Water
in
Willow Springs Township

by Dennis Domer

After eighty-three years of living in the same house and working the same place, Leslie Churchbaugh moved to Baldwin City from his farm on the eastern edge of Willow Springs Township in southern Douglas County, Kansas. He had a sale and just about everything was on the auction block, except a miniature windmill and pump. When the auctioneer came to them, Les waved him on and decided to take them to town. The windmill and pump would no doubt remind him of his old home in Willow Springs, of washing off the dirt from a morning’s work, of hauling water, of filling the stock tank, of drinking from a jug at the end of the field while the horses rested, of carrying water from the creek at High Prairie School when he was a boy, and of that

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The haunting sound the windmill makes when it turns in the wind.

Windmills and pumps stand in many front yards in Willow Springs, and they are part of the highly developed water landscape that runs shallow and deep. This landscape binds all people in Willow Springs, and it is a defining element in the overall landscape that people have been making here incessantly for centuries. People identify so closely with their landscape that it makes and remakes them in what Dell Upton calls “the fusion of the physical with the imaginative structures that all inhabitants of the landscape use in constructing and constructing it.” From this fusion arise common landscape patterns and ways that reveal themselves through cultural forms and processes that differentiate us as people and make the physical landscape understandable, transferable, ubiquitous, and enduring in human life. Les’s windmill and pump are so commonly understood and powerful symbolically that they do not need water to play their role.

J.B. Jackson calls the landscape the “infrastructure or background of our collective existence.” A landscape is not just the natural environment, topography, or scenery, although all are components of a landscape. Rather, a landscape is the natural environment shaped and shared by humans over time for specific purposes. Landscape includes not only those changes made in the land, such as the creation of roads, ditches, and terraces, but also objects placed on the land, such as churches, schools, houses, barns, sheds, telephone poles, fences, wells, windmills, and water systems. Cities are intensely developed landscapes. As the background of our collective existence, the landscape and all its objects also have psychological and social aspects. Every landscape has spatiality that affects human perception through topography and the distance one can see. In every landscape there lie deep maps of our social existence, especially in the structures of community life.

The importance of water in the landscape cannot be underestimated. The 1989 dust storm, the first to roll into Douglas County in more than fifty years, made this perfectly clear. How to find water, keep it, and ensure its adequacy in the future are eternal questions whose answers are written on the landscape. Today’s citizens of Willow Springs, many of whom experienced the big dusters of the 1930s, have answered these questions by building an intricate pressurized water system of underground PVC pipe, pump houses, and standpipes, and connecting it to a gigantic reservoir. This new infrastructure is layered on top of older, still necessary, water systems such as ditches, sloughs, creeks, ponds, wells, cisterns, windmills, and tanks. In the layers of this complex hydrosystem it is possible to understand the importance of water, read the local knowledge of water over time, learn how people change to deliver the precious fluid through a landscape that is changing, and consider how people prepare for their water futures.

An oral history of water in the landscape also has developed. When listening in a rural place, one hears a rich variety of tales about water from the people who have lived there all their lives. In Willow Springs Township, many elderly people relate the sick feelings they experienced when they did not find water or the jubilation when they did. They remember when they did not have much of it and where they hauled it from. These experiences taught them a frugal and careful ethic about water. Stories about water vary from generation to generation, leaving a trail of changing values and attitudes that sometimes is astounding. Young people in Willow Springs Township, for example, never talk about digging a well. They talk of turning on the tap, taking long showers, or building swimming pools. Their ethic about water is carefree.


The water landscape, along with its infrastructure and lore, leads to important political questions, such as questions of power that Don Worster outlines in *Rivers of Empire*. Worster demonstrates that Karl Wittfogel’s hydraulic society thesis applies to the American West, a thesis that states the bigger the waterworks the more power is wielded by a centralized water bureaucracy. Wittfogel’s thesis about water power also applies in the contemporary water landscape of Willow Springs Township. Control of water has devolved from decentralized and private power within the township to centralized and public power in nearby Lawrence. A small-scale and entirely local water system in Willow Springs—woven by tradition, mystery, myth, and belief about water and controlled by those who lived in the landscape—in the late 1960s developed into a centralized water system that was designed by professionals and regulated by bureaucratic elites who do not live in the landscape. The power to decide how many water rights to grant in Rural Water District No. 2 has significant economic implications in the township, which is under great development pressure. The number of water rights and the extent of the water systems throughout the township determines how fast, how far, and in which directions the emerging exurb will go. Today water evokes power and politics as well as memories in Willow Springs.

Water in Willow Springs had a different power among the Kansa Indians, their related Siouxian tribes, and to most Native Americans in North America. To the Kansa tribe the Great Spirit, Wau-con-dah, was a water god and was the first among all gods in a polytheistic belief system made up of religious entities the Kansa associated with various aspects of the natural environment. The Kansa frequently traveled a great distance from their villages along the Missouri and Kansas Rivers to a salt spring on the Solomon River to gather Ne Wohkondaga—“Spirit water”—for use in their daily prayer songs to Wau-con-dah. Drinking sacred water before taking meals invoked Wau-con-dah.

