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COVER FEATURE

Making Sense of Metrics for Sustainable and Resilient Water Infrastructure

This paper identifies the primary national and local rating systems relevant to water infrastructure projects and provides a rating system selection process to help utility managers, engineers, construction inspectors, and operators keep pace with current industry best practices.

FEATURES

2013 Annual Report

2013 was another banner year for VWEA. The annual report includes information on noteworthy accomplishments, events, and financial information.

Stockholm Junior Water Prize

In 2014, VWEA members will have the opportunity meet and learn from students from all over the U.S. as the SJWP national competition will be held at Hilton Dulles Airport Hotel in Herndon on June 13 and 14.

DEPARTMENTS & ASSOCIATION NEWS

President’s Corner
From Your Administrator
Industrial Waste & Pretreatment Workshop and Seminar
Good Lab Practices Call for Papers
Lab Analyst Excellence Award
Operations Conference
2014 Herb Evans Memorial Golf Tournament
VWEA Al H. Paessler Environmental Stewardship Award
WEF and VWEA Public Official Award
Public Officials Award to Penny Gross
CVRAC
Water Reuse Committee
Water For People Workplace Giving

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A New Year

I hope all of you were as excited as I was to see the 2014 WEA calendar arrive with the fall Conduit. This was a huge undertaking, and I would like to thank Grace LeRose, Marty Malone, Kathy Rabalais, and most importantly Felicia Glaipon.

I am impressed with the number and diverse types of activities scheduled for 2014, ranging from committee meetings to WEA and WEF education conferences and seminars. For their hard work on achieving such a high quality and useful tool for the WEA membership. As I look through this calendar, I am impressed with terrific photos that were submitted by our members. The quality of the facilities and the beautiful waterways go hand-in-hand in showing the value of our industry. The photos of our members at various events, especially the students and young professionals show me that our industry and WEA have a strong future. I am impressed with the number and diverse types of activities scheduled for 2014, ranging from committee meetings to WEA and WEF education conferences and seminars.

I am impressed with the number and diverse types of activities scheduled for 2014, ranging from committee meetings to WEA and WEF education conferences and seminars. As a WEA member, there are ample opportunities to learn about the many facets of our ever growing and changing industry. In addition, the Regional Activities Commit-tee (RACs) have plans for both educational and social events throughout the year, including a presentation focused on water reuse hosted by the Eastern Virginia RAC to revitalize the Water Reuse Committee that is a joint committee with the VA AWWA.

Many committees are well under way in planning events, with the kick-off educational event being the Industrial Waste and Pretreatment Conference happening on March 3-4 in Charlottesville, followed shortly after by the Stormwater conference on March 20. The Education Committee will host a great event incorporating the Student Design Competition in May, followed by the Operators Conference, highlighting the Operations Challenge Competition, in June. The Lab Practices Committee will host their conference in July, which leads us to the 2014 JAM Conference in Hampton in September. The JAM conference presents opportunities for committees to highlight their specific areas of expertise through evaluating abstracts to ensure a well-rounded technical program, hosting workshops, and holding committee meetings. The JAM Conference also offers many opportunities for collaboration as well, such as co-hosting workshops, and laying the groundwork for future activities. Please contact Shawn Heselton (sheselton@hrsd.com), or Paul Delphos (delphosp@bv.com) JAM Committee co-chairs, for additional information.

2013 was a great year for WEA, and looking back, I am proud to be part of an association that continually grows and looks for new ways to serve our membership. I want to thank previous WEA leaders for their great vision, and dedication in setting the stage for our continued success. I look forward to continuing to work with all of you as we move into the future and continue to grow.
In this issue of The Conduit you will find the 2013 VWEA Annual Report. The purpose of the report is to keep members informed on the activities, accomplishments, and financial status of the association. I hope you will find the report informative. I am amazed at the many accomplishments that our volunteer-driven association produces each year. We couldn’t do it without the dedication and passion of our many members who volunteer to plan events, review abstracts, judge science fairs, evaluate scholarships, participate in competitions, work on service projects, and so much more. Thank you for all you do!

One of the most prominent growths in 2013 was the expansion of our scholarship program. I am excited to announce the following winners of VWEA scholarships:

- **Sonny Roden Memorial Scholarship:**
  - **Recipient:** Zakary Goldberg
  - **Description:** ODU, Graduate Research Student

- **Undergraduate Scholarship:**
  - **Recipient:** Keith Mitchell
  - **Description:** Virginia Tech, Engineering Student

- **Member Dependant Scholarship:**
  - **Recipient:** Dan Kelly
  - **Description:** Roanoke, VA

- **Future Operator:**
  - **Recipients:**
    - James Napier, Drakes Branch
    - Zackry Moore, Chesterfield County

In 2014, we are expanding even more to include the WaterJAM Scholarship that will be given jointly with VA AWWA. Please visit the scholarship webpage, [http://www.vwea.org/awards/scholarships](http://www.vwea.org/awards/scholarships), to view applications and scholarship details.
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Why are YOU a member?

“I’ve been a VWEA member, and involved in committee work, for longer than I can remember. There’s no better way to get to know our colleagues in the utility business. I’ve met so many great people, and learned a huge amount, in a variety of different roles. It’s a fun way to expand our horizons, see things from other perspectives, and be part of the broader utility community.”

Kathi Mestayer, Professional Member, Owner, KMA Consulting

“By becoming a VWEA member, I have had the privilege of networking and learning from my peers in the water quality field. As a Young Professional, I truly appreciate the many occasions to discuss water quality topics and work hands on with so many people who share my passion for the environment.”

Christel Dyer, PWO Member, Plant Manager, HRSD

“For me, being a member of VWEA affords me the opportunity to expand my professional connections in the arena of utility engineering. By regions, we experience some rather unique utility factors: topography, climate, industrial, population, materials best for the application and environmental concerns and regulations. The diversity of the discussed solutions by the members statewide offers a plethora of brainstorming resources…”

Quinton Nottingham, Professional Member, Capital Projects Manager, City of Richmond

“I am a member of VWEA because it allows me to collaborate with industry leaders, my peers and mentors in a learning environment. What better way to share the latest industry trends, best practices and methodologies across public and private sectors! Thank you VWEA for enabling that.”

Supriya Murthy, Professional Member, Management Consultant, ARCADIS U.S., Inc

“VWEA membership provides a critical avenue for training, networking, and professional development. My experience within this organization is irreplaceable and has been a superb way to augment my early career. Given the opportunity, I always recommend young professionals to join and become active participants within VWEA.”

