

## **Our water future**

### ***State planning confronts water gap***

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The phrase “water is life” is a tried-and-true mantra in Northern New Mexico, a place where acequias still dictate daily chores for many people, community water systems have to deal with contaminants and rain is the subject of countless prayers.

Carlos Miera, a farmer in Des Montes and one of the people who created a water-sharing agreement for acequias on the Rio Hondo north of Taos, knows that all too well this year. He’s got one cutting of hay so far. It was just 120 bales, a bad situation because he needs at least 700 for his “beautiful horses,” Luke and Capitan, about five cows and the small flock of sheep he keeps on his property.

Like a lot of people, he’s going to have to sell some animals. He just has to decide which ones.

“One year I got rid of my sheep. I told my wife you can’t ride the sheep, at least not very far,” Miera joked. But this year, it might be the horses that have to go, and he’s not laughing about it. A lot of friends he used to go riding with have passed on, and the Rhino side-by-side has replaced trusty horses for taking care of his land.

Miera is just one farmer in just one county in New Mexico, but the choices he makes are reflective of what many people see as a new reality. If water is precious resource now, that’s only going to ring truer in a changing climate prone to even more drought.

That’s why New Mexico, since the late 1980s, has undertaken a comprehensive effort to map out the state’s water, the usual demand and a plan for what to do when there’s too little to go around.

### **Mapping the future**

The most recent version of the New Mexico State Water Plan was released July 9. The deadline to review and comment on the plan was recently extended. People have until Aug. 25 to submit their thoughts to the state government.

The water plan is a sprawling document, looking at technical reports of the quantity and quality of surface water and groundwater in the state; legal issues dictating New Mexico’s water use; and planning ideas for local municipalities, acequias and small water systems that deal with infrastructure, data collection, conservation and strategies to pay for the billions of dollars worth of upgrades needed across the rural and largely underfunded state.

“While the state as a whole has adequate supply to meet its current demands, in the future the demand for water may outpace the supply,” according to the draft plan.

It’s that gap between demand and supply in a drought year that is the telltale sign of New Mexico’s water future.

## **Growing water gap**

The Taos County planning area, which includes a sliver of Rio Arriba County along the Rio Embudo, is largely dependent on surface water and most of that water, 77 percent, is devoted to agriculture, according to the 2016 regional plan that was incorporated into the comprehensive state water plan. Both plans generalize water usage based on 2010 data, some of the most recent available, and use a 1930s drought as the low-water mark.

Taos' profile is different than those of many parts of the state. For example, in the Estancia Basin planning area (south of Albuquerque), nearly all of water used by people, governments and industry comes from underneath the ground.

And in a drought year, communities dependent on surface water are more susceptible to shortages.

According to the state water plan, the average water usage in the Taos County area is about 120,511 acre-feet annually. One acre-foot is roughly the water used in two average U.S. households in a year. But in a severe drought year, this area would only have about 30 percent of the water it usually needs.

Though 2018 is not a worst-case-scenario drought, the shortage Miera's dealing with — and the choice between the horses or the sheep — reveals the water reality at hand. For people without land to work, that reality could easily mean that people's wells go dry and they have to drill a deeper well and that local governments drastically restrict outdoor watering, car washing and public pools, like the town of Taos did this summer.

Taos County is not unique in that way. "All planning regions in New Mexico are projected to have less than 75 percent of the necessary supply to meet demands in 2060 under the drought scenario," according to the state plan's technical findings. One-quarter of the 16 planning areas in New Mexico — including the areas west, east and southeast of Taos County, places like Las Vegas, Tierra Amarilla and Colfax County — are projected to have less than 20 percent of the necessary supply of water in a severe drought.

While the Southwest is prone to seasonal fluctuations in rain, snow and streamflow, those ups and downs will be exacerbated by climate change. The state's minces no words on that matter.

