

# Arkansas Professional ENGINEER

Official Magazine of the American Council of Engineering Companies of Arkansas & the Arkansas Society of Professional Engineers

## Engineer of the Year

Garver's Glynn Fulmer, P.E., is managing the design work for Arkansas' \$1.8 billion Connecting Arkansas Program. He coordinates the work of eight other firms that, in other circumstances, are Garver's competitors. How does he do that? "Treat people like you'd want to be treated."

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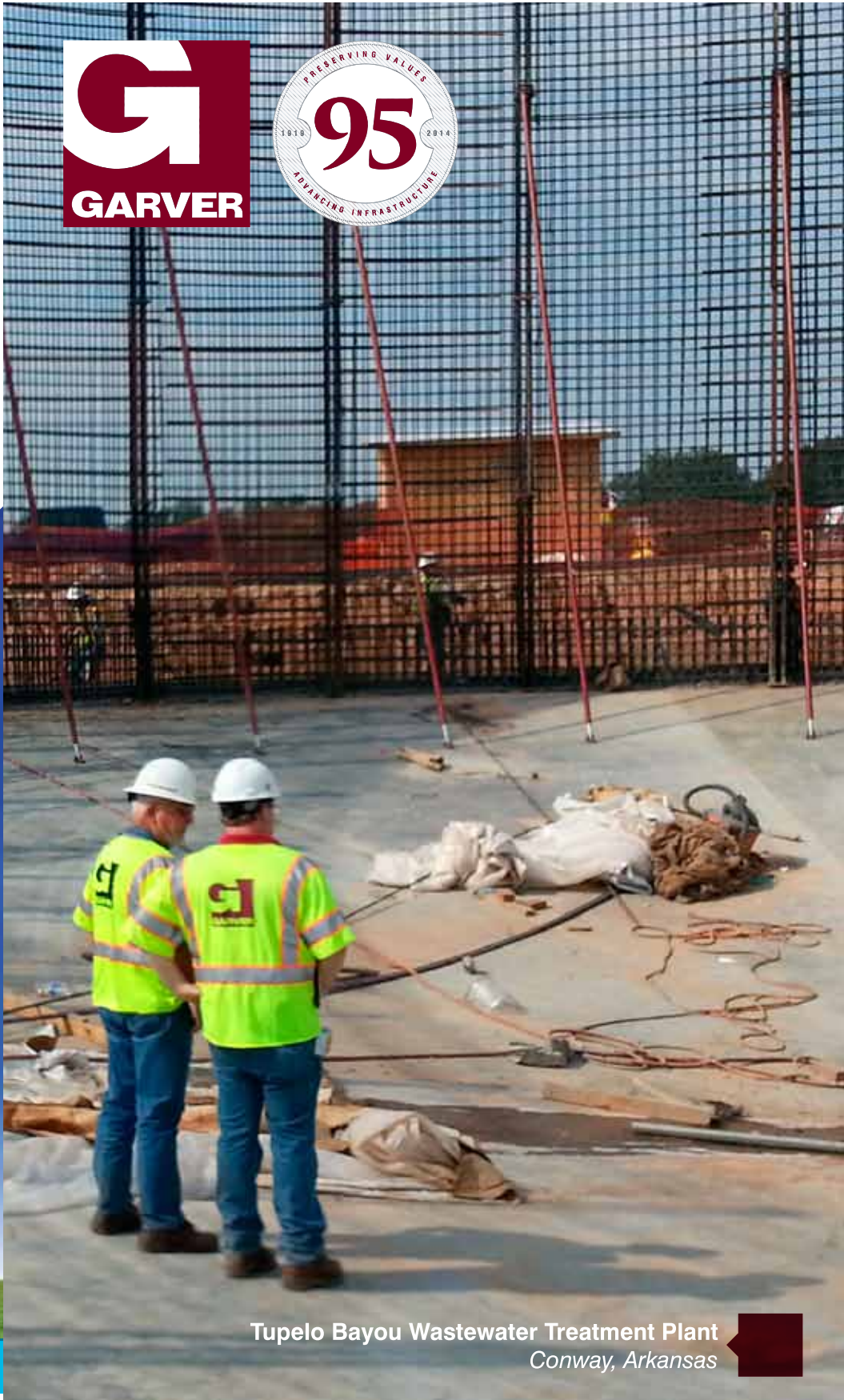
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**Congratulations** to Garver Vice President Glynn Fulmer, whom the Arkansas Society of Professional Engineers named Engineer of the Year. In order to survive and thrive for 95 years, Garver has relied upon great leaders like Glynn, and we understand the importance of cultivating that leadership from the beginning of an employee's career. That's why we'd also like to congratulate three of our employees—John Cantabery, Aaron Stallmann, and Adam White—for successfully completing the Emerging Leaders program, sponsored by the ACEC and ASPE.

