

Minutes to Midnight

at the Oasis

How Santa Feans Are Getting Water-Wise Before It's Too Late



BY ANDREA SHAPIRO

PHOTOGRAPHS BY JENNIFER ESPERANZA

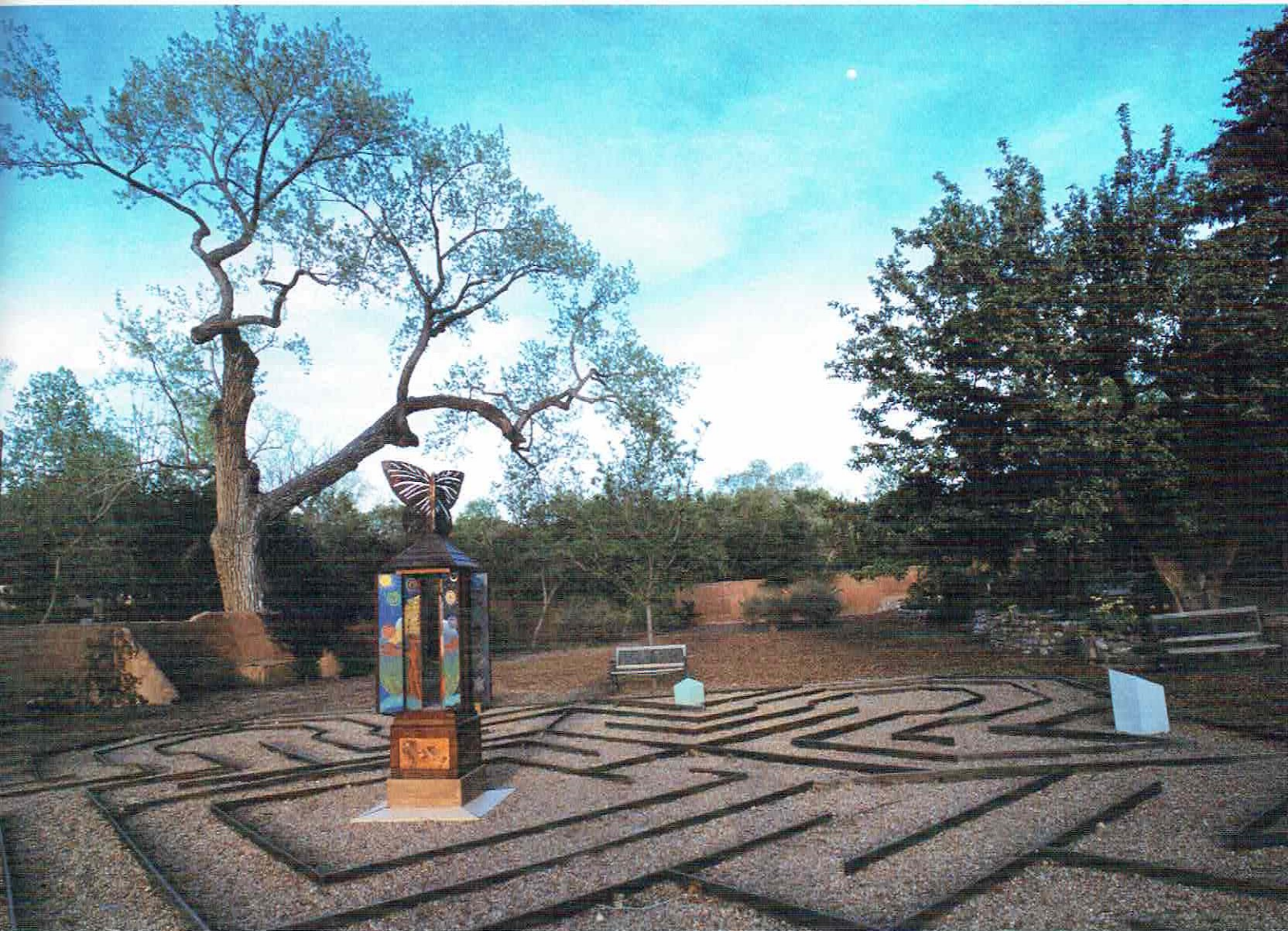
There are those who remember a river in the city—a time, fewer than sixty years ago, when a thriving tributary of the Rio Grande flowed through Santa Fe. We needn't dream back to an era more than five centuries past, and posit why, or if, the Anasazis evaporated. We must only imagine an imminent day of reckoning, when—as a result not of nature's droughts, which come and go, but of human greed and neglect, which seem to be here to stay—we exhaust the one resource we cannot live without. It's the blood of the Earth. It's the universal solvent. Water: It's the problem.

