

PROJECT PROFILE / **NORTHWEST WICHITA WATER FACILITY**

NEW WATER TREATMENT FACILITY OFFERS FLEXIBILITY AND RESILIENCE

With a more than 65-year-old water treatment facility and a growing population, the City of Wichita decided to construct a new facility to treat multiple water sources ranging from 100% groundwater to 100% surface water. The new facility allows the city to leverage its diverse water supply and operate in a flexible and sustainable manner based on climatic conditions.



PROGRESSIVE DESIGN-BUILD APPROACH EXECUTES A MAJOR WATER PROJECT

An integrated team will see that the water treatment facility design progresses with input from all stakeholders.

PROJECT STATS

CLIENT

City of Wichita

LOCATION

Wichita, Kansas

ANTICIPATED COMPLETION

2025

The City of Wichita currently operates the Main Water Treatment Facility, which includes the Central Plant with a capacity of 130 million gallons per day (MGD) and the East Plant with a capacity of 30 MGD. Although the facility was partially rehabilitated and upgraded in 1992, the original plants are more than 65 years old and lack the necessary redundancies to provide the resiliency and flexibility the city requires for a sustainable future.

water project with its joint venture partner Alberici.

A progressive design-build approach allows our team to facilitate collaboration among the city, designer and contractor at the earliest possible stages of the project to see that the design progresses with input from all project stakeholders. As the design evolves, our team can make design decisions within the context of the capital budget and life cycle cost, ultimately maximizing value.

Our work to make the Northwest Wichita Water Facility a reality began in 2018. The team defined the requirements of a new 120-MGD facility and completed the preliminary design that had the ability to treat 100% groundwater, 100% surface water and any blend of the two independent sources to current and anticipated drinking water standards.

The facility was also designed to include the equivalent of 24 hours of water storage and a high-service pump station to facilitate water delivery directly to the existing and planned water distribution system. The facility will be served by underground electrical power and will include backup generation sufficient

With more than 550,000 residents to serve, the city set out to improve reliability. The process of rehabilitating the existing facility while maintaining treatment would be a costly project, so the city chose to construct a new facility. The site of the new Northwest Wichita Water Facility was chosen due to its proximity to the convergence of pipelines from the city's two primary water sources: the Equus Beds Wellfield (groundwater) and the Cheney Reservoir (surface water).

Burns & McDonnell has been working in partnership with the City of Wichita on its water treatment infrastructure since the 1990s. This long-standing relationship meant our team was deeply familiar with critical aspects of this project. Our team was selected to lead this progressive design-build

\$494M
PROJECT BUDGET

120M
GALLONS PER DAY

\$15M
BELOW CAPITAL BUDGET



to meet operation and maintenance power requirements.

After a year of preliminary design, value engineering and process optimization, our team was able to deliver the City of Wichita a \$494 million cost proposal — \$15 million below the city’s capital budget — with a projected \$6 million per year in operational savings. Our team also helped the city complete its application for Water Infrastructure Finance and Innovation Act (WIFIA) funding through the U.S. Environmental Protection Agency (EPA). This facility is one of 38 water

infrastructure capital projects that the EPA is financing. This funding source, paired with state revolving loan funds, will generate a low-cost funding alternative to deliver the facility for Wichita.

The Northwest Wichita Water Facility is one of the largest infrastructure projects the City of Wichita has undertaken, which makes stakeholder engagement a major component of our work. This project affects ratepayers; therefore, our team is helping stakeholders understand the importance of the project and the phases of work.

The new water treatment facility will treat multiple sources including groundwater, aquifer storage, recovery sourced water and surface water through a single treatment plant with multiple treatment schemes. This gives the city flexibility to switch between water sources depending on climatic condition, achieving the city’s goal of developing a diverse and sustainable water supply that serves more than a quarter of Kansas’ population. It will also provide the city with appropriately sized operations, laboratory, maintenance and administration spaces.



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