In addition to its daily religious uses, water ran through the creation myths of many North American tribes, including the Kansa Indians. Among the Kansa creation myths is the story of their home on “the sea of the rising sun,” which they left, taking with them the sacred shells of the tribe. They followed the Ohio River west until they came to the Mississippi where they separated into the “down-stream” people and the “up-stream” people. The up-stream people, including the Kansa, reached the Missouri River that took them west above the confluence of another river, the Kanzas, where they established their first village. When Lewis and Clark found them on June 26, 1804, the Kansa tribe had moved to its second village on the Kanzas, abandoning its first village to the spirits of the dead.

The Kansa situated, abandoned their villages to spirit villages, and resituated new villages along the

6. Donald Worster, *Rivers of Empire: Water, Aristocracy & the Growth of the American West* (New York: Pantheon Books, 1985). Worster explains the essence of the thesis: “Where the scale of water control escalated in the ancient desert world, he [Wittfogel] maintained, where larger and larger dams and more and more elaborate canal networks were built, political power came to rest in the hands of an elite, typically a ruling class of bureaucrats.”


10. The sacred shell of the Kansa was called Waska’ Ha’ga’ or Waska’ waxwa’ be. The people of the sacred shell were called Waska’ wax-a’bi onkasainga of the Iiche clan, whose responsibility it was to light the sacred pipe.


Kansas River from about 1800 until 1848. Their Willow Springs period covered roughly the first twenty-five years. Rivers and tributaries determined where the Kansa tribe members, who were frequently on the move, made their camps, planted their crops, buried their dead, and established their sacred meeting spaces. Rivers had made up the religious geography in their migration story, and rivers directed their specific travels on the Kansas prairie. As late as 1978, 130 years after the Kansa were removed to a reservation along the Neosho River near Council Grove and then forced to leave Kansas in 1873, Jesse Meholah, a Kansa elder, remembered the significance of rivers and tributaries in Kansas from which they took their sacred water. These rivers and tributaries were so central in the Kansa oral tradition that in an interview with J.O. Dorsey about 1882, the elders were able to name dozens of tributaries and events associated with them from the mouth of the Kansas River all the way up to the end of the Saline River, a stretch of about three hundred miles, as well as tributaries along the Neosho and Arkansas Rivers. This was nearly thirty-five years after they had last seen these parts of Kansas. Dorsey’s unpublished drawings of these rivers and tributaries reveal the extensive navigational system of the Kansa tribe on vast, rolling grasslands with few trees or distinguishing topological characteristics. This hydrography from Kansas City to Lawrence included tributaries named Ga-

from 1825 to 1854 Willow Springs was part of the Shawnee Indian reservation, and white settlers' stories about these and other native Americans who inhabited Willow Springs during that time confirm the importance of water in their lives. About one hundred rods from Sutton Cemetery at a bend in Taiy Creek was an Indian garden where the Shawnee and Osage tribes also camped. A circular Indian garden inside a timber area near Taiy Creek also has been reported. Old timers tell stories of an Indian burial ground where Indians had a garden in an oxbow of Taiy Creek in section 34 on the old Ezra Barnhardt place. However, the mystery of water and its ability to create common space for everyone, including Native Americans and the later European immigrants, perhaps never was more powerful than at Hole-in-the-Rock.

Hole-in-the-Rock was a large pool of water, perhaps 150 feet wide and "bottomless," in the southeastern part of Willow Springs Township on Ottawa Creek. It is a source of stories about Indian pony races; diving contests; a legend about Kansa Indians that describes a love triangle between Grey Wolf, Red Fox, and Laughing Waters; and tales about an Indian who drowned in its murky waters. This mysterious hole in the rock was so powerful that even members of the Ottawa tribe, who were transplanted to Willow Springs about 1846, created a myth about the origin of its waters. They believed the water that poured from the oblong hole in the large pool came from the tears of a giant imprisoned in a dungeon behind the Ireland sandstone. Nor could the new Americans and Europeans who came to Willow Springs just before and just after the Civil War resist giving Hole-in-

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16. The Kansa Indians claimed a vast territory that covered most of modern Kansas. According to notes made by Auguste Chouteau and George C. Sibley from 1816 to 1818, the Kansa's domain stretched south from the Kansas River to the Neosho River, northeast from the Kansas River across Missouri and into Iowa, and as far west as the confluence of the Republican and Solomon Rivers. Their hunting grounds, which they used twice each year, went west as far as the Colorado state line. See William E. Unruh, The Kansa Indians: A History of the Wind People, 1673-1873 (Norman: University of Oklahoma Press, 1971), 98. Before the Kansa came to this territory, native people who lived here as far back as 20,000 B.C. claimed the land around Lawrence and the Wakarusa valley. For a summary of many Indian sites on this land, see Mary Elizabeth Chambers and Sally Kress Tompkins, The Cultural Resources of Clinton Lake, Kansas: An Inventory of Archaeology, History and Architecture (Fairfax, Va.: Inquisito Research Institute, 1977).

