

By Greg Metz, Technical Assistant



New Water Distribution System Nearing Completion in Hanover

This photo shows a crew installing service lines.

Hanover, Kansas, with its population of approximately 700 residents, is well on its way to finishing the replacement of the city's water distribution system.

Hanover is located in far northern Washington County. The town has a robust business district, and area farms are prosperous, growing corn and soybeans – and livestock. Anyone who's stopped for lunch at Ricky's Café knows all too well to order "half-size" meals. And the "Days of 49" parades have great participation with no shortages of surprises.

Hanover was platted in 1869 and was incorporated as a city in 1872. It is a German community named after Hanover, Germany. The founders were Geret Hollenberg and Sophia Brockmeyer. They settled their farm initially called "The Cottonwood Ranch" and later the "Hollenberg Station" alongside the Little Blue River, which became a popular stop along the Pony Express Trail. That popularity led to the establishment of Hanover. The Hollenberg Pony Express Station is the only remaining building

along the 2,000-mile route, and it continues to stand one mile northeast of Hanover. The Hollenberg Station was registered as a National Historic Landmark in the 1940s.

Even prior to establishing the town, a school district was organized in 1868 in the area to satisfy the need to educate children of settlers who continued to arrive near the Hollenberg Station.

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The "Hollenberg Station" became an important hub for Pony Express travelers. Geret Hollenberg eventually established a grocery and stage depot on his farm in 1858. The Hollenberg farm housed nine boarding rooms, and the success of "Hollenberg Station" as a business attracted more people to the area. Many settled alongside the Hollenbergs in the decade leading up to the establishment of Hanover.

Time to replace the cast iron pipes

The city of Hanover decided to replace the aging distribution system and take advantage of historically low-interest rates and subsidies in loan forgiveness and a grant. Several areas of the distribution system experienced numerous breaks, and other pipeline breaks also occurred. The city purchases its water supply from the Washington Rural Water District No. 1. The district's office and shop are located in Hanover.

The city upgraded its water storage in 2009, replacing a 100,000-gallon standpipe with an elevated tank.

The nearly completed water line project consists of 4,898 linear feet of 4-inch DR18 C900 PVC; 26,298 linear feet of 6-inch, and 84 linear feet of 8-inch with fourteen 4-inch gate valves, seventy-eight 6-inch gate valves and two 8-inch gate valves, and 50 fire hydrants. The city provides water to 328 service connections; that requires 8,894 linear feet of service line. The entire system will have tracer wire installed with 57 test stations. The project also includes the installation of an automated meter reading (AMR) system.

The project's \$4.6 million-dollar price tag is being funded through a loan of \$2,979,000 from the United States Department of Agriculture (USDA) Rural Development (RD). The loan will have an interest rate of 1.75%. That loan is supplemented with \$1,033,000 in loan forgiveness from USDA and a \$600,000 Community Development Block Grant. The city currently has temporary financing for



This large rock saw was needed to cut some trench in Hanover.

An instrumental part of projects such as at Hanover is to have a good grant writer/administrator. Amanda Horn with the North-Central Reginal Planning Commission (NCRPC) assisted Hanover with its project. Amanda is a Community Development Representative.

As a community development representative, Amanda provides community and economic development support to cities, counties and non-profit organizations within 12 counties in north-central Kansas. Her primary responsibilities include research, facilitating community meetings, grant and loan proposals and implemented project management. The NCRPC receives some grants to assist with the cost of helping with grant writing and administration to help keep the cost of this service down for rural water districts and cities. Most smaller cities and rural districts do not have the staff or capacity to manage the administrative details associated with Community Development Block Grants. The documentation is tedious and time-consuming; the NCRPC hopes to be a valuable resource to the entities within north-central Kansas.

\$2.0 million through Citizens State Bank of Marysville. Interim financing was issued as the USDA water and wastewater program does not provide the funding until the project is complete. The interim financing allows the city to pay bills as incurred for the project. The interim financial will be paid off by the USDA 40-year loan when the project is completed.

