Investing in Arizona's Water Future

CONSIDERATIONS FOR CONSERVATION AND AUGMENTATION PROJECTS

Water for Arizona

Arizona faces a once-in-a-generation opportunity to make high-impact investments in water sustainability to support cities, Tribes, rivers, farmers and ranchers, and businesses across the state. We must develop an "all-of-the-above" statewide supply and demand strategy that includes aggressive conservation, recycling and reuse, multi-benefit stormwater and groundwater recharge, forest restoration to protect source water areas, crop switching, industrial cooling improvements, and realistic augmentation projects–while also investing in our water management and policy for the future. Outlined below are just a few examples of water projects and associated costs, timeframes, and considerations to help our leaders make informed decisions about investments in Arizona's water future. This list is not exhaustive and the estimated costs figures are not all-encompassing and may not reflect the true costs and benefits of implementing a project going forward. With that said, investing in Arizona's water future now, will better protect our water supply in the future.

Project Type
Conservation | Augmentation

Water Benefit Accrual
Annual | Perennial

Time Frame
●○○ Near-term (0-4 years) | ●●○ Mid-term (5-9 years) | ●●● Long-term (10+ years)

What is it?	Estimated Cost ($/acre-foot)*	Considerations
System Conservation ● ○ ○		
A Lower Colorado River Basin program in which participants sign a voluntary agreement to implement specific and temporary water conservation measures for a set duration of time in return for monetary compensation. By using less water, water users bolster water levels in Lake Mead.	$170–$400	• As greater volumes of system conservation are needed the price per acre-foot may increase. • There are federal cost share opportunities and opportunities for third-party funding from philanthropy, NGOs, and corporations. • Can be an important stop-gap measure, but is not a permanent solution to long-term water scarcity.
Urban Landscape Conversion ● ○ ○		
Municipalities offer financial incentives, such as rebates, to property owners for converting turf to low-water use landscaping. Several Arizona cities (and other desert cities) have successfully developed and implemented their own programs.	$1,600–$6,500	• 70% of residential water use in AZ is for lawns and other outdoor uses. • Would reduce water bills and decrease lawn maintenance expenses for homeowners. • May be paired with other municipal water savings rebate programs, such as rainwater harvesting programs.
Agricultural Drip Irrigation ● ○ ○		
Irrigators replace or supplement flood or sprinkler irrigation systems with drip irrigation. Drip (sometimes called micro-irrigation) uses low-pressure water pipes to slowly drip water onto the crop roots and stems, and is considered a more efficient irrigation method.	$640–$2,500	• Can lead to similar or higher crop yields and reduced input costs, though it may not be appropriate for every crop or field. • High installation costs can be alleviated by investing in pilot/incentive programs offering subsidies to farmers. • Without proper mechanisms in place to ensure conserved water remains instream or in the ground, conversion to drip may not produce a net decrease in water consumption.

*One acre-foot of water can provide for approximately 3.5 Arizona households per year.

What is it?	Estimated Cost ($/acre-foot)*	Considerations
Invasive Plant Removal + Replacement w/ Native Species		
High-water-use invasive plant species are removed from riverbanks and replaced with appropriate native plant species that can thrive in that location and may improve soil and river health.	$260–$1,050	• Continued research on impacts of invasive plant removal will be needed to assess longer-term impacts. • Can benefit wildlife habitat and reduce flood and fire risk. • Long-term maintenance is necessary to maximize water benefits.
Aquifer Recharge		
Stormwater, reclaimed water, and surface water can all be used to recharge aquifers. Recharge can enhance natural areas (e.g. wetlands, streams) or occur at constructed recharge facilities. The captured water is stored underground to replenish aquifer levels.	$270–$1,500	• Requires various levels of infrastructure and permitting, as well as long-term monitoring and maintenance. • Replenishing aquifers can provide the benefit of sustaining streamflow and riparian habitat if located near a stream channel, and/or providing storage of water for future recovery and use. • Groundwater modeling helps understand the unique features and status of the groundwater in the proposed recharge area.
Desalination		
Desalination removes salt (brine) from saline water so it can be used as freshwater. Recent Arizona desalination conversations propose (1) intrastate brackish aquifer water desalination and (2) binational seawater desalination in cooperation with Mexico.	Brackish: $1,500–$2,000 Ocean: $2,500–$3,000	• Brine management can incur capital costs up to $130M and creates potential environmental risks to source waters and nearby natural areas. • Desal is energy intensive, which may require energy infrastructure costs up to $200M + annual operating costs up to $80M (25% to 40% of the cost of the desalinated water). • The U.S.-Mexico desalination plants explored in the 2020 Binational Desalination Study were projected to produce about 100,000 acre-feet of water. Arizona's Colorado River water use reductions were 800,000 acre-feet in 2022.
Mississippi/Missouri Pipeline		
A diversion dam and pipeline that would harvest floodwater from either the Mississippi River or Missouri River and transport it across hundreds of miles to augment Arizona's water supply.	$2,300	• Discarded as politically complicated, too expensive and too time-intensive in the ADWR-funded Long-Term Water Augmentation study. • Likely 30+ years to receive the first water delivery. • The CAP pipeline is 336 miles long at a cost of $4 billion at the time of construction in the 1980s and 1990s (~$9 billion today), and Arizona still owes $1.65 billion of that debt.

The Water for Arizona Coalition is comprised of Arizonans who support policies and innovative practices to ensure a reliable water supply to meet the state's needs. Collectively, we have more than 60,000 Arizona members, as well as hundreds of hunter, angler, business, and outdoor recreation partners around the state. Learn more at waterforarizona.com.

For additional details on this project including project types, cost estimates, and considerations, view the supplemental report by visiting waterforarizona.com or scanning the QR code.