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# Arkansas Professional / ENGINEER

Official Magazine of the American Council of Engineering Companies of Arkansas & the Arkansas Society of Professional Engineers



**16** Glynn Fulmer, P.E., of Garver is this year's ASPE Engineer of the Year. He was proud to receive the award, but he couldn't be present to accept it. He had too much engineering to do.

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**Bert Parker**  
ACEC Past President

## Volunteering for son's campaign shows need to get involved

My son recently ran for public office here in Arkansas. During the campaign, he continually told me how exciting it was to visit with Arkansas citizens one-on-one and hear how passionate they were about the direction of our country. Regardless of where they fell on the political spectrum, they had strong beliefs in their positions.

Fast forward to May 20, the date of the primary elections in Arkansas. As my son's staunchest supporter, I volunteered to hold a sign for him at one of the largest polling spots in his district. From sunrise to sunset, I was on duty.

During that long day, my precinct had a continual line of voters coming and going. Being the engineer that I am, I analyzed the demographics of the voters that day.

Easily 70-75 percent of the ones in my location were over 70. Another 20-25 percent were women under 70, and most of them were 40 to 60. Probably less than 5 percent were male voters under 70. They just didn't show up.

We are seeing the same trend in our professional societies. The Millennials

and the Gen X's just don't seem to see the importance of getting involved in many of the issues that have historically defined engineers. Maybe the corporate administrators are just not promoting it hard enough, or maybe it is just a sign of the times. But I feel our profession will suffer from it.

As with any endeavor, you get out of it what you put into it. That certainly applies to our vocation and your career.

Are you willing to put in a little extra time for your development and the development of our profession? Is your family worth it?

In each of my messages I wrote this year for this very important publication, I tried to address the importance of getting involved. With my last message, I ask two questions.

First, are you do-

ing all you can do to get involved, promote, lead and represent our engineering profession? And second, did you exercise your given right and vote last Election Day?

My last message is simple: GET INVOLVED! Your profession needs you, and so does your country.



**"Are you doing all you can do to get involved, promote, lead and represent our engineering profession? And second, did you exercise your given right and vote last Election Day?"**

# ACEC

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**Lane Crider**  
**ASPE Past President**

# Leave it better than you found it

*Recognizing that service to the public, to the state and to the profession is a fundamental obligation of the professional engineer, the Arkansas Society of Professional Engineers does hereby dedicate itself to the promotion and protection of the profession of engineering as a social and economic influence vital to the welfare of the community, the State of Arkansas, the United States of America and all mankind."*

*– Preamble, Constitution for the Arkansas Society of Professional Engineers.*

These days, the story of most service and professional organizations is the same: dwindling numbers and lack of participation.

NSPE, along with our own ASPE organization, faces the same challenge. How do we tap the interests and desires of PEs throughout the state as we continue to provide for the promotion and protection of our profession?

The answer seems simple enough: Just add more members. However, things aren't always as easy as they seem.

In 2003, membership in ASPE was nearly 600. In 2013 it was about 350. The State Board of Registration currently has more than 2,200 PEs registered in Arkansas, the majority of whom call Arkansas home. So, only about 16 percent of the PEs in Arkansas are ASPE members.