Evan Bowles, YP Member, Engineer, Hazen and Sawyer

“Being a member of VWEA has provided me excellent opportunities in networking with professionals. Networking has not only jump-started my career, but it has also played a large part in leading me to a full-time position in consulting straight out of college. Being a member has also provided me opportunities in competing in local and national student design competitions, allowing me to greatly improve upon something that is not always emphasized in school – presentation skills, and not to mention being able to attend WaterJAM and WEFTEC!”

Shirley Luu, Student Member, Civil Engineer, Black & Veatch/Old Dominion University.
2013 was another banner year for VWEA. As always, the strong dedication of our volunteers made it possible for us to continue to grow and better serve our members. 2013 saw the first leadership appreciation picnic, which was a joint activity with VA AWWA, and was a great opportunity for networking and discussion for future activities. In addition, the first VWEA calendar (for 2014) was created and distributed to our members through the Fall 2013 Conduit mailing. The photos of facilities, waterways, and VWEA members represent VWEA well, and this calendar will serve as a useful tool to keep up with various Association and WEF activities scheduled throughout 2014.

The many noteworthy accomplishments of 2013 include a very successful showing for VWEA Operations Challenge Teams at the national competition held at WEFTEC in Chicago. VWEA sent three teams and Virginia Beach’s Terminal Velocity finished first in Division I, Team HRSD finished first in Division II, and The Roanoke Blue Ridge Brawlers finished second in Division II. The Utility Managers Webcast, “Creative Rate Structure and Affordability Program Options for Utilities” was presented as a WEF webcast with a national audience. And, once again the WaterJAM conference hosted a record number of attendees, and had an expanded technical program in response to an overwhelming number of abstract submittals. Twitter was used to make the conference more interactive for attendees, and the mobile phone application enabled attendees to have an enhanced conference experience.

2013 presented many opportunities for fun through collaboration, and member participation and I look forward to another great year of that in 2014.

Please take a moment to review the information in this report and, as always, let us know how we can continue to serve you – our most valuable asset.

Stacie Metzler, VWEA President
HRSD

In 2013 VWEA's Student Memberships rose by 82% over 2012

Total: 1412
2013 Accomplishments

Congrats to the three teams representing VWEA at WEFTEC in Chicago

Division I 1st Place
Virginia Beach’s Terminal Velocity
Division II 1st Place
Team HRSD
Division II 2nd Place
Roanoke’s Blue Ridge Brawlers

Networking and Community Service
VWEA members participated in six service projects in 2013 including the WaterJAM Service Project and Clean the Bay Day.
VWEA provided 19 networking opportunities in 2013. Members participated in golf tournaments, plant tours, after-hour socials and more.

2013 Conferences
IW&P 134 attendees
Stormwater 166 attendees
Education 174 attendees
Operations 116 attendees
Lab Practices 200 attendees

2013 Lunch & Learns and Seminars
12 Lunch & Learns on topics of regional interest
Envision Workshop
Pressure Pipe Condition and Assessment
NASSCO PACP Certification
Private Property II
Safety in the Workplace
Disaster Recovery
Arc Flash
Sustainable Workforce Webinar
Creative Rate Structure Webinar

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540-371-8500
Contact: Shane Reid, P.E. at sreid@reidengineering.com
1210 Princess Anne Street * Fredericksburg, Virginia 22401
Virginia Water Environment Association

2013 Accomplishments

2013 Scholarships/Donations

$2000 Awards
Sonny Roden Memorial Scholarship
Member Dependent Scholarship
Undergraduate Scholarship
Wastewater Operator Short School Scholarships
Future Operator Scholarship
Rising Freshman Scholarship

Other Donations/Awards
Water For People
Regional Science Fair Awards
Stockholm Junior Water Prize Travel
Water Environment Research Foundation
WEF Booth @ Boy Scout Jamboree
JAM 2013 Student Paper Awards
2013 Student Design Competition Award and Travel

Awards
VWEA recognized 23 individuals and organizations in 2013 who made an outstanding contribution to the water environment profession and/or VWEA. The new VWEA Life Member Award was created to recognize members of retirement age and who have made significant contributions to VWEA. Learn more about awards at www.vwea.org/awards.

“I owe a great deal to my personal development over the years to participation in various activities of VWEA. I hope to continue to get involved in different capacities in the future.”

– Pusker Regmi, 2013 Sonny Roden Memorial Scholarship Winner

2013 Joint Annual Meeting (JAM)

Four days of education and networking with our friends at VA AWWA. Record-setting turnout with 1,330+ attendees and expanded technical offering.

“Racing to Richmond”

“Tenth Conduit – Winning 2014”
In 2013 VWEA dramatically increased the number of Scholarships provided to students. The VWEA Board desires to continue growing the Scholarship Fund with the goal of a future endowment. Currently, 50% of sponsor donations go directly to the Fund.

VWEA also invested in improved technology by purchasing updated scanners for use in tracking continuing education credits.

Communications continued to be a focus in 2013. Members receive a monthly e-newsletter on current events and the quarterly magazine *The Conduit* that contains industry news and VWEA information. Members also have access to an up-to-date easy to navigate website that contains all the latest association news.

VWEA provides many tools (webinar and conference calling services, file storage, mass emailing and registration system) to committees to assist with providing top notch events for our members.
## VWEA 2014 Calendar of Upcoming Training Events

<table>
<thead>
<tr>
<th>Training Event</th>
<th>Dates</th>
<th>Location</th>
<th>Contact hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Waste &amp; Pretreatment Seminar &amp; Workshop</td>
<td>March 3-4, 2014</td>
<td>Charlottesville, VA</td>
<td>Earn up to 8 hrs</td>
</tr>
<tr>
<td>Stormwater Seminar</td>
<td>March 20, 2014</td>
<td>Richmond, VA</td>
<td>Earn up to 5 hours</td>
</tr>
<tr>
<td>Education Seminar</td>
<td>May 1, 2014</td>
<td>Richmond, VA</td>
<td>Earn up to 5 hours</td>
</tr>
<tr>
<td>Operations and Ops Challenge</td>
<td>June 12-13, 2014</td>
<td>Wintergreen, VA</td>
<td>Earn up to 8 hours</td>
</tr>
<tr>
<td>Good Laboratory Practices</td>
<td>July 28-29, 2014</td>
<td>Charlottesville, VA</td>
<td>Earn up to 8 hours</td>
</tr>
<tr>
<td>WaterJAM</td>
<td>September 8-11, 2014</td>
<td>Hampton, VA</td>
<td>Earn up to 12 hours</td>
</tr>
</tbody>
</table>

Check out the events page on our website for additional scheduled events.
Are you looking for ways to improve your water treatment quality, to remove more TOC and THMs, to increase your filter runs or to generate less sludge? Kemira can help you solve these challenges and much more. We aim to be a leading water chemicals supplier for raw and waste water applications, serving municipalities and water intensive industries. Together with our customers, we apply our knowledge and expertise to develop innovations that address the sustainable future of water.

