In addition to an outstanding lineup of program speakers, this year’s WWEMA Washington Forum provided a unique opportunity to collaborate with other water associations, in town to celebrate Water Week 2016. Events included a Joint Water Sector Officers meeting, a Congressional Reception, a Joint Regulatory Breakfast and Roundtable with office directors of the U.S. Environmental Protection Agency’s (EPA’s) Office of Water, and a Congressional Water Infrastructure and Innovation Exposition on Capitol Hill.

The collaborative events kicked off with a Joint Water Sector Officers meeting that included the executive leadership of WWEMA, the National Association of Clean Water Agencies (NACWA), the WateReuse Association, the U.S. Water Alliance, the Water Environment Federation (WEF), the Water Environment Research Foundation (WERF), the American Water Works Association (AWWA), the Water Research Foundation (WRF) and the Association of Metropolitan Water Agencies (AMWA). Each of the groups articulated their priorities and challenges, and then focused on optimizing the strengths among the organizations.

Issues such as leveraging our message, growing the water workforce, climate change, regulatory flexibility, water reuse, lead in drinking water, the “one water” concept, developing a better business model for utility management, creating metrics and a risk index for utilities to gauge those at risk for public health crises, and tackling legislative issues such as overall funding and programs for low-income households were discussed. The group committed to working together to create messaging around affordability in the near term. Plans are underway to continue the joint dialogue and plan joint activities during next year’s Water Week, which will be held March 19-25, 2017.

The meeting was followed by a Congressional Reception held across from the Capitol at 101 Constitution Avenue. The reception provided ample opportunities for attendees from all the water groups to mingle, discuss common issues, and hear speeches from a number of House members including Congressman Bob Gibbs (R-OH), Earl Blumenauer (D-OR), Jared Huffman (D-CA), Sheila Jackson Lee (D-TX) and Paul Tonko (D-NY), who spoke directly to water and funding issues as well as specific pieces of legislation.

The following morning’s activities included a joint breakfast and regulatory discussion and roundtables with EPA Office Directors and Deputies, including Andrew Sawyers, Director of the Office of Wastewater Management (OWM); Peter Grevatt, Director of the Office of Ground Water and Drinking Water; Jeff Lape, Deputy Director of the Office of Science and Technology; and Benita Best-Wong, Director of the Office of Wetlands, Oceans and Watersheds. These directors were joined by key staff for the roundtables, including Deborah Nagle, Director of the Water Permits Division in OWM, and Chris Kloss, Chief of the Municipal Branch in the Water Permits Division.

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“A noble purpose inspires sacrifice, stimulates innovation and encourages perseverance.”
- Gary Hamel

Water Week 2016 and the gathering of the U.S. water and wastewater associations was just the beginning of an exciting and inspiring 43rd WWEMA Washington Forum, where the seeds of innovation were alive and well.

History was made with WWEMA at the table of a Joint Session of Officers of the U.S. water associations. Compelled especially by Flint, Michigan, where 9,000 residents have been seriously impacted by the breakdown of a clean and safe water system, this groundbreaking meeting focused on how to unify water partners to a common purpose: a sustainable water system in the United States.

It brought to the forefront the important work by those who operate our water and wastewater utilities, provide technology solutions, and advocate for the vast needs and the crisis facing our aging infrastructure and delivery system. A common thread was the acknowledgement that the federal government will never be able to sustain funding for this infrastructure and how that lack of funding profoundly affects the future.

As the WWEMA Forum sessions began and we explored innovation in the water industry, it became evident that innovation is always borne from ideas responding to challenges and will ultimately result in new actions, processes, or products. These ideas may be of noble purpose from the very beginning, or may lead to noble ideas in the process of implementing the innovation.

