Erie Water Works Richard S. Wasielewski Water Treatment Plant
Membrane Filtration Retrofit and Improvement Project
2013 Civil Engineering Achievement Award

This project demonstrates that innovative and visionary ideas and their implementation are representative of our region. It shows that the combination of local excellence in management, engineering, and construction results in projects that deliver necessary civic and economic values to our region, and dramatically improves our technology, knowledge, and workers’ skills, all the while securing the safe and reliable use of our most precious life resource—water.

After seven years and 42 million dollars in renovations, Erie Water Works completed the update of their main water treatment plant in 2013. This 80-year old plant first used a sand filtration system. Now recent renovations make this the largest retrofitted membrane filtration water treatment plant in the United States, with a filtration capacity of more than 45 million gallons per day (MGD).

Nearly 270 local workers were employed on this project. The Northwestern Pennsylvania region benefitted as local companies built the plant pumping over $27 million into the local economy during the two plus years of construction.

The project includes:

- New submerged Siemens Ultrafiltration membrane filtration system retrofitted into the existing filter basins.
- New Filtrate VFD-controlled pumps draw water through the membranes and deliver it to the clearwell.
- New chemical dosing and storage systems for the membrane filtration equipment that include considerations for ventilation and all other applicable codes.
- Pretreatment upgrades to provide for long term membrane life, while balancing the desire to minimize chemical addition (seasonal coagulant addition is preferred as needed).
- New microstrainers and rapid mixers, and reconfiguration of the East Sedimentation Basin are included in this work.
- New bulk sodium hypochlorite system, for oxidation and disinfection purposes, safer than gaseous chlorine.
- Conversion of the west sedimentation basin to finished water clearwell achieves 1-log inactivation after membrane filtration. The clearwell addition/renovation proposed provides a minimum 1-log inactivation after filtration with no more than 1.0 part per million (ppm) chlorine residual.
Kemal Niksic, P.E.
2013 Civil Engineer of the Year

Kemal Niksic brings an uncommonly strong skill of finding ways to make things work. This skill was earned.

Kemal Niksic grew up in Bosnia, formerly part of Yugoslavia, that collapsed in the early 1990s. During the war in Bosnia, Kemal worked tirelessly to bring natural gas and potable water to the residents in besieged Bosnia where these essential utilities had been cut off by the Serbs. Kemal gained experience in finding means and methods to make things work with limited resources. Kemal has brought these rare skills with him to the United States.

Mr. Niksic worked tirelessly to restore gas service to his countrymen, cobbling together whatever pipes, valves, pumps, and other equipment as could be found. With the help of US forces, Mr. Niksic also did the same for potable water as processed in package water treatment plants provided by the US and installed in protected locations.

After losing several relatives to ‘ethnic cleansing’, upon refusing to accept offers to profiteer on the misfortune of his people, Kemal found his own life in danger, and escaped with the assistance of the UN and came to the US as a refugee.

Mr. Niksic received his engineering degree from the University of Sarajevo and began his engineering career in his native country of Bosnia and Herzegovina. In 1995 he came to the United States and the Pittsburgh region as a refugee of the war in Bosnia.

As a member of ASCE and EWRI, Kemal has been intimately active within the EWRI Pittsburgh chapter, served as a board member of the ASCE Pittsburgh Section, is the chair of the upcoming Shale Energy Engineering Conference, and is currently Vice President of the Pittsburgh Section.

Prior to his time as board member, Kemal was the EWRI Pittsburgh chapter chair from 2008 through 2010. Throughout this time Kemal has been a key person in expanding ASCE’s and EWRI’s reach throughout our region and nationally. He continues to be an invaluable asset to the success of ASCE and EWRI events, and his commitment and dedication to their overall success is outstanding.

He has also been an active member with Champions for Sustainability (C4S) and Sustainable Pittsburgh and has played an important role in expanding ASCE Pittsburgh’s recognition to these organizations and beyond. In addition to his ASCE and EWRI efforts, his engineering expertise during his time at KLH Engineers and HMM are worthy of recognition. Kemal has been instrumental in many important regional projects such as Alcosan’s Main Pump Station Rehabilitation, Franklin Township Municipal Sanitary Authority Biosolids Enhancement Project, and Municipal Sanitary Authority of the City of New Kensington Waste Water Treatment Plant Upgrade Project. Recently Kemal was named the nationwide pump stations and hydraulic structures practice leader within HMM for his demonstrated expertise in this field.

