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Growth and Water Loss Spell Sun Belt Trouble

By MIKE HEUER

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LAS VEGAS (CN) - Population growth and drought in the Sun Belt are forcing residents and governments to find new water sources, particularly in the Las Vegas area, which has grown from around 25,000 in the 1950s to nearly 2 million today.

More growth is expected in Las Vegas Valley, which is near the largest reservoir in the United States.

A proposed 263-mile pipeline that would send water from the Great Basin to Las Vegas has met furious opposition and is tied up in state and federal courts.

"Whiskey is for drinking, water is for fighting," said Center for Biological Diversity scientist Rob Mrowka, quoting Mark Twain on water in the parched West.

Mrowka, formerly the environmental planning manager for Clark County, now is a specialist with the Center for Biological Diversity. He says the proposed pipeline is among many issues facing the Desert Southwest as well as Las Vegas and could have a significant impact on far more than just population centers in the Southwest.

"The big picture is: What is sustainable and viable for the American Southwest, given climate change?" Mrowka said.

Mrowka says native plants in particular are susceptible to changes in water availability and could lead to a complete change in local habitat.

"As you start giving away more water, plants start to die out and get replaced by more noxious plants. Over decades we will see significant changes in species and the ecosystem," Mrowka said.

Although Las Vegas is next to Lake Mead, its rapid growth from a village into the fastest-growing community in the United States has transformed its water needs.

The Southern Nevada Water Authority indicates area residents consume an average of 124 gallons of water per person per day and use an average of 212 gallons of water per person per day. It wants to reduce the total use per person per day to 199 gallons by 2035.

Doing so largely will rest on removing grass lawns, which account for much of the water use in Las Vegas.

The Southern Nevada Water Authority helped develop new guidelines in 2003 that call for no lawns in the front yards of newly built homes and suggest grass in only half of the back yards, said Nicole Lise, the authority's public information director. Instead of grass, the homes have desert landscaping. Homes with lawns are subject to specific watering schedules that change every three months.

The new spring rules began March 1, and homeowners can water their lawns on three designated days per week, Lise said.

When summer rules start in June, homeowners will have just one day a week to water their lawns - but not in the afternoons. They go back to three days per week in the fall and back to one during the winter, when grass doesn't grow well.

The days that homeowners in particular neighborhoods can water their lawns rotates.

"Rotating watering days makes it easier to enforce the law," Lise said. "We can concentrate on the areas that aren't supposed to be watering on a particular day."

The Southern Nevada Water Authority has initiated a Water Smart Home program to reduce residential water use. The authority worked with the Southern Nevada Homebuilders Association to ensure that new homes are built with low-flow toilets and showers instead of bathtubs, to preserve water.

Homes built in accordance with Water Smart Home guidelines reduce their annual water use by up to 75,000 gallons, compared to homes built a decade or more ago.

Desert landscaping helps reduce water use, and homeowners are given rebates to use water-conservation measures, such as washing machines and dishwashers that use less water and pool covers to reduce evaporation.

Participation in the Water Smart Home program is voluntary, and the water authority generally sees good cooperation from residents, Lise said. The authority pays homeowners \$1.50 per square foot to replace grass lawns with desert landscaping.

"People aren't obliged to do it, but it saves them money," Lise said.

Many Las Vegas homes have pools, but Lise said they aren't a big problem so long as homeowners make sure they use the sewer system when they drain pools in the fall. The sewage goes through a reclamation process that purifies the water and returns it to Lake Mead.

"We don't discourage pools. But if you don't use it, then we discourage filling it," Lise said.

The water authority focuses its conservation efforts on residential uses, which by far accounts for the greatest amount of water use in the area. Mrowka said that despite people's perception, casinos are very water-efficient. Lise said area golf courses have removed much of their turf and use recycled water to keep what little grass they do have green.

Conservation efforts at golf courses alone have helped to save 2 billion gallons of water since 1999, Lise said.

Through conservation efforts like the Water Smart Home program, Lise says the Las Vegas area has reduced its consumptive water use by 32 billion gallons from 2002 to 2013 despite population growth of about 480,000 during the period.

About 40 percent of water used in Las Vegas has gone through a reclamation process, and Lisa says the remaining 60 percent of water use is consumptive and used outdoors.

Mrowka says much more needs to be done.

About 90 percent of the water used in Las Vegas comes from Lake Mead, Lise said, but Lake Mead is draining and could become unsustainable soon.

Under current federal water allotments, California gets 4.4 million acre-feet, Arizona 2.8 million acre-feet and Nevada 300,000 acre-feet of water from Lake Mead and the Colorado River system, according to the U.S. Bureau of Reclamation.

An acre-foot, which would cover 1 acre 1 foot deep, is roughly the amount of water a 4-person family uses per year in the United States.

The proposed pipeline from the Great Basin area of Nevada to Las Vegas would provide nearly 84,000 acre-feet per year.

To help preserve water and stave off potential disaster, Mrowka says four steps must be taken.

The first step is reduce the population of desert cities, like Las Vegas, and initiate water conservations measures. Mrowka says enforcement of local water laws is a key element, but can be difficult to do.

The second step is to control growth, so that sprawl does not consume more land. Federal lands can't be developed without approval from Congress. Mrowka said Congress should declare an end to development on federal land.

"There are tens of thousands of acres currently available for development,"

Mrowka said. "Las Vegas could grow by another 1 million, but they need to decide where development occurs and try to roll back developing more acreage."

The third step to improve water conservation is to decide how to best use the Colorado River water. Current allocations were decided in 1922 when annual precipitation amounts were much higher, and Las Vegas had its own water resources from the Spring Mountains, Mrowka said.

But Las Vegas used up its natural water resources decades ago and is dependent upon the Colorado River system, as are large areas in Southern California, Arizona and Mexico.

"There are huge irrigated areas in Southern California and Arizona. They are wasteful, and the water is sold to them too cheap," Mrowka said. "There is a lot of alfalfa and other crops that use a lot of water and are sold overseas to China. The Imperial Valley and Arizona need to catch up on growing the best crops that use less water."

The final step Mrowka suggests is to build desalinization centers for Las Vegas and other cities in the Desert Southwest. Solar power could be used to power the desalinization centers and pump the resulting fresh water to population centers via pipelines, he said.

With improved technology and water conservation efforts, Mrowka said, it's possible to stave off a short-term water disaster in Western states and buy more time to develop better methods to conserve water and use it more wisely.

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