In the case of Marc Edwards, professor at Virginia Tech, and a small group of graduate students, a noble purpose was indeed the catalyst of action. Pan Ji, who spoke on Wednesday, was part of that group. In August of 2015, the group decided to get involved in Flint, Michigan, and assist residents with the growing—but not yet public—contaminated water problem. “The Flint Water Study” was born, and the group tested 300 residents’ water for lead contamination. This study proved integral in bringing national awareness to the crisis and may positively impact cities across the nation by forever changing the future of how we achieve and maintain water quality. It’s unfortunate, but sometimes innovation is the result of crisis.

In Washington, D.C., DC Water has found that innovative ideas come about as they seek to “bring value to their ratepayers, employees, and the water industry as a whole, by looking at the physics of every process,” according to Sudhir Murthy, DC Water Innovations Chief, who presented on Thursday. DC Water operates the tenth-largest wastewater treatment plant in the world, which is now the largest advanced wastewater treatment plant in the world. Achieved through “intensification” (increased function in less space with fewer resources), their innovative thermal hydrolysis process for creating energy from waste earned them the prestigious 2016 U.S. Water Prize. DC Water’s innovation will no doubt reverberate throughout the United States and beyond, impacting communities and the environment worldwide.

Also considering process functionality was Andy Kricun, Executive Director and Chief Engineer for the Camden County Municipal Utilities Authority in New Jersey. He shared how they set their objective to be not just a compliant utility, but one that would fulfill the higher mission of water/wastewater in a community in the midst of an economic downturn. They took innovative steps as they looked creatively at funding, resource utilization, and sustainability in the upgrade of their plant. Introducing solar, sewage to heat, energy efficiency, and automation, they were able to fund these changes and maintain rates for 17 years. Again, we see a nobility and generosity of spirit as they now support the community of Camden as they meet their water/wastewater goals.

As many times as innovation comes from humanitarian or altruistic efforts, it also can stem from private industry’s profit and cost-reduction efforts. As manufacturers, we can identify with this, as we are constantly seeking ways to increase margin and implement lean manufacturing processes. In the case of The Coca-Cola Company, which uses more than 300 billion liters of water each year, what started as a sustainability and water/cost reduction endeavor became a goal to “return to communities or nature the amount of water we use in all our beverages and their production,” according to Paul Bowen, Director of Sustainable Operations for Coca-Cola.

As he explained how a singular goal became a multi-faceted mission, Bowen, who is also President of the Water Environment Federation, inspired us to think of the good that can be caused while focusing on the good business practice of assuring sustainability. The achievements under that initiative and its resulting good works demonstrate the far-reaching impact of merely beginning with the declaration of a goal. Coca-Cola now has “four pillars of stewardship” that drive its approach to
water: Plant Performance, Watershed Protection, Sustainable Communities, and Global Awareness and Partnerships. What could we as technology providers do both within our companies and in our solutions to make an equally dynamic impact on our communities?

The call for innovation, for nobility of purpose—the sacred pact, if you will—to be stewards of our water resources is a groundswell. The lessons of innovation are clear: Let the need lead the way; make a bold declaration of a purpose that is great enough to be worthy of you, and be its champion; examine the lens through which you view the challenge or opportunity; and be willing to cause the way, even when it appears that there is no way. And finally, as Sudhir Murthy reminded us: Recognize the abundance in which there really is enough in the vast world of ideas and imagination to truly invent the way forward.

“Without change there is no innovation, creativity, or incentive for improvement. Those who initiate change will have a better opportunity to manage the change that is inevitable.”

- William Pollard

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Roundtable discussions covered water utility finance; combined sewer overflows/sanitary sewer overflows and wet weather management; direct potable reuse and CWA/SDWA overlap; innovation, utility of the future, and the status of recovered resources; Waters of the U.S. and TMDLs; and stormwater issues. The dialogue at the roundtables was frank, engaging, and insightful, with EPA staff willing to answer all questions from the participants.

The joint events concluded with a Congressional Water Infrastructure and Innovation Exposition held on Capitol Hill. Designed to engage Congress and their staffs regarding water issues and technology solutions, WWEMA-member exhibitors included Calgon Carbon Corporation, Environment One Corporation, Evoqua Water Technologies, and Xylem Inc.