Kemal was recommended by colleagues during his time at KLH Engineers, from those in the HMM Pittsburgh office, from C4S and Sustainable Pittsburgh, as well as his colleagues in ASCE who have witnessed many of Kemal’s extraordinary qualities as a leader and as a person, and regard him as a person of integrity, trustworthiness, dedication, and possessing a level of engineering expertise that has earned Kemal the distinction of being honored as the Civil Engineer of the Year.,
Jorge M. Suarez, P.E.
2013 Distinguished Engineer

Jorge M. Suarez, P.E. has been honored as the ASCE Pittsburgh Section Distinguished Engineer. Jorge is well known to the Pittsburgh engineering community and by many ASCE members over the 24 years he has worked and participated in technical organizations in the Pittsburgh area. A resume of his participation in the Pittsburgh Section includes:

- President, 2009
- Past President, 2010
- Nominating Committee Chair, 2010.
- Vice-President, 2007-2008
- Board of Directors, 1999-2002
- Program Committee Chair, 1999-2005
- Structures Group Chair, 1998-1999
- Member, 1996-Present

Mr. Suarez’s graduated from Manhattan College with a Bachelors of Engineering in Civil Engineering. He has 37 years of structural engineering experience in design of steel and concrete highway bridges, bridge rehabilitation, and retaining walls.

His technical expertise includes specialized experience in post-tensioned, prestressed, cast-in-place, and precast construction for segmental and cable stayed bridges, tieback walls, pavements, culverts, airport terminals, buildings, FAA control towers, garages, and nuclear containment vessels. Jorge’s technical management experience includes construction management, design-build, cost estimating, scheduling, and specification writing.

Currently, Mr. Suarez is Technical Services Manager-Bridge Construction on national and international projects for Michael Baker, Jr., Inc. in Moon Township, PA.

A brief summary of Jorge’s accomplishments at Michael Baker, Jr., Inc. follows:

- Monongahela River Bridge Crossing, Pittsburgh, PA
- Phase I Airport Busway/Wabash HOV Facility, Pittsburgh, PA
- US Route 21 Viaduct, Newark, NJ
- Route 52 Causeway, Somers Point, NJ
- William H. Harsha Bridge, Maysville, KY
- Ironton Russell Bridge, Ironton, OH
- Blennerhasset Island Bridge, Blennerhasset, WV
- Pomeroy Mason Bridge, Pomeroy, OH
- Downtown Ohio River Bridge, Louisville, KY
- I-90 Central Viaduct Bridge, Cleveland, OH
- Fox River Bridge, Chicago, IL
- Tajikistan / Afghanistan Bridge, Afghanistan
- Mudeirej Bridge, Beirut, Lebanon
- Bagley Street Bridge, Detroit, MI
- Land between the Lakes Bridges, KY
- Shore Road Bridge over Amtrak, Bronx, NY
- Bushkill Bridge, Olive, NY

Mr. Suarez delivered over 15 presentations on post-tensioned and prestressed bridge projects at seminars, conferences and technical society meetings. He authored or co-authored seven (7) publications and is active in eight (8) technical societies.
Linda Kaplan, P.E. is a bridge engineer working in the Pittsburgh office of Gannett Fleming.

Ms. Kaplan holds a bachelor of science degree in civil engineering from CMU and a master of science degree in structural engineering from Lehigh University.

In 2013, Ms. Kaplan served on the planning committee for the ASCE National Structures Congress:

Ms. Kaplan currently serves as:
- ASCE Young Member Forum Vice President,
- chair of the Structures Engineering Institute,
- CMU Student Chapter Practitioner Advisor;
- “Architecture, Construction, & Engineering Mentoring (ACE)” Coordinator,
- “CANstruction” Coordinator,
- Student Chapter Mock Interview Facilitator, and
- ASCE Program Committee member.