Some denizens of this arid Eden are zealous about that problem and are adopting or devising innovative solutions. "Last year was a major disaster," says Elspeth Bobbs, a Santa Fean since 1943 and an eyewitness to the city's wetter days. For the 82-year-old resident, recent rainfall shortages and attendant watering restrictions have been a conservation wake-up call. "I have had to change my gardening ambitions and methods, and abandon the lawns completely."

Environmentalists may cry, *Lawns in New Mexico?* But Mrs. Bobbs' lawns are a unique, some might even say historic, case. Those grass beds—now shrouded with bark or retired beneath an offbeat labyrinth—were once elemental features of the 3.8-acre estate called La Querencia ("loved place"). During the summer, horticultural tours descend on the Canyon Road-area estate to enjoy an herb collection that honors the persistence of thyme; themed portions, such as a medieval garden, with an Excalibur lodged in a huge stone; trompe l'oeil-adorned adobe walls; and the fragrance of David Austin roses, Mrs. Bobbs' favorites, which she says grow better in Santa Fe than in England, where they were bred.

The veteran gardener should know; she was bred in England, too. When she and her late husband, painter Howard Bobbs, purchased La Querencia in 1967, she sought to recapture the landscape of her childhood in Devonshire.

But emulating British scenery in the high desert has had its challenges. At one time the property was irrigated by an acequia, and it still has access to well water, though that source, too, was in jeopardy last year. Mrs. Bobbs recalls severe droughts in the 1950s and the 1970s, but she believes that the dire straits we are in



BE: La Querencia's former grass beds have been laid to rest under this labyrinth.

BELOW: Elspeth Bobbs enjoys an English rose in her Santa Fe garden.



today may be caused more by the demands we place on nature's liquid assets than the fickleness of that bounty.

Moria Peters, La Querencia's head gardener, clusters thirsty perennials and gravel-mulches the xeric sections. A rock garden incorporating native alpines has also been added. But water-wise planting hasn't been enough. Early this spring Mrs. Bobbs took the proactive measure of installing a rain-harvesting system.

"She's a responsible person, and rather than using aquifer water, she wants to use captured rainwater," says Spencer Farr, of RainCapture, Inc., which designed a site-

specific system for La Querencia. Roof water from one of the buildings is drained into two underground cisterns, each able to store 1,700 gallons. Together, the cisterns can be expected to yield between 25,000 and 30,000 gallons of rainwater a year.

"What most people don't realize is how much water falls on a typical 2,000-square-foot Santa Fe home," Farr explains. "On an annual average, about eighteen to twenty thousand gallons of water lands on that roof. Most homes can capture 100 percent of the water used for outdoor gardening; that's roughly 20 percent of the water they use every year."



