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Newsletter

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2013-14 Theme: Maximizing Innovation for Water Quality Improvements

Corbin Inspires Scholars at 22nd Annual Awards Luncheon

by John Kosco



Jeff Corbin, EPA Senior Advisor for the Chesapeake Bay and Anacostia River, addresses scholarship and science fair winners at the Elephant and Castle in Washington DC.

Speaking to FWQA for the third time was a special event for Mr. Jeff Corbin, now the Environmental Protection Agency's (EPA) Senior Advisor for the Chesapeake Bay and the Anacostia River. At the May 29 FWQA 22nd Awards Luncheon, held at the Elephant and Castle, Jeff gave an inspiring talk on the Chesapeake Bay to the FWQA scholarship and science fair winners as well as their parents and other participants.

Jeff has worked on Chesapeake Bay issues for many years, beginning with the Chesapeake Bay Foundation where he was Virginia Deputy Director and Senior Scientist (when he first spoke to FWQA), then as Virginia Governor Kaine's Assistant Secretary for Natural Resources (his second FWQA luncheon presentation) and now as an EPA Senior Advisor for the Bay.

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Jeff began by discussing the history of the Bay program including the series of Bay agreements, the development of a total maximum daily load (TMDL) for the Bay, and a new Chesapeake Watershed Agreement to be signed in June. The Bay is showing signs of progress. For example, Jeff presented data showing that striped bass have increased significantly since the mid-90s. Bay health is also improving in other areas, such as a declining dead zone and an increased crab population. However, significant challenges still exist. One of the biggest challenges is the sheer size of the Chesapeake Bay watershed, which is five times larger than any other watershed in terms of land to water ratio.

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President's Corner

Hello FWQA members!

Welcome to summer! After a spring that seemed like it would never come, we have been inundated with heat and precipitation in the D.C. area. Everything is so green my walks in Rock Creek Park feel like the Amazon rainforest! I hope that you all are enjoying our beautiful weather and are as excited as I am about the summer months. This is my last President's Corner as I make way for Mr. Gregory Mallon to step in as the President of our great organization. I plan to continue to be involved with the organization in my new role as Past President and will be forever honored to have served in the role of FWQA President. Although we faced many challenges over the two years of my tenure, I believe that we faced them head on together and we have charted a course to clearer waters.

As was expected, the spring was a busy time for us. We had great luncheon presentations by Mr. Hiram Tanner, Jr. in February and Dr. Suhdir Murthy in March, both of DCWater. Although our event at the Alexandria Sanitation Authority was cancelled due to a heavy storm event, we plan to reschedule that activity for the early fall. To wrap up the year we held our annual scholarship luncheon at the Elephant and Castle Restaurant. Everyone had a great time at the event as we honored science fair winners and three scholarship winners, all of whom focus on water issues in their studies. Mr. Jeff Corbin gave a presentation on the status of the Chesapeake Bay that I believe truly inspired the students. An annual business trip had kept me away from this luncheon for the past few years, and I have to say that it was moving to reward and spend some time with the young water-focused future engineers and scientists. I truly recognize how special the event is to the organization and to the students.

I am sure that under Greg's leadership the FWQA will continue to broaden and deepen its reach. He, along with all of the board members will continue to spread the word of all the good work that WEF/FWQA members do for our region and the nation.

Thank you for all of your support over the past two years and your continued support of the FWQA! I hope to see you all at our next event in the fall.

Best regards,
Charles C. Glass, Ph.D.

22nd Annual Awards Luncheon (continued from page 1)

This means that pollutants sources on land, such as urban stormwater and agricultural runoff, need to be addressed on a much larger area than similar watersheds. Another challenge is addressing Bay issues with shrinking federal, state and local budgets, all while the population in the Bay watershed continues to increase.

Mr. Corbin discussed several key initiatives to help address the Bay's problems. First, a May 2010 Executive Order on the Chesapeake Bay set clear goals and outcomes. This accountability is measured by annual action plans and annual progress reports ensuring transparency. Second, the TMDL established in 2010 established a "pollution diet" for the Bay, with specific, numeric targets to be achieved by watershed and State. The TMDL, through watershed implementation plans developed by the States, will track progress toward a clean-up goal by 2025. Two-year milestones are set so progress can be measured and tracked.

Jeff summarized his talk by saying that the States are currently on track to meet their TMDL commitments, but it will only get harder as we implement the easier milestones and get closer to the 2025 clean-up date. This is where we will need the students, with their fresh ideas and energy, to help us achieve the goal of a restored Chesapeake Bay.



Charles Glass, FWQA President announcing Scholarship winners for 2014:
 Tyler Treakle with presenter Jim Wheeler, Ben Hayden, and Mr. Falkner accepting for Perrin Falkner with presenter Sheila Olem.