Ms. Kaplan also led ASCE’s High School Outreach program in 2013, facilitating presenter training programs in the process.

Ms. Kaplan received an Alumnus Achievement Award from the Civil and Environmental Engineering (CEE) Department at Carnegie Mellon University (CMU). It recognizes CEE alumni who accomplish noteworthy achievement within 10 years of receiving their highest degree from CMU, serve as role models for students, and demonstrate exemplary leadership in the public or private sector.

It is for demonstrating this exceptional and ongoing commitment to her profession that Ms. Kaplan is being recognized by ASCE as “Young Civil Engineer of the Year”.

Jacobs Engineering Group is seeking construction managers and inspectors to work on a major project in the greater Pittsburgh area over the next two to three years. We need construction experience in highway, bridge, rail, utility, earthwork, and port/waterfront disciplines. NICET certification valued. Contact Joel Shodi at 412-249-3465 for additional information, or send resume to joel.shodi@jacobs.com.
Greg Scott, P.E.
2013 Michael A. Gross
Meritorious Service to the Pittsburgh Section

Greg Scott has been active in ASCE since 1993. Greg has served the Pittsburgh Section as the
- President
- Vice President
- YMF Chair
- Legislative Affairs Chair,
- ASCE National Region 2 Governor
- National Conference Chair for the ASCE Annual Conference in Montreal, Canada
- Current Chairman of the Construction Legislative Council of Western Pennsylvania. The CLC is a consortium of fourteen construction-related societies and associations representing professionals and trades in the planning, design and construction sectors of our regional economy and represents well over 100,000 votes on Election Days.
- Organized Infrastructure Day from 2007 to 2012, the annual legislative affairs fly-in to Harrisburg where ASCE and allied societies and Member ships meet with their State legislators and discuss policy and funding for infrastructure and STEM education programs;
- While serving as a Regional Governor, championed the creation of the PA State Council, in which all four of Pennsylvania's ASCE sections convene and promote ASCE's agenda statewide with a common voice;
- Chairman of Pennsylvania's 2010 Infrastructure Report Card, a short assessment of the Commonwealth's infrastructure, comprised of letter grades and recommendations for improvement promulgated by the ASCE membership.
- Past Chair of the Pittsburgh Section’s Environmental Water Resource Institute.
- Young Engineer of the Year in 2005
- Civil Engineer of the Year in 2008,

Greg’s enthusiastic and passionate participation continues to motivate and inspire Section members, young and old, colleagues and policy makers.
Arletta Scott Williams
2013 Service to People Award

Arletta Scott Williams, the well-known Executive Director of the Allegheny County Sanitary Authority (ALCOSAN) has been recognized by the Pittsburgh Section of ASCE for her outstanding service to people.

Ms. Williams has dedicated her life to serving people. Many western Pennsylvanians are familiar with the Open Houses held each fall at the ALCOSAN treatment plant, instituted by Ms. Williams. The national award winning ALCOSAN Open House Is a key achievement, educating the public in a fun and unique way about wastewater treatment, engineering and becoming a watershed steward.

But the Open Houses are only the ‘tip of the iceberg’. At them one sees Arletta tirelessly teaching and inspiring young and old, not just about ALCOSAN, but about Science, Technology, Engineering, and Math (STEM).

In addition to her Executive Duties at ALCOSAN, Arletta is not only seen around with other community leaders, but also teaching and inspiring regional teachers and children in the summer day camp held at ALCOSAN.

A number of key programs and initiatives have taken place during Arletta’s tenure as Executive Director:

- navigating a major treatment plant upgrade,
- negotiating terms of a consent decree to address sewer overflows,
- developing the Wet Weather Plan,
- increasing assistance to the 83 customer municipalities that ALCOSAN serves, and
- increasing employee professionalism.

She passionately encourages young people to achieve and to inspire others. The Scholastic Outreach Program for students and teachers educates, mentors, and motivates the next generation of engineers, scientists, and leaders. Her trademark advice to students is that they should look beyond today’s accolades and to make a positive difference throughout their lives.

