

# Nortonville Makes Water System Improvements

The city of Nortonville with a population of 589 is located in Jefferson County in northeastern Kansas about 30 miles northeast of Topeka at the intersection of U.S. Highway 59 and Kansas Highway 4. Nortonville has a rather long history dating back to before Kansas became a state in 1861. Like other eastern Kansas cities before the end of the civil war, there were confrontations between pro-slavery and free state supporters. Local history notes there was a site in the Nortonville area that was a part of the underground railroad. Like most cities in Kansas, Nortonville has a rich history. For those interested in learning more about Nortonville's history, visit the city website at the following link: <https://nortonvilleks.com/About-Us/History>

## Early water system

In February of 1940, the city signed a contract to begin work to install a city water system. The system included wells, distribution system with cast iron lines, and a used elevated storage tank which cost approximately \$6,000 at the time. This water infrastructure, basically placed into use in the 1940s provided adequate water services for the city; however, after being in use for 70+ years, various maintenance problems including many leaks due to corrosion of the cast iron mains were a common







The new wells were drilled by Sargent Drilling. Two new wells were added to the city water system.

occurrence and sufficiently problematic to the city that the council decided to pursue improvements. The engineering firm of Bartlett and West, Topeka, was hired to evaluate and recommend improvements.

### System improvements (Phase 1)

The results of a system evaluation conducted by the engineering firm were basically that the entire system needed to be replaced. The plan chosen was to do the overall replacement in two phases. Funding assistance would be needed for such a project. The city received a grant and loan from the United States Department of Agriculture, Rural Development (USDA-RD), to help fund the construction of phase one. Work on phase one began in 2011 and included the replacement of about two-thirds of the distribution system with mostly four-inch PVC Class 200 pipe. A total of 5,100 feet of six-inch was included also. The original elevated tank was needing major rehabilitation work but due to its age and since lead-based paint was used on the tank, it was removed and replaced with a new 50,000-gallon elevated storage tank, of course at a cost far more than the \$6,000 for the original tank. Phase one project cost was \$1,115,000 with \$493,000 in the form of a grant and the remaining \$622,000 in a loan.

### System improvements (Phase 2)

Work on this phase started about ten years later in 2021 and included the replacement of approximately 11,250 linear feet of four-inch water distribution line, 2,100 feet of six-inch line, along with the complete replacement of water meters, meter settings, valves, and fire hydrants. Actually, 279 of the total 296 meters have been replaced to date. The



Both four and six-inch PVC Class 200 pipe was used on the project.

remaining 17 meters will be installed as soon as possible.

The new meters are radio read Neptune meters and the city has updated its billing software making billing customers much more convenient. The original 300 meters were Sensus touch read meters and Barbara Polson, City Clerk, indicated that if anyone is interested, the city would be willing to sell those meters. This phase also included the construction of two new wells, one of which is located in the vicinity of the elevated storage tank where a new chemical feed and system control building will be located. Each of the new wells was completed utilizing pitless unit-type construction and each will deliver 50 gpm to the system. These two new wells along with the existing two wells are capable of providing about 225 gpm to the system. The city



This photo shows drilling rig operated by Sargent Drilling.

again was able to obtain a loan from the USDA-RD along with a CDBG from the Department of Commerce. The cost breakdown includes a CDBG of \$501,300 and a loan from the USDA-RD for \$1,004,000, totaling \$1,505,300 for the project.

Financing provided by the USDA Rural Development for these projects included both American Recovery and Reinvestment (ARRA) and American Rescue Plan Act (ARPA) funds.

The city was able to secure a large portion of its funding by obtaining grants but still a larger amount is in the form of loans. An increase in water use rates would be needed. Rates increased incrementally from 2019 with a monthly charge of





A new fire hydrant is being installed here. New fire hydrants and radio read meters were included in the project.

\$29.00 for 1,000 gallons plus \$1.85 per thousand to \$43.00 and \$2.60 per thousand in 2023. As a comparison, five thousand gallons of water use per month increased from



This pitless adapter awaits installation. Pitless adapters are used to connect a submersible well pump's discharge pipe to a supply line. Pitless adapters should be installed below the frost line and on the side of well casing where the supply line will run from well.

\$36.40 in 2019 to \$53.40 in 2023. On the surface, this increase would appear to be significant, and it is, however, when considering the amount of work done, basically replacing the entire system, and if the new system's operational life will be similar to the original system, the city, hopefully, will be in great shape for at least another 70+ years.

Both Steve Pruet, City Superintendent and Barb Polson commented on how pleased they were with all those involved in this project including the contractor, Engemann Construction, Troy, Kan., responsible for the water line and chemical building; Sargent Drilling, Salina, Kan., responsible for the two new wells; Bartlett and West, Topeka, Kan., responsible for design and inspection, and Donna Crawford, Governmental Assistance Services, who served as the grant administrator.

### Attend the Annual Conference

The KRWA Annual Conference & Exhibition will be held on March 28 – 30. This is the largest conference in the Midwest. The conference will have 48 informative sessions, 8 pre-conference full-day sessions, and forums for both attorneys and engineers. EXPO Hall will be filled with interesting and informative exhibits showcasing hardware, software, and services. The program is being reprinted in this issue and is also online at [www.krwa.net/conference](http://www.krwa.net/conference).

