

Communities struggle to find a balance

Developers look for more incentives to aid bottom line; cities, towns employ variety of strategies in face of constrained supplies



Landscaping is underway outside Sterling Ranch resident Greg King's home in Littleton. A list of drought-resistant plants that use less water are pre-approved for residents' landscaping. REBECCA SLEZAK — SPECIAL TO THE DENVER POST

BY JUDITH KOHLER

JKOHLER@DENVERPOST.COM

When Greg King starts watering outdoors at his Douglas County home, the meter starts spinning to show him how much water he's using.

"Holy moly, they consume a ton of water," King said about lawns.

And showers. He and his wife can track the effects of long showers on their water bill by checking a second meter, the one that clocks indoor water use. “If you’re in there for 15 minutes, that’s a lot of water.”

King moved last year from Morrison to Sterling Ranch, a master-planned community, believed to be the first development in the country to use a dual-meter system that allows residents to monitor water use in real time. King can check the meters in his basement or use an app on his phone or computer.

“Water is a problem here in Colorado, so we want to reduce our consumption of water by changing the way we do our landscaping,” King said.

The technology that helps the Kings do that is among efforts to reduce water use in an era of restricted water supplies because of climate change even as growth continues, particularly along Colorado’s Front Range where people face a tight, pricey housing market.

Across the Denver area, local governments, water utilities, homebuilders and developers are employing a number of strategies to meet the demands for housing, respond to growth and strive to ensure the long-term supply of the resource essential to a future in this semi-arid region: water.

Agriculture consumes the lion’s share of Colorado’s water, about 90%, while municipal uses account for 7% of the total.

“When you start off with that number, I think it’s really easy for people to say, ‘Why does municipal water use even matter? Why are we even worried or focused on this?’ That’s a question I answer a lot,” said Lindsay Rogers, a water policy analyst with Western Resource Advocates.

One response is that state water planners say municipalities could face a shortfall of as much as 740,000 acre-feet of water by 2050.

An acre-foot is enough water to cover an acre of land with a foot of water and generally supply the needs of two families of four each for a year.

With the West in the grips of a prolonged drought and increasingly warmer temperatures, saving water on all fronts is crucial. Nearly 6 million Coloradans and 19 other states and Mexico rely on water from the state’s major river basins.

In January, the Colorado Water Conservation Board finalized the update of a 2015 state water plan to map the possible scenarios for the state’s future water supplies and suggest solutions and tools to deal with them. The state’s population is forecast to grow to about 7.5 million by 2050 from the current 5.8 million.

“While it’s true that agriculture uses about 90% of the water in the state, a lot of that water flows back into streams providing ecosystem benefits and water for downstream users,” said Russ Sands, the water supply planning section chief at the state conservation board.

“When water is taken off farms permanently, it often has cascading local and state impacts. These include loss of local food, loss of agricultural exports, loss of ecosystem benefits, loss

of jobs and more,” Sands said in an email.

Harold Smethills, Sterling Ranch co-founder and chairman, doesn't want to see large portions of Colorado's agricultural land dried up. Smethills, who has a ranch, leases land on the development south of Chatfield State Park to a cattle operation.

“This community was built on the idea of water demand management, not supply management,” Smethills said. “We started from the concept of let's figure out how much water we need, what's the demand and then go get that amount of water.”

No water-thirsty Kentucky bluegrass is allowed at Sterling Ranch, which has about 5,000 residents. The company worked with the Denver Botanic Gardens to identify roughly 155 different plants that use less water, many with the added bonus of attracting bees and other pollinators.

The water meters in the homes track indoor and outdoor use and have revealed leaks when staff at the Dominion Water and Sanitation District noticed water use shoot up. Residents are also able to keep an eye on their water bills.

Douglas County was built on groundwater, but that is changing. Sterling Ranch acquired water rights on the South Platte River. Households have water budgets and tiered rates that price outdoor water at higher rates.

“The water you use indoors, we get back at the sewer plant. What you put outdoors is gone forever,” Smethills said to explain the price difference.

