



National Blue Ribbon Commission for Onsite Non-potable Water Systems

National Blue Ribbon Commission for Onsite Non-potable Water Systems advances best management practices to support the use of onsite non-potable water systems for individual buildings or at the local scale. We are committed to protecting public health and the environment, and sustainably managing water—now and for future generations.

Context

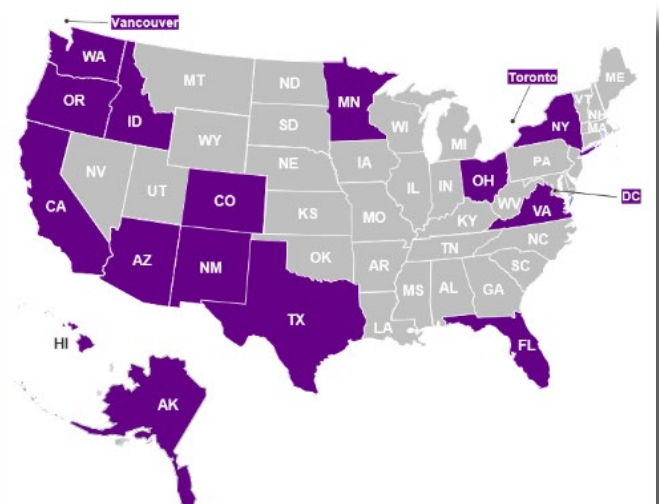
As water supplies become more strained, climate change persists, and populations grow, communities are looking for new ways to develop and manage local water supplies and increase the resiliency of water infrastructure. Onsite water systems collect wastewater, stormwater, rainwater, and more, and treat it so that it can be reused in a building, or at the local scale for non-potable needs such as irrigation, toilet flushing, and cooling. These systems are usually integrated into the city's larger water and wastewater system and contribute to a more resilient and sustainable water management by using alternate water sources, reducing valuable potable water used for non-potable purposes, and minimizing strain on wastewater systems.

Despite growing interest in incorporating onsite non-potable water systems to meet broader One Water goals, a lack of public health-based state or national standards, streamlined permitting processes, and regulatory guidance for ONWS has created barriers to implementation.

The National Blue Ribbon Commission (NBRC) is focused on creating tools and resources that can support implementation of this sustainable water strategy and foster strong collaborations between water and wastewater utilities and public health agencies to ensure projects protect public health and meet water quality standards.

The NBRC builds upon years of work beginning in 2014 by several municipalities, water utilities, public health officials, the Water Environment & Reuse Foundation, the Water Research Foundation, and the US Water Alliance. At the White House Water Summit in 2016, the NBRC announced its commitment to accelerate the development of ONWS. The NBRC has made significant research contributions and continues to advance policies and regulations for onsite water reuse.

The commission is comprised of representatives from municipalities, water utilities and public health agencies from 15 states, the District of Columbia, the city of Toronto, the city of Vancouver, US EPA, and US Army Engineer Research and Development Center (see map below). See the full list of [commissioners](#).



Map of participating US states and cities in Canada.



Commission Goals

The NBRC is convened in partnership with the WaterReuse Association, and is partnered with the US Water Alliance and the Water Research Foundation. It is chaired by the San Francisco Public Utilities Commission. The goals of the commission are to:

- Serve as a forum for collaboration and knowledge exchange on the policies, best management practices, procedures, and standards for onsite water systems for non-potable purposes.
- Craft guidance and model policies that establish a framework for water quality criteria, monitoring and reporting requirements, and operational and permitting strategies that are based on risk-based science and honor local context.
- Develop case making resources for water utilities based on best practices and lessons learned in the design, development, integration, and operation of ONWS to demonstrate how these systems can help utilities meet their One Water goals.

Commission Principles

The NBRC is guided by the following six principles:

(1) Protect public health.

In order to secure a sustainable water future, we need diverse approaches to water management. In all of the work we do, we are committed to protecting public health and ensuring safe, secure, and reliable water use and reuse

(2) Develop science-based policy.

As the commission develops policy recommendations and guidance, it will be driven by risk-based science and research.

(3) Utilize a consensus-based approach.

If we align our diverse experiences and expertise, we can achieve the best outcomes. The commission will seek consensus across all of the work we do together.

(4) Integrate best practices.

The work of the commission is informed by the best practices in the management, operations, and oversight of onsite non-potable water systems.

(5) Honor local context.

The commission sees great value in the development of policy and business models to support the effective adoption of onsite non-potable water systems. At the same time, the commission recognizes and respects that policy and program implementation will vary based on needs and context at the local and state level.

(6) Commit to continuous learning.