WWEMA’s official program, chaired by Thacher Worthen of Schreiber LLC, began Tuesday afternoon with a Congressional update on infrastructure funding and 2016 priorities.

Introduced by Jack Adams of Calgon Carbon Corporation, the Hon. Keith Rothfus (R-PA) talked about growing the economy, increasing jobs, protecting social security, veterans affairs, and unfunded mandates. He spoke on a number of water topics, including private activity bonds, the need for asset management plans,
funding for innovation, increased funding for the Clean Water and Drinking Water State Revolving Loan Funds (SRFs), and potential passage of the Water Resources Development Act. He encouraged all WWEMA members to get actively involved in the legislative process and develop a working relationship with their Senators and Representatives.

Adam Schank from Bloomberg Government continued the Congressional report by providing more detailed insights into legislative direction and impacts on the economy, business, and the environment. He noted that with the election year, Congress has a compressed schedule, leaving 60 and 80 working days respectively in the House and Senate before the election. There is a potential that the Senate could change from Republican to Democratic control so the elections process will be weighing heavily on legislators this year. With no specific deadlines to drive legislation, he projected that the likely scenario for funding is a continuing resolution until December or early next year.

Schank discussed the Administration’s funding request for EPA, noting a decrease in state funding grants as well as the SRFs. He mentioned several bills aimed at addressing the lead crisis in Flint, Michigan. He did note increases in funding requests for renewal energy programs and various climate change initiatives. While a number of bills have been introduced in Congress recently related to water and funding, it is likely that only the Water Resources Development Act which funds the Army Corps of Engineers stands a chance of passing, meaning it will be a lightning rod for add-ons and policy riders.

Turning to public health protection, WWEMA attendees heard from Pan Ji, a doctoral candidate at the Charles E. Via Jr. Department of Civil Environmental Engineering at Virginia Tech and a member of the Flint Water Study Team that was responsible for bringing the Flint water crisis to national attention.

She provided a compelling synopsis of the events that took place over 18 months, affecting 100,000 people, including 9,000 children. In addition to excessively high lead levels that occurred when the city switched from Detroit water to Flint River water without adequate corrosion control in place, the city also experienced elevated levels of Legionella bacteria due to low chlorine levels and other factors that led to 87 cases of Legionellosis and 10 deaths.

In spite of repeated assurances from state and federal officials that the water was safe to drink, the local industries, the Flint Water Study Team, and the people of Flint all knew otherwise. The Flint Water Study Team became the voice for the residents of the City of Flint, which suffered from disinvestment, deindustrialization, depopulation, and urban decay, as well as high rates of crime, unemployment, and poverty.

Ji shared with the audience the work that was done by the team to bring this issue to light and shared insights into the tough decisions students and professors faced as they committed themselves to helping the residents of Flint.

Ken Simonson, Chief Economist for the Associated General Contractors of America, provided a look at the economy, noting that construction spending has rebounded over the last five years, led by private residential and multi-family housing. He predicts that multi-family housing starts will continue showing strong growth as millennials trend toward rental property and city living. Overall, AGC members are expecting an 8 percent increase in spending on water and sewer in 2016.

Simonson provided some analysis on roads, recreation, and water/sewer spending, noting that Eastern and Midwestern cities under orders to make long-term upgrades to sewer systems should boost spending. Utilities facing drought and conservation also will boost spending, and funding may be provided for lead abatement.

Simonson predicts cutbacks in coal-fired plants, that oil and gas fields have hit bottom, and that there will be a surge in gas-fired plants and pipelines into 2018.

He anticipates manufacturing growth led by chemicals and transportation equipment, but said there will be few new starts along with cuts in plants tied to farming, mining, and exports. He projects private (mainly rail) investment in transportation will decline and small gains for public airports, ports, and transit. Worker shortages continue to plague the industry, with employers having trouble filling craft positions and engineer/management roles, leading to higher labor costs.