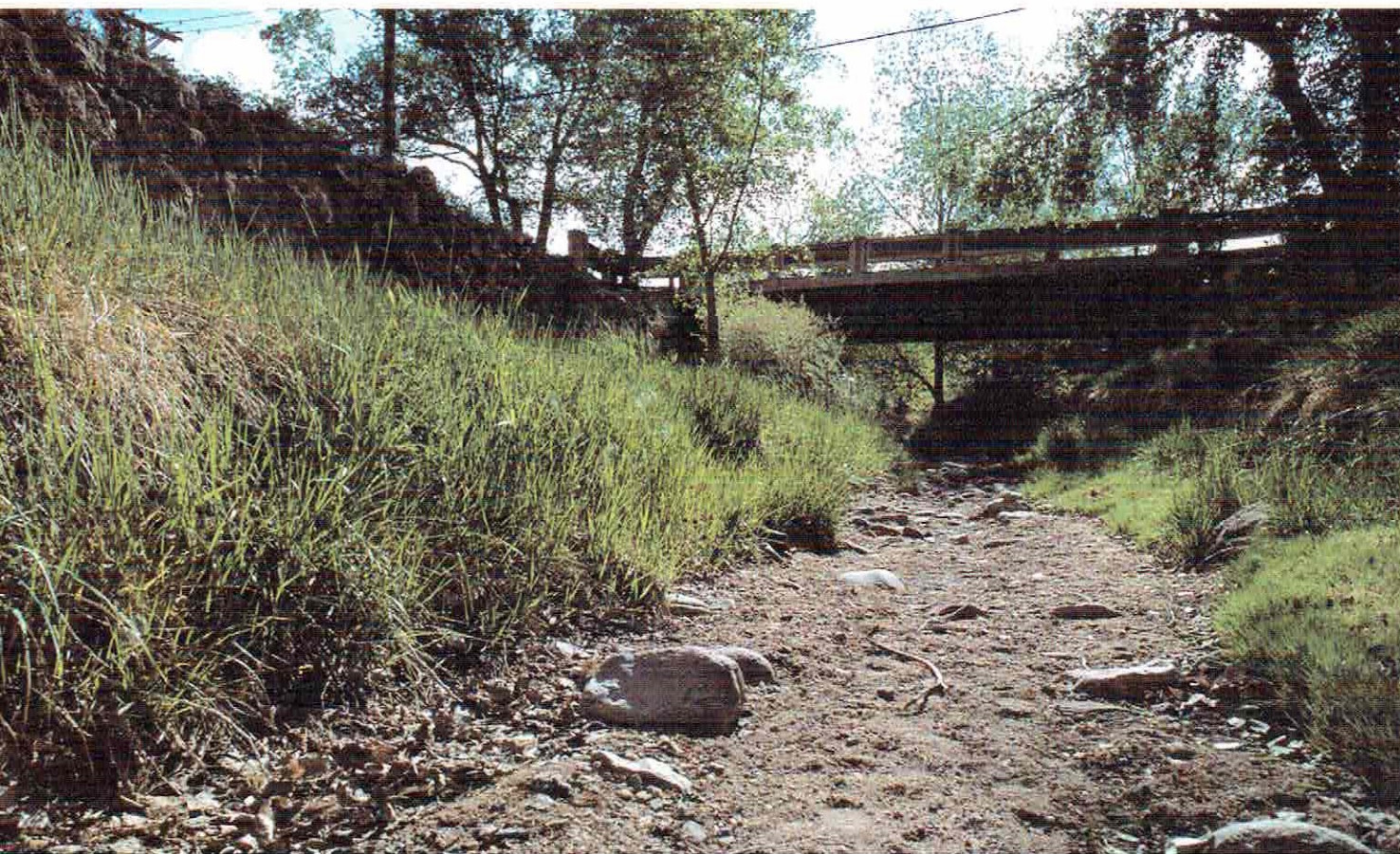
LEFT: Snowmelt flowing from the ski basin, Santa Fe National Forest. RIGHT: Santa Fe River this spring, behind La Querencia.

"The river is the soul of the city, and every effort should be made to keep it running," Bobbs says. "One year, it ran all summer—much to the delight of children, who were allowed to fish in it."

In addition to manufacturing cutting-edge water-conservation products, for which several patents are pending, RainCapture provides water re-use systems for multiple-home developments throughout the Southwest. Rancho Viejo, a subdivision south of Santa Fe, has contracted with RainCapture to install a rain-harvesting system similar to Mrs. Bobbs's in every new house built at the development; the program began in April of 2003.

"Through use of the underground cisterns over the next three to four years, Rancho Viejo expects to save up to six million gallons of water a year," says Farr. One could argue that they're new houses, and we shouldn't have new houses. But those homes are among the most water-efficient homes in Santa Fe, to date—they use 25 percent less water than houses in existing subdivisions of comparable size."