State-level studies found the average wintertime temperature had increased statewide by about 1.5 degree Fahrenheit since the 1950s. The trend will likely continue, with predicted temperature increases in New Mexico from 5 to 10 degrees more by the end of the century.

"High temperatures will result in a longer and warmer growing season, resulting in increased water demand on irrigated lands and increased evapotranspiration from riparian and forested areas, grasslands and forests, and thus less retired to the aquifer," it read. The peak snowmelt in the Taos area will likely be 2-3 weeks earlier than normal by 2040, and the streamflows in major rivers across the Southwest are projected to decrease substantially. And while climate change is pushing the Southwest into a drier world, the rains that do come are predicted to be more erratic, severe and dangerous for flooding.

## **Crafting solutions**

One of the basic long-range solutions for places like Taos dependent on surface water is to have water-sharing agreements among traditional acequia users in place for when the drought does hit. Miera's agreement on the Rio Hondo has "gone okay," he said, though "it's hard because there's not that much water to share."

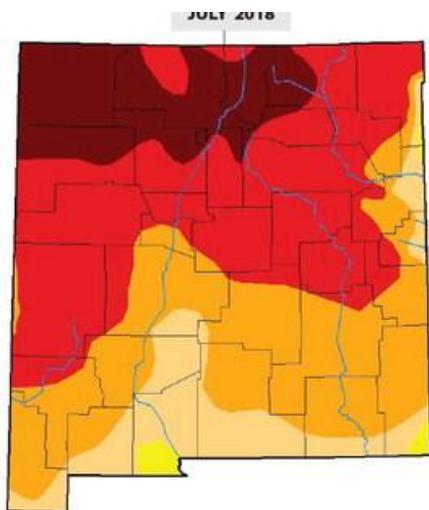
Other strategies include regionalizing water systems. A good example of this in action was when Taos' water pump went down earlier this year and the water system in El Prado was able to provide enough

water for weeks to keep the lines pressurized and avert a crisis, like the one that hit Questa around Christmas 2016.

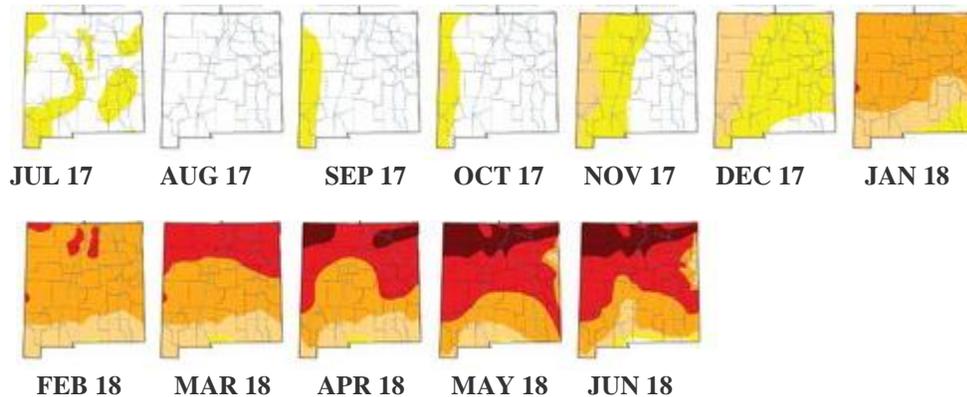
Still, the needs are immense. In the Taos planning region, the state came up with 279 projects, programs and policies to help address the potential water shortages in decades to come. Only 38 percent of those had a cost estimate, which totaled about \$123 million. The estimated costs for such upgrades and programs across the state is estimated at \$4.2 billion.

Here's another figure on a lot of people's minds: \$10 for a bale of hay. That's what Miera's thinking about. With the recent rains he's hoping to get a second cutting of alfalfa, just to delay getting rid of Luke and Capitan. "I'll see how much I have, how much pasture there is...maybe I can keep them there a little bit longer."

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**JULY 2018**



Courtesy of U. S. Drought Monitor