



Water Policy Innovations and Challenges in ARIZONA

BY SHARON B. MEGDAL

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The rapid growth in Arizona's population, coupled with prolonged drought, has strained its already scarce water resources. Accommodating population growth in a responsible manner has required Arizona to be a leader and innovator in water policy. The Assured Water Supply Program requires 100 years of continuously, physically and legally available water for the areas where groundwater management is required. The Arizona Water Banking Authority, operating since 1997, has stored over three million acre-feet of Colorado River water in anticipation of

future shortages. The Central Arizona Groundwater Replenishment District (CAGRDR), authorized in 1993, enables affordable use of renewable water supplies by those without long-term contracts for Central Arizona Project (CAP) water and/or the ability to deliver CAP water to their service areas. Arizona's recharge and recovery statutes and regulations are central to all of these programs as well as the reuse of treated wastewater. Agriculture and municipal and industrial water users partner in a special recharge program, called the groundwater savings program. This program has conserved significant quantities of groundwater for future use.

Arizona's recharge and recovery program is carefully regulated and administered by the Arizona Department of Water Resources. ADWR was established in 1980 to implement and enforce the far-reaching groundwater regulations incorporated in the 1980 Groundwater Management Act. Permits are required for the recharge facilities, the actual storage

of water, and for the recovery of stored water, respectively. Reports are filed and a careful accounting of stored quantities is made. The storage and recovery program has facilitated great progress in meeting the groundwater management goals of the Act. However, significant challenges still remain.

The Assured Water Supply program is designed to curtail groundwater overdraft in active management areas (AMAs), the geographic areas of the state subject to groundwater regulations (see Figure 1). However, water can be and often is recharged or replenished in areas that are hydrologically disconnected from the location of pumping. Therefore, the law allows for localized draw-down of aquifers to 1,000 feet below land surface. The CAGRDR was created to help water users meet the renewable water use requirements of the Assured Water Supply Rules, but the CAGRDR does not have the water supplies in hand to meet its long-term replenishment obligation. Legislation is pending that would allow for the sale of bonds to finance

acquisition of supplies on behalf of CAGR members. Moreover, the rules governing assured water supply only apply to AMAs. Several growth areas lie outside the AMAs, where in some cases development can occur even when water supplies are demonstrated to be inadequate. Examples of areas not subject to the AWS Rules include: the northwestern part of the state, soon to become a bedroom community of Las Vegas; the Sierra Vista area, home to an important Army base and a national riparian conservation area; and some areas near the Verde River, where conflicts exist over the implications of groundwater withdrawals and transportation.

Significant quantities of water have been stored for future use by the Arizona Water Banking Authority and the Central Arizona Project, but plans for the recovery of the stored water have lagged. In addition to storing for Arizona, the Banking Authority must fulfill storage and recovery obligations pursuant to an interstate agreement with Nevada. The Central Arizona Project, built to deliver 1.5 million acre-feet into Central Arizona, has the lowest priority of all Colorado River users.

What is Arizona doing to address these myriad issues? Water managers, public officials, and stakeholders are not sitting idly. Numerous collaborative efforts are underway. The Central Arizona Project has spearheaded a stakeholder-driven ADD (Acquire, Develop and Deliver) Water Process. Arizona worked with the six other Colorado River basin states to develop a shortage sharing agreement and is involved in collaborative efforts to augment water supplies. The Upper San Pedro River area is studying options for water augmentation and voters there will determine in November whether a water district is formed. The Verde River area is considering its options for regional management. Some counties have taken advantage of a relatively recent state law that allows counties to disallow development if water supplies

are determined to be inadequate, but only if the county board of supervisors votes unanimously to do so. The Blue Ribbon Panel on Water Sustainability, co-chaired by the Directors of the Department of Environmental Quality and the Department of Water Resources as well as the Chairman of the Arizona Corporation Commission, is looking at many issues, especially increasing water reuse and reclamation. The Central Arizona Project is in the process, albeit a slow one, to develop a recovery plan for millions of acre-feet of water stored for future use. There is good collaboration with the university personnel at the University of Arizona, Arizona State University and Northern Arizona University, who are anxious to involve themselves in cutting-edge, real-world-relevant research, education and outreach.

The Water Resources Research Center's mission is to promote understanding of state and regional water issues, and the Center is an active participant in the state's water work. WRRRC is home to Arizona Project WET, a vibrant water education program for K-12 teachers and their students, as well as outreach programs such as Arizona NEMO (non-point education for municipal officials) and the Master Watershed Steward Program. The Center is also involved in applied research projects. Two ongoing projects relate to what is an overlooked sector in Arizona statutes, namely the environment. Water use data are assembled by the state for the agricultural, industrial and municipal sectors only. State law does not provide for consideration of the implications on the environment of water development and use practices. With U.S. Bureau of Reclamation funding, the Center has developed the "Conserve to Enhance" mechanism, a voluntary conservation program designed to secure water for environmental restoration or enhancement purposes. In a state where there are no state-level legal protections for riparian areas, innovative and voluntary programs are required. The WRRRC is working to pilot

the program with a number of communities both inside and outside of Arizona and welcome inquiries regarding this innovative program. The Center is also working on assessing alternative approaches to quantifying environmental water needs.

Water management involves great complexities, especially when dealing with growth, water scarcity and recognition of environmental water needs. If the solutions were easy, we'd have identified them. Collectively, on multiple geographic scales and across water using sectors, we must work together to develop and implement solutions. ■

About the Author

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Additional Resources

University of Arizona Water Resources Research Center
www.cals.arizona.edu/azwater/
 See particularly Layperson's Guide to Arizona Water, annual issues of Arroyos, and issues of the Arizona Water Resource newsletter.

Arizona Department of Water Resources web site, including its Water Atlas
www.azwater.gov

Central Arizona Project
www.cap-az.com

Arizona Water Banking Authority
www.azwaterbank.gov