A former engineer with a Ph.D. in genetics, Farr started RainCapture, Inc. in 2001, in response to a water crisis at his Chama ranch. When the recent drought hit,



his cows started dying. This personal emergency inspired solutions with sociopolitical implications; Farr's business has proven profitable, both ethically and financially.

"Clients are paying for these systems because they believe it's the right thing to do. Water's cheap; people don't need to do this." Farr goes further: He believes water is *too* cheap, and that the imposition of meaningful surcharges would be the swiftest course to a greener way of life. "If water were to approach anything near its true resource value, I think you'd see conservation in a heartbeat."

Whether Santa Fe is experiencing a "severe" drought depends on who is consulted, and the breadth of their perspective. From the standpoint of millennia, our current dry spell is relatively insignificant. If decades are the measure, the present aridity emerges as a cyclical pattern. It's only when one limits one's framework to recent months or years that one begins to embrace the idea that our oasis is in danger of morphing into a mirage.

"I do think that droughts have been the downfall of civilizations. I don't think that a drought in the western part of the United States will be the downfall of Western civilization," maintains Peter H. Gleick, Ph.D., president of the Pacific Institute, an Oakland, California-based think tank committed to global water, environmental, and security issues.

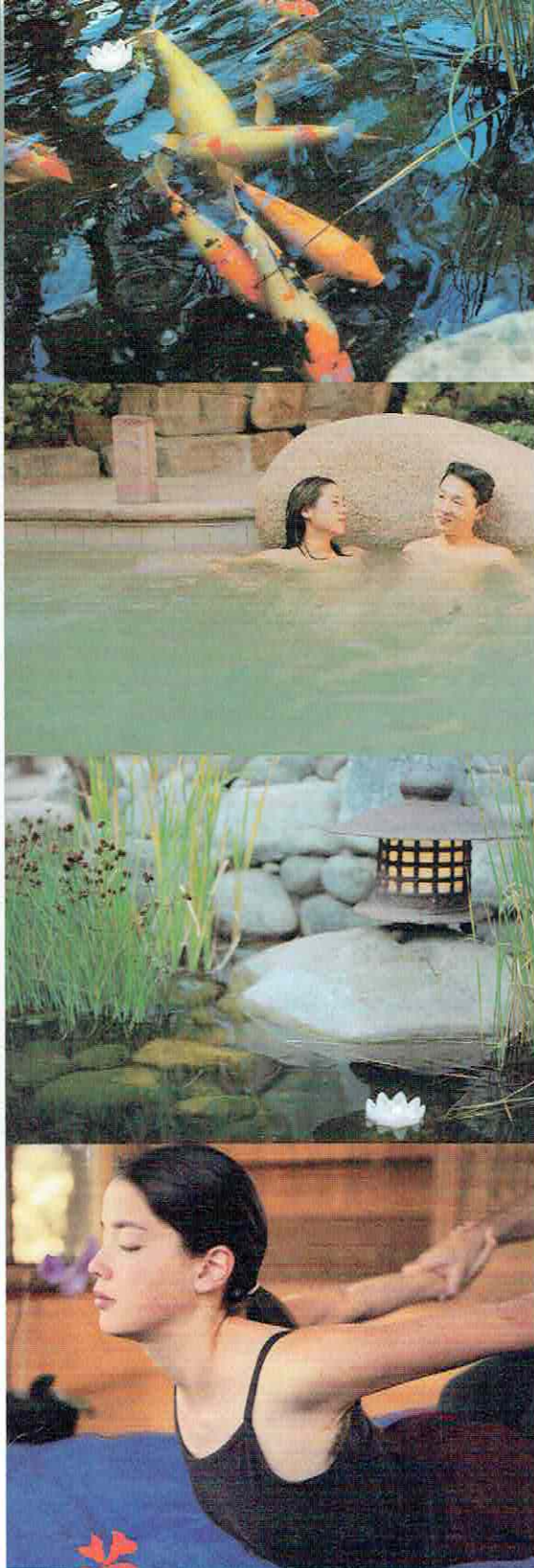
"We're not running out of water in the West; we're just using what we have in the wrong way," asserts Gleick. "I would argue we don't want to use water; we want to do things: clean our clothes, get rid of human waste, have nice landscapes. Some of them can be done with very little water, or no water."

