

## Where Can We Get More Water?

Someone asked me recently, “Where can we get more water?” It reminded me of a presentation by Charlie Flatten a few years ago. Among the things he discussed was a list of possible sources of “new” water, that is, water that we currently don’t have available to us.

Before I discuss the options we have available to us, I should point out a few things. There is no such thing as “new water” from a global perspective--what we have is what we have always had and all that we will ever have. Further, the amount of rain that falls on Texas, which is the source of virtually all of our fresh water, both ground and surface, is, if anything, more likely to decrease in the future rather than to increase. And the population of people demanding water will certainly increase in the future. Where will the water that these new people will demand come from?

One suggestion is to build new reservoirs. But, as Flatten pointed out, there are several problems with this idea. First, all of the best places to build dams to create new reservoirs are already taken. Building a reservoir means condemning people’s property and destroying native habitats. In the western half of the state, evaporation from reservoirs far exceeds the rate of rainfall—the evaporation from lakes Buchanan and Travis exceeds the amount of water used by Austin. And finally, but not insignificantly, building dams and reservoirs is an exceedingly lengthy and expensive process.

Desalinization is the closest thing to actually “creating” new water. But it doesn’t actually create any new water, but simply removes the salt from sea water or brackish water to make it potable. This process is certainly doable—El Paso is doing it and San Antonio is building a facility to desalinate brackish water from deep underground aquifers. But the process creates mountains of salt and/or highly-saline water that must be disposed of safely and it requires huge amounts of energy, so it is expensive water.

Reuse of all municipal waste water is a process that puts many people off, but in a way, we have been doing it for centuries. Cities have always been taking water from rivers, then treating the waste water to varying degrees, and pumping the “used, treated” water back into the river, where each downstream city does exactly the same thing. If the treatment process were much more robust and did a much better job of really cleaning up the water, then it could be put back into the city’s municipal water supply. Wichita Falls has recently been doing this, but at significant expense.

Conservation is the cheapest form of new water. Any water that is not used today is free “new” water that is available for tomorrow. It is estimated that 17% of all the water put into city water systems is lost to leaks! In many older cities, water mains can be 100 years old. In the summer, 50% of the water used in Texas is to water exotic grass lawns! Harvesting rainwater can be considered conservation because when you use

water that fell on your roof, you are not using water from the aquifer or the municipal system.

One attempt by individual cities to obtain “new” water for their use is what is called an interregional transfer where cities or commercial water companies build huge pipelines long distances, sometimes at \$1,000,000/mile, to “purchase” water and pump it to the cities. But where are they getting that water?

Frequently they are buying the water from individuals or companies who own the land. Because in Texas the landowner “owns” all the water in the aquifer(s) below the surface and can legally (sometimes requiring permits) pump all the water they want from the aquifer and sell it. There are, however, legal, ethical, and philosophical issues at play here when someone pumps so much water from the aquifer under their land that it depletes their neighbor’s aquifer water. Water in aquifers is not stationary, but flows from one place to another. The people of Texas will eventually have to decide what is and what is not allowable in these situations.

This has been just a very brief summary of some of the issues that will be facing all of us for years, no, decades, to come. All Texans owe it to themselves and to their offspring, to learn as much about our options so we, collectively, make the right decisions. Water will cost us more in the future.

Until next time...

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