Chair, NCS Geotechnical Executive Committee

As part of the ASCE-NCS Centennial Celebration, members were able to travel back in time on November 18, and visit a number of local historical transportation-related structures. This included Chain Bridge, the C&O Canal, and a B&O Railroad truss/girder bridge over the C&O canal, the B&O Railroad tunnel under MacArthur Boulevard, the drinking water conduit discussed during [October's](#) walking tour, and a Capital Transit streetcar bridge. The tour concluded with a lunch meeting at the Irish Inn at Glen Echo.

The tour began at the parking area along the Clara Barton Parkway north of the east end of Chain Bridge. From that point, Chain Bridge, the C&O Canal towpath, the B&O Railroad (now Capital

Crescent Trail) three-span truss/girder bridge over Canal Road, and the canal were easily accessed. A trail from the Sumner Place shopping center connecting to the Capital Crescent Trail provided the route through the B&O Railroad tunnel under MacArthur Boulevard. Along the way, participants were able to inspect a short through-girder railroad bridge some 500 feet north of the north tunnel portal. One of the few remaining Capital Transit streetcar bridge's south abutment, decking, and framing were closely examined via a trail leading down from a public parking area at the intersection of MacArthur Boulevard and Walhonding Road. Their tour guide gave participants brief verbal sketches on each structure and related history. Each structure was over 100 years old, and with the exception of the streetcar bridge, was still in service in some capacity, either to carry



motor vehicles and pedestrians over the Potomac River or as a recreational trail/commuter link for hikers, bikers, and bicycle commuters. ■

## November Meeting Recap: The Dulles Corridor Metrorail Project – Phase 2

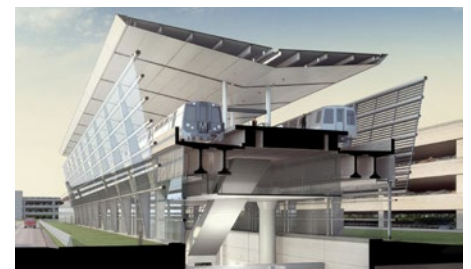
By L.J. Sauter, Jr., M.ASCE, NCS Newsletter Editor (2010–2014)

The NCS was privileged to have two excellent speakers from the Metropolitan Washington Airports Authority for the November dinner meeting. Our guests presented on Phase 2 of the Silver Line construction, which is extending Metrorail's Dulles Corridor System from the Wiehle-Reston East Station through Dulles International Airport and on to Ashburn in eastern Loudoun County, VA. Approximately 75 members and guests convened on the Arlington Hilton to hear Kevin Volbrecht, Project Director of Package "A" and Steven Barna, Director of Project Engineering, describe the challenges of Phase 1 (which opened July 2014), and the progress on Phase 2. In keeping with the spirit of our centennial celebration, they also learned some of the history of the Metrorail System

and how it was extended towards Dulles Airport.

Phase 2 consists of 11.4 miles of rail (4 miles of aerial guideway at Dulles Airport), six stations (Reston Town Center, Herndon, Innovation Center, Dulles Airport, Loudoun Gateway, and Ashburn), five parking garages (at all stations except Dulles Airport), and a rail yard and maintenance facility (about 90 acres). The projected completion date for Phase 2 is late 2019.

Travelers to Dulles Airport will be interested to learn that the Dulles Airport Station will be about 1,000 feet north of the terminal and adjacent to Garage 1 (North), linked to the terminal via an expansion of the existing tunnel that connects with Garage 1 (North), and include new moving walkways.