Sterling Ranch negotiated an agreement with Douglas County that lowered the requirement of supplying 0.75 acre-feet of water per household to 0.4 acre-feet. Smethills said the average consumption is actually 0.17 per household.

“If we had gone out and acquired 0.75 acre-feet per home per year of renewable water, the tap fees would have made this project uneconomical,” said Brock Smethills, Sterling Ranch president and Harold's son. “The tap fee would be \$150,000 a tap and that's more than what we get paid for the entire lot.”

Tap fees, also called system development fees, are one-time charges for connecting homes and businesses to water and sewer systems. Sterling Ranch is paying about \$69,000 per home.

The fees, the Smethills said, should be based on actual, documented use. They believe that gives developers and homebuilders incentive to cut water use and helps hold down costs for homebuyers.

Show me the incentives

“We have proven without a question that developers will invest a great deal, drop their water use way below anything the city expects, but they won't do it unless they're incentivized to do it,” said Carmine Iadarola, founder and president of AquaSan Network, a consulting firm on water and energy projects.

However, tap fees often work as disincentives because they are based on outdated modeling rather than documented water use in various types of buildings, Iadarola said. Some municipalities base fees on the number of units without accounting for the size of individual units and things like the number of bathrooms, he added.

“What incentive is there to conserve? You can’t manage what you don’t measure and they don’t measure the water use of these new buildings,” said Iadarola, who worked with Sterling Ranch on its water plan.

David Zucker, CEO of Zocalo of Community Development, believes water utilities' policies can upend efforts to build affordable housing and lower water use. He said his firm had to recently pay for a bigger water tap than a study showed was needed for a Denver-area affordable housing project in a renovated building. The costs ballooned, he said.

“Utilities need to snap into the 21st Century,” Zucker said.

Zucker and Iadarola said a regulatory body similar to the Colorado Public Utilities Commission should oversee water providers.

“Every water utility should have the ability to make decisions based on its water source, its uses and age of its infrastructure,” Zucker said. “But having a regulatory body, I believe, would make levying tap fees far more predictable and fair.”

Iadarola and Zucker also agree that ultimately, treating wastewater to drinking-water quality is critical to ensuring there's enough water in the long term. Earlier this year, Colorado became the first state in the nation to approve comprehensive regulations for what's called direct potable reuse of water.

“Developers are putting a demand on water because they're saying ‘Hey, we need more water for the people that are moving here.’ Cities are saying, ‘OK, we have to build another dam or build another pipe or drill another well,’” said Iadarola, who worked on the first statewide water plan.”

“I seldom see reuse as being a major part of their plan,” he added.

Native grasses, recycled water and contests

Saving water is top of mind for communities across Colorado, said Heather Stauffer, the legislative advocacy manager at the Colorado Municipal League.

More and more, Stauffer said, municipalities are integrating water and land use planning. However, using tap fees as incentives for developers and builders is tricky, she added.

“A lot of water providers are not for profit, so the tap fee is really there to ensure growth pays its own way,” Stauffer said. “There does need to be some recognition that tap fees are essential for the continuation of services.”

Several cities and towns have approved ordinances and codes to encourage conservation and offer different types of incentives to homeowners and builders, Stauffer said.

Denver Water, which serves around 1.5 million in the metro area, offers developers a rebate on their fees when they install the highest efficiency fixtures, landscape designs and irrigation technology, spokesman Todd Hartman said in an email.

With regulations now on the books, a few Colorado communities are exploring whether to pursue treating wastewater to drinking-water quality. Castle Rock and Aurora are looking at the possibility. The water wouldn't be released into a river or stream and recaptured, but would directly go through a complex treatment process before entering the drinking-water system.

Under the new regulations, water providers must collect abundant data on the wastewater that would be treated and keep the public informed.

“De facto reuse is happening all the time. That's when a community discharges to the river and that becomes the water that someone else is able to divert to their supply,” said Laura Belanger, a senior water resources engineer and policy adviser at Western Resource Advocates.

