

Hope or Hype: How does Onsite Water Reuse Fit into the Future of the San Francisco Estuary?

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Whether referring to the capture of stormwater runoff in a rain barrel or to the SFPUC's 280,000 sq. ft. "Living Machine" headquarters, which treats and reuses gray- and black-water, the concept of onsite water reuse has grown in popularity over the past several years, particularly as a result of the drought. These types of efficiencies are often framed as being 'better for the environment,' but can we ensure that implementation translates to environmental benefits for the San Francisco Estuary, such as improved water quality and reduced reliance on imported water sources? If we can, how do we do it and how do we go about quantifying the benefits? If not, are there other environmental justifications for using these systems?

This session will use these questions to catalyze a lively panel discussion, moderated by Heather Cooley of the Pacific Institute, that highlights the opportunities and challenges presented by onsite water reuse, which encompasses the capture and reuse of stormwater, grey- and black-water, and in some cases, even groundwater captured by sump pumps. The session will look at multiple scales of onsite water reuse, from individual residences to large mixed-use developments to new and retrofitted commercial buildings and campuses. Panelists Josiah Cain (Sherwood Design Engineers), Sebastien Tilmans (Codiga Resource Recovery Center), Senator Scott Wiener (California State Senate), and Ian Wren (San Francisco Baykeeper) will bring both extensive experience and diverse perspectives to the discussion.

Keywords: water reuse onsite benefits challenges

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Speaker Biographies:

Heather Cooley: Heather Cooley is Director of the Water and Sustainability Program at the Pacific Institute, where she conducts and oversees research on a range of issues related to the sustainable water use and management, the connections between water and energy, and the impacts of climate change on water resources. She has served on several boards and committees and authored numerous publications on water resource management. In 2009, she received the Outstanding Achievement Award from the U.S. Environmental Protection Agency for her work on agricultural water efficiency.

Scott Wiener: Elected in November 2016, Senator Scott Wiener represents District 11 in the State Senate, which includes San Francisco, Broadmoor, Colma, Daly City, and portions of

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South San Francisco. Prior to his election to the State Senate, Senator Wiener served as a member of the San Francisco Board of Supervisors, where he authored a number of first-in-the-nation laws, including mandating fully paid parental leave for all working parents, requiring water recycling and solar power in new developments, and banning public spending in states with LGBT hate laws.

Josiah Cain: Josiah Cain serves as Sherwood's Director of Innovation. A student of design, ecology, and technology, his deep sustainable design experience and multi-disciplinary approach provides insight and opportunities for optimization of site and structure. His inherent drive for enhanced systems performance and integration has led to first of a kind permits in over a dozen jurisdictions; his work has provided advancement in the areas of rain harvesting, graywater, blackwater reuse, living roofs and walls, native plants, sustainable stormwater management, food systems, and sustainable materials. In addition to his efforts managing Sherwood's Innovation Program, Josiah provides strategic design on a variety of influential projects, with a focus on campus and large-scale urban projects. His project credits include the design of on-site wastewater treatment wetlands and water reuse systems for a high-density corporate campus as well as living architecture applications at the California Academy of Sciences, University of California, and Duke University.

Sebastien Tilmans: Dr. Sebastien Tilmans is the Director of Operations at the Codiga Resource Recovery Center at Stanford University, a test-bed facility dedicated to accelerating the scale-up of innovative wastewater treatment and resource recovery systems. Prior to joining Stanford, he worked in the Process Engineering group at Oceanside Wastewater Treatment Plant for the San Francisco Public Utilities Commission. He has also designed and implemented several decentralized anaerobic wastewater treatment systems in Panama, and a waterless sanitation service in Haiti. He holds a PhD in Environmental Engineering from Stanford University, and a B.E. in Civil Engineering from Cooper Union. He was a Fulbright scholar, an NDSEG fellow, and an EPA STAR fellow.

Ian Wren: Ian is the Staff Scientist for San Francisco Baykeeper. Ian manages advocacy and research efforts, provides technical hydrology services on Baykeeper's enforcement actions, and represents Baykeeper on a number of regulatory and technical issues. Prior to joining Baykeeper, Ian was as a Habitat Restoration Specialist in Southern California and a Hydrologist in London, UK. Ian has worked with a range of public, private and non-profit organizations in California, Europe, and the Middle East. He is experienced in urban water quality, coastal nutrient pollution, endangered species, wetland restoration, and the use of low impact technologies to mitigate water quality impacts and flood risk. He studied biology and ecology at UC Berkeley, holds an M.S. in Hydrology and Sustainable Development from Imperial College, London.