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2014 Industrial Waste & Pretreatment Seminar

Working Together to Sustain our Future

March 3-4 | Charlottesville, VA

MONDAY’S WORKSHOP

Industrial Wastewater College: Fundamentals of Building and Maintaining a Pretreatment Program

- DEQ Audits, Inspections and Annual Reports
- Conducting an Efficient and Effective Industrial
- Survey Sampling Protocols and Headwork Analysis
- Local Limit Development

TUESDAY’S SEMINAR

Updates and Developments in Industrial Waste Management

- EPA Pretreatment Update
- DEQ Initiatives Update
- Upcoming Water & Wastewater Regulatory Challenges
- Pollutant specific considerations in Headwork Analyses
- Source Reduction through Wastewater Reuse
- Whole Effluent Toxicity Testing
- GIS Integration with Work Order Management Systems
- Controlling Landfill Discharge of Hydrogen Sulfide
- Changes to the Industrial Stormwater General Permit Reissuance
- Metal Removal

LODGING

Omni Charlottesville Hotel
235 West Main St.
Charlottesville, VA 22903
Tel: +1 434 817-6639
Fax: +1 434 817-6493

Special Room rate is $135/night plus tax until February 9, 2014. Please make your reservation directly with the hotel by calling 1 434-817-6639 or using the link below:


Please mention the VWEA Seminar when making your reservation.

REGISTRATION

March 3-4, 2014
Omni, Charlottesville, VA

<table>
<thead>
<tr>
<th>TYPE OF REGISTRATION</th>
<th>MEMBER</th>
<th>NON-MEMBER</th>
<th>MEMBER</th>
<th>NON-MEMBER</th>
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<tbody>
<tr>
<td>STUDENTS with valid ID</td>
<td>No charge</td>
<td>No charge</td>
<td>No charge</td>
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<tr>
<td>WORKSHOP March 3, 2014</td>
<td>$ 55</td>
<td>$ 75</td>
<td>$ 75</td>
<td>$ 95</td>
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<tr>
<td>CONFERENCE March 4, 2014</td>
<td>$ 135</td>
<td>$ 175</td>
<td>$ 160</td>
<td>$ 205</td>
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<tr>
<td>WORKSHOP &amp; CONFERENCE</td>
<td>$ 155</td>
<td>$ 195</td>
<td>$ 175</td>
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Register ONLINE at:
https://www.regonline.com/30thIWP
Or on your cell phone by scanning the bar code below:

Register by MAIL or FAX:
If unable to register online, please download registration form at:
www.vwea.org.
Mail registration form with check to:
VWEA, Industrial Waste and Pretreatment Committee
PO BOX 2324
Glen Allen, VA 23058

Fax credit card registrations to:
804-545 0849

On Site Registration Hours:
March 3, 2014 – 11:30 a.m. to 5:00 p.m.
March 4, 2014 – 7:30 a.m. to 1:00 p.m.

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Winter 2014 – The Conduit 17
WILL YOU BE READY FOR LOWER PHOSPHORUS LIMITS?

Discharge limits for phosphorus removal are more stringent than ever and pose a definite challenge for treatment plants. In most cases, the degree of removal required by a facility is determined by the quality of the receiving stream. Although a high degree of phosphorus removal can be achieved with a sophisticated secondary treatment process such as an AquaSBR® system or AquaPASS® system, some plants require even lower phosphorus levels. In this case, tertiary treatment is essential and lower levels can be achieved with an AquaDisk® or AquaDiamond® filter, AquaMB Process® or Aqua-Aerobic® MBR system.

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  - Enhanced biological nutrient removal in a compact footprint and direct filtration via submerged membranes

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  - Time-managed aerobic and anoxic reactions in a continuous-flow process schematic; nutrient removal is expedited via Phase Separator technology

- **AquaMB Process® Multi-Barrier Membrane System**
  - High level nutrient removal utilizing multiple barriers, featuring cloth media filters followed by membranes

- **AquaDisk®/AquaDiamond® Cloth Media Filters**
  - OptiFiber® cloth filtration media provides advanced phosphorus removal
  - Customized designs for retrofits and new plants

- **IntelliPro® Monitoring and Control System**
  - Combines process monitoring and integrated comparative analysis
  - Automatic adjustment of biological nutrient removal and chemical addition
  - Proactive operator guidance via the BioAlert™ process notification program
Save the date!

Sustainable Utilities Webinar
February 21, 2014, noon to 1:30 p.m.

Title: Climate Change and Sea Level Rise in the Hampton Roads

Speakers:

Dr. Larry Atkinson
Slover Professor of Oceanography,
Climate Change and Sea Level Rise Initiative, Old Dominion University

Dr. Hans-Peter Plag
Professor, Ocean, Earth and Atmospheric Sciences,
Co-Director, Climate Change and Sea Level Rise Initiative (CCSLRI), Old Dominion University

More details will be available in the February e-Newsletter.

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Call for Papers & Workshops
20th Annual
Good Laboratory Practice Technical Conference 2014

Sponsored by VA AWWA/VWEA Laboratory Practice Committee
The Laboratory Practice Committee hereby invites the submission of abstracts for papers and workshops for the 20th Annual GLP Conference, to be held in Charlottesville, Virginia on July 28 and 29, 2014 at the Omni Charlottesville Hotel. This conference is designed to provide the latest information on major issues such as analytical method updates and development, laboratory accreditation, regulatory updates, particularly those impacting laboratory staff and utilities; and emerging technologies and analytical instrumentation. This is a great opportunity to present new information related to water and wastewater issues. Workshops will be held on the 28th and the technical presentations will be given on the 29th.

