



City of Onaga Named Most Improved Water System in Kansas

From the time when Onaga, Kansas was founded in 1877, it has relied on a ground water supply. Onaga is located in northeast Kansas in Pottawatomie County, just on the northern edge of the beautiful Kansas Flint Hills. The Kansas Central Railroad was an important factor in the founding of Onaga. During its early years, the water supply for the community was a single town well. In 1911, work began on a water works system. Throughout the years since then, many attempts were made to locate a good source of water until finally a very good well site was located about 10 miles north of town. Three wells and a 100,000-gallon elevated storage tank are located at the site and in addition to Onaga, with a population of about 700, the city sells water to eight customers along the line to town as well being a supplier for Pottawatomie County Rural Water District No. 3. With a good source of water in place, the city felt the need to look into infrastructure needs, both water distribution system and storage needs, as well as wastewater collection system improvements.

Beginning in about 2005, the city embarked on an extensive infrastructure improvement course of action starting

with a project to upgrade the wastewater collection system, including manholes, and installing a new lift station. To provide service to the city's 434 connections, approximately 90 to 95 percent of the collection system was either replaced or renewed via the trenchless pipeline rehabilitation process (Insituform). Replacement pipe consisted of SDR 21 PVC pipe. The project included 2,032 feet of 15-inch, 3,601 feet of 10-inch, 20,912 feet of 8-inch, and 15,700 feet of 4-inch. Also, 490 feet of new sewer mains were installed. Manholes received attention. New manholes were installed at 89 locations and 20 others were rehabilitated. Jack May, Operator/Manager, stated that since the completion of this project, infiltration/inflow into the system has decreased substantially. Before the project, heavy rainfall events of three inches or more, would cause the lift station pumps to run nearly 24 hours per day. Currently, similar rainfall events cause the pumps to operate only four to five hours, saving power costs, wear and tear on the pumps, and reducing the hydraulic load at the waste stabilization pond.

In 2008, the city took on a project to replace the aging water distribution

This new 150,000-gallon, glass-lined elevated storage tank was constructed to provide more storage and more elevation to provide additional fire protection and additional system pressure. The cost of the tank was \$750,000 and the contractor was Engineering America, Oakdale, Minnesota.



Here is one of the 55 new fire hydrants installed as a part of the distribution system project. J & K Contracting, L.C., Junction City, Kansas, was the contractor on this project.

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system that had been requiring frequent repairs. In fact, Jack noted that more than 100 breaks were repaired over the last five years. The entire distribution system consisting of 28,711 feet of 6-inch pipe and 8,436 feet of 8-inch pipe was replaced with C-900 PVC pipe. Also included were 55 new fire hydrants, 100 new valves, 358 new remote-read meters, and a new glass-lined 150,000-gallon elevated storage tank. The new tank was needed to provide more pressure in the system and for better fire protection. Pressures prior to this project were in the 40 psi range while now they are in the 60 psi range. The entire cost of the project

was \$3.588 million. Funding for both this and the wastewater project was by means of community development block grants, and grants and loans through the U.S. Department of Agriculture, Rural Development.

These projects did have a significant impact to user rates. The monthly water bill for a customer using 5,000 gallons of water before the project was \$35. With the project costs now being charged, a customer will pay \$55 per month for 5,000 gallons of water. Sewer rates increased from \$6 per month to \$20 per month.

Because so much of the infrastructure was located in streets, the city entered into another project with the Kansas Department of Transportation’s main street advancement program (street scape).

Although this program is designed to help fund improvements to the “curb to building” area, the city was able to use these funds to help with resurfacing Main Street after the new water and sewer lines were in place.

Most small cities would likely consider stopping at this point, but not Onaga. With funding through the American Recovery and Reinvestment Act of 2009, another project was started. This is a storm water project targeting flooding issues within the city. The consulting engineering firm throughout all of these projects was B.G. Consultants, Lawrence, Kansas.

And to further demonstrate the forward thinking and progressive nature of this city, additional funding is being sought to add yet another project. This project will provide new curb and gutter and sidewalks on Main Street.

The city council is to be congratulated for taking on these various projects that are beneficial to the residents of the city. Also, congratulations on receiving the most improved water system award at the recent KRWA annual conference.

Bert Zerr is currently a consultant with KRWA. He has been with KRWA for the last four years. Bert held the position as District Engineer with the KDHE in the Salina District Office for 32 years prior to that.



These photos show improvements to the storm water system designed to relieve some of the flooding that has occurred in the past. King’s Construction, Inc., Oskaloosa, Kansas, was the contractor.