15. The Kansa's cession was reciprocated by the federal government. "For this vast domain the Kansas were promised $2,000 worth of cloth, vermilion, guns, ammunition, kettles, hoes, axes, knives, flints, awls, and tobacco, to be issued each September for an indefinite period; a blacksmith was also promised—to keep their guns and implements in good repair." See Unruh, The Kansa Indians, 103.

18. Ibid., 107.


the-Rock a significant place in their early history. By the 1870s they used this three-hundred-million-year-old formation for profane and sacred activities such as turkey and chicken roasts, diving exhibitions, Sunday wrestling matches, Easter sunrise services, Baker University's Epworth League picnics, and romance. Margaret Hill McCarter in her 1912 book *A Wall of

Not everyone was so intimidated by its dark waters. It remained a favorite swimming hole into the 1930s. During the 1960s Hole-in-the-Rock was still an important place in Willow Springs Township that drew Baker University students who questioned the mysteries of its waters while they drank and read the thousands of names carved into stone surfaces sur-

*Hole-in-the-Rock, shown here in about 1900, is a three-hundred-million-year-old formation that has held great significance for many generations and cultures in Kansas. Its history is imbued with stories, myths, and memories of events from sacred activities to group picnics.*

*Men* devotes an entire chapter to this landmark on the Santa Fe Trail and describes it as

an ugly, black, still thing which lay so darkly shadowed, it might almost have escaped the eye of a stranger. Once seen, however, it was not easily forgotten. It was full thirty feet deep, and cruelly smooth, reminding one of nothing else so much as the lidless eye of a motionless snake watching its victim.²³


²⁴. Ibid., chapter 1.
understood that travelers west needed water—a need that determined the general direction and many stopping places along the Santa Fe Trail. In his field notes Joseph C. Brown, leader of the United States Surveying Expedition of 1825, dutifully marked the route from creek to creek and commented on the water wherever he found it. He noted Hungry Creek, Dove Creek, Gooseberry Creek, and Grindstone Creek—all head branches of Coal Creek, which flows north away from the northeast corner of Willow Springs. All these places had good water and easy fords for the thousands of pioneers who followed the Santa Fe Trail.25

Immigrants named the township after one of those important water places on the Santa Fe Trail, a place where springs were surrounded by black willows. It is almost in the middle of the township near the ghost town of Willow Springs. Frank Horrell, a well-known teacher in the township, speculated that a grove of willow trees in a ravine containing several springs just east of the town of Willow Springs accounts for the name.26 This water hole on the prairie really was an oasis, a perfect place for people to come together in the shade and drink from the water of an underground stream that surfaced there.27 Wayne Flory, of the Dunker faith and now in his late seventies, retells the story of pioneers on the Santa Fe Trail who tried to reach the place called Willow Springs. “If they could only reach Willow Springs,” he said, “then they would always find plenty of water and shade and rest before they journeyed on. The holes were so big at Willow Springs that you could drive a covered wagon into them.”28 A deep rut carved by many wagons, which today appears to be nothing more than a wide indentation of the land, leads to this place. Wilson Hobbs, a medical missionary to the Shawnee tribe from 1850 to 1852, noted that Willow Springs “was a distinguished watering place on the road, but marked only by the fountain of water.”29 If this fountain was anything like the one at Hole-the-Rock, it was a gushing stream. Longtime resident Henry Flory notes that the springs east of his house even today always run water.

The Willow Springs old city well also is still full of water. The big spring northwest of the Old German Baptist Church is “everlasting” and displays the typical trail of heavy prairie grasses that grow around and especially downhill from a deep spring running to the surface of the earth. E. H. Van Hoesen used this well for his large cattle business at the turn of the century, and in dry years the surrounding farm community also used it to water animals. This well alone provided enough water for Van Hoesen’s personal use, but he also operated the Willow Springs hotel, a six-room, two-story structure to accommodate the daily crowd of thirsty passersby. Next to the hotel’s old foundation is a good well where many weary travelers once exercised their usufructuary rights and drank their fill.30 Water is seemingly endless at Willow Springs. West of the Old German Baptist Church is another well, and yet another where the old creamery stood. A large well also was dug at the south end of Willow Springs near Lee Duncan’s old blacksmith shop. It, like many other nineteenth-century wells in Willow Springs, is five feet in diameter, lined with limestone, and filled with water that constantly moves. Because these wells were full, even in the driest years, their water became common property from which everyone and their animals coming along the Santa Fe Trail could partake. Droughts were frequent, and the common right to water for human and animal use, which were considered reasonable uses in common law, was

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27. Black willows are hearty in eastern Kansas and grow in “any moist area, stream banks, lake shores, pastures, sloughs, and roadside ditches; rich loam, rocky or sandy soil.” See H.A. Stephers, Woody Plants of the North Central Plains (Lawrence: University Press of Kansas, 1973), 48–49.
30. A usufructuary right is “the legal right of using and enjoying the fruits or profits of something belonging to another,” according to Webster’s New Collegiate Dictionary.

