

Design-Build, continued

maximum price before they become heavily invested in a project. After careful consideration of all available options, City Corporation of Russellville concluded that the design-build project delivery method was the most appropriate for their solids handling project.

Efficient solids handling is a vital component for all successful wastewater treatment plants. After a thorough engineering evaluation and operation of a full scale pilot facility, City Corporation concluded that the Schwing Bioset process was the best fit for their sludge management needs. They selected a design-build team led by local Contractor Van Horn Construction that included Hawkins-Weir Engineers as the designer. The team committed to constructing the 100 dry tons/day Class A solids handling facility for a guaranteed maximum price of approximately three million dollars. The project housed the Bioset process in an 8,000 square foot solids handling building. A metal building package was used to help control project

costs. To make the building easier to clean and maintain, the metal structure was installed on top of 4 foot high concrete splash walls. The building included an operations floor, chemical storage area, office space, electrical room, and a drive through solids loading bay. The design-build team worked hand-in-hand with City Corporation through every step of the design and construction process to not only minimize plant disruption but also to ensure that the final facility would serve the Utility well for many years. The fact that the project was delivered months ahead of schedule and below budget provides proof that the design-build project delivery method can provide added value. If you would like help determining if your project is a good candidate for design-build, give us a call. There is a lot more to that decision than we could put in a newsletter article, but we will be happy to walk you step-by-step through the process so that you can best position your city or utility for success. **HW**



The 8,000 square foot solids handling building includes an operations floor, chemical storage area, office space, electrical room, and a drive through solids loading bay.

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HW Team News



Congratulations to Blake Peacock, P.E. of HW's Van Buren office on attaining his Professional

Engineering License. Blake is a graduate of the University of Arkansas with a B.S. in Civil Engineering, and has been a member of the HW team since September 2011. He serves as a Project Engineer on public works and private development projects. His responsibilities include planning, design, and construction administration.



HW welcomes Tom Webb, P.E. to our team. Tom joined HW's Little Rock office in March 2017 and

brings over 30 years of experience in Civil Engineering in Construction Management in the transportation and water/wastewater fields. A graduate of the University of Arkansas with a B.S. in Civil Engineering, he is a licensed Professional Engineer in the States of Arkansas, Arizona, California, Colorado and Nevada. He is currently serving as the Resident Project Representative on the Scott Hamilton Drive Peak Flow Facility Expansion Project for Little Rock Wastewater.

HW Adds Electrical & Instrumentation Design Capabilities

Hawkins-Weir Engineers, Inc. (HW) is excited to announce the addition of Scott McBrayer, P.E. to the firm. Mr. McBrayer is a licensed Professional Engineer in the States of Arkansas and Oklahoma, and possesses extensive experience in electrical power distribution, standby power generation, electrical motors, variable frequency drives, lighting design, process and instrumentation design, and automated systems startup. His experience



Scott McBrayer, P.E.

also includes design of process control panels; programming of PLC, SCADA HMI, and data server systems; equipment networking; fiber optic networking; telemetry for remote control monitoring of systems; and equipment integration with electrical systems. Company President Brett D. Peters states that "among Scott's many professional talents, what differentiates him as an electrical & instrumentation engineer is his understanding of water and wastewater applications. Another distinguishing attribute is his ability to troubleshoot, diagnose and resolve electrical & instrumentation issues during project start-up and thereafter during operation."

Mr. McBrayer earned his Bachelor of Science in Electrical Engineering from the University of Arkansas at Fayetteville in 1987. After graduation, Mr. McBrayer was a Design Engineer for Texas Instruments Defense Electronics plant in Plano,

Texas until 1991. While in Texas, he enrolled in graduate school and earned his Master's degree in Business Administration from SMU in 1990. He returned to his hometown of Van Buren in 1991 and became President of Allied Electrical & Power (an electrical equipment repair and sales company) until the sale of his business in 2015. While President of Allied, Mr. McBrayer also became a licensed Professional Engineer and formed McBrayer

Engineering (an electrical & instrumentation consulting firm) in 1999 to separate his two business interests and has been in a full-time consulting role since the sale of Allied Electrical & Power. During his time at McBrayer Engineering, Mr. McBrayer has worked as the lead Electrical & Instrumentation Subconsultant for HW on numerous projects including the Zero Street Pump Station and EQ Storage Project and the Sunnymede Peak Wet Weather Flow Management Project.