Science Fair Winners are all smiles at the 22nd Annual Awards Luncheon

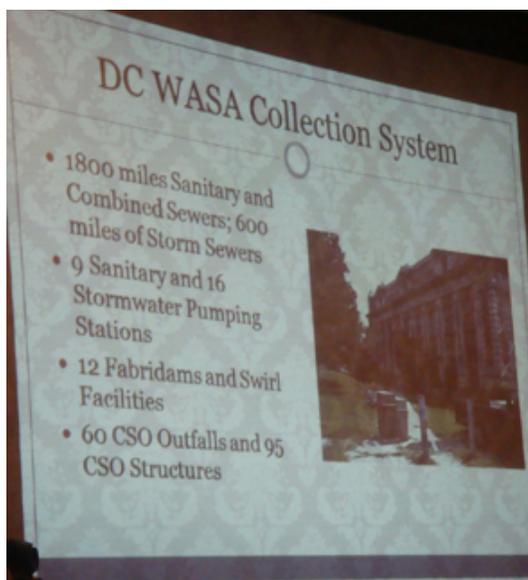
The Importance of Good Asset Management: Wastewater Treatment Begins with the Flush at DC Water

By K. Jack Kooyoomjian, Ph.D

On February 27, 2014 at the Channel Inn, the FWQA members and guests were introduced to the philosophy and practices of the District of Columbia's Water and Sewer Authority (DC Water) by Mr. Hiram L. Tanner, Jr., who serves as Manager of Sewer Pumping for DC Water. In his role, he is responsible for the operation and maintenance of 1800 miles of sanitary and combined sewers and 600 miles of storm sewers as well as the other structures listed in the illustration below on the left.

Mr. Tanner began this presentation by raising issues dealing with wipes (primarily baby wipes) and fats, oils and grease (FOG) from a variety of sources, and asking whether the U.S. Environmental Protection Agency (EPA) should lead the charge, or does it fall to others? His discussion points touched on what products not to flush (baby wipes, floss, diapers, hygiene products, including FOG). The "take home" message to the audience is that the toilet should not be viewed as an all purpose trashcan! The annual sales of consumer and industrial wipes and other non-dispersible products in the U.S. runs in the billions. He stressed what happens in the sewer system with the presence of FOG, including corrosion of pipes and plumbing as well as the clogging of pumps and equipment. He explained why he prefers standards to guidelines, and touched on legislative action taken in at least four states. He indicated that National Association of Clean Water Agencies (NACWA), the Water Environment Federation (WEF), the American Public Works Association (APWA) and state and local associations are involved in this area. He noted that the WEF survey of utilities indicates that FOG programs in various utilities generally capture their costs in savings. As an illustration, he recapped the experiences of the Maine Wastewater Control Association and the effectiveness of their advertisement campaign to dispose of used baby wipes into the trash and not the sewer. He conveyed the website (<http://saveourwipes.com>) for those who wished to follow up and track more information on this subject. Mr. Tanner also touched on the adverse impact of corrosion on infrastructure.

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Description of DC WASA Collection System on left and speaker Hiram L. Tanner, Jr. of DC Water on right.



Treatment Begins with a Flush at DC Water (continued from page 4)

To illustrate actions taken, he highlighted DC Water's experiences with grease abatement systems and grease interceptors especially at food establishments. Such efforts reduce the adverse effects of FOG, such as corrosion of sewers, pipe failure leading to sink holes, odor complaints, the clogging of pumps and equipment as well as numerous other impacts. Blue Plains processes approximately 50,000 pounds of FOG daily, and hauling costs are approximately \$6,400 per month. WASA Maintenance crews spend about 260 man-hours (equals 2 months) per year using grease-busting chemicals at an approximate cost of \$55,000 per year. Closed Circuit Television (CCTV) Crews use robotic cameras to survey pipes and locate obstructions in the system. Restaurants generally do not diligently manage grease traps and interceptors, and this inevitably results in complications requiring more aggressive follow-up maintenance and abatement. Enforcement of proper maintenance is very important, and requires such activities as an agency response, the granting of permits, follow-up inspections, the issuance of non-compliance notices and written warnings when appropriate. The legal response usually involves citations, fines, water stoppages and lawsuits. Hiram advocated for the use of sound asset management practices to track issues. Such practices would include monthly, quarterly and biannual inspections. He observed that in the Washington, DC area, it is a fact that restaurants are social meccas, and that improper FOG management could possibly ruin a business. He observed that the U Street corridor, for instance is a FOG problem area, and this has resulted in such phenomena as collapsed pipes and big sinkholes. While the improper management of FOG has a big adverse impact, there are few alternatives to sewers. By-pass pumping is costly and repairs are made quickly, because of the huge impacts on businesses and infrastructure, as well as the obvious inconveniences to residents.