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unquestionably exercised. This common right still exists, and in Willow Springs Township today common wells at Baldwin Junction are available from which anyone can draw for reasonable uses.

The abundance of water the pioneers found just below the surface of the prairie in much of Willow Springs Township was neither everlasting nor even adequate for the number of people who bought 80 to 320 acres of land in the burgeoning farm landscape after the Civil War. By 1885, 1,536 people lived in the township that was well defined by fences, roads, cattle in pastures and in road-sides, fields of corn and wheat, churches, schools, and country stores. All this required more water than the native prairie held, and with plowing, the farm landscape lost an important element in the recovery and retention of water near the surface. Spring plowing created erosion in the wet years and dust in the dry years, and the shallow wells that provided water to early pioneers went dry. So farmers dug deep for water, and their attempts to tap the underground water system—wherever it was—and fulfill the water needs of their developed farmscapes gave water witches and well diggers much to do.

When well diggers found that precious liquid at 150 feet or more down in the fountain of the deep, the problem of pumping it up to the surface was solved by a relatively small investment in a steel windmill. These usually four-legged, galvanized windcatchers still stand throughout the township, although few are used to pump water in a now fully electronic landscape. Ten to twenty feet tall, most of them have been standing as long as anyone can remember. Aeromotor of Chicago, which is the windmill most farmers in Willow Springs and the rest of the United States seem to have bought between 1888 and 1970, dominates.

Although magical when they make a woeful wail with the wheels turning to take the wind, the air machines shipped to Willow Springs were not based in magic. They had been perfected in a long history of scientific experimentation. Men like Alfred Wolff, who wrote *The Windmill as a Prime Mover* in 1885, fine tuned their machines for the most efficient transfer of wind power to pumping power. They had data charts to show average movements of wind in different regions of the country, wind pressures, “impulses of wind on windmill blades,” friction effects in windmill mechanics and in water pipes, pumping capacities, irrigation capabilities, proper pipe dimensions, costs, and returns on investment. With less than one hundred dollars in normal times and sometimes less than fifteen dollars in hard times, farmers in Willow Springs hoped to purchase a wind machine that guaranteed water for a lifetime. The Aeromotors indeed were long lasting—so long lasting that they became obsolete long before falling apart. Often they outlasted the water or the need for it at a particular place in a changing farm landscape in which gasoline engines on tractors pulled a new array of farm implements so efficiently that fewer farmers were needed. The success of the industrial revolution, the boom and bust cycles of an unregulated market economy, and drought drove the population of Willow Springs precipitously down after 1885 to a low of 739 in 1970, leaving many windmills abandoned along with all their associated objects in the water landscape.

The windmill and a water system composed of decentralized wells, cisterns, and other surface springs and run-off eventually proved to be inadequate even to the survivors in the farm landscape, whose success after years of intensive dirt farming also had lowered the water table significantly, especially during dry years. Eastern Kansas has always had dry years, and during those years farmers had to haul water from community wells near Baldwin Junction or, like Leslie Churchbaugh, hire water haulers from places like Baldwin City to bring water.


for the empty wells. Wayne Flory remembers his neighbors, whose well went dry in the 1930s, hauling water from his dad's well with two fifty-gallon barrels in a wagon pulled by two horses. Their voices, the strain of the horses, and the amount of labor they expended every day to complete this essential task still haunts him. Flory also hauled water in his adult years from the Baldwin Junction wells because he had dairy cattle, and his well and cistern near the house could not keep his family and his cows in water. He got up in the middle of the night to fill his truck, and if someone was already at the well, he had to wait.

Waiting for water made no sense when Flory could travel to Baldwin in fifteen minutes, call Kansas City in seconds, and listen to agribusiness market reports from around the world instantaneously. But Wayne Flory and the rest of the water community in Willow Springs Township had no alternative until the late 1960s. He tried to sink a well in 1954, but the water witcher he hired found his water exactly where Flory wanted to build a dairy barn. Taking a chance, Flory asked the driller to make an attempt farther away. The driller went down 383 feet and did not find a drop, so Flory hauled water for thirteen more years, a time-consuming and costly job for a busy farmer. Flory's fellow farmers particularly felt the pinch—men like Bob Bighby, who also had a dairy, and John Metsker, who had a large hog operation. They never had enough water on their property to keep a farm business going, which caused tremendous inefficiency in their farming practices. They were smart, resourceful, and prudent, but without an adequate water supply they were stymied. Too much work, too little profit. Besides, they wanted indoor toilets and more than the traditional weekly tub bath. Water technologies simply were not synchronized with other systems and technologies in the larger landscape that had been transformed by the automobile, the telephone, and electricity.

