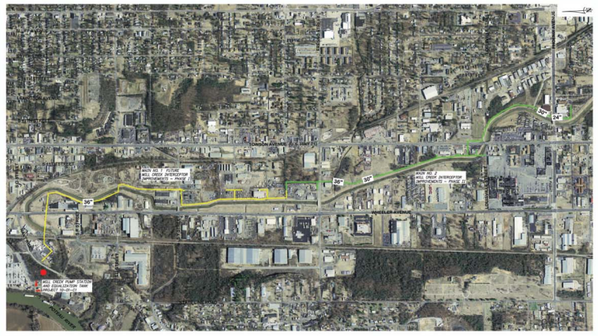
Mill Creek Inteceptor Sewer Project

Hawkins-Weir Engineers is performing engineering services for the City of Fort Smith through 2016 for the design and construction management of the Mill Creek Interceptor Sewer Project. The City of Fort Smith is under a Consent Decree from the Environmental Protection Agency (EPA) to eliminate sanitary sewer overflows from their sanitary sewer collection system during heavy rainfall events. The City of Fort Smith has been making numerous systemwide improvements through voter-approved Sales Tax Bonds.

Built in the 1950's, the existing Mill Creek Interceptor line was constructed using concrete pipe. Over time the concrete pipe and manholes degraded and became a major source for inflow/infiltration from surface water around failing manholes and ground water at the leaking pipe joints. The original improvement project identified approximately 17,000 feet of gravity sewer lines ranging in size from 24-inch to 36-inch in diameter. Due to the size of the overall project and schedule for available bond funds, the project was divided into two similar sized projects. Hawkins-Weir provided surveying, preliminary and final design services, advertisement and bidding services, as well as construction management and inspection services. Hawkins-Weir also provided the initial route study and an alternate pipe material evaluation. Additionally, we secured all of the necessary state and federal permits and regulatory approvals, as well as prepared easement descriptions and surveys for securing easements and rights-of-ways.



The first phase is in the final stage of construction and flow has been diverted completely over to the new interceptor line. Final restoration is expected to be complete in late June 2015. The contract for this phase was awarded to the low bid received from Forsgren, Inc. of Fort Smith, Arkansas in the amount of $1,917,753.10, and was completed below budget. The second and final phase is expected to bid in August 2015 and completed in August 2016. The first phase includes the installation of over 8,100 feet of sanitary sewer lines consisting primarily of 24-inch, 30-inch, and 36-inch diameter pipe, ranging in depth from 10 to 24 feet. This project also includes approximately 300 feet of dry bore steel encasement pipe ranging from 36-inch to 54-inch in diameter, 300 feet of fused PVC carrier pipe, 40 sewer manholes and over 4,000 cubic yards of rock excavation. HW

HAWKINS•WEIR ENGINEERS, INC.

110 South 7th Street
P.O. Box 648
Van Buren, AR 72956
479.474.1227 phone
479.474.8531 fax

211 Natural Resources Dr.
Little Rock, AR 72205
501.374.4846 phone
501.374.4886 fax

ISSUE 04 SUMMER 2015

A PUBLICATION OF HAWKINS-WEIR ENGINEERS, INC.

HW HighLights

this issue:

Welcome to the Hawkins-Weir Team

Hilary Dubois joined HW's Little Rock office in January 2015 as an Administrative Assistant II. She previously served as an Instructor, Trainer, and Quality Assurance Officer at the Professional Education Center at Camp Robinson in North Little Rock. She also served as the State Program Manager for the Arkansas Yellow Ribbon Reintegration Program at Camp Robinson. She is retired from Army Aviation as a Lieutenant Colonel with 28 years of service. Hilary received her BA in Business Administration from Campbell University (NC); is a graduate of the Combined Arms General Staff College (KS); and a graduate of the New Mexico Military Institute with an AA in General Studies.