Arletta was a founding member of the Southwestern Pennsylvania Engineering Outreach (SPEO) which provides business opportunities, mentoring, and guidance to existing and new minority-and women-owned engineering firms in the area. Through her involvement in SPEO she has enabled MBE/WBE businesses to provide employment opportunities for talented professionals in this area.

She is respected for her deep Christian faith which she attempts to live out each day. She is an active member of the Warren United Methodist Church where she serves as a Lay Leader and Chairperson of the Administrative Council.

Arletta graduated first in her class from Westinghouse High School, then earned her B.S. degree in Metallurgical Engineering and Materials Science from CMU. Prior to joining ALCOSAN she worked for U.S. Steel in the Steel Works Quality Control division of the Metallurgical Department.
Barry Schoch, P.E.
2013 Government Engineer of the Year

In 2013, Pennsylvania enacted the first adjustment for inflation to the revenue that sustains our highway and transit transportation systems since 1997. Since 1997, inflation in the cost of construction and maintenance increased by 66%. In 2014, a dollar of revenue is now necessary to buy what only 60¢ bought in 1997.

The foundation of the adjustment was the findings of a blue-ribbon panel headed by Barry Schoch, the TFAC, or Transportation Funding Advisory Committee. The findings were in a report issued in August, 2011.

Forming public policy by elected officials in the House and Senate of Pennsylvania is exceedingly difficult and frustrating, regardless of the facts supporting measures to enact relatively routine and responsible public policy.

Facing repeated setbacks and wrangling among elected policy makers, Barry Schoch, Pennsylvania’s Secretary of Transportation appointed by Governor Tom Corbett, persevered, working tirelessly to bring some measure of funding to sustain the transportation system that supports the Pennsylvania economy.

The resulting legislation, though far from that necessary, nevertheless provides some funding to be able to repair critical elements of the Commonwealth’s transportation system. The 20% rate of construction unemployment be reduced, and resulting freight and employee access to PA employers restores the economy.

A graph showing the results of the legislation imposed on the recommendations of the TFAC. Credit is due our legislature for leading responsibly, and especially Barry Schoch for his leadership.

During the Herculean effort to bring about necessary legislation, Mr Schoch continued to lead the Department of Transportation, engaging with, encouraging and inspiring staff and citizens.

ASCE Pittsburgh Section recognizes Barry Shoch, P.E. with the honor of this award recognizing his leadership in 2013.

2013 Employer Recognition Award – Hatch Mott MacDonal

Hatch Mott MacDonald management and overall company policy continually reinforce the importance of involvement within ASCE. HMM has long established a special billing code for "Professional Excellence" dedicated to employee efforts within professional societies such as ASCE, and has encouraged management to dedicate overhead to these efforts. HMM continually provides financial support in the form of sponsorships at both the national and local level for special events.

Hatch Mott MacDonald is one of a growing number of companies enrolled in the ASCE Partners Program that provides corporate membership to organizations, delivering ASCE products and services at exclusive rates.
Pittsburgh YMF Gains National and Regional Recognition

The Eastern Regional Younger Members Council (ERYMC) honored two Pittsburgh Section younger members at their annual leadership conference in Indianapolis, IN February 7-8, 2014.

Section member Adi Menon was recognized as the 2013 Outstanding Civil Engineer in the Public Sector. Adi was an Assistant Geotechnical Project Manager at PennDOT District 11-0. He has been active in the Pittsburgh Section Geotechnical Institute and is a past webmaster of the Section. Additionally, Adi has been involved with several engineering mentoring programs and serves in the United States Air Force Reserve.

YMF Vice President Linda Kaplan was recognized for her work with the Carnegie Mellon University Student Chapter as the 2013 Outstanding Practitioner Advisor. Linda is a bridge engineer at Gannett Fleming, and has been working with the CMU chapter since 2010. She has helped build the relationship between the students and professionals in the area and is involved in the planning of the upcoming Ohio Valley Student Conference to be hosted at CMU at the end of March.

The Committee on Younger Members (CYM) Employer Recognition Program recognizes employers who show exemplary support of Younger Member involvement in ASCE. Employers are judged on multiple criteria including the involvement of younger members (employees 35 years old and younger) in local, regional, and national ASCE levels.

