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Long, hot summers

• Drought puts squeeze
on city water resource

By Pat Blair

Senior staff reporter

Weather forecasts call for mostly clear skies with no more than a 20 percent chance of rain at least through next week, and the drought that hangs over Sheridan County — and most, if not all, of Wyoming — shows no sign of abating soon.

Arid City Utilities Engineer Mike Cole says he owes a debt of gratitude to his predecessor, former City Engineer Jackie Flowers, and the City Council that, in March 2003, adopted a Drought Response Plan to deal with the situation in which the city has found itself not only this summer, but also most of the past four or five years.

"If Twin Lake doesn't fill, we have a plan to follow," Cole said in an interview in his office at City Hall earlier this week. "If (the city's) stream-flow rights get called out of priority, we have a plan to follow."

Neither of those events has happened so far, and Cole believes they won't happen this year if Sheridan residents continue to follow voluntary watering restrictions implemented by the City Council in July.



Mike Cole
City Utilities
Engineer

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The Sheridan Press/Ryan Brannecke

Water sprays from a sprinkler during Thursday night's irrigation at Whitney Commons. Whitney Benefits has donated 27.76 million gallons of water to help lighten drought pressure on the city's water supply and help keep public areas green for the summer.



Water

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Those restrictions were called for after the city received word from the State Board of Control that its water rights in Big Goose Creek were in danger of being called.

If the city is "called out of priority," it means the city cannot use natural stream flow from Big Goose Creek to meet its water needs.

Instead, the city would have to release stored water from Twin Lake reservoir to provide the 8 to 10 million gallons of water per day demanded by the city's 20,000 customers — 16,500 residents plus businesses and additional users like the residents of the Downer Addition who purchase water from the city through the Downer Neighborhood Improvement District.

• A question of ownership

The issue, Cole said, goes back to 1882, when the city filed for water rights from Big Goose Creek — and it's tied to Wyoming statutes that say all water in Wyoming belongs to the state.

Cities, counties, irrigators and other private water users do not "own" the water they use. What they "own," Cole said, is the right to use a designated amount of water from a designated source.

The city of Sheridan, for example, owns the right to draw on 16 cubic feet per second of water from Big Goose Creek — during the winter.

During irrigation season, as a result of action taken by the Board of Control in the 1990s, the city's right drops to 13 cfs.

One cubic foot per second — abbreviated as "cfs" — is the equivalent of 448.8 gallons of water per minute, roughly 0.64 million gallons of water per day.

The city filed for its water rights in Big Goose Creek in November 1882. Six ditch companies filed for water rights ahead of the city, four in October, one in November, one on an unspecified date in "fall 1882" — but still ahead of the city.

"Apparently, someone in my position in 1882 dropped the ball and didn't get the paperwork done," Cole said.

For most of the year, that isn't a problem. Nor is it a problem in years when water is plentiful.

But during irrigation season — from May 1-Sept. 30 — during years as dry as this one, "We start getting nervous when the natural stream flow drops below 40 cfs," Cole said.

The six ditch companies that are senior to the city collectively control 25.75 cfs of water, according to the city's Drought Response Plan.

If the natural flow of Big Goose Creek drops below that number, the state Board of Control will cut off the city's stream-flow rights.

To date, Cole said, that hasn't happened. And thanks to voluntary water restrictions now in place, he feels confident it won't happen this year.

But the potential for state "regulation" — the term used when the state shuts down the stream-flow right — continues to loom large.

In August 2001, for example, all holders of water rights junior to the city's were shut down, as water in Big Goose Creek dwindled. The city was next in line.

What kept the city out of regulation was that the creek did not fall below the critical number. At this time, Cole said, Big Goose is running between 30 and 40 cfs.

In a worst-case scenario — if the city were pulled out of priority — it would still have enough stored water in Twin Lake Reservoir to meet the needs of its residents, he said.

Twin Lake was enlarged in a project completed in 1998 as part of the Sheridan Area Water Supply project to provide water for Sheridan County residents in the Big and Little Goose valleys.

The project increased storage capacity from an original 1,533.2 acre-feet to nearly 3,400 AF. The city has the right to 2,967.72 AF of that water, and SAWS has rights to 408.68 AF.

Quotable ...

“Apparently, someone in my position in 1882 dropped the ball and didn’t get the paperwork done.”

Mike Cole
City Utilities Engineer

The lake also contains a “conservation pool” of 569.60 AF, which the city and SAWS are required to maintain under the agreement between the city and U.S. Forest Service.

(The USFS owns the land that forms Twin Lake Reservoir, and the city maintains Twin Lake and has access to the stored water under terms of a Forest Service permit.)

If the reservoir is ever drawn to a level below the conservation pool, the city and SAWS will be required to restock the reservoir, according to Cole.

How that would be done would be determined by Wyoming Fish & Game, but Cole speculates the fish would be primarily brook trout and rainbow — the same fish found in Coney Creek, which is the primary source of water for Twin Lake.

Even with this summer’s demands for city water — up to 10 million gallons or more per day before the city asked its water customers to restrict their use — Twin Lake is in no danger of being drawn down.

And Cole said since voluntary restrictions were implemented last month, the usage has dropped to around 8.5 million gallons a day — an average 500 gallons of water per day for every city customer.

from a private source

The city has also benefited this summer, Cole continued, from Whitney Benefits, which has donated 27.76 million gallons of water from the nonprofit corporation’s water rights in Park Reservoir.

Whitney’s stipulation is that the donated water be used to irrigate the city’s parks and public recreation areas, including Whitney Commons and the YMCA soccer fields.

The city has the right to draw 3 cfs of raw water from Goose Creek to irrigate the cemetery, but all the water for irrigating the city’s remaining parks, recreation fields and green spaces — including those along the Big and Little Goose creeks — must come from the same 13 cfs that meets all the other demands for municipal water.

Whitney Benefits’ offer relieves some of the pressure and will allow the city to maintain green public places for the balance of the summer.

“The timing of Whitney was really good,” Cole said.

And in fact, he noted, the city actually has only 10 cfs at its disposal during the summer. The remaining 3 cfs is allocated to Sheridan VA Medical Center under an ordinance adopted in the early 1900s.

For the foreseeable future, the city is assured of an adequate water supply, Cole said, but Twin Lake “is simply not adequate for the long term.”

At the city’s present rate of population growth, around 1 percent per year, Twin Lake will probably meet the city’s needs for the next 20 years or so.

Assuming the growth rate continues at a steady 1 percent per year, Cole said it’s anticipated the city will need an additional water supply by around 2020.

“We continue to evaluate this,” he said.

In addition to looking at potential new supplies of water, city officials are looking at ways to get more use out of what’s currently available — such as the treated water that is discharged from the city’s wastewater-treatment plant.

That water now goes back into Goose Creek where, according to Cole, it’s actually cleaner than the creek water.

“On average, we dispose of 2.5 million gallons a day of treated water back from the (wastewater) plant,” he said. “We could be reclaiming that water, using it for irrigation.”

He added the city of Sheridan is looking at demonstration projects such as one in Cheyenne in which wastewater discharge is being used on the city’s cemetery and parks.

The bottom line, Cole said, is that if the drought continues — as some officials including the state climatologist now believe it will — a year will come when Sheridan’s water rights will be called out of priority.

He doesn’t expect it will be 2006.

• Timely help

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