

CASE STUDY

# The City of Gillette Builds the Largest, State-Funded Water Project to Secure the City's Supply

The City of Gillette, Wyoming, and Burns & McDonnell took on the largest, state-funded project to secure the city's water beginning from 2009 through 2025. Burns & McDonnell offered program management, planning, design, permitting, bidding and construction oversight services.



To provide an additional water source for the City of Gillette to support the growing population and the booming oil and gas industry, the Gillette Madison Pipeline Program came to be a multiyear, multiproject endeavor that required comprehensive program management with phased design and construction projects.

## Challenge

Due to a projected increase in water demand, the City of Gillette realized that its existing well field, pump station and water transmission main could no longer provide the city with enough water, especially during the warm summer months.

The Gillette Madison Pipeline Program received state funding for both the design and construction of multiple projects. The State of Wyoming Water Development Commission required a phased funding approach for this large project, which added

## Project Stats

### Client

City of Gillette

### Location

Gillette, Wyoming

**52**

MILES OF STEEL  
WATER LINE

**\$225M**

IN PROGRAM COSTS  
(PLANNING, DESIGN, BIDDING  
AND CONSTRUCTION)

**14K**

GALLONS PER MINUTE  
GROUNDWATER WELL  
FIELD EXPANSION

**55**

MILES OF TRANSMISSION  
PIPELINE

**15+**

YEARS OF  
WORK

a complexity that the program management team needed to navigate. With the complexity of this project, there were large amounts of unconsolidated data for each design and construction project that needed proper organization.

## Solutions

To address the challenge of data management, Burns & McDonnell utilized members of its construction, design-build and business technology solutions groups to provide and update an electronic data collection system. This system has two basic components, Program Manager and OneTouchPM. Program Manager was designed to consolidate and manage large amounts of data, including planning documents, permitting documents, easements, permits, design review documents, project bids, construction documents, submittals, requests for information, pay applications, field orders, change orders and conformance with construction documents. Program Manager has now been replaced with ProCore for all current and future projects. OneTouchPM is an online based system that shows pictorially the status of the project for land acquisition (easements and licenses) and up-to-date construction progress. These systems provided a comprehensive and real time overview of the multiple ongoing projects, which allowed for effective coordination, monitoring and transparency with the City of Gillette and the Wyoming Water Development Committee.

The team also strategically planned the program project design and construction phases based on the availability of funds from the State of Wyoming Water Development Commission on a year-by-year basis. For example, the 52-mile pipeline was divided into 4 separate pipeline projects.

Burns & McDonnell designed and oversaw the construction for the new Madison Formation Well Field — which includes five wells — 52 miles of 36- and 42-inch diameter pipeline, a 24 million-gallon-per-day (MGD) pump station, a 1 MG storage tank, an on-site sodium hypochlorite disinfection generation facility, 3 miles of 18-inch waterline, and a water blending facility. The entire program required permits from the City of Gillette, Crook County, Campbell County, State of Wyoming, Union Pacific Railroad, Wyoming Department

of Transportation, Bureau of Reclamation, Bureau of Land Management, U.S. Army Corps of Engineers, Wyoming Department of Environmental Quality, and Wyoming State Engineer. Such permitting was part of the team's program management capabilities.

The team also provided hydraulic modeling and surge analysis for the new and existing water system to accurately confirm waterline sizes, storage requirements, pressures and required flows. Model scenarios included existing demand, future demand and overall water quality. The 24 MGD pump station includes seven 450-horsepower variable speed-controlled vertical turbine pumps. The team summarized all information in a series of technical memorandums.

## Results

This water delivery system provides an additional source of water to the City of Gillette and is one of the largest municipal water projects in Wyoming's history. It helps not only the Gillette community but also the state as a whole, as interconnection points built within the water system will allow other regions and users to connect in the future.

These program management, design and construction efforts have collectively contributed to a reliable water infrastructure for the City of Gillette, marking a significant milestone in its long-term sustainability efforts. The Burns & McDonnell team continues to support the City of Gillette through project completion, which is set for 2025.

## About Burns & McDonnell



Burns & McDonnell is a family of companies bringing together an unmatched team of engineers, construction and craft professionals, architects, and more to design and build our critical infrastructure. With an integrated construction and design mindset, we offer full-service capabilities. Founded in 1898 and working from dozens of offices globally, Burns & McDonnell is 100% employee-owned. For more information, visit [burnsmcd.com](https://burnsmcd.com).