The Pacific Institute's recent biennial report, *The World's Water 2002–2003*, outlines Gleick's case for a "soft path"—a multifaceted approach to water management that minimizes ecological damage and favors efficiency, as well as conservation. "Thinking that there's a single thing we can do is what's gotten us into trouble in the past—in large

part because in the past the single thing we could do was build another dam, or drill another well," he explains. "The 'soft path' integrates all the things we care about; it protects the environment and meets human needs at the same time. It uses technology, where appropriate, but it also uses smart economics and smart planning."

Global ideology ultimately comes back to local action—in this case, how we "spend" water at home. Clothes washers and toilets account for almost half of all indoor water use, which can be reduced by 30 percent after installing low-flow (or waterless, composting) toilets and energy-efficient washing machines. With respect to outdoor water use, this year New Mexico joined many other western states in passing gray-water legislation that allows residents to irrigate their landscapes with effluent from washers and bathroom sinks, showers, and tubs—welcome news for conservation-savvy Santa Fe gardeners.

One local visionary, Richard Jennings, of Santa Fe's Earthwrights Designs, is intent on



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wresting the potential even of “black water.” He is seeking a private grant to develop economical technology to rehabilitate septic systems; a means, he says, for “treating a resource for what it is—a resource, and not a problem.” A former organic gardener, Jennings has experimented with effluent for the past 12 years. His water-wise solutions include a grid-independent, gravity-driven water-harvesting system for an affordable-housing subdivision, and a design for a Railyard Park development that will store harvested rainwater in a remaindered rail tanker.

Landscape architect Melissa McDonald, who serves as vice chair of the City of Santa Fe Water Conservation Committee, says that a key committee goal has been to determine what constitutes a “reasonable” amount of water use. Based on statistics established by the American Water Works Association, an international nonprofit organization focused on drinking-water quality and supply, the committee has determined that a household with select water-wise appliances should have an indoor daily allowance of 55 gallons per person. Additional outdoor quantities, which fluctuate seasonally, will also be provided.

“One of the problems in getting folks to save water is that they want to know where the water will go,” says McDonald. “An idea that has come from the Alliance for the Rio Grande Heritage is to create an incentive for people who conserve water below their allotted budget. Their reward would be an ability to determine how they want the water to be directed to improve the community. Consumers might have a checklist on their bills that says, ‘I want the water to go to new growth, to city parks, or, say, to the river.’”

Before rethinking distribution or the recycling process, however, Santa Feans would do well first to ponder where the cycle begins. Turn the kitchen faucet, fill a tall glass, and dwell on this: Where does our water come from?

Santa Fe is in the middle of a watershed that starts in the National Forest and drains through the city of Santa Fe and out to the Rio Grande. That mountain stream is now the yawning stretch of dust dubbed the Santa Fe River, a shadow of what it was when Mrs. Bobbs arrived here, during World War II.

About 40 percent of our water—called “surface water”—comes from melted snow-



St. Francis of Assisi, patron saint of Santa Fe, watches over the rain barrels at La Querencia.

cap that flows into reservoirs at the top of the watershed. The remaining 60 percent of our water—known as “groundwater” or “the aquifer”—is pumped from city wells, by the Santa Fe River, and the Buckman well field, along the banks of the Rio Grande.

“Surface water and groundwater have been considered separate, unrelated entities. However, hydrologists are more and more coming to understand that surface water and groundwater are a single resource,” says hydrologist Paul Hsieh, Ph.D., of the U.S. Geological Survey, in Menlo Park, California.

“During dry seasons, water that flows in a stream commonly comes from groundwater seeping into the stream,” he explains. “When groundwater is pumped from wells situated close to the stream, a portion of the groundwater that would have seeped into the stream (in the absence of wells) is now extracted by the wells. If a large amount of groundwater is pumped from wells close to the stream, the stream may be dry.”

