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City of Emporia Dedicates Renovated Wastewater Treatment Plant Progressive Design-Build Project Showcases a First-of-its-Kind Process in Kansas

KANSAS CITY, Missouri — A new wastewater treatment plant for the City of Emporia demonstrates that multiple public benefits, including cost savings, can be achieved by applying new technology to existing infrastructure, all within the umbrella of a progressive <u>design-build</u> project delivery approach. As a celebration of that achievement, a formal dedication and a ribbon-cutting ceremony for the Emporia Wastewater Treatment Plant were conducted today at the plant site. The project reached substantial completion in June by the design-build team of Burns & McDonnell and CAS Constructors.

The project began in 2015, when regulators notified Emporia city leaders that renewal of the plant's discharge permit would be contingent on meeting more stringent requirements for removal of nitrogen, phosphorous and other pollutants. In addition, more treatment capacity would be needed by the city.

"We faced a significant requirement for a capital upgrade to our treatment plant but knew we did not have the resources to construct a new facility," says Emporia City Manager Mark McAnarney. "So, we challenged Burns & McDonnell and CAS Constructors to come up with a plan to maximize efficiency of this capital investment by reusing existing infrastructure while also increasing treatment capacity in a way that would meet our new, tougher permit obligations."

The solution hinged on designing and retrofitting the plant to employ an innovative Integrated Fixed-Film Activated Sludge (IFAS) system — the first of its kind in Kansas — within the facility footprint. City officials selected the IFAS system based on its ease of installation in the existing basin, thereby eliminating the need to build separate costly infrastructure, as well is its proven performance for biological nutrient removal (BNR). The new IFAS system expands treatment capacity from 4 million gallons per day (MGD) to 5.4 MGD.

"The efficiencies we achieved at the Emporia plant really can be attributed to our design-build project delivery method that gave us the flexibility to evaluate and select the right technology," says Ron Coker, senior vice president and general manager of the Water Group at Burns & McDonnell. "Design-build emphasizes close collaboration between owner and project team much further upstream in the project



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planning cycle. With a clear understanding of budget constraints and regulatory requirements, we were able to focus on an engineering solution that gained new life from existing infrastructure while adding a whole range of facility improvements."

As part of the overall project master plan, Burns & McDonnell worked with the city to provide financial guidance and support in helping the city obtain funding for the project via the Kansas State Revolving Loan Fund (SRF). The facility enhancements enable the city to treat wet weather flows of up to 11 MGD, benefit from streamlined operations and solids handling, use less energy, and add entirely new laboratory, office and administrative space.

The Burns & McDonnell and CAS Constructors joint venture has delivered 30 water or wastewater design-build projects, all with zero change orders, cost or schedule overruns, construction claims or lost time incidents. Learn more about how Burns & McDonnell approaches <u>design-build for water infrastructure</u>.

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About Burns & McDonnell

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About CAS Constructors

Since 1985, CAS Constructors has safely and successfully completed more than 450 water and wastewater projects. In addition to traditional Design-Bid-Build, CAS has extensive experience in utilizing the Design-Build project delivery method since 1996. For more information, visit casconstructors.com.