

Watershed Level: Urban Watershed Planning—What Does Sustainable Management Mean?

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In public policy, “sustainability” often refers to meeting the needs of the present without compromising the needs of future generations; it also entails balancing the Three Es (Environment, Economics, and Equity). In a pragmatic sense, “sustainability” means ensuring the financial and personnel capacity to keep programs and operations running effectively.

Several Bay Area cities have begun developing watershed management plans to address water quality impairments, flood management, ecosystem restoration, and stormwater drainage improvements. Challenges to watershed planning in the urban context include the severity of watershed ailments, the wide variety of stakeholders, and the lack of available municipal staff and money to generate meaningful momentum. Faced with increasing regulatory requirements and deteriorating stormwater infrastructure, cities seek cost effective strategies with multi-objective, long-term benefits. Green Infrastructure (GI) is gaining traction, as it preserves and mimics natural watershed processes. GI includes protecting open spaces, urban forests, creeks and wetlands, as well as retrofitting existing developed parcels and the public right-of-way to intercept, treat, infiltrate, and/or detain stormwater while improving neighborhood aesthetics (and other benefits). Broad and strategic deployment of GI complements “grey infrastructure” (conventional collection and conveyance into centralized pipe networks) by relieving hydraulic loading and treating polluted run-off before entering storm pipes and receiving waters.

Watershed management plans use the findings of various assessment types (i.e. habitat, water quality, hydraulic modeling, community concerns, and physical conditions of infrastructure assets) to develop a comprehensive suite of recommended actions and policies, and their associated costs for addressing identified problems. These plans can satisfy both definitions of sustainability by prioritizing actions that improve watershed health and providing the public with the rationale for approving adequate financial resources.

Keywords: Green Infrastructure, Low Impact Development, Watershed, Management, Planning, Natural, Drainage

Session Title: Scaling up to Sustainable Watershed Management

Speaker Biography: Josh Bradt is a Watershed Specialist and Project Manager for San Francisco Estuary Partnership. He manages a multi-city green infrastructure demonstration project, the San Pablo Avenue Green Stormwater Spine and supports SFEP’s Watershed Program and regional green infrastructure efforts. Before that, Josh spearheaded the creation of a citywide Watershed Management Plan for the City of Berkeley. Prior to that, he was Executive Director and Restoration Director of the Urban Creeks Council. He has also worked as a Watershed Specialist for the Contra Costa Countywide Clean Water Program. Josh has a B.A. in Political Science from the University of North Carolina and lives in Richmond, CA with his urban farming family.

Regional Level: Developing Next Generation Technology and Management Tools for Sustainable Watersheds

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This talk will summarize ongoing and forthcoming research activities to develop next generation technology and management tools for sustainable urban water infrastructure, and suggest some implications that these tools may have for watershed management and integrated regional water management. This research includes projects to develop decision support tools to identify the optimal scale for implementation of recycled water infrastructure, to analyze full life cycle emissions and energy use models for urban water, and to innovate methods to incorporate non-technical planning criteria into site suitability and feasibility analyses for stormwater capture and recharge projects. The talk will identify certain challenges that these innovative technologies and methods may pose to existing planning and financing practices, and further research that will be necessary to overcome these challenges.

Keywords: Urban Water Infrastructure, Planning, Innovation, Watershed Management

Session Title: Scaling up to Sustainable Watershed Management

Speaker Biography: William Eisenstein is the executive director of the Center for Resource Efficient Communities at UC-Berkeley and the leader of the Urban Systems and Integration research thrust of the NSF Engineering Research Center on Renewing the Nation's Urban Water Infrastructure (ReNUWIt). He has also previously served as a consultant to Delta Vision, the Delta Conservancy, the Delta Protection Commission, and the Department of Water Resources.

Regional Level: Current Trends and Future of Integrated Water Management— Combining Water Resource Governance Structures

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The natural water cycle intertwines water supply, flood management, wastewater collection treatment and reuse, urban runoff pollution control and recapture, stream and wetland restoration, and groundwater recharge and use, but these functions are institutionally isolated to various degrees and unable to raise funding commensurate with future infrastructure capital investment needs for multi-benefit projects. Water governance evolved in the 20th century based on specific issues as they arose. Integrated Regional Water Management (IRWM) legislation of 2002 has increased watershed-based alignment of water planning and multi-benefit projects, but it is match-funded by voter-approved bonds that are an unreliable source of public funding going forward, and is implemented by a fragmented governance structure lacking needed flexibility for revenue generation and expenditures. This year the Department of Water Resources has engaged IRWM program participants to define goals and objectives for IRWM's second decade. Looming large is the finite nature of the supplemental funding for this program and the need to consider structural changes to water governance.

What if existing fragmented water supply, flood management, wastewater and storm water management agencies, districts and private organizations could *voluntarily* opt in to become a 'Unified Water Authority' of a given watershed and/or groundwater basin just as they would join a Joint Powers Authority under the IRWM structure, but capable of raising revenue for a greater variety of water-related investments under the Prop 218 category of water or wastewater that requires greater than 50% protest to overturn proposed rate changes? Such consolidation of authority would require commensurate public processes and transparency to have checks and balances on potential misuse of power. Regional Unified Water Authorities could build on partnerships and experiences of existing integrated water agencies to improve the governance for all aspects of water – ensuring California can meet its sustainability goals into the 21st century.

Keywords: Governance, IRWM, Structure, Sustainability, Funding, Watershed Planning, Multi-Benefit Authority, Regional

Session Title: Scaling up to Sustainable Watershed Management

Speaker Biography: Since 2012, Steven has served as a Board Member on the California Water Resources Control Board, and was previously a member of the San Francisco Bay Regional Water Board for four years. He has a B.S. in biology and an M.S. in civil engineering, both from Stanford University. He has worked 8 years as a civil engineer for water projects, two years as a biologist doing CEQA documents, and 12 years in clean water regulatory programs, including chief of basin planning at the SF Bay Water Board. He also has two years' experience as a director of a nonprofit for water education and restoration. And he performs as a bass player and vocalist for the Bay Area bands D'Amphibians and Dredgetown.