We encourage you to submit an abstract and participate in discussions that are important to the advancement of our laboratory professionals. Conference topics may include but are not limited to the following:

- Natural water monitoring
- Environmental research
- Treatment plant monitoring
- Drinking water distribution
- Bacteriological techniques
- Drinking water disinfection
- Laboratory accreditation
- Laboratory management
- Security issues
- Water and wastewater analytical methods
- LIMS, laboratory software applications
- Laboratory practices
- Laboratory ethics
- QA/QC issues
- Regulatory issues
- Emerging instrumental technology
- Analytical instrument troubleshooting
- Nutrient screening methods

Abstract and paper submissions for technical presentation:
Submit a 300-word or less abstract that lists the title, author(s), affiliation, phone number, and email address. Morning session presentations are 40 minutes. Afternoon technical session presentations are 25 minutes with five-minute Q&A.

Workshop proposal submission:
Submit a one-page workshop outline that includes information on the subject matter and name(s), affiliation, email address, and phone number of workshop instructors. Workshops are three-hour sessions.

Deadline for presentations and workshops for flash drive proceedings due June 1, 2014.

Please submit your technical presentations and workshop proposals to or for further information contact:

Alicia Connelly
Water Quality Manager, City of Norfolk
757-441-5774 Ext. 270
alicia.connelly@norfolk.gov

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VA AWWA/VWEA Lab Practices Committee Seeks Candidates for 2014 Lab Analyst Excellence Award

One of the best ways to acknowledge an exceptional performer is by nominating them for an award. For lab folks, VA AWWA/VWEA offers the Lab Analyst Excellence Award. Eligibility and criteria requirements for the award are listed in the table below.

### ELIGIBILITY

| MEMBERSHIP  | The candidate does not have to be a member of the Water Environment Federation at the time of nomination. The association will award a membership to the winner, if the awardee is not a current member. |
| EMPLOYMENT  | The candidate must be employed at an industrial, commercial, or municipal laboratory facility that conducts water and wastewater analyses. |
| RESPONSIBILITIES | The candidate must have direct responsibilities for analytical bench testing and/or field-testing of water or wastewater samples. |
| RECOGNITION  | Only those who have not been recognized by this award before are eligible. Non-winning nominees may be nominated again. One nominee per facility per year. |

### CRITERIA

| INITIATIVE  | The nominee must have shown initiative in pursuing innovative bench or field technique improvements. |
| PERFORMANCE  | The nominee must have performed duties consistently as outlined by laboratory or field sampling/analytical methods. The nominee’s performance must demonstrate a commitment to high quality control standards. The nominee must be conscientious about laboratory or field safety requirements. |
| ABILITY  | The nominee’s abilities must include problem solving. |
| PERSPECTIVE  | The nominee’s perspective should be dutiful and conscientious. |
| PERSONAL DEVELOPMENT  | The nominee’s actions should demonstrate a commitment to professional development; e.g. by maintaining active membership in professional associations and/or through continuing education. |

The deadline for nomination packages is February 14, 2014. It’s never too early to nominate, so don’t let this recognition opportunity pass you by.

For more information and nomination forms, please contact:

Lea Brooks  
Chesterfield County, Proctors Creek WWTP  
1200 Coxendale Road, Chester, Va., 23836  
Phone: 804-768-7351  
Fax: 804-748-4692  
Email: brooksdl@chesterfield.gov

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## PRECAST CONCRETE BUILDINGS
FOR WATER & WASTE APPLICATIONS

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<th>REPRESENTING</th>
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<td>ABB/Fischer &amp; Porter</td>
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<tr>
<td>Aerzen, Inc.</td>
<td>E&amp;I Corporation</td>
<td>M&amp;N Water Treatment Products</td>
<td>Novas Water Technologies</td>
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<td>AWI</td>
<td>Environmental Engineering Equipment</td>
<td>PeriFlo</td>
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<td>Calgon Carbon Corporation</td>
<td>Franklin Miller</td>
<td>Philadelphia Mixing Solutions</td>
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<td>Centrisys</td>
<td>Golden Harvest, Inc.</td>
<td>PULSCO</td>
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<td>Charter Machine Company</td>
<td>House Industries</td>
<td>Pulsed Hydraulics</td>
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<td>Combs Technologies, Inc.</td>
<td>HSI</td>
<td>Varec Biogas</td>
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<td>Cook Legacy Water &amp; Energy</td>
<td>JDV / Ralph B. Carter Company</td>
<td>Walker Process Equipment</td>
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<td>Dorr-Oliver Eimco</td>
<td>KLa Systems, Inc.</td>
<td>Warminster Fiberglass Company</td>
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Bernie Moore  Vinnie Bryant  Rodney Edwards
Charlie Weimer  Mike Knight  Shad Stringfellow

North Carolina Sales Team
John Whittaker  Roger Lyman

South Carolina Sales Team
Mick Heavener

Service Team
Judy Keller  Eric Hudson
Scott Liles  Paul Trexler
Paul Trew  Greg Roberts
Gregh Brewington

