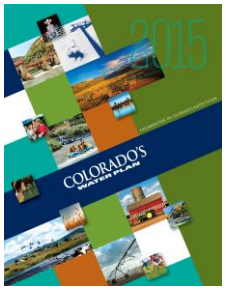
One Water

Patti Wells
CWCB Board of Directors - Metro Denver Representative

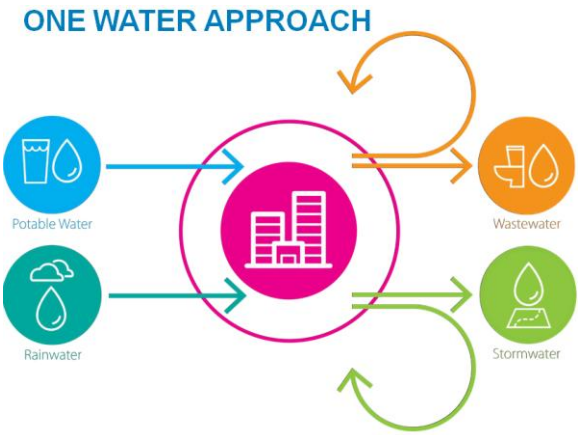


Colorado's Water Plan was approved by the CWCB in November 2015, in response to an executive order issued by Governor Hickenlooper in May 2013. I was appointed in March 2013 as a representative of the City and County of Denver, and thus spent almost the entirety of my first three-year term working on Colorado's Water Plan, attempting to bring an urban perspective to the discussions.

One of the central motivating factors behind the executive order was the prospect of a statewide gap of up to 500,000 acre-feet of supply for municipal and industrial uses by 2050. Closing the supply gap is vital to Colorado's prosperity and quality of life, but the challenge for Colorado's Water Plan was to develop approaches that would be consistent with Colorado's water values.

With regard to water values, Colorado's Water Plan describes the goal of limiting traditional permanent dry-up of agricultural lands by supporting lower impact alternatives. In addition, it discourages new transmountain diversions (TMDs) from the West Slope. Colorado's Water Plan adopted the Conceptual Framework developed by the Interbasin Compact Committee (IBCC), which states that prior to pursing a new TMD project, proponents should have achieved aggressive levels of conservation and reuse and development of backup supply from local East Slope sources. The direction of Colorado's Water Plan for municipal water providers is to emphasize conservation and reuse of local supplies presents challenges.

One approach to facing those challenges is a concept called "One Water," which is being actively implemented in other states and countries. One Water is defined as an integrated, sustainable approach to urban water management. One Water is integrated because it takes a holistic approach to all forms of water: drinking water, wastewater, groundwater, reclaimed and reused water, rainwater and stormwater. It is more sustainable than traditional approaches because it emphasizes green infrastructure and resource recovery. In urban development, application of One Water would mean looking toward non-traditional sources and avoiding the use of potable water for nonpotable purposes.



One of the critical goals in Chapter 10 of Colorado's Water Plan is to encourage reuse. And one of the critical actions is to "evaluate regulations to foster reuse of water supplies while protecting public health and the environment." This evaluation is needed because reuse is challenged and inhibited by Colorado's regulatory and water law systems, with the result that reuse of water in Colorado is more limited than in many other states. This article focuses on water quality regulations that control reuse in Colorado.

Emory University WaterHub
Source: Denver Water

Onsite reuse of graywater in Colorado is the subject of Regulation 86, which was adopted by the state Water Quality Control Commission (Commission) in November 2015 under a legislative mandate. The allowable sources for graywater treatment systems are sinks, laundries and showers, not toilets or kitchens. Allowable uses are toilet flushing and subsurface irrigation. Graywater recycling is only available where a local government has adopted an ordinance and regulations that mimic Reg 86. In addition, applicable plumbing codes must be amended to allow for nonpotable plumbing inside buildings. The state plumbing code was successfully amended in December 2015, and Denver's code was amended in March 2016. Denver's graywater regulations became final in November 2016. To my knowledge, no other local government has adopted the regulations necessary to allow graywater, so this opportunity for reuse is just in its infancy.

The City of Denver anticipates that the greatest demand for graywater systems will come from new hotels, multi-family residential facilities, and dormitories. These facilities have high uses of water from showers and laundry and high water demand for toilet flushing, and therefore, should realize the costs savings needed to make an investment in graywater treatment. Based on experience in others states, Denver also expects demand to come from commercial development pursuing a green building certification.

The type of reuse with the longest history in Colorado is reclaiming of wastewater effluent, which is governed by Regulation 84 promulgated by the Commission. Reg 84 was first adopted in 2000 and has been amended several times to add new uses. In general, Reg 84 deals with offsite uses, meaning the effluent is treated in one location and then distributed to other locations for use. All the permissible uses are nonpotable: irrigation of non-food crops, commercial laundries, certain industrial processes, car washes, and zoos.

For reuse to become a viable alternative supply from agricultural water transfers or new TMD's, onsite and offsite recycling must be expanded. And rather than focusing efforts on direct potable reuse, it would be more prudent and less expensive to start with direct nonpotable use. Proposals were presented to the Commission in March of 2016 to begin the rulemaking process to expand the uses of Reg 84 reclaimed water. The Commission declined, in part on the basis of insufficient funding to undertake such a rulemaking. Other state agencies involved in the implementation of Colorado's Water Plan recognized the need to encourage reuse, and stepped into the breach. The CWCB provided $300,000 and the Water Recourses and Power Development Authority provided $357,000 to hire an employee to work on reuse issues, including the rulemaking to expand uses under Reg 84.

The Reg 84 rulemaking process should begin in a few months. The uses being proposed for addition are toilet flushing, irrigation of edible crops, stock wash down, and filling of small ponds. Expanding uses will allow better use of reclaimed water, and greener buildings.

Ultimately, I would like to see municipalities in Colorado adopt nonpotable water programs similar to San Francisco's, where any development larger than 250,000 square feet must use nonpotable water sources for nonpotable uses if possible. San Francisco developed its nonpotable water program largely in response to demand from developers, who desire to achieve the highest LEED certification possible. Developers in Colorado are probably no less anxious to meet the market demand for green, sustainable development. Before this can happen, however, Colorado needs to join other states in embracing recycling and reuse for multiple uses.

San Francisco PUC Headquarters
Source: Denver Water

Port of Portland Headquarters
Source: Denver Water

*About the author: **Patricia Wells** was appointed to the Board in 2013; she previously served two terms from 1995-2001. She is the General Counsel for the Denver Board of Water Commissioners, a position she has held since 1991. Prior to joining Denver Water, she served for eight years in the administration of Denver Mayor Federico Peña as either City Attorney or Deputy City Attorney.*

Her legal employment includes stints as a staff attorney for the Environmental Defense Fund and a judicial clerk for Ninth Circuit Court of Appeals. Ms. Wells served on the Water Quality Control Commission for six years, and was a board member of the Colorado Water Trust for eight years. She is involved as a volunteer in several youth rugby organizations. She graduated from Auburn University and Harvard Law School.