I hope you plan to attend.

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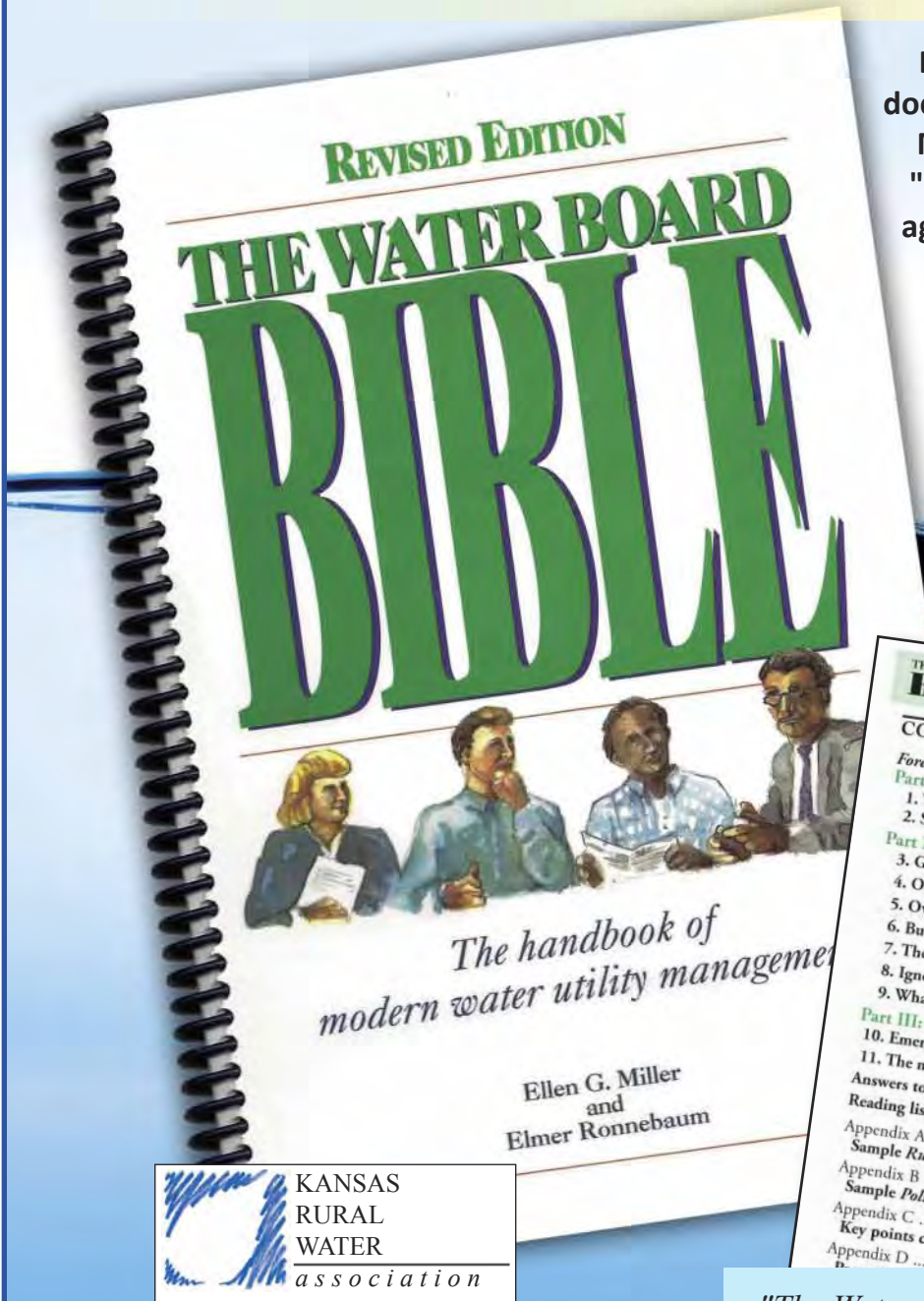


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A newly updated *Water Board Bible*  
is now available from Kansas Rural Water Association



Building on the strong foundation document authored in 1993 by Ellen Miller and Elmer Ronnebaum, the "Bible", was reprinted in 1995 and again in 2010 with minor revisions.

A much more extensive review and updates in the 2016 printing were provided by Gary Hanson, Stumbo Hanson, LLP (ret.).



**THE WATER BOARD BIBLE**

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KRWA also continues to make its handbooks available to other state and national organizations. More than 49,000 copies have been provided.

To obtain copies, contact KRWA, 785.336.3760.

*"The Water Board Bible strikes the right tone with respect to current trends including diversity in the workforce, open government and post-Flint regulatory climate as well as the relationship with the consuming public and their water supply expectations."*

– Gary Hanson

Funding for the 2016 printing is courtesy of the Kansas Rural Water Finance Authority. The Authority has offered to donate copies to every rural water district in Kansas, upon such request. The handbook will also be used for board training provided by KRWA.