We have an opportunity to grow this organization by more than several times its current size. I encourage the leadership of the local chapters to develop a list of registered PEs in your area. Call and invite them to a chapter meeting. Encourage them to join NSPE/ASPE and help promote this valued profession.

This past year, your ASPE Board has made great strides. We established a for-

ward-looking budget that allows for the continued support and partnership with ACEC/A, revised the constitution and by-laws of the state organization to reflect the goals and current practices within the state, and positioned the board to assist and encourage the local chapters with growth and participation.

In our own busy lives, we have things pulling us in many directions at once. Family, work, faith, and social opportunities demand our time and attention. However, we all made significant sacrifices of time and effort when we decided to become professional engineers. Every year ASPE/NSPE faces challenges and threats that attempt to undermine the critical importance of our profession through legislative challenges and the overall commoditization of our services. We should all be aware of and concerned with these issues, and be greatly appreciative of the efforts that this organization makes to protect our profession. Membership and active participation in the local ASPE chapters will help assure that the efforts of this organization continue for generations of PEs to come. It's an opportunity we should all undertake with enthusiasm and pride.

I am proud and honored to be a part of a profession that does so much to advance the health and welfare of those around us. In his final address to the Boy Scouts, Robert Baden-Powell encouraged the scouts to "Try and leave this world a little better than you found it." As with any opportunity or challenge I choose to give my time and attention, I try to leave it better than I found it. I certainly hope this is the case with ASPE, and I encourage you all to do the same.

## In the News

### New ACEC/A, ASPE officers take office for 2014-15

The 2014-15 slate of officers for both the ACEC/A and ASPE have been appointed.

Brad Hammond, P.E., of McGoodwin, Williams, and Yates is the new ACEC/A president.

Other officers are: **president-elect** – Dee Brown, P.E., Brown Engineers; **secretary** – Andy Dibble, P.E., Mickle, Wagner, Coleman; **treasurer** – Mike Burns, P.E., Crafton Tull; **state director** – Byron Hicks, P.E., McClelland Consulting Engineers; **state director** – Jim Beavers, P.E., CH2M Hill; **national director** – Dan Williams, P.E., Garver; **immediate past president** – Bert Parker, P.E., Garver.

Rob Bullen, P.E., of Mid-South Engineering Company is the new ASPE president.

Other officers are: **president-elect** – Brad Peterson, P.E., CFM, LEED AP,

Crafton Tull; **secretary-treasurer** – Alan Pugh, P.E., CFM, City of Springdale; **state director** – Paul Speers, P.E., Entergy Arkansas; **national director** – Clint Bell, P.E., CWB Engineers; **past president** – Lane Crider, P.E., McGoodwin, Williams, and Yates.

compiled by the American Council of Engineering Companies using U.S. Census Bureau data and industry reports.

Employment reached about 1.395 million in May, up from 1.39 million in April.

The numbers are up from a little more than 1.35 million in May 2013.



#### August 20

ASPE Board Meeting  
Hot Springs, Mid-South Engineering

#### September 11

ACEC/A Board Meeting  
Little Rock, Executive Offices

#### September 24

ASPE Board Teleconference

#### October 15

ASPE Board Meeting  
Little Rock, Executive Offices

#### November 14

Agency Forum  
Little Rock, Garver

#### November 14

ACEC/A Membership Meeting  
Little Rock, Garver



**THE LOCATION** and strategies of the project are demonstrated above.

### Crafton Tull project to manage stormwater runoff in Little Rock

Crafton Tull is participating in an EPA-sponsored demonstration project finding best management practices for stormwater drainage in Little Rock.

A number of low impact development strategies will slow down and filter stormwater along a four-block span of Main Street before it flows into the Arkansas River. Those strategies include pervious pavers and concrete, rain gardens, bio-swales, and vegetated walls and filter strips.