Mr. McBrayer is a resident of Van Buren, Arkansas where he lives with his wife Teri Thomas McBrayer where they raised two daughters, Haylee and Kelsi. He joins HW to lead all of the firm's electrical & instrumentation design efforts. Peters summarized this expansion of HW's capabilities by commenting that "Scott has always been a member of the HW family, and we are extremely pleased to welcome him under our own roof." **HW**

HW Project Wins 2017 ACEC Award

The City of Fort Smith Utility Department's Zero Street Pump Station and Site Remediation project was awarded the 2017 ACEC Arkansas Engineering Excellence Award in the Environmental Category. The City has been engaged in a campaign to mitigate sanitary sewer overflows for over two decades. The age and size of the City's

sanitary sewer collection system has made their efforts to address wet weather flows more difficult and costly than many other cities in Arkansas, but the Utility Department's diligence has achieved tremendous success. One of Fort Smith's primary methods of reducing overflows has been to construct equalization storage

basins at strategic locations across the City. One of those locations, the Zero Street Pump Station Site, presented the City with a unique opportunity to remediate and reclaim a long-contaminated site. This project entry tells the story of how they utilized their limited resources on that project to create the greatest environmental benefit.

ZERO STREET PUMP STATION SITE REMEDIATION
Fort Smith, Arkansas

Nearly 45 years after its closing, the abandoned site of a Fort Smith zinc smelter became the focus of a new project for the City's Utility Department and provided a unique opportunity to remediate and reclaim a long-contaminated site.

Stormwater runoff from the smelting operation's ash and slag stockpiles was a major contributor to the property's contamination with arsenic, cadmium, iron, lead, manganese, and zinc. The City of Fort Smith worked through the ADEQ Brownfields Program to address the issue.

Circa 1900, Northern Arkansas was being touted as the "richest zinc mining district in the world." Fort Smith was home to two zinc smelting mills, processing a mineral important in World War I efforts.

The wet weather improvements constructed on the former zinc smelter site included a new 13-MGD pump station and two 5-MG concrete equalization storage tanks to help meet the challenge of managing sewage flows, mitigating overflows, and addressing capacity issues citywide.

Site remediation resulted in the removal of over 77 thousand tons of ash, slag, and contaminated soils. With the exception of groundwater extraction, the cleanup of the site allows Fort Smith unrestricted use of the property.

The City of Fort Smith ARKANSAS
HW HAWKINS-WEIR ENGINEERS, INC. (Van Buren, Arkansas)
ACEC Arkansas

Winning project display panel demonstrating the challenges, solutions, and innovative uniqueness of key project elements.

Design-Build is the Right Fit for City Corporation's Solids Handling Project



After careful consideration of all available options, City Corporation of Russellville concluded that the design-build project delivery method was the most appropriate for their solids handling project.

Of the many project delivery alternatives used to expand infrastructure, design-bid-build has dominated in the State of Arkansas in the areas of water and wastewater improvements. Design-bid-build is considered to be the "traditional" approach. This project delivery alternative typically begins with the selection of an engineering design firm like Hawkins-Weir. After the design is complete and all necessary approvals and permits have been obtained, the project is advertised for bids. Finally the city or utility selects a Contractor based on the bids that are submitted and the project is constructed. The traditional design-bid-build approach is the most appropriate for the majority of public infrastructure projects because it allows the Owner to independently select the design professional based on their qualifications, retain control over the design process including the equipment and

materials used, and because it allows the largest pool of Contractors to compete for the work. Another factor that has contributed to this method being the most prevalent in Arkansas is that some believed that the State's procurement laws required its use. This concern was recently removed for wastewater utilities by the signing of Act 627 of Arkansas' 91st General Assembly.

Since there are more variations of the design-build project delivery alternative than we care to discuss in this brief article, we will focus on one common approach. With this approach a design-build project would begin with a city or utility developing a project scope. Design-build teams that are led by a general Contractor and include design Engineers and other professionals would prepare and submit an approach for the project that included a

guaranteed maximum price. The selected team would then perform the design to the appropriate level before beginning construction. This is an important differentiator between design-build and design-bid-build because it allows design and construction to occur simultaneously. This can shorten the overall project schedule. With a traditional design-bid-build approach, the Contractor has no involvement in the design process. Under design-build project delivery, the Contractor works hand-in-hand with the Engineer during the design phase to proactively identify and resolve potential constructability issues prior to beginning field work. A couple other important features of design-build delivery that distinguishes it from design-bid-build is its single-point accountability for both design and construction and the fact that the Owner is provided a guaranteed

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