

● INFORMATION I INNOVATION IMPACT

Reflections: Dry Times, Bold Moves – Innovation for Arizona's Water Future

by Sharon B. Megdal
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My work, in formal classroom instruction, presentations to audiences of varied backgrounds, and written materials, centers on fostering understanding of water challenges and options for addressing them. As a faculty member and Director of the University of Arizona Water Resources Research Center, I interweave my applied research, education, and engagement/outreach programs and design them to bridge academic and non-academic communities. I try to write and present materials that are understandable to broad audiences, and convene forums, such as the WRRRC's Annual Conference and Water Webinars, that are accessible to all, regardless of background.

Listening to and learning from others often inspire ideas for programs or publications. At the WRRRC's **2025 Annual Conference**, *Shared Borders, Shared Waters: Working Together in Times of Scarcity*, there was focus on innovation and investing with impact, sharing good information in inclusive ways, and incentivizing changes that contribute to a more secure water future. These themes were fertile sources of inspiration.

Inclined toward alliteration, I started jotting down words that began with the letter "i." Here is my list: innovation, information, investment, infrastructure, institutions, incentives, inclusive involvement, industry, impact, interrelationships, and interactions. The goal for innovation, defined by the **Cambridge Dictionary** as "a new idea or method," when stated simply, is to bring about positive impacts. Information is needed for evidence based decision making on investments in infrastructure, research, and both educational and engagement programs. Information on trade-offs associated with policy change is necessary, too. Governmental institutions and industry will be involved. Often, incentives are better ways to bring about change—the carrot rather than the stick. Inclusive processes can ensure that differing perspectives are heard and various viewpoints weighed. Our interrelationships and interactions contribute to robust deliberative processes and support cooperative action.

Arizona's water challenges are well known and documented. Key among them are diminished availability of water from the Colorado River and overdrafting of groundwater. Twenty-five years ago, when I served on **Governor Jane Dee Hull's Water Management Commission**, we asked what would be the next bucket of water

and how could groundwater be better managed. And here we are, approaching the end of 2025, with the same questions. Only now, average Colorado River flows are much reduced, and groundwater is under more stress. At the same time, water demand, including for data centers, chip manufacturing, and energy production, is growing. The need for innovation has never been greater, and explorations are ongoing.

Innovation in the policy arena is front-and-center. Efforts to come to consensus on how to manage groundwater outside Arizona's Active Management Areas and to share the burden of lower Colorado River flows across the large Colorado River Basin are ongoing. These are the two "**wicked water problems**" I most often cite when speaking about our water challenges and solutions. Among the factors that influence water policy and management I regularly list the importance of the legal framework and public values.

Innovation is central to discussions of how to reduce water use by the agricultural sector. **The Water Irrigation Efficiency Program**, carried out by Arizona Cooperative Extension with funding from the State, has incentivized changes in irrigation practices. With matching funds from water users, the program includes applied research to monitor and synthesize results.

Through the **Water Infrastructure Finance Authority's Long-term Water Augmentation Fund**, WIFA seeks to support "the development of projects intended to supplement Arizona's existing water supplies." The fund "is part of a holistic approach to meeting Arizona's water needs through diverse strategies including conservation, reuse, and the development of new sources of water, all to enhance Arizona's water supply reliability, resiliency, and sustainability." The need for a multi-pronged approach to securing Arizona's water future is explicitly noted.

The location of facilities in Arizona that require large amounts of water to provide quick and reliable access to data and information has prompted questions about whether such facilities should be located in our semi-arid state. While I have received questions about data centers and semi-conductor manufacturing over the years, there has been an uptick in interest in their water use by Arizona residents—and in new policies regarding large commercial water users. A recent report by the Kyl Center for Water Policy at ASU's Morrison Institute, **How Arizona Municipal Water Providers are Regulating Large-volume Water Users**, provides information on this topic. With the working title, *Commercial & Industrial Water Stewardship – Large Users and Our Water Future*, the WRRRC's 2026 Annual Conference will explore, more broadly, the water demands of non-agricultural, large water users.

Wicked water problems are not easily addressed. It should not be surprising that reaching agreement on sharing Colorado River shortages is more difficult than sharing surplus, especially when facing potentially significant reductions in historical water uses. Indeed, there are burdens to share, and viewpoints on what is fair or acceptable will differ. There are questions about serving new large users at a time when we have not yet identified the next buckets of water. These facts bring me back to the need for greater understanding of the complexities of our water challenges and solutions to them. Water users will be impacted by the decisions of policy makers. Because we all are water users, we all have a stake in water decisions, and we have the ability to be decision-maker influencers. It is therefore essential that all remain informed.

I chose the title for this essay to match that of my September 18, 2025, **University of Arizona CATalyst Chats** presentation. These dry times require bold moves. Innovation—the implementation of new ideas and methods—is surely needed. We need everyone involved in dialogues regarding our water future.

To stay engaged with WRRRC programming, including our Annual Conference and Water Webinars, please **subscribe** to our *Weekly Wave*. I can be reached at smegdal@arizona.edu.