As the adoption of onsite non-potable water systems is evolving, the commission is committed to staying abreast of new science and new approaches. We are inclusive of input from interested stakeholders as we learn together.



National Blue Ribbon Commission visits the World War II memorial to learn about their stormwater system in Washington D.C. (2023).

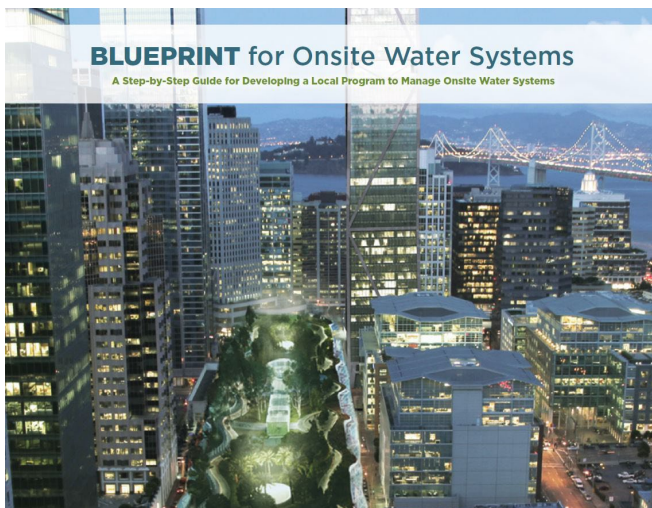


Research and Publications

The NBRC has made significant research contributions and advanced policies and regulations for onsite non-potable water reuse over the years. Leveraging two years of funding from The Water Research Foundation (WRF), the Commissioners participated in the development of the following research:

Blueprint for Onsite Systems: A Step-by-Step Guide for Developing a Local Program to Manage Onsite Water Systems

(2014): Describes ten key steps for considering and implementing an ONWS program. Several Commissioners participated in the development of this guide, which pre-dates the NBRC, and have since leveraged the research effort for future work. Published by SFPUC and WRF. It should be noted that although the NBRC operated within a two-year formal partnership between the US Water Alliance and WRF, it leveraged over four years of investment from the research foundations, as well as built upon many more previous years of research (including the robust [Decentralized Water Resources Collaborative](#) and findings from the SFPUC's May 2014 [Innovation in Urban Water Systems](#) meeting).



Risk-based Framework for the Development of Public Health Guidance for Decentralized Non-potable Water Systems (2017): This landmark report establishes scale-appropriate water quality criteria and monitoring for ONWS. Many Commissioners participated on the Stakeholder Committee in the development of this research study. The research was funded by WRF and led by the National Water Research Institute (NWRI).

A Guidebook for Developing and Implementing Regulations for Onsite Non-potable Water Systems

(2017): To help develop water quality criteria and standards for ONWS and present pathways for implementation and management of these systems at the local and/or state level.

Model State Regulation for Onsite Non-potable Water Programs

(2017): Provides template state legislation for establishing regulatory programs for ONWS.

Model Local Ordinance for Onsite Non-Potable Water Programs

(2017): Provides template local ordinance for establishing regulatory programs for ONWS.

Model Program Rules for Onsite Non-potable Water Systems

(2017): Provides specific details on implementation of an ONWS, including system design criteria, permitting, cross-connection control, reporting, notification, and enforcement.

Making the Utility Case for Onsite Non-potable Water Systems

(2018): A report to help utilities and other stakeholder understand the benefits and drivers behind onsite reuse, how other utilities have addressed potential challenges, and best practices for the ongoing operation of these systems.



Guidance Manual and Training Materials for Onsite Nonpotable Water Systems (2020):

Develops a design and permitting training for onsite non-potable water systems to identify the skills and knowledge required to design and permit treatment systems that meet the risk-based framework.

Health Risk-based Benchmarks for Onsite Treatment of Water (2023): Outlines the current state of the science for determining the level of treatment required for ONWS.

Future Research Priorities

Operator Certificate Program for Onsite Non-potable Water Systems (2024, anticipated):