Robert Wilson with WeiserMazars shared his insights into the “Circular Economy” and the impacts that trend might have on the future of manufacturing. First he described the current economic model, which is linear and defined as a take-make-waste model and which has driven industrial development and growth for the last 100
years. Given that the global population is projected to double between now and 2050, the development of resource scarcity issues and the diminishing reserves of key resources such as rare earth metals and minerals, and increasing exploration and material extraction costs, there is a growing movement to create a cradle-to-grave mindset that reuses and repurposes goods and resources. This new circular economic model is gaining a foothold in Europe as manufacturers strive to keep products, components, and materials at their highest utility and value.

Wilson described the principles and characteristics of a circular economy and compared that to the linear economy. He provided a list of many of the drivers that are moving countries toward a circular economy and discussed the economic opportunities inherent in the framework. Finally, he provided two case studies—one with SUEZ and one with the Philadelphia Water Department—showing how the concept can be put in action. As manufacturers in the U.S., he noted that knowledge about this framework is critical as it is gaining a foothold in Europe and other countries and may impact the ability for manufacturers to compete abroad if their products do not conform to these changing expectations. This presentation generated a lot of dialogue with the audience and questions about applicability to U.S. markets. Several members who sell overseas noted that they had begun to encounter some of this thinking in bids and specs.

The day ended with a presentation by Kelly Kryc from the White House Office of Science and Technology Policy. She provided an overview of the Office, noting it advises the President and others within the Executive Office of the President on the effects of science and technology on domestic and international affairs and leads interagency efforts to develop and implement sound science and technology policies and budgets. The Office works with the private sector; state, tribal, and local governments; the science and higher education communities; and other nations toward this end.

Kryc reported on the March 22, 2016, White House Water Summit that brought together representatives from federal, public, private, non-governmental organizations, and academic sectors to raise public awareness about the importance of water in the United States, share innovative solutions to key water challenges, and to catalyze a national effort to build a sustainable water future. More than 150 external institutions announced new efforts and commitments in support of the Summit goals. Thursday morning began with a thought-provoking presentation from Paul Bowen, Director of Sustainable Operations at The Coca-Cola Company. Although not publicized, Coca-Cola has taken extraordinary steps to conserve water worldwide in their manufacturing and bottling plants while at the same time promoting sustainability and social good programs. Currently, the company has more than 900 bottling plants in more than 200 countries. In 2005, the company committed to a water risk management process and water stewardship program that focused on being a global water citizen that makes a dif-
In addition to providing specific details about each of these trends, he provided a list of opportunities and specific suggestions for how manu-

facturers can take advantage of these trends. For example, under corporate stewardship, he noted the trend toward “off the grid” water management by large to mid-size industrial facilities to increase reliability and decrease connection fees and water/wastewater bills, as well as liabilities and energy costs. Companies are also developing corporate stewardship/responsibility and sustainability goals, often in response to stockholder activism and minimizing the water footprint.

After exploring each of these trends, Carpenter concluded with an overview of a WaterReuse research project designed to create a scorecard for evaluating opportunities in industrial water reuse. He noted that the project is designed to help industry develop its own method to efficiently define, track, and communicate information on how water is used; the business value of water, including the total cost of water; the anticipated return on investment; and the business risks associated with water challenges including facility shutdown and supply chain interruptions.

The goal of the project is to develop a user-friendly tool for evaluating potential opportunities in industrial water reuse across industries to help the user to determine if industries have a viable water reuse opportunity.

The program ended with a panel presentation on innovation in municipal water and wastewater treatment. Sudhir Murthy, Innovations Chief for DC Water, provided an engaging and informative presentation on the “innovation lifecycle” and how that varies depending on the cost, the lifecycle, and the return on investment of the equipment being purchased by the utility. Using animal models to simulate equipment purchase decision-making, he graphically displayed how the utility makes buying decisions. Turning to innovation, he noted that DC Water currently operates the largest advanced wastewater treatment plant in the world and has focused on process “intensification,” meaning doing more, in less space, more efficiently. They have transitioned from the classic wastewater treatment plant to a world-class water resource recovery facility. Partnering with innovators from around the world, they are creating processes that bring value to their ratepayers, employees, and the water industry as a whole. They approach innovation like a business, creating business plans and strategies to achieve short-term and long-term goals. Many of their efforts are saving energy, reducing operating costs, and creating one-off business opportunities such as selling soil conditioners made from Class A biosolids. DC Water exemplifies innovation at its best.