Indirect potable reuse occurs when a city or water utility releases treated wastewater to a river or creek and recaptures water at some point. The water goes through an environmental buffer, such as a lake or groundwater aquifer, and is treated at a drinking water treatment plant.

Aurora started its Prairie Waters indirect reuse program in 2010. About 95% of the city's water rights are reusable, said Greg Baker, spokesman for Aurora Water.

“We're using Prairie Waters to reuse those rights over and over again,” Baker said.

The city, Colorado's third-largest, uses its building codes and standards to discourage outdoor water use because it can't be reused, Baker said. Aurora's typical per capita water use is 115 gallons a day, compared to 188 gallons in 2000 when about 120,000 fewer people lived there.

Roughly 65% of the water used by Castle Rock in Douglas County comes from groundwater. Other sources are renewable water from local creeks, Chatfield Reservoir and the South Platte. The town's goal is to eventually use all renewable water.

Like Aurora, Castle Rock uses treated wastewater to irrigate parks and golf courses and also recaptures discharged water and treats it to be used as drinking water.

“We have one of the most advanced water treatment plants in the country here,” said Mark Marlowe, director of Castle Rock Water.

The town allows the use of so-called gray water, which is the reuse of shower and sink water to flush toilets. “We have some houses in Castle Rock that have been built with those systems in place,” Marlowe said.

Castle Rock's per capita water use ranges from 114 to 118 gallons a day. The town wants to cut that to 100 gallons per capita.

Another important conservation strategy is the requirement that new homes put in what Castle Rock calls “ColoradoScape,” or plants native to the area or adaptive to the climate, including trees and shrubs, along with mulch and rocks. No grass is allowed in the front yard and turf in the back is limited to 500 square feet.

Marlowe said developers and home builders can save up to 40% on their development fees of \$42,000 by installing the city-approved landscaping in both the front and back yards. The town also offers a rebate for homeowners who replace turf with ColoradoScape materials.

Amy and Shawn Stephens won Castle Rock's 2022 ColoradoScape contest. Their video highlighting why they wanted to replace their lawn got the most votes on social media and the prize was a professionally designed and installed front yard worth about \$8,000.

The real prize, Amy Stephens said, is lower water bills. “We’ve definitely seen a decrease in water use. I’m super happy about any cost savings we can get.”

Aurora has also cracked down on grass intended for cooler, wetter climates. Kentucky bluegrasses and similar varieties are prohibited on golf courses, new homes and on common areas not used for recreation. City officials said 50% of the water is used to irrigate lawns.

Colorado Springs Utilities is considered a leader in the switch to native grasses, which use less water and include buffalo grass and blue gramma. Scott Winter with the city utility said using native grass began during the Great Recession when the parks department needed to cut costs. The utility improved the irrigation system and switched to native grass, which doesn't need as much water or mowing. So far, approximately 61 acres of parks and commercial property have been switched over.

“I have buffalo grass on my front lawn. I water it about once a week, less if it rains. I mow it about once a month,” Winter said.

Thanks to the changes in turf and other conservation programs through the years, Colorado Springs' water use is about the same as it was in 1986 despite a population surge that has made it the state's second-largest city. Winter said the per capita daily water use was more than 220 gallons in 2000, but now varies between 120 and 130 gallons a day.

Colorado Springs' experience shows that population growth doesn't have to lead to more overall water demand, said Rogers with Western Resource Advocates. Communities are changing from a supply-side approach, which stresses acquiring additional water, to a demand management, which focuses on conservation and reuse.

And Rogers said she is seeing more efforts to base water tap fees on specific standards, such as lot sizes, the number of rooms and landscaping.

For Lynn Moffett, conservation is vital. She moved from California to Sterling Ranch in January 2021. “I had come from a drought-ridden state with fires all around me.”

Moffett said she kind of misses having grass in her front yard, but has gotten used to it.

“When I looked at the charter of Sterling Ranch I thought this is what we should be doing in California,” Moffett said. “This is what we should have done way in advance of what we had gotten ourselves into.”