By the 1960s attaining water for farm animals and a hot shower at night, without hauling it, was achieved by creating a scientifically engineered water system in the community. Both the federal and state governments had recognized the severe limitations of the old water landscape and sought to remove them through government-farmer partnerships. The State of Kansas created the Rural Water Supply District Law in 1941 and the authorization to receive funding from Washington through the Rural Water District Act of 1957. Rural water districts were designed "primarily to provide a safe and more dependable water supply for farm families and stock during periods of drought conditions and secondarily to improve farm living standards." With local, state, and federal backing, farmers could organize, gather the necessary initial investment for a rural water system through loans and grants guaranteed by the federal government, and amortize and maintain that system over a period of years through water right payments and monthly charges. Willow Springs farmers had long worked with the government, and by the dry days of the 1960s it seemed astute to do so again in the face of an ever-pressing need to stabilize, upgrade, and ensure their water future. These farmers could build a water community with a distributive

34. Wayne Flory interview, April 14, 1993.
35. Ellis, The Divining Rod; Shoemaker interview. Charles C. Howes, This Place Called Kansas (Norman: University of Oklahoma Press, 1952), 198-99, notes that "many water witches once made a substantial stipend by going about the country water witching for a fee, but others who had the 'power' performed their services as a friendly and neighborly act in their community." People born in Willow Springs Township during the early twentieth century talk about witching (or divining) water with profound belief. The most frequent water witching tool is a forked branch of a willow, peach, or preferably hazel tree, but almost anything will do if you have the power. No one has an explanation for this ability, and the ideology of science does everything it can to discount this deep-seated belief system. But an old tradition is not easily washed away.

Wayne Flory and the other Florys named in this essay are Dunkers, Old German Baptists, whose religion does not permit them to listen to the radio or watch television. The St. John's and Worden Germans did not have these restrictions. All these religious groups, however, place baptism, a water rite, at the heart of their faith. Baptism symbolizes salvation in the Christian community, and baptismal variations defined the religious landscapes in Willow Springs Township, where the settlers had different beliefs about baptism. Baptism separated them into different churches, and the churches separated them into different neighborhoods around these churches. Regarding the various doctrinal beliefs respecting baptism, see Sydney E. Ahlstrom, A Religious History of the American People (New Haven, Conn.: Yale University Press, 1972).

pressure system through scientific planning, financial far-sightedness, social organization, and modern management practices. They found few disadvantages in the beginning, and for the most part they would find few in comparison to the advantages and the dynamic changes in life an engineered water system would bring to Willow Springs Township.

At county fair time in 1963, Wayne Flory cornered a Dunker friend, Robert Bigsby, about the need for a water district. That summer had been particularly dry; along the backbone of Willow Springs Township householders were pressed to conserve, and animals were stressed. Nor did the produce at the fair look good, but nothing could done without rain. Bigsby, with his big dairy farm, was game, and he agreed to chair a steering committee that met in Township Hall to form a district. Wayne Flory was the vice chair. John Metsker with all his hogs was easily persuaded to be secretary, and Arley Flory, who had a diversified farm and no good wells, became the treasurer. Don Churchbaugh, who to this day manages a robust grain and cattle farm, was the member at large. Three original members, Wayne Flory, John Metsker and Don Churchbaugh, still serve on the board, and this kind of longevity is typical of rural water district board members in Douglas County. The people who established rural water districts have closely watched, sometimes for more than thirty years, the biggest community enterprise of their lives.

To build a rural water district with government backing, Bigsby and his water men had to find wells that could pump enough water to fill a water system and meet the needs of relatively few customers. Although easy in the beginning, this task became increasingly difficult over the years as the number of customers on extended lines grew. The steering committee found three good wells near Baldwin Junction, not far from Hole-in-the-Rock, near the community well where many of them had drawn their water in dry years. Between 1963 and 1983 the water district continued its search for new wells and used from three to ten wells to fill the system. The water in these wells often was plentiful but some wells played out in dry years, and customers were advised to conserve water when no rain had fallen for six weeks. In addition to uncertainty about the adequacy of water, some of the water district’s wells contained too much iron. Water had to be pumped first into a thirty-thousand-gallon, concrete Calgon pit to reduce the iron content and then sent through the system. A final continual concern was the cost of pumping. It was cheap in the beginning but the energy crunch of the early 1970s drove the cost of electricity for pumping up to twenty-eight hundred dollars a month. In spite of these initial and continuing problems, Bigsby and his committee were confident in 1963 that...
Map showing the location and hydrography of Willow Springs Township.
enough good water was available in Willow Springs and that it was feasible to pump it through a well-designed system.