This year, one public and one private employer were chosen to receive “superior” recognition of the applicants received. Gannett Fleming, Inc – Pittsburgh Office, was selected as CYM’s 2013 Superior Employer for Support of Younger Members in the Private Sector. Gannett Fleming is a member of the ASCE Partners program and has numerous younger members involved in local, regional, and societal roles within ASCE.

For more information about YMF activities, contact Linda Kaplan, at Gannett Fleming, 412-922-5575, lkaplan@gfnet.com

Julie M. Vandenbossche, PE - 2013 Professor of the Year

Assistant Professor Julie M. Vandenbossche has a focus on highway and airfield pavement engineering. Julie’s passion for her subject matter is reflected in the fact that her teaching evaluations are regularly ranked in the upper 25 percent of all professors in the Swanson School of Engineering.

In addition to teaching students, Dr. Vandenbossche enjoys interacting with students in other capacities. Her research program has provided hands-on research and technical training opportunities for graduate students and undergraduate students. She provides academic and career guidance to these students and many others, and frequently arranges for her graduate students to participate at technical meetings and conferences at both local and national levels, including the Annual Meeting of the Transportation Research Board (TRB) in Washington D.C., every January, where her students regularly make session and committee presentations.

In addition to her work in academe, she worked for the Michigan and Minnesota Departments of Transportation (MnDOT) in various capacities. Dr. Vandenbossche served MnDOT as a Senior Researcher for 5 years, a position in which she had the opportunity to work with and aid many city, county and state engineers (as well as consulting engineers and trade associations) in resolving issues pertaining to concrete pavements and in implementing her research results. In a position with the Transportation Research Board (TRB), she worked with various associations, State highway representatives, and other transportation professionals from across the country in the development of a “roadmap” for guiding national research efforts concerning concrete pavements. Her colleagues’ respect for her is reflected in her current appointment as the Chair of the Transportation Research Board Committee AFD70 (Pavement Rehabilitation).
Phipps Conservatory and Botanical Gardens
Center for Sustainable Landscapes
2013 Civil Engineering Sustainability Award

Phipps Conservatory and Botanical Gardens, in a continuing effort to advance their mission of sustainability, completed the third and final phase of their overall campus expansion. The design of the new center for education, research and administrative operations meets the requirements of the International Living Future Institute’s groundbreaking green building certification program, the Living Building Challenge.

The 24,000-sf, two-story structure fits within the narrow lower campus area and allows a walk-on entrance onto the green roof. The Center for Sustainable Landscapes (CSL) is the centerpiece of the $23 million Phase III of the multi-year expansion project at Phipps to upgrade and expand facilities, and to emphasize more green and sustainable building practices and operations. CSL provides both a home for administrative/classroom functions and a tool to further the institution’s mission “to advance sustainability and promote human and environmental well-being through action and research.”

The CSL achieved LEED Platinum certification from the U.S. Green Building Council in September 2013, received a Green Design Citation at the AIA Pittsburgh Design Awards in October 2013, received the Forest Stewardship Council Design & Build Award in the Commercial / Institutional category in November 2013, and achieved the Sustainable Sites Initiative™ SITES™ certification for landscapes in November 2013, the first project ever to be awarded four stars, the highest level of recognition.

Project Highlights:
1. Revolutionary Energy Efficiency
2. Integrative Design Process
3. Robust Building Envelope
4. Passive Solar Design
5. Geothermal Heating and Cooling
6. Rooftop Energy Recovery Unit
7. Desiccant Dehumidification
8. Vertical Axis Wind Turbine
9. Natural Ventilation
10. Minimally Conditioned Atrium
11. Daylighting
12. Sustainable Materials
13. Sustainable Landscape
14. Green Roof
15. Rainwater Harvesting
16. Permeable Paving
17. Rain Gardens and Bioswales
18. Net Zero Water
19. Building Management System (BMS)
20. Demand Controlled Ventilation (DCV)
21. Lagoon Stormwater Treatment System
22. Constructed Wetland Wastewater Treatment
23. Solar Photovoltaics (PV) and Solar Hot Water Collectors