This presentation was followed by Andy Kricun, Executive Director and Chief Engineer of the Camden County Municipal Utilities Authority. Like Flint, Michigan, Camden, New Jersey, suffers from high rates of unemployment; the majority of the citizens live below the national poverty line, making it America’s poorest city; it suffers from aging infrastructure (the combined sewer system is over 100 years old) and poor urban planning; and in 2012, Camden had the highest violent crime rate in the United States. But unlike Flint, the leadership in Camden saw an opportunity to become the “Clean...
Water Utility of the Future.” Rather than strive for permit compliance as the ceiling for its operations, the leaders decided that it should be the floor. Though the Authority does not own the Camden wastewater facility, they saw an opportunity to partner with the city and through the use of state revolving loan funds, the Authority set about optimizing water quality, minimizing odors, achieving cost efficiencies to reduce rates, reducing the carbon footprint and implementing green energy initiatives, implementing green infrastructure, and providing community and environmental service leadership to the ratepayers and the clean water industry.

Through collaboration with the city, the state, local businesses, and non-profit organizations, Camden staged a remarkable turnaround and revitalization. Gardens were created for the citizens, a long-buried stream was daylighted and incorporated into recreation opportunities for the community, and the riverfront was accessed through the creation of several new parks. Collectively, the organizations addressed flooding, contaminated sites, air emissions, recycling, environmental justice issues, and environmental education. What’s more, doing the right thing was also the smart thing! These efforts resulted in the reduction of regulatory liability and fines, reduced litigation from residents, improvements in public perception, and efficiencies that allowed not only for improved environmental performance and community service initiatives but also significant cost savings.

Continuing with the theme of innovative technology development, our program ended with a presentation by Aaron Fisher, Technology and Innovation Manager in the Leaders Innovation Forum for Technology (LIFT) program. He spoke on the development of a national water resource recovery test bed network to assist in the development and piloting of technology at various scales to help manage risk and accelerate the adoption of innovation around water resource recovery. The initiative is currently identifying and cataloging four levels/types of test bed facilities. Currently more than 40 facilities are located and mapped in the national directory, which is available for manufacturer access and use. Fisher concluded his presentation with an update on the LIFT program.

In summary, the WWEMA 2016 Washington Forum was a huge success, bringing leaders of the water industry associations together for historic joint meetings, connecting members with Congress, and providing compelling and informative presentations by some of the industry’s most thought-provoking and innovative leaders. We confirmed that the water industry has the tools, resources, and technologies at its fingertips to embrace effective utility management and to provide safe drinking water and a clean environment—it just needs the right leaders and the right vision to make it happen.

Survey Says... How would you rate your overall experience at the Washington Forum?

Excellent/Very Good: 93 percent

Comments:
Overall experience was outstanding. Having the groups together in the beginning was a good idea.

These meetings keep getting better and better. The topics are spot on and the networking is really valuable.

I loved the program this year. It was fantastic!

I heard very interesting perspectives from the speakers. This was my first Washington Forum, so I was primarily taking it all in. The WWEMA personnel did a great job in helping everything run smoothly.

Very good forum, interesting content and excellent location.

Overall very well done event; liked the DC Water/Camden Water panels in particular.

I am still learning the organization and what it can do for us and what I can do for it. Some good speakers (and a lot of political “talk” that hopefully leads to action).

Combined events with the other associations were nice. Some good speakers and presentations as always for the DC forum.

I appreciated being able to meet with the other water groups. It was an expanded opportunity.

Great job of putting the program together. It was integrated well and right on topic.

It was great. Loved presentations and being part of the larger Water Week groups.

Important meeting. Keep it going.