
S&ME



The Engineers Who THINK OUTSIDE THE BOX

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S&ME is a Raleigh, North Carolina-based ENR Top 100 engineering firm with national reach and expertise in geotechnical, civil, environmental, construction and planning services.



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The company's ability to partner with multiple stakeholders and think outside the box to find solutions for its clients has consistently set S&ME apart from its competitors since its founding as a local geotechnical engineering firm in 1973. Today, the employee-owned business has over 1,100 staff and 36 offices all over the U.S.

S&ME's innovative approach to solving its clients' problems is exemplified by a project it completed in 2017 for the City of East Ridge in Tennessee. S&ME was originally contracted by the Hamilton County Water and Wastewater Authority (WWTA) to perform a Sanitary Sewer Evaluation Study (SSES) of the wastewater collection system serving portions of the City of East Ridge, which borders Chattanooga.

These investigations consisted of manhole inspections, smoke testing, and closed circuit television (CCTV) investigations of the wastewater assets. The SSES was conducted because East Ridge had recently received grant funding to attract new retail centers, and WWTA needed to eliminate the sanitary sewer overflows that occurred after heavy rain falls in the area and provide additional capacity for future growth.

While developing rehabilitation projects and applying for funding assistance through the Clean Water State Revolving Fund Program, the WWTA identified some near-term projects that could be completed to regain some capacity in the system



and allow relief of the self-imposed moratorium on new connections. One particular project was replacing 151 vented manhole covers in streets with solid watertight covers.

“Flow monitoring conducted after these covers were replaced indicated that approximately one million gallons of inflow

were removed from the system through these repairs. All of the information ►►

- ▶ necessary to identify this near-term project was collected during the Sanitary Sewer Evaluation Study,” Vice President Scott McDonald and Area Manager of Water Resources tells us.

But the SSES turned out to only be the beginning. During the process of reviewing the data and presenting it to East Ridge staff, S&ME found that a major construction project on the I-75 Exit 1 interchange was about to go out for bid, and some of the sewers it had investigated under the proposed project were severely deteriorated.

“Had we not collected this information and shared it with them, the existing sewers would likely have collapsed during the construction of the on-ramp,” says McDonald.

After the SSES, once the severe condition of the existing sewers under the proposed new exit ramps was shown to the City of East Ridge and their transportation engineers, they asked S&ME to prepare a design to rehabilitate the sewers prior to the construction of the new exit ramps. The project had to be completed within two months.

“A key component of the design was utilizing pipe bursting to rehabilitate the existing sewer pipeline under Ringgold Road. The existing pipeline was approximately 35 feet deep and was vitrified clay pipe (VCP). Any open cut excavation of this

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pipeline would have been extremely expensive and disruptive,” McDonald recalls.

Utilizing pipe bursting, the existing 12-inch VCP was replaced in the same trench with a new high density polyethylene (HDPE) pipeline. The new HDPE pipe was of sufficient strength and thickness to support the traffic loads under Ringgold Road. Once this section was replaced, the plan was to install a new manhole that wouldn’t be located in the embankment of Ringgold Road and replace the existing VCP pipe with a new section of pipeline consisting of ductile iron pipe (DIP) tied to the existing downstream sewer system. This section of DIP would allow the new on-ramp to I-75 to be constructed, eliminating the possibility of a collapse during construction of the new ramp.

S&ME coordinated between the City and the Authority that owned the sewers to assist both clients and completed the design within three weeks – yet due to the challenging nature of the project, no contractors responded to the bid advertisements.

“We contacted the plan holders and sat down with each of them to determine their reluctance in submitting a bid for the work. Each contractor was concerned about the short amount of time to complete the work, and the potential consequences of a failed rehabilitation project. We reworked the bids items to provide some additional line items to mitigate their risk,” McDonald adds.

Despite the initial reluctance of most contractors to take on such a difficult project, S&ME was able to make it happen. The company then assisted the successful bidder, Hurst Excavating, in completing the work three weeks ahead of schedule and almost \$50,000 under budget. Moreover, this was done in spite of unforeseen circumstances.

After they had started, S&ME found an old abandoned connection that wasn’t shown in the video inspections, which required S&ME to redesign the project so the contractor could finish an emergency sewer repair. A buried manhole was uncovered, and an unknown pipe segment tied to it had flow that was clearly not wastewater. But with the manhole exposed, S&ME was able to televise the pipeline and find that it was tied to an abandoned section of sewer line. While it was capped on the upstream end, the flow coming in turned out to be infiltration from a nearby storm water pipeline.

“Additionally, when the buried manhole was uncovered, it also turned out that the invert had a slight bend that would not allow the bursting head to pass. This required S&ME to work with

the contractor to redesign the location of the start of the pipe bursting and re-align the sewer pipeline. All of this redesign work happened on the fly, and was completed in less than two days to prevent delays to the contractor while he prepared his trench and materials for the pipe bursting,” says McDonald.

Interestingly, S&ME’s uncovering of that manhole during the project was something that other firms insisted was impossible to do. Another firm had attempted to locate this buried manhole on multiple occasions, going so far as to bring a small excavator out to attempt to find and uncover the manhole, with no success. However, by using a ground penetrating radar system to accurately discover the exact location and depth of the buried manhole, S&ME created a shoring design that gave the contractor options stabilizing the embankment so that the manhole could be uncovered.

In short, S&ME was able to literally and figuratively go where other companies couldn’t.

But S&ME’s out-of-the-box outlook isn’t its only market differentiator. The ENR (*Engineering News-Record*)-recognized firm is also an excellent place to work that harbors creative minds and provides unique incentives. It is an ESOP company, entailing that it provides employees with stock ownership at no upfront cost. Additionally, S&ME is also set apart by its in-house technical conference. At its most recent one, 600 people from within the company attended.

“Having been with other firms over the course of my career, this is the first time I’ve seen a firm committed to ensuring that we take a few days every year and learn about all the capabilities of the different business units,” says McDonald. “In addition to the technical presentations, this provides everyone with the opportunity to meet their peers and get to know others within the firm who they may not have had a chance to work with on previous projects.”

As the growing business continues to attract and retain clients with its holistic approach to even the most challenging and complex projects, S&ME searches for hard workers while it expands its corporate footprint.

“We typically look for people who are not afraid to work hard, that are humble servants and are able to communicate effectively with their peers and with our clients. We also really like hiring veterans. I’m a veteran myself and have several prior service military veterans in my group. For those who are either leaving active duty or been in the military this is a great place to work,” McDonald adds.



S&ME’s goals going forward are to continue to build on its design services. In 2015, it joined forces with Littlejohn Engineering Associates, a Nashville-based planning, civil and environmental engineering design, landscape architecture, and survey firm. The two private businesses had complementary services, geographic markets, and work cultures.

“With the acquisition, S&ME’s ability to provide civil design and landscape architecture services throughout our geographic footprint will be a goal in the future years. With these additional services, S&ME would ideally be able to provide a ‘one-stop shop’ for any client,” says McDonald.

So even though the engineering firm has already made the ENR Top 100 list, in the future it is only expected to keep growing. ■



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