Project Team:
Owner: Phipps Conservatory and Botanical Garden
Design Architecture Firm: The Design Alliance Architects
Engineers: Civil and Environmental Consultants; Atlantic Engineering Services; CJL Engineering
Contractor: Turner Construction Company
Pittsburgh Section Opportunities to Learn and Network

Maintain technical proficiency and current knowledge, and learn what other members, companies, organizations, and lawmakers are doing. **Mark your calendars now.**

Member prices extend to non-member spouses or one guest of member, except as noted by ‘*’.

**March 01, Saturday, Dodgeball**
1. Team-building fun!
2. CMU University Center Gym
3. 10:00 AM
4. $10/ person, $60/team
5. To register, email Louis.Gualtieri@cdrmaguire.com

**March 8, 2014, Thursday. Post-Disaster Engineering – all day seminar**
1. Held at Civil & Environmental Consultants, 333 Baldwin Rd.
2. $115 for ASCE members. $165 for non-members
3. 6 Professional Development Hours credit

**March 12, Wednesday, Breakfast with Governor Tom Corbett**
1. Presented by NAIOP in association with ASCE.
2. Omni William Penn
3. 7:30 – 9:30 am
4. $40

**March 27, 2014, Thursday. Annual Sustainability Conference – all day seminar**
1. Phipps Conservatory
2. Co-sponsored by Sustainable Pittsburgh

**March 29, 2014, Saturday Annual Geotechnical Institute Short course**

**April 4-6, Friday – Sunday, Shrine Circus**
1. Consol Energy Center
2. $10 admission, $15 reserved seats
3. Supports Shriners who support 22 hospitals for children

**April 23, Wednesday, 12th Annual Student Night**
4. Foster’s Restaurant, #10 Foster Plaza, Green Tree
5. Co-sponsored by Pittsburgh Geological Society and Assn. of Engineering Geologists
6. Monetary awards for top presenters of research in a geotechnical field.

**May 16, 2014, Friday, EE for CEs – all day seminar**
8 am to 5 pm
1. Basic, Practical Electrical Engineering Every Civil Engineer Needs to Know
2. Topics:
   a. Electrical engineering basics, d. pumps,
   b. electrical safety for construction sites, e. generators,
   c. traffic signals, f. electric valve actuators,
   g. plus some cool toys (subsurface utility detection).
3. Hilton Doubletree in Green Tree, 500 Mansfield Avenue
4. Registration Fees:
   a. Members: $135, c. Students: $75,
5. Seminar brochure and registration form will be available in March.
6. Members $135
7. **Who Should Attend**: Civil Engineers who have forgotten basic electrical engineering and wish to refresh their knowledge of how electricity affects their projects.
8. for sponsorship/exhibitor opportunities Contact Sam Shamsi, PE, 412-298-7932 sam.shamsi@gmail.com, or Kathryn Power, EIT, KathrynPower@live.com.

**Event Sponsorship and Exhibition Space Available:**
Please contact Seminar Manager, KathrynPower for sponsorship/exhibitor information.

**July 21 - 23, SEEC (Shale Energy Engineering Conference)**
1. Lawrence Convention Center
2. Share knowledge of how to enjoy the economic benefits and solve the problems to the environment and health
March 12, 2014

“Breakfast with the Governor”

WHERE: Omni William Penn Hotel
TIME: 7:30 a.m. Registration & Breakfast
      8:30 a.m. Program
COST: $40
RSVP: www.naioppittsburgh.com

Mail payment to: NAIOP Pittsburgh  333 Baldwin Road  Pittsburgh, PA  15205
Request invoice for payment online with VISA or MC or questions  412-928-8303
The Altoona Wastewater Treatment Plant discharges to the Juniata River, which in turn flows to the Chesapeake Bay. The ecosystem of the Chesapeake Bay is very sensitive, producing much shellfish and seafood for human consumption. Accordingly, the removal of nutrients that degrade the Chesapeake Bay is necessary at the Altoona WWTP. This project retrofitted the existing WWTP with Biological Nutrient Reduction (BNR).