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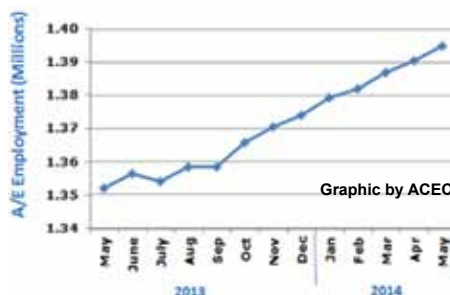
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### A/E employment sees increase for seventh straight month

Employment among engineers and architects rose for the seventh straight month in May, according to numbers

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## Pendergrass to head McClelland business development

Susan Pendergrass is the new director of business development for McClelland Consulting Engineers, Inc.



Pendergrass

dustry.

She is based at the company's headquarters in Little Rock. MCE has offices in Little Rock, Fayetteville and Tulsa.

Pendergrass will focus on strategic growth in Arkansas and adjoining regions in this newly created position. She has more than 20 years' experience within the design and construction in-

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# SAU engineer program readies for fall

Industry big supporter of only engineering program south of Little Rock

By **Steve Brawner**  
Editor

The state's newest engineering program will offer classes in general engineering this fall, but it's really been preparing for this moment for years.

Southern Arkansas University was given the approval to start a Bachelor of Science in Engineering program by the Arkansas Higher Education Coordinating Board Jan. 31. Dr. Scott McKay, dean of the College of Science and Engineering, said the program expects to enroll 40-45 students during the fall – about 20 transferring from its current engineering physics program and about 20 new students.

SAU has been offering an engineering physics degree for a couple of decades and began moving toward offering a bachelor of science in engineering program several years ago with strong encouragement from local industry. For the past three years, it has offered mechanical and chemical options as part of engineering physics.

McKay said the costs of starting the engineering program have been manageable because so many investments already have been made in hiring professors and building laboratories.

"We've already taught all the courses and kind of developed the curriculum over the last two years through those programs," McKay said.

The school is beginning a \$3 million campaign to build an 11,015-square-foot engineering complex and hopes to break ground next summer. It's also trying to raise \$350,000 - \$500,000 over the next year for more laboratory space and equipment. The department will have 3.5 professors in chemical and mechanical engineering. It will not offer classes in civil engineering.

## Industrial support

Local industry has helped drive the creation of the program and is actively involved with an engineering advisory



**DR. SCOTT MCKAY** is dean of Southern Arkansas University's College of Science and Engineering. Below, students study as part of the college's engineering physics program.

board. Magnolia-based Albemarle, one of the world's largest suppliers of bromine and bromine chemicals, has donated \$200,000 to create the SAU Albemarle Endowed Professor of Engineering. Other regional industries have joined with Albemarle in supporting SAU's efforts. The area includes a number of chemical and mechanical engineering-related

companies, including Zodiac Aero Elastomer America, which produces carbon fiber fuel cells, Murphy Oil and Dupont Fluorochemicals in El Dorado, and the large defense industry in Camden.

"We had a lot of industry both here and there that really kind of demanded it," said McKay, whose background is in petroleum chemistry. "We wanted to have engineers available and well trained and people who want to live here in southern Arkansas. It's not easy to find and retain engineers anywhere, so we felt that developing our engineers in this region would help the market a lot and would help us be more competitive with our companies."

McKay said the school will be industry-focused and hopes to provide two internships for every student during their four-year career. Students will work on industry-related projects in the Natural Resource Research Center – an ADEQ-certified facility with seven laboratories that conducts research and development in chemical and water issues and collaborates with local industry.

The school offers an annual \$10,000 Hallman Scholarship to a female student in the College of Science and Engineering and recently awarded it to an engineering student. Another donor has recently donated money for a scholarship for prospective female engineers.

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**PARTNERS.** ACEC/A representatives are present for the signing of a partnership agreement with the Arkansas Highway and Transportation Department. Pictured are, bottom from left, Bert Parker, P.E., Garver; Scott Bennett, P.E., AHTD director; Angie Cooper, ACEC/A executive director. Back row, James Barr, P.E., ICA Engineering; Dee Brown, P.E., Brown Engineers; Stacy Akin, P.E., McClelland Consulting Engineers; Brad Hammond, P.E., McGoodwin, Williams, and Yates; Mike Burns, P.E., Crafton Tull; and Glynn Fulmer, P.E. Garver.