Chris Blair joined HW's Van Buren office in December 2014 as a GPS Field Survey Crew member. He is a lifelong resident of west Central Arkansas from the River Valley area. Prior to joining the firm, he worked for three years as an EMT for Care One EMS. Chris and his wife, Kara, have two children – a son, Kayden, who is 2-years old, and daughter Camyre, 9-months old.

Engineering Client Success

Brett D. Peters, P.E.

Barry McCormick, P.E.

J. Kyle Salyer, P.E., P.S.

Larry Yancey, P.E.

Jeremy Shores, P.E.

Aaron Benzing, P.E.

As we celebrate our 35th Anniversary in business and our 5th anniversary in our Little Rock office, we recognize that we owe any success that we have achieved to our clients throughout Arkansas and eastern Oklahoma.

At Hawkins-Weir, "engineering client success" is much more than a tag line. We measure our success by the success of our clients and the projects they entrust to us. This business philosophy, albeit simple, dates back to the origin of our firm. Ronnie Hawkins and Larry Weir founded Hawkins-Weir Engineers on four cornerstones: *honesty, integrity, client service*, and *the advancement of the engineering profession.* Ronnie and Larry fostered a culture that focused on the Golden Rule and "treating others as you want to be treated." This approach is true whether we are referring to our clients, contractors, equipment suppliers, or our employees. Five of the six Principals of the firm were professionally raised in this culture – Brett D. Peters, Barry K. McCormick, J. Kyle Salyer, Larry Yancey, and Jeremy Shores. Although Aaron Benzing did not start his career at HW, his professional roots were established with a similarly sized and client focused firm in Mississippi. His decision to join HW as a Principal and manage our Little Rock office in 2010 represented him coming home to his roots. Within the last year, HW has named two younger professional engineers, Josh Durham and A.J. Kaufman, as Associates of the firm.

HW is also proud of our acquisition of Oswald Engineering, and the addition of Fred Oswald to our team. Only a small handful of engineering firms in Arkansas can boast that they have more professional engineers on staff than HW, and we put our engineering experience up against any of our competition. Another strength of the firm is the relative young age of its Principals. This, in addition to low turnover of our staff, offers our clients stability in knowing who they will be working with now and well into the future.

How do we define client success? We believe a successful project is one that is delivered on schedule and within budget while simultaneously incorporating the details necessary for our clients' operations and maintenance staff to perform their jobs safely and efficiently. We assign a Principal of the firm to manage each and every project, and work in a collaborative team setting relying heavily on client involvement to ensure the success of their projects.

At 35 years of age, we recognize that we will never be the oldest engineering firm in Arkansas, and may never be the largest, but being the oldest or the largest aren't the attributes that we want to be known for by our clients and prospective clients. We strive to be considered as one of the best engineering firms, with a strong emphasis on client service, and believe that our reputation meets this expectation. At the end of the day, we want to be known by our clients and prospective clients as . . . *their Engineer.* HW

Treading Water?

Record setting May 2015 rainfall (as shown in Table 1) has wastewater collection systems and treatment plants in a stressed condition, beyond their design conditions, across the State of Arkansas. Although these collection and treatment systems are as different and unique as the towns and cities they serve, there is one thing that all collection systems have in common – they all leak. The primary concern with leaking collection systems is they allow stormwater to enter during rainfall events, and can surcharge. This surcharging can result in wastewater overflowing from manholes located at low points in the collection system (referred to as a Sanitary Sewer Overflow, or SSO), and can overwhelm wastewater treatment plants (WWTPs).

Surcharging can result in sanitary sewer overflows

In recent years, regulatory agencies have increased reporting requirements and begun strict enforcement of municipalities' National Pollutant Discharge Elimination System (NPDES) Permits for the elimination of SSOs regardless of their cause – capacity or maintenance related. This regulatory requirement typically results in the need for a capacity expansion of the wastewater collection system infrastructure, along with its corresponding expensive price tag.