Product Specialists
Matt Mancuso
Wayne Littleton
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<thead>
<tr>
<th><strong>AEROMOD</strong></th>
<th><strong>Belco Manufacturing</strong></th>
<th><strong>CDG</strong></th>
<th><strong>Custom Controls</strong></th>
<th><strong>Dakota Pumps</strong></th>
<th><strong>Danfoss</strong></th>
<th><strong>DOer</strong></th>
<th><strong>Duall (Met-Pro)</strong></th>
<th><strong>ECC, Incorporated</strong></th>
<th><strong>EMCO Flow Systems</strong></th>
<th><strong>Endress+Hauser</strong></th>
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<tr>
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<td>WesTech Engineering</td>
<td>WesTech Engineering</td>
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<tr>
<td>Full Line of Clarifiers</td>
<td>OxyStream BNR systems, MBR systems</td>
<td>OxyStream BNR systems, MBR systems</td>
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<tr>
<td>WesTech Engineering</td>
<td>Robinson Group</td>
<td>S.:CAN</td>
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<td>Channel, Ditch and Surface Aeration</td>
<td>Digester and Landfill Gas Cleaning Systems, Micro Turbines</td>
<td>Full Line of Reagentless Analyzers</td>
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<td>GE Energy (Roots) Turbo Blowers, PD Blower Packages,</td>
<td><strong>VanAire</strong></td>
<td>Teledyne Isco</td>
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<td>S&amp;N Airoflo</td>
<td>Stainless Steel, Micro-Bubble DAF Systems</td>
<td>Samplers and Open Channel Flow</td>
</tr>
<tr>
<td>Floating brush rotor aeration</td>
<td></td>
<td>Plasti-Fab</td>
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<td>Oda-Killa by SunCoast</td>
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<td>Ozone Feed to Control H₂S odors</td>
<td>Ozone Feed to Control H₂S odors</td>
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<td><strong>Grundfos</strong></td>
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<td>Digital, Diaphragm Dosing Pumps</td>
<td>Flow Meters</td>
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<td><strong>Stenner</strong></td>
<td><strong>Telog</strong></td>
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<td>Peristaltic Pumps</td>
<td>Fire Hydrant Flow Tester, pH Loggers</td>
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<th><strong>SCADA / CONTROLS / VFDs</strong></th>
<th><strong>FILTERS</strong></th>
<th><strong>DISINFECTION</strong></th>
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<tr>
<td>Lord and Company</td>
<td>Enaqua</td>
<td>CDG</td>
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<td>Complete SCADA Integration</td>
<td>Non-Contact UV Disinfection Systems</td>
<td>On Site Generation of Chlorine Dioxide</td>
</tr>
<tr>
<td>Mission Communication</td>
<td><strong>SeaMetrics</strong></td>
<td>PCI</td>
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<tr>
<td>Wireless Telemetry and SCADA Systems</td>
<td>Paddle Wheel Turbine Meters</td>
<td>Liquid Oxygen Systems</td>
</tr>
<tr>
<td>Danfoss</td>
<td><strong>Hanna Instruments</strong></td>
<td>Pinnacle Ozone Solutions</td>
</tr>
<tr>
<td>VFDs and Soft Starters</td>
<td>Test Kits, Hand Held Meters</td>
<td>Ozone Generation Systems</td>
</tr>
<tr>
<td>Custom Control Tech.</td>
<td><strong>Maid Labs</strong></td>
<td>Field Service / Maintenance Programs</td>
</tr>
<tr>
<td>Custom Control Panels</td>
<td>Power Analyzers</td>
<td>Turnkey, Full Service Odor Corrosion &amp; FOG Control for Collection Systems Facilities, Glycerin (carbon source) for denitrification processes at WWTP facilities</td>
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**Service**
- Field Service / Calibration of Flow Meters and Process Instrumentation
- Short Term Sewer / Pump Station Flow Studies
- Turnkey, Full Service Odor Corrosion & FOG Control for Collection Systems Facilities, Glycerin (carbon source) for denitrification processes at WWTP facilities
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Mark your calendars for the 3rd Annual Wastewater Operations Education Conference and Operations Challenge Competition June 11-13, 2014 at Wintergreen. This year’s conference will include something for everyone.

* The conference kicks off with a **Golf Tournament** on June 11 at one of Wintergreen’s magnificent courses.
* The **Operations Challenge Competition** follows on June 12. It hardly ever breaks 75 degrees at the top of the mountain!
* Also offered on the 12th is a workshop worth 3.0 CEUs that is dedicated to the issues and management of **FOG and High Strength Brewery Wastes**, which features a tour of a local brewery. A shuttle will be provided to take participants in the workshop to and from the local brewery.
* On June 13, you can earn an additional 6.0 CEUs for participating in lectures associated with three Educational Tracks: Track A for **Collection Systems**, Track B for **Basic Math and Relevant Topics**, and Track C for **Wastewater Treatment: Start to Finish**.
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Utilities are encouraged by incentives and mandates from the government and citizen groups to develop sustainable approaches for new infrastructure, redevelopment, and maintenance based on triple bottom line analysis: economic, social, and environmental. While sustainable infrastructure rating systems such as Leadership in Energy and Environmental Design (LEED®), Envision™, and numerous others are available to assist public utility departments in fulfilling this obligation, selecting from the multitude of systems is no small task. This paper identifies the primary national and local rating systems relevant to water infrastructure projects and provides a rating system selection process to help utility managers, engineers, construction inspectors, and operators keep pace with current industry best practices.

Public utilities departments are starting to see the industry shift toward more sustainable development practices. In 2011, the US EPA issued the Clean Water and Drinking Water Infrastructure Sustainability Policy and created a sustainable infrastructure website to support utilities. Signed in 2009, the Presidential Executive Order #13514 Federal Leadership in Environmental, Energy, and Economic Performance encourages federal leaders to reduce green house gases, increase energy efficiency, reduce fleet petroleum, conserve water, and reduce waste. It also mandates that federal government buildings over 5,000 sq. ft. achieve LEED or Green Globes® certification. Similarly, in 2010 Virginia’s Governor McDonnell passed Executive Order #19 promoting conservation and efficiency in the state government, fuel efficiency, and telecommuting, as well as mandating that state government buildings achieve LEED or Green Globes certification. In addition, several Virginia localities now require LEED green building certification by code (Alexandria, Arlington County, Chesapeake, Fairfax County, Fredericksburg, Hampton, Herndon, Richmond, and Roanoke). Many municipalities have prepared Sustainability Plans or appointed Sustainability Managers (Blacksburg, Chesapeake, Newport News, Richmond, Virginia Beach, and Roanoke). In short, sustainable development is becoming the norm nationally and in Virginia.
There is plenty of guidance available for utilities interested in sustainable practices. In fact, there are over 900 sustainable infrastructure rating systems addressing various types of infrastructure with varying applicability to different geographic regions (city, state, regional, or national) (Institute for Sustainable Infrastructure, 2012). For example, The Federal Highway Administration’s INVEST addresses transportation nationally while the New York State Department of Transportation’s GreenLITES is specifically for transportation infrastructure in New York. Other rating systems go beyond individual projects to assess systems, programs, and communities. National examples of these include the American Public Works Association’s Accreditation of Public Works Departments and ICLEI’s STAR Community Index. State examples include the Department of Environmental Quality’s Virginia Environmental Excellence Program and the Virginia Municipal League’s Green Government Certification. In general, the rating systems address similar criteria to achieve the shared goal of promoting sustainable and resilient high-performance infrastructure; it’s the mechanics of the rating systems that differ based on the type of infrastructure they are designed to address.

The sustainability rating systems most applicable to water infrastructure projects are: LEED, Green Globes, Envision, and the Sustainable Sites Initiative™ (SITES™). Summaries of each are provided in Table 1.