Mr. Tanner highlighted the DC Water asset management program and demonstrated how the program has saved the utility time and money in operating the complex DC wastewater pumping and collection system. He explained that the system encompasses 1,800 miles of combined and sanitary sewers and 600 miles of storm sewers. He emphasized how a good program can help the utility in preparing for the unexpected and in responding to emergencies.

A lively question and answer session followed the formal presentation.

Attendees enjoying the question and answer session at the February professional luncheon.



Innovation and Collaboration in the Water Sector

By K. Jack Kooyoomjian, Ph.D

On March 20, 2014 at the Channel Inn, the FWQA members and guests were introduced to the development and implementation of DC Water's innovation strategy by Dr. Sudhir Murthy, who serves as DC Water's Innovations Chief in the Office of the General Manager. In this position, Dr. Murthy creates and defines processes, capabilities and metrics around innovation, and leads the translation of research and development into product or service concepts. In addition to this, he identifies and leads a variety of partnerships for collaborative new technology programs.

Dr. Murthy has a Ph.D. in Civil Engineering and has over 15 years of experience developing and implementing innovative new technologies at water utilities. He has also been working closely with the Water Environment Federation (WEF) and the Water Environment Research Foundation (WERF) and other partners to look at ways to accelerate use of innovations in wastewater treatment and water reclamation through a joint-partnership called the Leaders Innovation Forum for Technology (LIFT) initiative. The LIFT initiative is a forum for technology, which has three goals, namely scholarship, collaboration and networks. The LIFT initiative includes multiple efforts such as the newly developed Technology Evaluation Program to foster strategic partnerships. The program offers a vetting system to screen new technologies and processes, as well as a platform for facilitating collaboration between facilities for evaluating and testing new technologies, and provides peer-reviewed information about emerging technologies. LIFT also provides technology evaluations for end-users in the water sector. These evaluations enable end-users to share the risk and costs of conducting demonstrations, so they are able to adopt new technologies faster.



Dr. Murthy (*see picture below*) gave us a brief history of the Blue Plains plant, which was built in the 1937 to 1938 time frame. Dr. Ralph E. Furhman was the second Blue Plains Plant Manager, and held a Ph.D. in Civil Engineering from Johns Hopkins University. He was President of the Water Pollution Control Federation (WPCF, now the WEF) in 1950 and 1951. There are a lot of different processes ongoing at Blue Plains. Someone said "We would never build a plant like this again." The treatment processes obviously evolved over time. However, we are finding out that the plant configuration originally designed by Ralph Furhman is, actually in fact the ideal configuration!

Sudhir touched on a variety of details of the current expansion program at Blue Plains, and the research that has been undertaken to support these decisions. He remarked that the activated sludge treatment system we use at Blue Plains today has been around for nearly 100 years. The innovations of today become the treatment processes of tomorrow. Dr. Murthy discussed the process of innovation, using a variety of analogies, such as in the IT sector with the evolution of the 5¼ inch disk evolving to the Compact Disk (CD) and now the Memory Stick which has enormous storage capacity. He talked about an array of subjects dealing with innovation, including the variety of technologies and sensors that have evolved to make it possible to bring us to the current Supervisory Control and Data Acquisition (SCADA) Systems capabilities.

He also referred to how the structure of the Boeing 747 technology has been around "forever," and where the structure of the Space Shuttle has been around for 20+ years, and how "risk management" has evolved to refine the product. He noted that digesters were around for 65+ years when Ralph Furhman made the decision to install them some time ago at Blue Plains. Dr. Murthy talked about technology "push" and technology "pull" activities, and the rate-limiting effect of technology diffusion being on the supply side. He talked about the demand side bottlenecks of implementing new technologies in the water sector, and used examples such as nitrogen removal, and collaborative programs within DC Water in Program Management, as well as programs ongoing at other utilities and universities.

This discussion was followed by a lively question and answer session. For instance, we learned that for Blue Plains, it generally takes approximately a minimum of 5 years to evaluate a technology. Dr. Murthy noted that perhaps engineers are not the best communicators, but that they have approximately 10 staff in DC Water to engage on the entire technology implementation venue, and it keeps them fairly busy and engaged.