The Altoona Water Authority (AWA) faced strict regulatory standards for nutrient discharges at its Westerly and Easterly Wastewater Treatment Facilities. The challenges included compliance with strict Chesapeake Bay limits for nitrogen and phosphorus; provision for high wet-weather flows from an upstream combined sewer system; accommodation of seasonal temperature variations in the treatment process; compliance with a strict compliance schedule (subject to penalties) and achievement of an affordable project for the Authority customers.

The plants have the flexibility of using any of five BNR processes (depending on climatic conditions) and step feed process management to accommodate wet weather flow. The plants far surpass effluent nutrient standards with less energy and at a lower operating cost.

The Altoona BNR Upgrade Project advances the science of biological treatment of nutrients under extreme combined sewer loadings and cold weather conditions by combining the following treatment techniques:

**Extreme Flow and Pollutant Loading Peaks** - Raw wastewater flows vary 4 million gallons per day (MGD) to 58 MGD from a partially combined 300 mile sewer system at the Westerly plant. The Easterly plant, flow varies from 2.5 MGD to 40 MGD. The plants are subject to high variations in organic and nutrient loadings, including “first flush” from the CSOs.

**Hybrid Bardenpho Process** - The plants achieve nutrient removal with the Hybrid Bardenpho process, a combination of the 5-stage Bardenpho and the Virginia Initiative Plant (VIP) process. Like the 5-stage Bardenpho process, the Hybrid process also has 5 treatment zones, but uses mixed liquor recycle flow (a VIP feature) from the primary anoxic zone to the anaerobic zone. Computer modeling showed that the process would be able to meet the regulatory standard without supplemental carbon addition.

**Step Feed** - Step feed eliminates bio-mass washout during high flow events. The step feed system maintains the BNR reactor flow while diverting excess flow to the last aerobic zone providing contact stabilization. Gravity flow is maintained for the entire process.

**Cold Weather Nutrient Removal** - While the plants are designed around the Hybrid process, the plant has been operated in the VIP mode while maintaining the step-feed operation. The VIP has a larger aerobic volume than the Bardenpho process and, therefore, can fully oxidize ammonia nitrogen in cold weather conditions. Even when not step-feeding, computer modeling showed that it would be advantageous to switch to the VIP for winter operations. Rising NH3-N concentrations indicate when to switch from the Bardenpho and Hybrid process.

The quality of downstream fishable and swimmable waters has improved as a result of the project including a 95% reduction of nutrients to the Juniata River. Sewer overflows and bypasses at the plants have been virtually eliminated.
Part 4:
Continuing Education Requirements in Other Jurisdictions
Sam Shamsi, PE, F.ASCE

Started in December 2013, this is a multi-part series of short articles on Continuing Education. Parts 1 to 3 focused on continuing education basics and requirements for Pennsylvania professional engineers. In this 4th part, we provide continuing education requirements in the neighboring states and specialty certification programs. The entire series can also be accessed from the Continuing Education page of the Pittsburgh Section Web site: http://www.asce-pgh.org/continuingeducation

Other Jurisdictions

Because P.E. license continuing education requirements are not the same in every state, you probably face confusion when satisfying continuing education requirements in multiple jurisdictions. As an increasing number of jurisdictions adopt and implement continuing education requirements, establishing uniformity in the requirements across jurisdictions has become a difficult issue. As jurisdictions implement different variations of CPC requirements, it is difficult for civil engineers who are licensed in multiple jurisdictions to keep track of what CPC activities are acceptable in each jurisdiction. According to NCEES Model Rule 240.30 - Continuing Professional Competency, a licensed professional engineer is required to obtain 15 PDHs per year. Since the NCEES requirement is a model rule, each individual jurisdiction is free to adopt its own requirements. Although most jurisdictions adopt the NCEES requirement, the amount of required PDH units can vary among jurisdictions from zero to 36 per year (NCEES, 2013). To complicate matters, many jurisdictions often require the standard to be expressed as a biennial or triennial requirement and the calendar dates defining a renewal period vary among jurisdictions. When this is the case, the NCEES Model Rule requires 30 PDH units for a biennial reporting period and 45 PDH units for a triennial reporting period. ASCE has developed a tabular summary of continuing education requirements by state, which is available from www.asce.org Web site (ASCE, 2010). The requirements for Pennsylvania, West Virginia, and Ohio are compared in Table 1.