Explanations vary as to why the Santa Fe River, in particular, has run dry; one theory suggests that a moratorium on tree thinning in the forest has led to overgrowth of moisture-ravenous trees; hence less water flows down the mountains. But noisier debates prevail over whether the dry riverbed

Be part of the solution

COUNT DROPS AT HOME. Take a water-saver's tour of your house, guided by at www.h2ouse.org, a site developed by the California Urban Water Conservations Council in partnership with the EPA.

RETROFIT YOUR HOME WITH GRAY-WATER FIXTURES AND YIELD WATER STREAMS WITH FEWER CHEMICALS. Play with a "laundry ball," which washes clothes without detergents; instead, it contains a fluid that changes the surface tension of water. Cool science that makes common sense. One "Gemwash" ball, \$20, is good for over a thousand washes. Earthwrights Designs (ezentrix@aol.com).

REPLACE AN OLD/EXPIRED CLOTHES WASHER with a new, energy/water-saving front-loader, using 14 to 20 gallons per wash, significantly less than older models, which gush 40 to 60 gallons. Consider: GE's Profile Harmony Clothes Care System, Whirlpool's Duet, any Miele, or Kenmore's Elite HE 3t.

THINK YOU CAN'T AFFORD IT? Loans for systems ranging from affordable pumice wicks to fully automated cisterns are available from Permaculture Credit Union (www.pcuonline.org). Borrowers qualify on the basis of their avowed commitment to "the ethics of permaculture," a holistic approach to building sustainable systems.

LIVE AS GREEN AS YOUR DREAMS. From the ground up, build a green, energy-efficient home. Visit ADC Referral, www.adcreferral.com, specialists in matching up environmentally conscious clients with green architects, designers, and builders.

BE TRENDY, WATER-WISE. Santa Fe resident Geraldine Macomber suggests, "Let's make small, dirty cars the cool thing in Santa Fe!"

is the canary in the coal mine—alerting us that Santa Fe is over-mining its groundwater.

"Pumping groundwater can take generations to affect a nearby stream or river; replenishing the groundwater that's pumped can take anywhere from weeks to thousands of years. Our surface water, which is replenished more quickly, should be what we think of as our water budget. The aquifer should be our savings bank," asserts Craig Roepke, chief of the Interstate Stream Commission's Water Project Bureau.

"Santa Fe cannot continue to exist by over-mining its aquifer," Roepke contends. "The San Juan-Chama project is Santa Fe's hope to manage Santa Fe's lifestyle."

Due to be completed by 2007, that project will divert water from the Colorado River Basin into the Río Chama, which flows into the Río Grande; Santa Fe will then pipe the water into the city. The supply should allow

the community to limit its reliance on well water and rest the aquifers. Perhaps, in time, even the Santa Fe River will rise again.

"I'm optimistic about our water issue," says City Councilor David Pfeffer. "The poverty perspective says, 'We live in the desert; get used to it.' The plenty perspective says, 'We live in the desert; let's make it bloom.' I come from the plenty perspective. The reason we can make deserts bloom is that we can bring the water to us. Maybe the Anasazis were displaced because they had to wait for the water to come to them. It seems to me there can be an elegant middle ground between traditional supply systems—pipes, wells, tunnels, the hard infrastructure—and collecting water when it rains, right here."

Collected rain could indeed save the gardens of La Querencia. It's worth noting that when Mrs. Bobbs landed in Santa Fe, at age 23, she was swept away by the desert's sights,

yet she was well on the road to a life of silence; she had begun losing her hearing at 11 and by 26 was completely deaf. It's been a while since she has heard the river coursing by her home, and nearly as long since she's seen the water flow.

"The river is the soul of the city, and every effort should be made to keep it running," she avers. "One year it ran all summer—much to the delight of children, who were allowed to fish in it. We had a flood, even; I could see the waves breaking up to the end of the driveway."

What Elspeth Bobbs remembers it behooves the rest of us to envision. Picture a day that's too dry and too late. Think clearly when drawing from the tap. Keep moisture in mind.

Andrea Shapiro is a freelance writer living in Tesuque, New Mexico.