The purpose of Dulles Metrorail is to provide high quality, high-capacity transit service in the Dulles Corridor. New metrorail service in the corridor will result in travel time savings between the corridor and downtown DC, expand the reach of the existing regional rail system, offer a viable alternative to automobile travel, and support future transit-oriented development along the corridor. The NCS applauds Messrs. Volbrecht and Barna for the work they oversee and for presenting this highly informative briefing on the project's history and status. ■

## ASCE-2016 Centennial Celebration: Dr. Z's Corner & Exciting New Features

Our readers may know by now the "Outstanding Website Award" winner, the NCS is celebrating its 100th year in 2016. Accordingly, all activities, including our column, will have a centennial focus this year. You may have already noticed the new look and user-friendly functionality of the new Dr. Z's Corner. This major overhaul was the result of a great teamwork of many individuals at the NCS, the Board Members, Scott, Chris, Ranjit, Rachel, L.J., and my good friend Prof. Dr. Vagelis Plevris from Greece. I would like to thank each of you for your dedication to the profession and commitment to engineering students and practicing engineers not only in the Washington metro area but also in the nation and around the globe.

Now with the new features of Dr. Z's Corner, our readers will have easy access to all timeless articles, past issues, hundreds of original problems, solutions, tips, and applications with a click of a mouse. Once [www.asce-ncs.org](http://www.asce-ncs.org) is entered, the readers will see the NCS's beautiful centennial logo on the top left of the menu bar and "Special Features" on the right. As soon the cursor is placed on the "Special Features," [Dr. Z's Corner](#) will welcome them in no time with its debut issue published in June 2014.

This holiday season, as we reflect on 2015, I would also like to congratulate the students from all engineering schools in the metro area. This

includes UDC, Howard, UM-College Park, George Mason, Catholic, Morgan State, Virginia Tech, and Villanova, who read our column, downloaded hundreds of problems from this site for free, tirelessly attended our pro-bono Saturday classes and finally "conquered" the FE and PE exams. We have to add; some of our readers were not as fortunate and could not make it on their first attempts. Still, they have graciously sent us thank-you notes as well. I will never forget the note that I received from an engineering student from CUA who not only diligently attended to our Saturday classes, but also brought several students with her from her school week after week. She wrote:

Dear Dr. Z,

I hope all is well with you. With finals approaching and the semester almost over, I won't be able to stop by your Saturday classes before the year ends. Although I did not receive your email, my friend told me that you have sent us an email asking about the FE exam results. Unfortunately, I was not able to pass the FE exam... I apologize Dr. Z., for letting you down! I know that you had faith that I will pass.... However, my goal is still to pass the exam before I graduate this coming May, so I'm planning on retaking the exam probably on February. I will be working on the

problems on Dr. Z's Corner during the holiday break. Despite failing, I would want to thank you for all your help in our preparation for the exam. I also look forward in going to your Saturday Classes, if you still have them early next year. Sincerely

I want this outstanding engineering student to know that she did not let Dr. Z. down at all. Just the contrary, considering her full-time work to support herself and pay her bills, her course work to finish and the finals, she did remarkably well on her first try. I am confident; we will support her and she will pass her exam in February. Our promise has always been "we'll never rest our case, until all our students who read Dr.Z's Corner and attend our pro-bono Saturday sessions conquer their FE & PE exams." For this month's problems click [here](#).

Finally, I want to wish each of you a joyous holiday season with peace & cheer in the New Year!

Until next time,  
Ahmet Zeytinci, P.E.  
[az@alfam.com](mailto:az@alfam.com)



### Employment Clearinghouse

*The NCS provides the Employment Clearinghouse as a free service to its membership. The Clearinghouse allows members to post short notices for available positions or candidates seeking employment. All employers listed herein are equal opportunity employers. If you have questions, are seeking employment or would like to post a position please contact the [newsletter editor](#) and visit our [jobs page](#).*

### ASCE-NCS Newsletter Patrons



**Schnabel**  
ENGINEERING

**January 6, 2016**

**YMF Monthly Happy Hour**, 6–8 pm, at [The Green Turtle](#), Arlington, VA. Join other younger members from the area while you enjoy free appetizers and drink specials. Watch for upcoming emails for more information.

**January 7, 2016**

**Construction Committee Meeting**, 6:30 pm, at la Madeleine Country French Café, 7960 Tysons Corner Center, McLean, VA.

**January 14**

**DC Report Card for Infrastructure**, Washington, DC. ASCE will be releasing the inaugural Report Card for DC's Infrastructure, following the methodology of ASCE National's Report Card for America's Infrastructure. The Report Card will be available [online](#) and at a news conference.