Historically, strategies to eliminate SSOs were limited to capacity improvements within the wastewater collection system. However, it has been our experience that if these improvements are not expanded to include the private sanitary sewer services, significant inflow/infiltration reductions aren't always realized. Another historical strategy is the construction of an equalization basin at the WWTP site to store the dilute wastewater until the rainfall event subsides, then return these wastewater flows to the plant for treatment. Although this is a proven approach, the treatment of dilute wastewater can cause issues in the operation of the WWTP and lengthen the impacts of the storm event at the plant.

Table 1
Arkansas Rainfall Data (inches)

	Average May	May 2015
El Dorado	5.05	10.99
Fayetteville	6.04	13.01
Fort Smith	5.47	19.85*
Harrison	4.69	10.71
Hot Springs	6.15	12.13
Jonesboro	4.61	7.81
Little Rock	4.87	9.45
Russellville	4.73	10.73
Texarkana	5.09	8.69

**Surpassed previous rainfall record of 13.67 inches*

Newer strategies for dealing with peak flows and the elimination of SSOs include considering equalization storage in the wastewater collection system. This equalization storage can be in the form of open top basins (earthen or concrete-lined), open or enclosed tanks, or in-line storage. State-of-the-art strategies for dealing with peak flows at the plant include offline storage to accommodate biomass transfer during a storm event or various forms of auxiliary treatment. Auxiliary treatment alternatives include both high-rate treatment (HRT) and enhanced high-rate treatment (EHRT). A few examples of EHRT include ballasted flocculation through the use of either microsand or magnetite, and filtration including compressible media filtration. An advantage of EHRT is that they require relatively small plan footprints on the plant site, while treating large wet weather related peak flows.

Hawkins-Weir Engineers, Inc. is the engineering industry leader in the State of Arkansas with respect to the design and implementation of peak flow strategies for municipal wastewater collections systems. We have designed $39.8 million in wet weather projects for wastewater collection systems across the state over the past four years, and have another $22.3 million presently in design. Some of these projects are briefly described as follows. The Sunnymede project located in Fort Smith, Arkansas incorporated ballasted flocculation treatment with an ACTIFLO process prior to earthen equalization storage in the collection system, and represented the first such application in Arkansas. The Zero Street project located in Fort Smith, Arkansas incorporated the construction of two 5.0 MG equalization tanks in the collection system. Both of these projects also incorporated a peak flow pump station. The Scott Hamilton project located in Little Rock, Arkansas, presently in design, will incorporate a 31 MG concrete-lined equalization storage basin expansion of existing collection system storage.

A favorable 2013 ruling by the United States Court of Appeals for the Eighth Circuit regarding the Iowa League of Cities suit against the Environmental Protection Agency (EPA) has, on its surface, the potential to fundamentally change the way peak flows are treated across the United States. The Iowa League of Cities contended that the EPA's internal wet weather policy was more stringent than required by the Clean Water Act. At the heart of the issue was the EPA's perceived prohibition on blending. The group contended that EPA limited municipalities' options in dealing with peak wet weather flow and often required that more costly and generally less desirable options be implemented. The Court's ruling in the favor of the plaintiff sought to vacate the EPA's apparent ban on blending, and also asserted that the EPA's attempt to regulate blending or other treatment practices within a WWTP were beyond that Agency's authority. Hawkins-Weir Engineers is working with several of our Arkansas clients to take advantage of this new blending opportunity, presently pursuing permitting through the Arkansas Department of Environmental Quality.

So if your municipality has found itself treading water regarding peak flow issues, please contact Hawkins-Weir Engineers, Inc. at www.hawkins-weir.com so we can collaboratively determine which strategy is best for you. HW

Sunnymede Wet Weather Flow Management

Scott Hamilton Peak Flow Attenuation Facility

Zero Street Pump Station

110 South 7th Street • Van Buren, AR 72956 • PH: 479.474.1227 • www.facebook.com/HWEngineers

www.hawkins-weir.com • 211 Natural Resources Dr. • Little Rock, AR 72205 • PH: 501.374.4846