### Table 1. Sustainability Rating Systems for Water Infrastructure

<table>
<thead>
<tr>
<th>Rating System</th>
<th>LEED ®</th>
<th>Green Globes ®</th>
<th>Envision™</th>
<th>SITES™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>US Green Building Council and the Green Building Certification Institute</td>
<td>Green Building Initiative</td>
<td>Institute for Sustainable Infrastructure and Harvard Graduate School of Design Zofnass Program</td>
<td>American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center, and the United States Botanic Garden</td>
</tr>
<tr>
<td>Data Source</td>
<td><a href="http://www.usgbc.org">www.usgbc.org</a></td>
<td><a href="http://www.thegbi.org">www.thegbi.org</a></td>
<td><a href="http://www.sustainableinfrastructure.org">www.sustainableinfrastructure.org</a></td>
<td><a href="http://www.sustainablesites.org">www.sustainablesites.org</a></td>
</tr>
<tr>
<td>Type of Water Infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Type/Phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupied Buildings and Associated Site</td>
<td></td>
<td></td>
<td>Unoccupied Buildings and All Other Infrastructure Planning and Design</td>
<td>Built Landscapes and New Projects</td>
</tr>
<tr>
<td>New Construction and Major Renovation, Existing Building Operations and Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year Implemented</td>
<td>2000</td>
<td>2004</td>
<td>2012</td>
<td>2010</td>
</tr>
<tr>
<td>Accredited Users (in VA)</td>
<td>30,669 (997)</td>
<td>242 (8)</td>
<td>1200+ (50)</td>
<td>NA</td>
</tr>
<tr>
<td>National/Global Projects Certified (Registered)</td>
<td>28,898 (33,534)</td>
<td>555</td>
<td>2 (18)</td>
<td>26 (60)</td>
</tr>
<tr>
<td>Virginia Projects Certified (Registered)</td>
<td>855 (946)</td>
<td>33</td>
<td>0 (0)</td>
<td>0 (2)</td>
</tr>
<tr>
<td>Award Levels</td>
<td>Certified, Gold, Silver, Platinum</td>
<td>1 to 4 Globes</td>
<td>Bronze, Gold, Silver, Platinum</td>
<td>1 to 4 Stars</td>
</tr>
<tr>
<td>Water Infrastructure Example Projects</td>
<td>DPU Office Building</td>
<td>DPU Office Building, Parking Garage, Pump Station</td>
<td>Pump Station, Pipeline, CSO Diversion Structure, Rain Garden</td>
<td>Utility Corridor, Rain Garden</td>
</tr>
</tbody>
</table>

For example, in Figure 1, LEED is the oldest and most popular system based on the number of project certifications and accredited users. However, it should be noted that the majority of the LEED certified buildings are privately owned. Sustainability-minded owners, architects, and contractors have embraced LEED as a standardized method for designing, constructing, and operating green buildings. Access to a standardized approach in the private sector has facilitated the industry shift to transformative sustainable practices and provided the data necessary to document effectiveness in the commercial and residential sectors. However, utilities buildings that are not occupied (filter buildings, pump stations, etc.) and many types of infrastructure do not meet the minimum program requirements for LEED certification. These unoccupied structures can achieve points in categories related to the natural world, materials, or resource conservation, but do not meet LEED’s threshold for full-time equivalent occupancy and cannot achieve several pre-requisites for those credits. Green Globes, on the other hand, addresses both occupied and unoccupied buildings, but is not appropriate for pipelines or other types of infrastructure. The newer rating systems, Envision and SITES were developed to fill the gap for these types of projects. Envision is adaptable to any infrastructure project while SITES is specific to the built landscaping component of projects.

### Figure 1. Historical Nationwide Rating System Implementation

The following flow chart was developed to help utility managers, engineers, construction inspectors, and operators select the most appropriate sustainable infrastructure rating system to meet their needs (Figure 2). The first question in the process is “Does the project include a building?” If so, will the building include offices, restrooms, or break room? In such a case, LEED or Green Globes would be applicable. If the building doesn’t have these rooms, such as in a small pump station, Green Globes or Envision would be applicable. The next question is “Does the project have a significant built landscaping focus, such as...
installing a rain garden?” If so, Envision or SITES would be applicable. Finally, if the project includes a variety of infrastructure types or is primarily linear in nature, such as a long pipeline, then Envision is most appropriate. The figure also illustrates that LEED and SITES have a more narrow focus on one type of infrastructure (buildings and landscaping, respectively), while Envision and, to a lesser extent, Green Globes are adaptable for more types of infrastructure. No matter which system is selected, owners can decide if it will be used for guidance and self-evaluation or for formal assessment and third-party verification. Either way, owners are encouraged to document the procedure and results for future reference.

**Figure 2. Rating System Selection and Implementation Process**

This process may be used to select the one most appropriate sustainable infrastructure rating system for a project or to select the most appropriate system for each component of a larger project. Use of the sustainability rating systems discussed may benefit utilities by providing:

- An industry-vetted, standardized framework for a consistent approach to all projects.
- Metrics for benchmarking and measuring sustainability initiatives to better track performance and effectiveness.
- Aid in the prioritization of projects to optimize achievement of community-wide sustainability goals.
- Defensible certification that assists in getting public support and/or project funding.

In addition, industry-wide implementation of sustainable infrastructure practices and associated rating systems across all market sectors, including both public and private assets, will promote innovative products and procedures for building and maintaining the infrastructure of the future. Implementation of sustainable infrastructure practices will also provide extensive data for comparative analysis and development of decision support tools for reference in future projects (Pyke, et. al 2012 and Institute for Sustainable Infrastructure 2012). Using these tools, monitoring infrastructure performance and reporting lessons learned will foster innovation that supports sustainable and resilient water infrastructure across the industry.

**References**


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**Author bio:**
Denise Nelson is the Sustainability Practices Group Leader for Greeley and Hansen, a water, wastewater, and stormwater services consulting firm. She is also Chair of the WEEA Sustainability Committee.