FWQA Member Highlight: Dr. Christian Davies-Venn, Ph.D., P.E., BCEE



Dr. Davies-Venn is the Vice-President and Chief Technical Officer of PEER Consultants, P.C., a global, full-service environmental and civil engineering consulting firm, headquartered in Washington, DC. He is also an adjunct professor at Johns Hopkins University's Whiting School of Engineering where he teaches several water and wastewater treatment and design courses. Dr. Davies-Venn obtained his Bachelor of Engineering in Civil Engineering from the University of Sierra Leone, and M.S. and Ph.D. degrees in Environmental Engineering from the University of Cincinnati, Ohio and the University of Arkansas, respectively. He is a licensed Professional Engineer in Maryland, Virginia, Florida, Michigan, Tennessee, and the District of Columbia and a Board Certified Environmental Engineer by the American Academy of Environmental Engineers and Scientists (AAEES). This year he was elected and served as President of AAEES.

Christian has 37 years' experience in civil and environmental engineering ranging from facilities planning; program management; design of water, wastewater and industrial waste treatment facilities; and construction management to pollution prevention and abatement; environmental assessment; and air pollution control. He is a recognized national expert in water, wastewater, and biosolids treatment process design. He has been involved in the planning, design, and construction management of numerous water and wastewater treatment systems and other environmental projects for federal, state, local, and industrial clients throughout the U.S. For these projects, he has served in various capacities ranging from project manager to principal-in-charge. His international experience has included design of several development projects in Sierra Leone, Liberia, the Gambia, and Nigeria sponsored by the World Bank, the European Economic Community, and the African Development Bank, among others.

Dr. Davies-Venn is actively involved in several professional organizations including the American Academy of Environmental Engineers and Scientists; the Council of Engineering and Scientific Specialty Boards; the Water Environment Federation; the National Society of Professional Engineers; the American Society of Civil Engineers; the American Water Works Association; the Chesapeake Water Environment Association; and the Federal Water Quality Association (FWQA). He has been a member of the FWQA since 1994 and has served on various committees including Chair of the Students Chapter and member of the Scholarship Committee as well as chief judge of several Montgomery County Science fairs. He is an FWQA 5S recipient and also the recipient of the William D. Hatfield Award by the Water Environment Federation and the FWQA in recognition of his outstanding performance and professionalism in the operation of a wastewater treatment facility.

FWQA Judging at Local Science Fairs for 2014 by Janet Goodwin

We had a very successful season and judged at seven area science fairs this year. I want to recognize and thank all the volunteers who judged:

- Virginia: Sharon Nye with the Water and Wastewater Equipment Manufacturers Association judged at Prince William and Loudoun Counties
- Janet Goodwin with EPA judged at Northern Virginia Fair and Fairfax County
- Washington DC: Chancee Lundy, Kenya Goodson and Veronica Davis with Nspire Green
- Maryland: Brianna Mannion with the National Association of Clean Water Agencies and John Campbell with the National Cancer Research Institute of NIH judged at Montgomery County
- Marcus Andrew and Jonathan Aklaku, both graduate students at Howard University judged at Prince Georges County

The FWQA awarded first place prizes to 22 senior and junior high students and met with hundreds of young people that have done research in the environmental science and engineering fields.

Six first place winners were able to attend the annual awards luncheon to be recognized for their work. **See pictures and related article on the 22nd Awards Luncheon on page 3.**

FWQA Member Awards for 2014:

Right: President Charles Glass receiving the 5S (Golden Shovel) from Jim Wheeler and Effluent Integrator Jack Kooyoomjian. Charles also was awarded an outstanding service award for his term as president.



Left: Jan Goodwin receiving the WEF Charles Bedell Award from Dianne Crilley of WEF and FWQA President Charles Glass for her outstanding service to FWQA.

Additional awards were also presented to Dawn Kristof Champney and Sharon Nye.



Extra! Extra!

2014 Election Results

The FWQA is pleased to announce the official results of the 2014 Executive Board elections. All candidates were unanimously elected. The new Executive Board was effective July 1, 2014

President	Greg Mallon
President Elect	Joe Ford
Vice president	Tim Connor
Secretary	Sharon Nye
Treasurer	Jim Wheeler
Director	Tim Schmitt
Past President	Charles Glass

Four additional at large members will be appointed by the incoming president to make up the full FWQA Executive Board.

Looking Forward.....

With summer almost ending and election results complete, our 2014-2015 year will begin with several activities planned for FWQA. The "theme" for our new year is "Charting the Course for Water Innovation and Sustainability."

Mark your calendars now for our first event, the rescheduling of the Alexandria Treatment Plant tour on September 25. Those who signed up in the Spring will be getting email updates.

Also tentatively planned for the year:

- November Luncheon Presentation
- Several Happy Hour Socials
- February Luncheon Presentation
- March Monitoring Theme Event
- March-April -- Science Fair Judging
- April Embassy Event
- May Awards/Scholarship Luncheon