## ACEC/A, AHTD sign partnership pact

Shared goals, liaison committee included in agreement signed July 15

By **Steve Brawner**  
Editor

The American Council of Engineering Companies of Arkansas and the Arkansas Highway and Transportation Department have signed a partnering agreement whose purpose is “to sustain a meaningful partnership between our organizations.”

The agreement was completed Dec. 13 and was signed July 15 by AHTD Director Scott Bennett, P.E.; ACEC/A Past President Bert Parker, P.E.; and Angie Cooper, ACEC/A and ASPE executive director.

The agreement’s goals include constructive dialogue, enhancing professionalism and integrity in the design and construction industry, and supporting qualifications-based selection processes. The agreement calls for continuing a six-

person liaison committee that meets at least twice a year. Three members from AHTD are appointed by the director, and three from ACEC/A are appointed by the ACEC/A president with approval by the board of directors.

### Bennett: State can’t rely on feds

Arkansas may need to prepare to receive less highway funding from Washington and rely more on money it raises itself, Arkansas Highway and Transportation Department Director Scott Bennett, P.E., told members of the ACEC/A Board of Directors July 15.

During a signing ceremony for an agreement between the AHTD and the ACEC/A, Bennett said Congress’ in-

ability to fund highways means, “We’ve got to keep making that transition to where we’re relying on it less and less, and there are a lot of states that have done that. Some states only rely on it for about 20 to 30 percent of what they do.”

About 50 percent of Arkansas’ highway funding comes from the federal

*Continued on next page*

government, but federal dollars pay for 70 percent of state highway construction.

Bennett said some in Washington favor "devolution," or funding highways primarily at the state level. He said that approach might make some sense, but definitely not with the interstate highway system or with national highways. Arkansas has 600 miles of interstate roadways as well as U.S. highways including U.S. 71 in western Arkansas and U.S. 412 across the northern part of the state.

"You look at Arkansas and our interstates, especially Interstate 30, Interstate 40, we're a bridge state," he said. "A lot of the traffic you have on those interstates is not necessarily generated in Arkansas. It's coming across Arkansas, and we need to have a way to be able to have funding from the federal level that's generated from all over the country to be able to pay for highway improvements here."

Bennett said the fact that Arkansas can't rely on Washington was one of the selling points of the Connecting Arkansas Program, the \$1.8 billion construction program passed by voters in 2012 and funded with a half-cent sales tax.

Bennett's comments came as Congress was deciding how to extend the current highway funding mechanism. The current law, MAP-21, was set to expire at the end of August, and the Highway Trust Fund would be empty by the beginning of that month.

The U.S. House of Representatives voted in July to shore up the trust fund and

**"We've got to keep making that transition to where we're relying on (the federal fuel tax) less and less, and there are a lot of states that have done that."**

**- Scott Bennett**

to extend MAP-21 through May 2015, partly by using a "pension smoothing" provision allowing employers to delay contributing to pension plans, thus raising their taxable incomes. Among the criticisms of the arrangement is that it would fund less than a year's worth of extra transportation costs using future revenues that would have to be repaid.

The Senate July 29 passed a bill that would fund highways through Dec. 19. It raised \$8.1 billion with no pension smoothing provision. The chambers had not reconciled the bills at press time.

Typically highway bills last five or six years, but MAP-21 was only a two-year provision. After the House passed its version, Bennett told engineers that the department needs a long-term solution.

"It would keep us operating, but it still doesn't let us plan for the future," he said. "I mean, we're in the middle of trying to develop our next four-year highway program, and we don't even know if or how much money we're going to have starting in October of this year. So it really makes it difficult to plan for the long term. With the time it takes to develop and implement highway projects, we need a longer term authorization bill, and we need a longer term funding solution."