The steering committee needed a civil engineer with hydrology experience to design this pressure system, and it hired Kelly Veets of Chad Veets Engineers in Kansas City to find all the elevations and design a system of standpipes, shut-off values, air values, and pumps interconnected with an affordable and durable pipe from which potential customers in the proposed district could draw water on demand. This was not easy because no affordable, semirigid pipe was available. A "trinkle system" with soft rolled pipe was rejected because it could not withstand the pressure necessary to move water throughout the system, and it would require each customer to have a holding system. With the invention of PVC pipe in the mid-1960s, Veets redesigned the system which the Lomarich Construction Company of Wheaton, Missouri, said it could build for $125,056. This price included digging thirty miles of trenches; laying the pipe; erecting a 115-foot-high, 12-foot-diameter standpipe that holds one hundred thousand gallons of water; erecting an 80-foot-high, 4-foot-diameter standpipe that holds six thousand gallons; installing the valves and pumps; and testing the system. With a seventy-five-thousand-dollar loan from Lawrence National Bank, guaranteed by the Farmers Home Administration, and a sixty-thousand-dollar federal grant, Robert Bigsby and his committee authorized construction and began to sell water rights. These rights were worth every penny because the system "has worked beautifully," according to Wayne Flory.

If financial circumstances are any indication, Flory is right. The board has paid off the original mortgage, maintained the system, enlarged pipe, replaced valves, and added standpipes during the past thirty years and still had accumulated $241,624 in cash by December 31, 1992. In the beginning, however, the board naturally was anxious about the largest debt it had ever seen, especially on those days when its members came home without selling a single water right. When the initial cost of the water right at $140 failed to bring sales, the board announced that it would raise the price to $250 after a certain date. This marketing technique made the original price look like a bargain, and eventually about seventy farmers and their families took advantage of this bargain to hook up to a water system at the edge of the road.

Many Willow Springs farmers, however, decided to remain independent, or at least initially did not join the water community. Leslie Churchbaugh, for example, was hauling water from Baldwin City during the late 1960s at exactly the time when Bigsby and Flory were building their interdependent water community, but he did not join them. Instead he jury-rigged a line down to the windmill and well in the pasture that his father had drilled, and he pumped water from it for his cattle. He used the well and pump near his house for domestic use only. Churchbaugh had few water problems after that, but when he retired to Baldwin City he was doubtful that the water he had drunk for eighty-three years could pass a government inspection. The need to satisfy ever-rising water standards set by the government ensured that most people who moved to Willow Springs, unlike Les Churchbaugh who lived their all his life, would buy a water right from a water district. That water right in Rural Water District No. 2 today costs four thousand dollars when available.

The demand for these rights has not come from new farmers moving into Willow Springs Township, even though rural water districts were set up specifically to promote domestic and farm needs. In the early 1970s the new availability of water throughout Douglas County increasingly brought city dwellers to the country, and that trend continues. As Donna Luckey has concluded, "there is a significant relationship between the increased availability of water due to the formation of these districts and the conversion of agricultural land to residential use in rural Douglas County." She calculates this relationship of rural water lines to residential development to be 99 percent and estimates the reduction of agricultural land to be about 12 percent between 1976 and 1989.38

Since 1989 this conversion rate has increased, and all but one of the rural water districts in Douglas County have grown dramatically since their inception.

New exurban tracts in Willow Springs Township strained the pressurized rural water system in a number of ways. Wayne Flory remembers that “water got complicated when we had some housing projects come in like Timberline Acres.” After Timberline came Chut Valley with fifteen to twenty people all at once, and then many others bought dozens of houses in Pleasant Grove Estates and Quantrill Acres. To serve these new city people the board extended the water system’s lines from thirty to fifty-four miles. “They all helped us pay our debts off,” Flory argues, which was an advantage to a point. However, paying off the loan in this way did not fit the policies of the Farmers Home Administration when it first made the loan. “The FHA finally said we couldn’t sell more than two units at a time because the system was built first of all for farmers.” In spite of this bureaucratic restriction, Rural Water District No. 2 managed to sell sixteen “benefit units” from 1991 to 1992.

According to Flory, one of the great disadvantages of opening rural water districts to city people is that they “want city living in the country.” By the late 1970s Flory and other water board members found themselves dealing increasingly with irate customers who insisted that watering the lawn in a dry summer had priority over watering cattle and other farm animals. “They thought that I should shut off the water to the livestock,” Flory recalled. At one point this agitation brought about eighty “city” people to a board meeting in which Dennis Flory, the water engineer, was taken off the board and replaced with an exurbanite. In response several members of the board resigned, including Wayne Flory and Michael Flory. Finally, the exurbanite also resigned, and several days after the meeting the remaining members of the board reappointed Wayne and Dennis. It was a battle but the original board finally reasserted its control over this rural water system designed for agricultural purposes and unintentionally for exurban development.