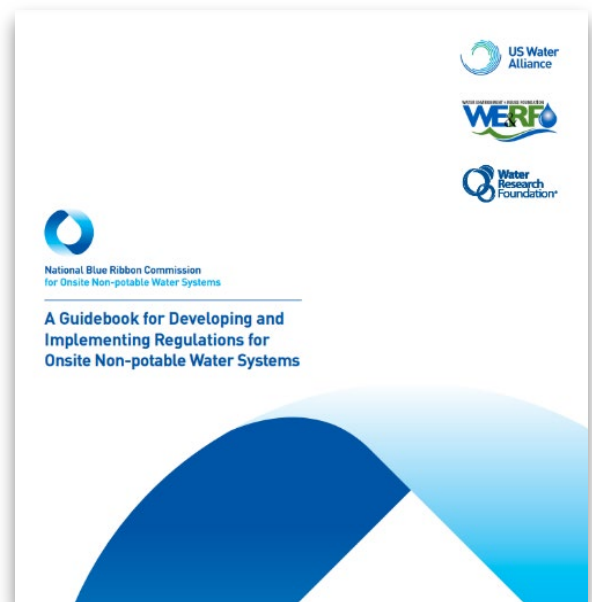
Developing an operator certificate/certification program is to build operator capacity and provide the unique training and skills needed to safely operate and maintain onsite non-potable water systems.

Other research underway by the NBRC includes expanding the risk-based framework, researching pathogen crediting for natural treatment systems, developing bacteria crediting frameworks, aligning plumbing codes and standards with the risk-based approach, addressing how onsite water systems can play a role in equity and climate change issues, and conducting life cycle assessments evaluating the environmental and economic effects of community-scale onsite water reuse adoption.

Policy Impacts

As a result of the peer exchange, joint policy development, and rigorous research, there has been a shift in the perspective of many participating public health regulators who now have the appropriate framework and tools to develop regulations. California, Colorado, Minnesota, Washington, and Hawaii are advancing regulations or policies supporting onsite reuse, while others including Texas, Alaska, Ohio, and Oregon are considering similar steps forward.

- **San Francisco:** In 2012, San Francisco became the first city to establish an ordinance to allow for the collection, treatment, and use of alternate water sources for non-potable uses in buildings. In 2015, the ordinance became a mandatory requirement for new development projects of 250,000 square feet or more of gross floor area to install and operate an onsite water reuse system. In October 2021, the ordinance was amended again to further increase potable water savings from new developments and increase opportunities for cost-effective systems. San Francisco's [Non-potable Water Program standards](#) align with the risk-based framework.



- **Minnesota:** Minnesota Department of Public Health has moved forward with guidance for onsite non-potable water systems. A report was published in March 2018 [Advancing Safe and Sustainable Water Reuse in Minnesota](#). Recommendations from Minnesota's report include adopting the risk-based framework.



- **Colorado:** In August 2018, Colorado Department of Public Health and Environment updated [Regulation #84](#), which regulates reclaimed water use, to allow localized non-potable water systems to treat onsite wastewater for toilet flushing and irrigation. Colorado adopted a risk-based framework for localized water reuse systems.
- **California:** In September 2018, California signed into law [Senate Bill 966](#), which directs the State Water Resources Control Board to establish a risk-based framework for onsite non-potable water systems. The statewide regulations are expected to be released for public comment in Spring 2024 finalized by the end of 2024.
- **Hawaii:** Hawaii passed legislation House Bill 444 in 2019 directing the Hawaii Department of Health to adopt a localized set of rules for onsite non-potable water systems with guidance from the National Blue Ribbon Commission.
- **Austin:** In December 2020, the City of Austin adopted the Onsite Water Reuse Systems Ordinance to regulate the collection, treatment, and use of alternative water sources for non-potable uses in multi-family and commercial buildings. In March 2024, the ordinance was amended to require onsite systems in large commercial and multi-family projects greater than 250,000 square feet and additionally extended the centralized reclaimed water required connection distance from 250 feet to 500 feet.
- **Washington:** In 2021, House Bill 1184 was passed and signed into law. The legislation directs the Washington Department of Health to develop a state-wide risk-based framework for the use of onsite non-potable water reuse systems in commercial and multi-family buildings.
- **New York City:** The New York City Department of Health and Mental Hygiene

is developing regulations for onsite non-potable water systems that align with the risk-based framework.

- **Texas, Alaska, Ohio, and Oregon:** These states have expressed conceptual interest in adopting standards for onsite non-potable systems that align with the risk-based framework.
- **Vancouver (Canada):** Private properties in Vancouver are required to manage rainwater and stormwater, to help reduce combined sewer overflows. To do this, a building may choose to incorporate a non-potable water system. The local plumbing code contains design, commissioning, performance and operator certification requirements, and mandatory [Operating Permits](#) ensure that these non-potable water systems operate safely.

National Water Reuse Action Plan

The NBRC is contributing to the US EPA's Water Reuse Action Plan as an action leader for the following actions:

- WRAP 2.18: Encourage the inclusion of risk-based framework for onsite non-potable reuse in building plumbing codes and standards.
- WRAP 3.4: Conduct research and develop training programs, planning approaches, and decision support tools to support the implementation of onsite non-potable water systems that are protective of public health.

