

A step-by-step guide for developing local programs to manage onsite water systems

Blueprint for Onsite Water Systems (SIWM7W14)

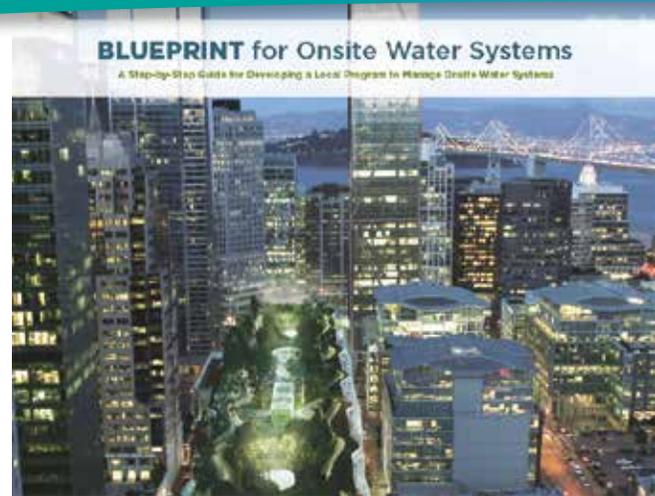
The Central Issue

As strains on centralized water and wastewater facilities increase, many cities are looking for new ways to develop and manage local water resources. One of those strategies is integrating smaller, distributed, onsite water systems with broader centralized systems.

Context and Background

Today, buildings in New York, San Francisco, Santa Monica, Seattle, Tokyo, Sydney, and many other cities throughout the world are collecting and treating water onsite to serve their own non-potable needs rather than using potable water. The *Blueprint for Onsite Water Systems* was developed jointly by the San Francisco Public Utilities Commission, the Water Environment Research Foundation (WERF), and the Water Research Foundation (WRF). It includes contributing opinions from:

- City of Atlanta, Department of Watershed Management
- City of Calgary, Water Resources
- Los Angeles County Department of Public Health
- Los Angeles Department of Water & Power
- New York City, Department of Environmental Protection
- Milwaukee Metropolitan Sewerage District
- Minnesota Department of Health
- North Central New Mexico Economic Development District
- Oregon Department of Environmental Quality
- City of Santa Fe
- City of Santa Monica, Office of Sustainability & the Environment
- San Francisco Department of Public Health
- San Francisco Public Utilities Commission
- Seattle Public Utilities
- County of Sonoma



The 20-page *Blueprint for Onsite Water Systems* was created to assist communities in developing a local program to manage and oversee onsite water systems that protect public health.

- Hawaii State Department of Health
- U.S. EPA
- U.S. Water Alliance
- Washington State Department of Health

Findings and Conclusions

The group found that development of a local program to manage onsite water systems should follow a sequence of steps and associated actions which will inform critical decisions regarding the scope, structure, and implementation of the program. Those steps include:

1. Convene a working group to guide the development of the local program.
2. Select the types of alternate water sources.
3. Identify end uses for the non-potable water.
4. Establish water quality standards for each alternate water source and/or end use.
5. Identify and supplement local building practices, including construction requirements and building permit processes.
6. Establish monitoring and reporting requirements for ongoing operations.
7. Prepare an operating permit process for initial and ongoing operations for onsite water systems.
8. Implement guidelines and the program to provide clear direction for project sponsors and developers.
9. Evaluate the program and promote best practices.
10. Grow the program.

Management and Policy Implications

The *Blueprint* is a useful tool to help communities develop and implement onsite water systems.

Blueprint for Onsite Water Systems

Related WERF Research	
Project Title	Research Focus
Long-Term Study on Landscape Irrigation Using Household Graywater – Experimental Study (06CTS1CO)	Provides useful information to decision makers, water agencies, regulators, product manufacturers, and consumers considering graywater irrigation systems for household irrigation.
Modeling Onsite Wastewater Systems at the Watershed Scale: A User’s Guide (04DEC6)	Provides guidance to planners and regulators for developing and using models to evaluate watershed-scale water quality scenarios associated with decentralized or onsite wastewater systems. Includes resources for each step of the planning process, and explains modeling philosophy, model selection, and sensitivity analysis and calibration. The guide includes case studies.
Guidance Manual for Separation of Graywater from Blackwater for Graywater Reuse (INFR4SG09a)	Provides guidance on the appropriateness of graywater reuse for home and business owners and discusses the technologies and equipment necessary for graywater reuse systems, known maintenance, and best management practices to ensure safe reuse of graywater. Presents guidance on the steps necessary to determine whether a graywater reuse system is applicable to an individual’s situation and discusses reuse goals, including methods for calculating the amount of graywater that is generated from a home or office. Includes information on source separation, plumbing, storage, equipment, irrigation, and toilet reuse applications.
Development of the Integrated Urban Water Management Tool (INFR4SG09c)	The Integrated Urban Water Management Tool (IUWM) is a mass balance model that provides a tool for water managers to forecast water demand, waste, and associated costs for different water management scenarios. Here, integrated urban water management is defined as a holistic approach to urban water management whereby water, wastewater, and stormwater management are considered together rather than optimizing each separately. The practices included in IUWM are indoor conservation, irrigation conservation, graywater reuse for flushing and irrigation, wastewater treatment plant effluent reuse for irrigation, stormwater capture, and reuse for irrigation. A report serves as a user’s manual for the IUWM tool.



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For more information, contact
Theresa Connor at tconnor@werf.org