Board members in the other nine water districts that serve Douglas County did not experience the standoff over water that occurred in Willow Springs, but the general histories of these water districts are similar to Rural Water District No. 2. The individuals who established the districts, many of whom still serve on district boards or in administrative positions, all faced problems of drought, and they took advantage of government programs that helped change their water landscapes. Most districts have grown dramatically since their inception and have extended and improved their lines. Only Rural Water District No. 6 has remained at about its original size, primarily because of a exurban development failure and stingy water contracts with Lawrence. Not all rural water districts in Douglas County are free of debt, but all have built up tremendous equities in their systems, and several have significant cash reserves. Rural Water Districts Nos. 2 and 4, for example, are debt free, but Rural Water District No. 3 is indebted for its Clinton Lake sedimentation and filtration plant that cost five million dollars. Regardless of debt, the value of these systems is high, and the cost of a water right has steadily risen in all water districts: Douglas County (DG) 1 ($2,000); DG 2 ($4,000); DG 3 ($3,000); DG 4 ($4,000); DG 5 ($4,000); DG 6 ($2,000); Jefferson County 13 ($4,150); Franklin County 5 ($3,000); Osage County 5 ($2,500); and Johnson County 6 ($5,725). All districts expect growth and are making plans for an expansive future.

This expansive future was ensured by a monumental change in the water landscape that came in 1980 when Clinton Lake, a pool of seven thousand surface acres built by the U.S. Army Corps of Engineers from 1971 to 1977 for fifty-five million dollars, was ready for use. This gigantic water landscape is one of twenty-six similar reservoirs built in Kansas for “flood control, water supply, fish and wildlife and recreational purposes.” By damming the Wakarusa

39. Michael J. Hickman, Douglas County Rural Water District No. 2 Lawrence, Kansas. Exhibit E (1993), 2 (Rural Water District Office, Baldwin, Kans.).

40. For a more detailed summation of important aspects in the histories of water districts in Douglas County, see Donna Luckey, “The Impact of Rural Water Districts,” 253–55.

41. Master Plan for Clinton Lake, Kansas River Basin, Wakarusa River, Kansas, Multiple-Purpose Project (Kansas City, Mo.: U.S. Army Corps of Engineers, 1985), 1-1.
River, Clinton Lake drains water from 367 square miles. Its rolled earthfill dam is 1.75 miles long, stands 114 feet above the stream, and is 850 feet wide at the base. When full, this dam can hold back 12,800 surface acres of water and discharge 7,290 cubic feet of water per second through its spillway. This water covers the small towns of Sigel, Bloomington, New Belvoir, and Richland and nearly one hundred Native American sites along Elk Creek, Rock Creek, Coon Creek, Dry Creek, Deer Creek, and the Wakarusa River. All this water—in wet and in dry years—has put an end to the psychology of frugality that once lay deep in the water consciousness of Douglas County. Lawrence has a contract for 14 million gallons daily, and the rural water districts can receive up to 4.41 million gallons daily from this great pool. However, this much water has never been needed, even on peak days. In addition to an apparent abundance of water, this dam gives flood protection to 156 square miles of the Wakarusa valley, which has reduced considerably the risk of development, created a boom psychology, and contributed significantly to population growth in one of the fastest-growing regions in Kansas.

For information on the nine communities that Clinton Lake affected directly, see Martha Parker and Betty Laird, Soil of Our Souls: Histories of the Clinton Lake Area Communities (Lawrence, Kans.: Parker-Laird Enterprises, 1980). For locations of the Native American sites, see Chambers and Tompkins, The Cultural Resources of Clinton Lake, Kansas, 45.

Clinton Dam: The Heart of the Lake (n.p.: U.S. Army Corps of Engineers, Kansas City District, n.d.); Master Plan for Clinton Lake, II-2. In 1985 the corps made a population study of its "area of influence," which shows that the greatest population growth in the region is nearest Clinton Lake.

The current water landscape incorporates elements from the past such as this homemade windmill rigged up by Henry Flory in his backyard.

For Willow Springs Township the abundance of water came none too soon. By the early 1980s the original system had hit capacity. Wayne Flory explains that "we were just about to the point of being absorbed because we couldn't get enough water in a stressed time through that three inch pipe from Baldwin Junction." So the board jumped at the chance to put in a six-inch line to Lawrence and buy the soft water from Clinton Lake that was sent first through the Lawrence water treatment plant and then to the water district. This cut electricity costs in half and increased the capacity of the water system tremendously. With the addition and replacement of standpipes and the installation of three-inch instead of two-inch lines, the water pressure and the amount of water reaching the faucet also improved. Wayne Flory points out that Lawrence is only required to furnish twenty pounds of pressure, and Rural Water District No. 2 routinely furnishes sixty pounds of pressure at the faucet.

The water pressure is strong, and Clinton Lake has assured an abundance of water for the foreseeable future, but who can have water when and where is an unresolved battle in a hydraulic society. The controversy between farmers and exurbanites for water control in Willow Springs Township ended fifteen years ago. However, a protracted political and legal wrangle between farmers and city leaders about how much Clinton Lake water...
can be made available to the rural water districts in Douglas County continues to frustrate water men like Wayne Flory. Rural Water District No. 2 has a contract for more Clinton Lake water than it needs every year, but without a filtration plant of its own, the water district also must contract with the City of Lawrence to certify the potability of that water. In this way, Lawrence controls not only the water of Willow Springs Township but also the rate of development in Willow Springs Township. Lawrence determines how much water it will purify for the districts and this controls the number of water rights a district may sell. "Lawrence done one thing to us," according to Wayne Flory. "They wanted us not to go too much bigger than 350 members and that's about where we are now. We can put on four new members a year."

