Joint CWEA and CSAWWA Water Reuse Committee – 2019 Fall Seminar: Water Reuse in the Chesapeake Bay Region is Here and Now

By Vanessa Smullen, PE

On November 7th, more than 50 people attended the Joint Reuse Committee's technical seminar in Edgewater, Maryland. The seminar included presentations on current regional and US water reuse approaches and projects, and began with a welcome and introduction from both CWEA Chair **Zohreh Movahed, PhD, PE,** and CSAWWA Chair **Kelly Landry, PhD**. Zohreh introduced Peter as the next CWEA Co-Chair.

Joint Committee Seminar, November 7th audience.

Greg Fogel, Policy Director of the WateReuse Association, opened by presenting goals and appropriations at the state and national levels. The EPA funds the Clean Water State Revolving Fund (CWSRF), the Drinking Water State Revolving Fund (DWSRF), and the Water Infrastructure Finance and Innovation Act (WIFIA). The Bureau of Reclamation promotes reuse in the western US with the Title XVI Water Reclamation and Reuse program and offers research opportunities through water and energy efficiency grants and desalination programs. The USDA offers the Regional Conservation Partnership Program (RCPP) and the Environmental Quality Incentives Program (EQIP), and the US Department of Energy provides energy efficiency incentives. The Water Resource Development Act (WRDA) of 2020 is in draft stage and will authorize USBR's Title XVI-WIIN Water Reclamation and Reuse Program and a Pilot Program for Alternative Water Source Grants. The priority is to develop a collaborative national initiative for water reuse.

Greg Fogel, Policy Director WateReuse Association.

Kevin Hardy of the National Water Research Institute, described the mission to advance water resources science and policy through collaboration and innovation. The vision is for water resources management decisions to be grounded in science and to be based on best practices. Specific solutions include onsite systems, conservation technologies, appropriate regulations, programs like One Water, and a comprehensive project directory. Kevin highlighted regulatory case studies by those states leading the way. California regulates and operates projects which include enhanced source control, wastewater recovery, recycled water use, advanced water treatment, groundwater recharge, reservoir augmentation, raw water augmentation, treated drinking water augmentation, and currently is on track for finalized on-site reuse legislation by 2023. In New Mexico, reuse is being driven by the water-starved village of Cloudcroft.

Kevin Hardy, National Water Research Institute

Given the lack of reuse regulations there, state regulators hired an engineering firm to define safe reuse and avoid potential public health issues. Arizona also is focusing on writing regulations, but for direct potable reuse (DPR). The regulations will most likely include the usual chemical control, source control, advanced wastewater treatment, and utility collaboration. The state also hopes the regulations will allow utilities to help choose their own path forward. In Colorado, an independent expert advisory panel has developed a draft final report of guidelines for direct potable reuse. They emphasized that Public health is the top priority. Lessons learned include the point that decisions must be based on new science, and that independent panels are useful and encouraged. Hardy warned the audience to beware of unintended consequences, such as questions of whether the cleaned water is cleaner than the pipe it's being distributed in, and to think big picture

planning. He stated that public involvement needs to be up front and continued throughout the entire project.

Steve Via of **AWWA,** then presented an overview of EPA's Water Reuse Action Plan, the final version of which is expected by the end of 2019. In this plan, EPA will redefine why reuse is needed; to provide sustainable water to meet public health needs. Adequate quantity, quality, appropriate uses, and appropriate releases all must be considered. Until now, the main reason described was adequate supply, but this new plan takes the triple bottom line approach and is not just about adequacy of water, but of social and environmental good of preventing nutrient pollution.

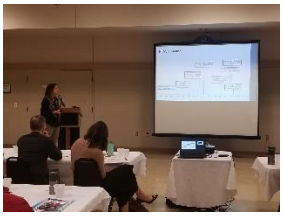
Steve Via, American Water Works Association.

Steve emphasized the integrated approach of "Fit for Purpose," the concept that water only needs to be clean enough for the intended purpose and does not necessarily have to be potable. Via reiterated the importance of managing financial risk and water quality, and that research funding is key.

The morning session concluded with a **Panel Discussion** on how to **encourage potable reuse in the Mid-Atlantic region by 2050**. Panel members included Micah Vieux, of Loudoun Water, Salil Kharkar, PE, of DC Water, Chris Phipps, PE, of Anne Arundel County, and Jeff Glass, of Westminster. Questions included "How does DC encourage water use and reuse?" answers to which seemed to present a resounding support of water reuse, including aquifer recharge. Another question, "How are groups and regulators engaged?" prompted the answer, "to work with regulators to promote solutions and guidelines."

Panel Discussion, Loudoun Water, DC Water, AA County, Westminster.

Christina Alito, PhD, PE, kicked off the afternoon session with a detailed description of the state of per- and poly-Fluoroalkyl substances (PFAs), as concern is rising based on recent data. Christina described the compounds, their prevalence, and removal mechanisms. She further described EPA's PFAs Action Plan, which includes development of MCLs, groundwater management, toxicity evaluation, hazardous substances classification, analytic method development, and integration with chemical manufacturing.



Christina Alito, PhD, PE of HDR, explained the current state of PFAs.

Germano Salazar-Benites, of Hampton Roads Sanitation District, gave the annual update on the Sustainable Water Initiative for Tomorrow (SWIFT), an overarching goal of which is to provide a sustainable supply of groundwater for the Hampton Roads area. Germano provided a description of the project, which involved pilot-testing two different treatment processes, and which concludes with a full-scale 1 MGD plant and aquifer recharge. Current challenges include elevated bromate levels, which can result in DBP formation, N-nitrosodimethylamine (NDMA) formation, the presence of 1,4-dioxane (removed by ozonation), and high dissolved oxygen concentration.

Germano Salazar-Benites, of Hampton Roads Sanitation District

The seminar ended with a presentation from Kelly Landry of Hazen and Sawyer on Florida's "New Water" initiative. Non-potable reuse of water has been prevalent in the state since the 1970s, and the Florida Potable Reuse Commission (PRC) is developing, through a collaborative effort with other agencies, a framework for both indirect potable reuse (IPR) and direct potable reuse (DPR). Multiple projects are on the horizon and include the use of aquifers and wetlands.

Kelly Landry presented Florida's water reuse goals of increasing current uses and fostering new ones.