**Figure 2. Sustainable Infrastructure Rating System Selection and Implementation Process**
WATER AND WASTEWATER EQUIPMENT SALES

**AERZEN**: Positive Displacement and Turbo Blowers, Compressors, Sound Enclosures

**AMT**: Trash Pumps, Small Utility Pumps, Sump Pumps

**ANDRITZ**: Centrifuges, Belt Filter Presses, Screw Presses, Thickeners, Sludge Dryers, Screening Equipment

**ANOXKALDNES**: IFAS and MBBR Systems for BNR, ENR and Plant Expansion Applications

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**AQUALITEC**: Vertical Bar Screens and Washer Compactors for Headworks and Lift Stations

**CUSTOM CONVEYOR CORPORATION**: Screw Conveyors, Belt Conveyors

**D.R. CORDELL**: Dumpster-Veyor™ Roll-off Container Handling Systems

**EBARA FLUID HANDLING**: Wet Pit and Dry Pit Submersible Pumps

**ENGINEERED TREATMENT SYSTEMS**: Closed Vessel UV Disinfection Systems

**ENVIRO-CARE**: Headworks Screens including MBR Pre-Treatment Screens, Septage Receiving Units and Solids/Grit Handling Equipment

**ENVIRONETICS**: Floating Baffles and Covers, Clearwell Baffles

**G.E.T. INDUSTRIES**: GrindHog™ Comminutors

**GORMAN-RUPP**: Wastewater Pumping Stations, Sewage and Sludge Pumps, Water Booster Stations, Submersible Pumps, Engine Driven Pumps

**H-TEC**: Air Release and Vacuum Valves

**KRUGER**: BOSTYRTM, ACTIFLO™ and BIOACTIFLO™ Systems, Oxidation Ditch and Pure Oxygen Activated Sludge Systems, NOSESEP™ MBRs, Class A Sludge Systems, Potable Water Membrane Filtration Systems

**LANDIA**: Submersible Mixers, Recycle and Chopper Pumps, Jet Aerators, Digestor Mixing Systems

**LIQUID TECH**: Bolted Stainless Steel Tanks

**OMNISITE**: Web Based Cellular Monitoring

**PATTERSON FLO-PAK**: Water Booster Pumping Systems

**PROMINENT FLUID CONTROLS**: Liquid and Dry Polymer Feed Systems

**PURAFIL**: Odor Control and Gas Scrubbers

**PW TECH**: Volute Dewatering Presses and Thickeners, CSO/SSO Products including Bar Screens, Cyclones, and Solids/Floatables Removal

**SHELTER WORKS**: Fiberglass Enclosures

**THERMAL PROCESS SYSTEMS**: ThermAer™ ATAD Biosolids Reduction Process for Class A Biosolids

**VOGELSANG**: Rotary Lobe Sludge Pumps and In-Line Macerators

**WATER INCORPORATED**: Package and Field Erected Wastewater Treatment Plants

**WILFLEY WEBER**: Diffused Aeration Systems
Mark your calendars for the 2014 Herb Evans Memorial Golf Tournament to be held on Thursday, May 15. Come join us and help support Water For People while enjoying a round of golf at one of the following prestigious courses:

- Golden Horseshoe Golf Club in Colonial Williamsburg, VA
- Bull Run Golf Club in Haymarket, VA
- Hanging Rock Golf Club in Salem, VA

This year, for the first time, the first 80 players to sign up for the Golden Horseshoe Golf Club will have the “Golden Opportunity” to play the Gold Course! Don’t miss this amazing opportunity. Early registration is open for the Golden Horseshoe at https://www.regonline.com/2014WFP_HEvanGolfClassic. Registration for the other courses will open soon.

Sign up individually or as a foursome. Sponsorships opportunities are also available. This event is hosted jointly by the VA WWA/VWEA and Washington, D.C. Water For People Committees. All proceeds are donated to Water For People.

Water For People works together to share the heartfelt vision of a world where all people have access to safe drinking water, adequate sanitation, and basic health services, and where no one suffers or dies from a water or sanitation related disease. Water For People works with people and partners to develop innovative and long-lasting solutions to the water, sanitation, and hygiene problems in developing nations all over the world. To learn more about Water For People please visit, www.waterforpeople.org.

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The Public and Government Affairs Committee (PGAC) is now taking nominations for the VWEA Al H. Paessler Environmental Stewardship Award. Al Paessler was one of the initial employees of the State Water Control Board, which was formed in 1947. He served as Executive Secretary from 1949 to 1972 and was the longest serving Executive Secretary of one of the precursor agencies to VDEQ. He was president of the Virginia Water Pollution Control Association (now the Virginia Water Environment Association) from 1959-1960. By naming this award after Mr. Paessler, the award emphasizes government employee service to the water environment field and to the association. The PGAC evaluates the nominations and makes a recommendation to the VWEA Board for approval. If approved, the Al. H. Paessler Environmental Stewardship Award is presented at the VA AWWA/VWEA WaterJAM.

If there is a person you believe should be considered for this award, please contact James Grandstaff, Chair of the Public and Government Affairs Committee at 804-795-9302 or at gra@co.henrico.va.us. A one-page biography of the nominee, a listing of the specific reasons for the nomination (two pages maximum) that relates to his/her work in improving the water environment and any other supporting material that relates to the award criteria are required for each nomination. Nominations must be received by March 15, 2014.

--------------

The Public and Government Affairs Committee (PGAC) is now taking nominations for the VWEA Public Officials Award. The Public Officials Award is presented to an elected or appointed public official that has made a documented, significant contribution in the areas of clean water legislation, public policy, government service, or another area of public prominence that resulted in improvements to the water environment. The award can be presented for public service at the local, state or federal level. The PGAC evaluates the nominations and makes a recommendation to the VWEA board for approval. If approved, the Public Official Award is presented at the VA AWWA/VWEA WaterJAM.

Winners of the VWEA Public Officials Award are nominated for the WEF Public Officials Award.

If there is a person you believe should be considered for this award, please contact James Grandstaff, Chair of the Public and Government Affairs Committee at 804-795-9302 or at gra@co.henrico.va.us. A one-page biography of the nominee, a listing of the specific reasons for the nomination (two pages maximum) that relates to his/her work in improving the water environment and any other supporting material that relates to the award criteria are required for each nomination. Nominations must be received by March 15, 2014.
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The Public Officials Award is presented to an elected or appointed public official who has made a documented, significant contribution in the areas of clean water legislation, public policy, government service, or another area of public prominence that resulted in improvements to the water environment. The award can be presented for public service at the local, state or federal level. This year the award was to be presented to Penny Gross at WaterJAM. Unfortunately, Ms. Gross could not attend due to a conflict with a Fairfax County Supervisors meeting. The award will be made at the January Potomac Watershed Roundtable – which Penny has chaired since its inception.