The new distribution system is augmenting more recent expansions in twelve areas which were developed using PVC pipeline. Hanover is not flatland. Because of the varied

elevations of the city, water pressure varies from 30 to 40 psi to more than 100 psi at the services at the lower elevations. That is a substantial range for any community.

A substantial amount of new pipeline was installed by boring. Some areas were more difficult due to the amount of rock and required the contractor to use a large rock trencher.

Locating and exercising all the existing valves was a priority before the start of the pipeline project. Operators Scott Wieden and Tim Koss worked with Kansas Rural Water



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Sub contractors installing valve cluster at corner of Washington and Hanover streets.



Bore being pulled in, and valve cluster at an intersection.

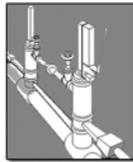
Association in exercising all of the existing valves. Having the operational aspects of valves known has resulted in significant time and cost savings to the city. When the crew has hit service lines or mains, it has been possible to isolate and repair the area in a timely manner.

The contractor had several crews working in different areas during the project as well as a subcontractor. One crew did most of the boring while another crew completed the valve and intersection tie-ins. A third crew focused on boing in service lines and setting and installing meter pits.

Hanover's water system was originally installed with water meters in homes and businesses. Some meters had been moved to meter pits outside of the homes as service lines were replaced over the years. Still, a majority of the meters were inside residences and businesses.

With the new system, the meter settings are being installed in house yards for easier access and maintenance. The engineer representing the AMR equipment had specified check valves in the meter pit on the homeowner's side of the meter setter. While this is somewhat more common in rural water districts, it is not as common in small cities and towns. A water system is designed with a water storage tank to provide pressure as well as an open system that allows for expansion of the water as

- LINE STOPPING
3/4" - 60"
- LINE TAPPING
2" - 60"
- VALVE INSERTION
4" - 16"
- VALVE TURNING



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temperature changes anywhere in the system. When a system installs a check valve on the service line, that service becomes a closed system. This becomes a problem when cold water enters the home and expands due to heating of water in a hot water heater. Expansion tanks are typically installed on hot water heaters to compensate for the expansion of cold to hot water. Thermal expansion can cause significant issues, such as blown pipelines resulting in the hot water heater rupturing in severe cases. A city or RWD needs to notify customers anytime there is an installation of a check valve. The state does not approve a single or even a double-check of Kansas for backflow prevention. The check valves can and do serve a purpose, but in my experience, they often end up not functioning correctly.

The project engineer is CES Group, P.A., Marysville. The contractor is J & K Contracting, Junction City. Sub-contractors were Jadwin Construction & Development, Hiawatha and Horizontal Boring & Tunneling Co. Exeter, Neb.

Water rates at Hanover are \$59.50 for 5,000 gallons. The city pays \$3.80 per thousand as the average cost for water purchased from Washington RWD 1. These rates were adopted in January 2020 in planning to meet the increased debt and operational costs of the project. The prior rates were about \$33 for 5,000 gallons.

The project completion date was estimated to be March 2022. As of September 15, the work appears to be ahead of that timeline. At the time this article was prepared, the last block of main was being installed.

Visiting with the Contractor owner Shannon Locke, he stated the project has gone very well and the city of Hanover personnel have been great to work with and were very accommodating.

As with most new installations you are bound to have a leak or two when pressuring up the new lines. The contractor is responsible for all leaks that occur for up to a year.



Hanover has a handsome welcome sign along Hwy 148.

It's appropriate to list the city commission and staff. They include Jared Sedlacek, Mayor and council members Tony Bruna, Kylie Fritschi, Kim Lohse, Nick Rohr and Don Spencer. Staff includes operators Tim Koss and Scott Wieden; Katlin Bruna is City Clerk.

Greg Metz joined KRWA as a Technical Assistant in July 2009. He previously worked at the city of Washington for 13 years where he was involved in city utilities including the power plant, streets, water and wastewater. He also served as purchasing agent for those utilities.



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