You may be awarded CEUs for AWWA training by your licensing agency. While trainings may be pre-approved for CE Credits in a given state, this does not mean that your agency will award you credit. AWWA recommends that you contact your agency prior to attending any training.

Specialty Certifications

Professional specialty certifications have their own continuing education requirements which may be different from the P.E. license requirements. Certification is the recognition of attaining advanced knowledge and skills in a specialty area of civil engineering. ASCE offers the highest advanced post-licensure certification in areas of coastal, geotechnical, navigation, ocean, ports, and water resources engineering. All certifications adheres to ASCE’s policy to broaden and deepen the body of knowledge for practicing engineers and to elevate the standards in civil engineering.
Table 1. Continuing Education Requirements in Pennsylvania, Ohio, and West Virginia

<table>
<thead>
<tr>
<th>State</th>
<th>PDH Hours</th>
<th>Renewal</th>
<th>Preapproval</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania</td>
<td>24</td>
<td>Biennial</td>
<td>No</td>
<td>CPC obtained by licensee should maintain, improve or expand skills and knowledge obtained prior to initial licensure or develop new and relevant skills and knowledge. The continuing professional development requirement may be satisfied by coursework or activities dealing with technical, ethical, or managerial topics relevant to the practice of engineering or surveying.</td>
</tr>
<tr>
<td>Ohio</td>
<td>15</td>
<td>Annual</td>
<td>No</td>
<td>Must be relevant to the profession of engineering and may include technical, ethical or managerial content.</td>
</tr>
<tr>
<td>West Virginia</td>
<td>15</td>
<td>Annual</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

For example, the American Academy of Water Resources Engineers (AAWRE) was founded in October 2004 under the leadership and guidance of members from ASCE’s Environmental and Water Resources Institute (EWRI). AAWRE started the Diplomate, Water Resources Engineer (D.WRE) certification as the highest level of advanced certification offered in the water resources engineering profession for professional engineers. As part of the annual certification renewal process, each Diplomate is required to earn a minimum of thirty (30) professional development hours, including two professional development hours in ethics and two professional development hours in sustainability, every year. American Academy of Environmental Engineers and Scientists (AAEES) specialty certification called Board Certified Environmental Engineer (BCEE) on the other hand requires 40 PDHs of continuing professional development activities in two years.

References and Resources


In the next issue, we will discuss various modes of continuing education.

For more information, contact Continuing Education Committee Chair Sam Shamsi, at sam.shamsi@gmail.com
IN THIS ISSUE

Richard S. Wasielewski Water Treatment Plant - 2013 Civil Engineering Achievement Award .......... 1
Board of Directors................................................................. 2
Kemal Niksic, P.E. - 2013 Civil Engineer of the Year .......... 3
Jorge M. Suarez, P.E. - 2013 Distinguished Engineer .. 4
Linda M. Kaplan, P.E. - 2013 Young Civil Engineer .......... 5
Greg Scott, P.E. - 2013 Michael A. Gross Meritorious Service to the Pittsburgh Section .......... 6
Arletta Scott Williams - 2013 Service to the People Award ................................................................. 7
Barry Schoch, P.E. - 2013 Government Engineer of the Year ................................................................. 8
Pittsburgh YMF Gains National & Regional Attention .... 9
Julie M. Vandenbossche, P.E. - 2013 Professor of the Year ................................................................. 9
Phipps Conservatory & Botanical Gardens Center for Sustainable Landscapes - 2013 Civil Engineering Sustainability Award ................................................................. 10
Pittsburgh Section Opportunities to Learn & Network ... 11
Breakfast With the Governor ................................................................. 12
Altoona Wastewater Treatment Facilities BNR Upgrade & Expansion - 2013 Award of Merit .......... 13
Continuing Education Made Easy (Part 4) .......... 14-15

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