Penny Gross was first elected to the Fairfax County Board of Supervisors in 1995. Ms. Gross also is vice-chair of the board, and she chairs the board’s Environment Committee. Regionally, Supervisor Gross represents Fairfax County on the board of directors of the Metropolitan Washington Council of Governments (COG), which she chaired in 2009. She also represents Fairfax County on the Northern Virginia Regional Commission where she serves as legislative chairman. Supervisor Gross represents Fairfax County on the Potomac Watershed Roundtable, which she also chairs.

On the state and national level, Supervisor Gross was chosen president-elect of the Virginia Association of Counties in November 2013. She currently is vice-chair of the National Association of Counties’ Energy, Environment, and Land Use Committee. She became president of the National Association of Regional Councils Board of Directors in June 2013. Supervisor Gross was appointed by Governor Mark Warner to the Local Government Advisory Committee (LGAC) to the Chesapeake Executive Council, which she chaired from March 2006 until August 2008, and continues to serve. She also served on the Chesapeake Bay Funding Blue-Ribbon panel.

Maintaining an exemplary water resources program at the local level requires political commitment and leadership in the face of competition with other public services for scarce resources. Ms. Gross’ leadership and commitment to environmental quality has ensured just such a program in Fairfax County. She has built bridges among diverse stakeholders and has demonstrated a rare mix of vision, leadership, and practical determination that makes difficult goals achievable.
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The Central Virginia Regional Activities Committee (CVRAC) recently hosted a Lunch-n-Learn event on December 4 to a sold-out audience. Our invited speaker was Mr. Jesse Moffett, the Executive Director of the Frederick-Winchester Service Authority (FWSA). Mr. Moffett provided an informative presentation wherein he discussed the current energy performance-based contracting project at the Opequon Water Reclamation Facility. FWSA has contracted with an energy savings company (ESCO), which serves to identify possible energy savings measures throughout a treatment facility via proposed implementation of process improvements. This contracting mechanism provides a win-win situation for FWSA, as they are able to fully fund desired capital improvements by simply lowering their future operations and maintenance expenditures. The presentation was followed up with an enlightening question and answer session between Mr. Moffett and the attendees. CVRAC would like to extend our deepest gratitude to Mr. Moffett, and the Chesterfield County Department of Utilities for hosting our event.

CVRAC would also like to thank everyone who attended our events throughout 2013. We hope that you found them informative, and had a lot of fun. We have a great lineup of events scheduled for 2014 – we look forward to a great new year!

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**Water Reuse Committee**

**UPDATE**

**What’s going on with water reuse in Virginia?**

The WVEA/VA AWWA joint Water Reuse Committee is ready to kick-off a new year. This committee will be reorganized, reenergized, and refreshed in the upcoming year. Water Reuse: Lessons Learned will be presented at the Spring EVRAC Lunch and Learn by the new WVEA/VA AWWA Water Reuse Committee Chairperson and HRSD Environmental Scientist Kevin Parker. This will be a great opportunity to reestablish this vital committee and discuss the past challenges and the future opportunities concerning water reclamation in Virginia. Please contact Kevin Parker (kparker@hrsdc.com) if you have an interest in serving on this committee.
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Save the Date

The problem:
Every 21 seconds, a child dies needlessly from a water-related illness. In an era of high-tech superiority, more than half of the people in the developing world are sick from the same cause – water-related diseases.

How we can help:
The VA AWWA/VWEA Water For People Committee has established a Fundraising Activity for March 2014 to assist Water For People in their efforts to provide safe drinking water, sanitation and hygiene education to save these children and people throughout the world.

You will soon be given the opportunity to join more than 100 companies and utilities that have launched Workplace Giving campaigns to benefit Water For People and its mission to help people in developing countries improve their quality of life.

Further information will be forthcoming. If you are interested in learning more, please contact Jerry Peaks at 757-229-1776 or jpeaks@bowmanconsulting.com.

To reach wastewater professionals through The Conduit magazine and its targeted readership, contact Dave at your earliest convenience to discuss your company’s promotional plans for 2014.

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For many years Stockholm Junior Water Prize (SJWP) has congregated the nation’s most imaginative young minds for an outstanding competition in water-related science projects. Any high school student (grade 9-12) with a science project aimed at enhancing the quality of life through the improvement of water quality, water resource management, or water and watershed treatment is qualified to participate in SJWP.

Every year in March Virginia Water Environment Association (VWEA) volunteers award top students for their water-related science projects at regional high school science fairs all over the Commonwealth. Students receive a monetary award and are highly encouraged to continue their research. In April VWEA volunteers select a state winner who represents Virginia at the U.S. competition. The 2013 state competition in Virginia was won by Valentina...
Lohr for her project Greening Greywater: Testing Filtration Systems to Protect Earthworm Food Supply.

In 2014, VWEA members will have the opportunity meet and learn from students from all over the U.S., as the SJWP national competition will be held at Hilton Dulles Airport Hotel in Herndon on June 13 and 14. VWEA members will have the opportunity to interact with some of the brightest high school students in the country and see their amazing projects, all focusing on water. SJWP taps into the unlimited potential of today’s high school students as they seek to address current and future water challenges. Projects explore water issues on a local, regional, national, or global level.

The 2014 U.S. competition is hosted by Water Environment Federation (WEF) with support from VWEA, Chesapeake Water Environment Association (CWEA), and Federal Water Quality Association (FWQA). Perhaps June seems far away, but we are currently seeking volunteers for this event. In particular we are looking for coaches and judges. The coaches’ job is to provide a support mechanism that increases the quality of the students’ experiences and leaves a positive, long-lasting impression. Judges will participate in a panel of 18 members that will select the project to represent U.S. at the international competition in Stockholm (Sweden). A judge should have substantial knowledge of water environment issues, for instance professors or directors from the government or private industry. Don’t miss this opportunity to make a major influence on a young person’s choice of career!

Please contact the SJWP State Organizer Nina Andgren (nina.andgren@uosa.org or 703-227-0259) as soon as possible if you (or someone you know) are interested in volunteering.

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VWEA Stormwater Committee 2014 Spring Seminar

Who should attend? Stormwater program engineers and administrators, MS4 program compliance managers, and environmental consultants.

March 20, 2014  8:00 AM - 5:00 PM
The Westin Richmond

VWEA Members $120/after March 6 - $150
Non-members $150/after March 6 - $180
Continental breakfast, lunch, and happy hour
CEUs will be awarded.

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