



## Civil and Environmental Engineering Department Seminar

# Modeling influence of upstream wastewater discharges on drinking water treatment facilities - National trends in wastewater reuse (intentional and unplanned reuse)

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**Date:** Thursday February 4, 2021, 12:45 – 2:00 PM

**Zoom Meeting ID:** 913 9974 3238 **Passcode:** 576579

<https://cwrw.zoom.us/j/91399743238?pwd=QIVTWjFVUdFGZDVON2ZMVmZ1eFIxdz09>

### Abstract

The National Research Council 2011 report lists quantifying the extent of de facto (or unplanned) potable reuse in the U.S. as the top research need associated with assessing the potential for expanding the nations water supply through reuse of municipal wastewater. Efforts to identify the significance and potential health impacts of de facto water reuse are impeded by out dated information regarding the contribution of municipal wastewater effluent to potable water supplies. We have developed geospatial models of the entire USA that include every wastewater treatment plant, river, and surface water intake for drinking water treatment plants (DWTPs), along with key design information on the treatment plants and population served. These allow us to predict the amount of wastewater present in drinking water sources, and to understand if the DWTPs have adequate technology to remove chemicals or pathogens of concern. The presentation will discuss challenges in collecting, ground-truthing, validating and using these large “digital-blue infrastructure” databases. Levels and significance of defacto reuse predictions will be presented for thousands of DWTPs intakes.

**About the speaker:** Paul joined ASU in 1995. After serving as the Civil and Environmental Engineering Department Chair he was the Founding Director for the School of Sustainable Engineering and the Built Environment, then served as Associate & Vice Dean of Research in Engineering and ASU Vice Provost. He is an Executive Editor for *Environmental Science and Technology* and the Deputy Director of NSF Nanosystems Engineering Research Center for Nanotechnology Enabled Water Treatment. He has over 330 journal publications and patents on his research related to fate of nanomaterials in water and developing novel technologies for water and reuse treatment. He received the 2020 A.P. Black award, 2019 NWRI Clarke Prize, 2015 ASU Outstanding Doctoral Mentor, 2013 ARCADIS/AEESP Frontier in Research Award, and 2006 Paul L. Busch Award.