**January 19**

**NCS Monthly Meeting**, 6–8:30 pm at Arlington Hilton. Mr. Jeff Seltzer from District Department of Energy & Environment (DOEE) will present on the Anacostia River cleanup history and status. Visit our [website](#) and look for more information in upcoming emails.

**January 20**

**NCS Geotechnical Executive Committee January Luncheon**, 11:30–1:30 pm at [Maggiano's, Tysons Galleria](#). Mr. Giovanni Bonita, PhD, PE, PG from GEI Consulting Engineers and Scientists will present on A Unique Retaining Wall Alternative for a Complicated Design and Construction Condition. [Register Here](#). Contact Kellie Owens at 540-751-5001 or [email](#) with questions.

**January 25**

**Recent Innovations in Bridge Inspection Techniques**, George Washington University. Learn about non-destructive monitoring and inspection techniques that have emerged in the bridge industry. **This is a free event and 1 PDH will be provided to attendees.** Pizza lunch will be served.

**February 3**

**YMF Monthly Happy Hour**, 6–8 pm, at [Blue Jacket Brewery](#), Washington, DC. Join other younger members

from the area while you enjoy free appetizers and drink specials. Watch for upcoming emails for more information.

**February 12–13**

**Regions 1, 2, 4 & 5 Multi-Region Leadership Conference 2016**, Pittsburgh, PA. The conference includes a Workshop for Section and Branch Leaders, Eastern Region Younger Member Council, and the Workshop for Student Chapter Leaders. Visit [www.asce.org](#) and look for more information in newsletter article.

**February 16**

**NCS Monthly Meeting**, 6–8:30 pm at Arlington Hilton. Michael Trentacoste, Associate Administrator for the Federal Highway Administration Office of Research, Development, and Technology, will discuss the history of FHWA's Turner-Fairbank Highway Research Center and emerging transportation technologies. Visit our [website](#) and look for more information in upcoming emails.

**February 21–27**

**Discover Engineers Week**, Share your enthusiasm for engineering and make a difference in a young person's life. Visit the website for related events.

**February 24**

**Global Day of the Engineer**, Pledge to celebrate and share how engineers make a world of difference. Global Day of the Engineer brings together the international community to celebrate the accomplishments of engineers, give students around the world a chance to experience engineering, and share the amazing innovations engineers create every day.

**February 25**

**Introduce a Girl to Engineering Day** started in 2001 as a joint effort between the National Society of Professional Engineers, IBM, and National Engineers Week Foundation. "Girl Day" 2016 marks the 15th year whereby women engineers, and their male colleagues, have the opportunity to introduce more than one million girls and young women to engineering.

**February 27**

**Discover Engineering Family Day**, at the National Building Museum in Washington DC, 10 am to 4:30 pm. Last year, the NCS and our partner Bechtel conducted the popular "Shaky Ground" demonstration of earthquake induced soil liquefaction in a plastic cup. For our youngest engineering students Bechtel also provided a sand box loaded with construction equipment. For more information, contact [Dean Westman](#).

**March 8**

**Recent Innovations in Airport Pavement Design**, George Washington University. Hugh Weaver, PE, an expert on aviation pavements with over 30 years of experience at airports across the country discusses modern airport pavement design methods, which provide increased safety, longevity, constructability, and sustainability.

**March 8–10**

**Global Marathon For, By, and About Women in Engineering and Technology** provides global and regional opportunities for women and provides a place to put forward ideas, solve common problems and come together.

**March 31–April 2**

**Virginia's Regional Student ASCE Competition**, George Washington University. Fourteen schools from DC, Virginia, and West Virginia will travel to Foggy Bottom to compete in the Steel Bridge and Concrete Canoe regional competitions. Other conference events will include a business meeting, banquet, and career fair. For additional information, email [Julian Olin](#).

**April 16 and 17**

**USA Science & Engineering Festival at the DC Convention Center**. NCS and ASCE World Headquarters sponsors a booth. The Festival is held every other year and includes hundreds of sponsors and thousands of visitors of all ages. Contact [Dean Westman](#) for more information.