Water is not the problem. It is money in the form of taxes that Lawrence cannot collect if people live in the county. Lawrence restricts growth in the township through a tight water purification contract that permits only a 1 percent increase in the number of water rights each year. Rural Water District No. 3, in cooperation with three other water districts in Douglas County and Shawnee County to the west, got around Lawrence by investing in a filtration plant. Arthur Worthington, who quit farming to manage that district, is not worried about water or any restriction on growth since his district has a contract for 720 million gallons of water a year from Clinton Lake. He predicts that the filtration plant on Clinton will double in capacity during the next five years to meet the demand for water in his district.44 Mark Buhler, Douglas County commissioner, encouraged Lawrence to increase its water purification contracts in the rural countryside, if county citizens—principally farmers who own the land—would agree to plating and other land development tools so that growth could be planned.45 The farmers resisted any restrictions on their private property and insisted that water should not be used to plan the county. Consequently Rural Water Districts Nos. 2, 4, 5, and 6 are considering investing in a sedimentation-filtration plant that could cost as much as ten million dollars. That investment is a big risk in the battle to wrest control of water from Lawrence, but it is a risk many rural water people consider worth taking. As Don Fuston of Rural Water District No. 6 explained, "if Lawrence doesn't give us the water, we'll build the plant because in the next thirty years water will be the most important commodity in the county."46

Once the farmers of Willow Springs Township and other townships in the county had only to deal with the finicky nature of water, but now they are concerned with the whims of an urban water bureaucracy enmeshed in the politics of exurban development and wrapped in a big financial package of outside money. In spite of these new problems in the water landscape, Wayne Flory can look on his work in the water community in Willow Springs Township with satisfaction. "We did a great service to the community, and it's often been a thankless task, but I'll tell you, many people have shown so much appreciation. We have seen the value that the water district has added to the area. We have seen how much better living is, how the people's livelihood is better now than the old timers ever."47 There is no doubt about this claim. Without Wayne Flory and his water board everyone would be pumping water or hauling it, but few nonfarmers would live in rural Willow Springs if they did not have this convenient water landscape.

Or all this success, however, Wayne Flory and others who live in Willow Springs Township find themselves in a landscape largely out of their control when it comes to water. The new water landscape is far too big, complex, and increasingly problematic in an exurbanizing period for any person or group in Willow Springs to control. For example, the most significant emerging problem in the Willow Springs water landscape, a problem that connects to a worldwide dilemma, is the widespread, nonpoint source pollution of surface water and wells. The test well in the middle of Wil-

45. Mark Buhler, Interview by Dennis Domer, December 14, 1995.
47. Wayne Flory interview, April 14, 1993.
low Springs Township, one of many across the state included in the Kansas Groundwater Quality Monitoring Network, contains alachlor, atrazine, chlor dane, and toxaphene along with many other pesticides. Pesticide, herbicide, and insecticide pollution is a general problem in northeast Kansas, according to a study recently issued by the Kansas Natural Resource Council, which reported atrazine in 100 percent of the tap water samples taken in June 1995 in Topeka, Lawrence, Johnson County, and Kansas City, Kansas. The sedimentation-filtration plant that Rural Water District No. 2 and others may someday own in their efforts to take control from the city will not be capable of taking out all these contaminants. Consequently many people in Willow Springs Township avoid drinking the water from the faucet and prefer instead to haul water from grocery stores that is cleaned by reverse osmosis and other purifying processes. This does not bode an easy water future, and history will tell whether the citizens of Willow Springs will someday join in the ancient mariner’s complaint of “Water, water, everywhere, Nor any drop to drink.”

For centuries water has been an enduring issue everywhere in Willow Springs, and human attempts to address it have deposited layer after layer of cultural sediment. The significance of the remembered hydrography of the Kansa Indians, Hole-in-the-Rock, the fountain of water on the Santa Fe Trail, and windmills that stand by the dozens in Willow Springs Township results from the interaction between objective water places or processes and subjective, mythological, nonrational or symbolic belief systems, and scientific ideas that have built up around those objective places and processes. Parts of the early water landscape such as the Kansa hydrography and Hole-in-the-Rock have been obliterated, even though they still exist in the landscape memory of older people or in documents. Windmills still exist, either as ruins or in a different reality—such as the two homemade ones Henry Flory rigged up in his backyard in the old town of Willow Springs twenty years ago, or the one Leslie Churchbaugh refused to sell and took away to Baldwin City. Our current water landscape, which incorporates these ancient and recent water places and processes, was created by a rapidly growing number of people with gasoline engines, electricity, water engineering, telephones, computers, the information highway, and Clinton Lake. This layer of water culture one day will be covered with yet another layer, for as we solve water problems in the future, so shall we forever construe our landscape and our lives in Willow Springs Township.