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Talk of the Town

Column: Officials should evaluate water alternatives

John Zambrano
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After six years of work, the Central Yavapai Highlands Water Resources Management Study (CYHWRMS), a project involving communities in the Prescott and Verde Valley regions and the Yavapai County Water Advisory Committee, under the direction of the U.S. Bureau of Reclamation (BOR), is virtually complete. This initial Appraisal Level study evaluates our two regions' future water demand to the year 2050, our current supplies and possible additional supplies to meet that potential demand.

The study showed a shortfall between future demand and current supplies of about 50,000 acre-feet per year. The shortfall increases to about 80,000 acre-feet per year if we provide enough water to achieve safe yield in our region and protect the Verde River.

However, the shortfall figures substantially overstate the water needed because one source to meet the shortfall is the inevitable wastewater that results from supplying water for new demand. The reuse or recharge of effluent is estimated to reduce the amount of water needed by as much as 45 percent.

CYHWRMS looked at virtually all possible alternative sources and roughly estimated the cost of each. The dozen or so alternatives varied considerably in the amount of water that each could produce. The Citizens Water Advocacy Group (CWAG) participated in the study and has formed opinions on which are most worth further investigation.

One alternative considered is to just continue mining our groundwater. This is unacceptable because it has adverse effects on many wells, is reducing streamflow, can cause ground subsidence and ultimately, is unsustainable.

Another alternative is the importation of water from the Big Chino aquifer for both the Prescott and Verde Valley regions. Given the concern of the Verde Valley communities about the inevitable reduction of Verde River flow, this would not interest them. Importation from the Big Chino aquifer would require mitigation to protect the river, which, if even feasible, would increase the cost. Importantly, it would not provide sufficient water for growth and achievement of safe yield.

Groundwater from outside the study area was considered, but that would meet with resistance from the poached communities and would require legislation unlikely to pass.

Collection of septic tank effluent in rural areas was considered prohibitively expensive; however, collection within densely populated unsewered areas could provide a small quantity of water and should be widely seen as desirable.

An ambitious alternative considered was the collection of unappropriated flood waters on the Verde River by increasing the height of either Bartlett or Horseshoe dam. The infrequency of high-volume flood events

and the difficulty of storage and transport of collected waters make this impractical.

Large-scale rainwater harvesting on undeveloped land was reviewed, but questions remain about the legal availability of the collected water and environmental issues with the alteration of the land surface. These questions have caused our local communities to drop their independent investigation of this method. Personal or other small-scale rainwater harvesting are encouraged and considered part of conservation efforts to reduce water demand.

Weather modification by cloud seeding was discussed, but never made it to the evaluation stage. Water quantities, reliability and cost information were beyond the reach of the CYHWRMS study.

Manipulating vegetation cover to increase recharge of the aquifer was considered, but not evaluated for viability, and questions remain about its effectiveness. Our local communities are hoping to study this method and demonstrate viability.

The source that has the potential to supply the large quantity of water needed to meet projected demand is the Colorado River. Although the river is over allocated, higher priority water rights can be purchased to provide a reliable supply. A pipeline to the river would be a major undertaking involving many parties and would be challenging to finance.

At the study outset, BOR asked the communities to factor in conservation when projecting their future demand for this study. Considering the high costs of importation projects, the communities need to determine whether conservation can play a greater role in reducing the needed quantity of imported water. It would also be wise for the communities to update their population projections.

Citizens deserve a sustainable water future, including protection of our environment. Our officials need to come together and thoroughly evaluate and publicly discuss the alternatives described in the CYHWRMS report, including the effect of a no-action alternative. They then need to determine which, if any, alternatives should be further evaluated in a BOR Feasibility Level Study.

CWAG will conduct a tour of low-water-use landscapes Nov. 8. Details at www.cwagaz.org or 928-445-4218.

John Zambrano is a CWAG Board member and a retired environmental engineer.

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