The primary means of funding highways at the national level, the fuel tax, has not been raised since 1993 and was not indexed to inflation. Cars have become more fuel efficient, which means drivers are paying less in taxes to drive the same roads, which are becoming more expensive to maintain. Meanwhile, travel has increased.

"The fuel tax doesn't necessarily do it anymore," Bennett said. "You know, it's based on consumption, and it's a national goal to reduce consumption of fuel and reduce our reliance on oil, and that's about 80 percent of our highway revenue (that) comes from motor fuel sources. So there's got to be something done that will be a major change in the direction of how highways are funded."

Bennett encouraged ACEC/A members to get involved in the political process.

"It can't be just us preaching it the whole time," he told the group. "That's what we've seen even at the state level is we'll be the ones out front saying we need this and we need that, but if it's not the people that are involved in the industry, and even the people at the local level that are affected by all this, it doesn't go very far."



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## ASPE Annual Conference

# Bullen, Hammond to lead associations

Gavels passed at ASPE's annual meeting June 5

At the ASPE Annual Awards Luncheon, leadership of the ASPE passed from Lane Crider, P.E., of McGoodwin, Williams, and Yates to Rob Bullen, P.E., of Mid-South Engineering Company. Bert Parker, P.E., of Garver handed ACEC/A's reins to McGoodwin's Brad Hammond, P.E.

The luncheon June 5 occurred at the end of the ASPE's two-day Annual Conference. It was followed by the ACEC/A Annual Meeting.

After ceremonially receiving the gavel, Bullen praised Crider for the year's accomplishments, which included reviewing the Society's bylaws and setting up a budget based on the previous five years with projections into the next five. "I would like to say that Lane has definitely put his heart into this," said Bullen, a mechanical engineer with previous experience in biomedical engineering.

Parker praised both Crider for his leadership of ASPE and Hammond for his work on ACEC/A's board.

"Brad has been an exciting guy to work with," Parker said. "He stays calm, but he approaches everything from a very analytical viewpoint. Whenever I had an issue or a problem I thought was going to be delicate and tough to resolve, I always asked Brad if he would help us with that, and he always took charge and got it done with a very methodical and very technical approach to problem solving."

The luncheon was the conference's highlight. Glynn Fulmer, P.E., of Garver was named Engineer of the Year, while Crafton Tull's Travis Tolley, P.E., was Young Engineer of the Year. Graduates of the ACEC/A's Emerging Leaders program received their certificates marking their completion of the course, which teaches "soft skills" such as communication and conflict resolution. This is the fifth year for the program and the first in which all 10 slots were filled.

Also, Rudy Timmerman and high school students with Team 5006 Apophis from Prairie Grove presented a robot



**NEW LEADERS.** Top, Brad Hammond, P.E., left, accepts the gavel as the new president of ACEC/A from Bert Parker, P.E. Above, Rob Bullen, P.E., left, new president of ASPE, accepts the gavel from Lane Crider, P.E.

they built as part of the FIRST Tech Challenge. FTC is one of four robotics competitions for all age groups of young people. Engineer Dan George, Jr., received his P.E. certificate.

The luncheon was sponsored by BancorpSouth Insurance Services, ACEC

Life/Health Trust, Environmental Technical Sales, Jack Tyler Engineering, McGeorge Contracting, and Shupe and Associates.

Earlier in the day, Sen. Jon Woods, R-Springdale, updated engineers on activities of the Legislature, including potential



**MEETING HIGHLIGHTS.** Top, graduates of the Emerging Leaders program receive their certificates. Pictured from left are Dayne Moreton, P.E., Farrell Cooper Mining; Scott Geurin, EIT, Brown Engineers; Aaron Stallman, P.E., Garver; Travis Tolley, P.E., Crafton Tull; Adam Triche, P.E., McClelland Consulting Engineers; and Nick Griffin, P.E., Mickle Wagner Coleman. Not pictured are John Cantabery, P.E., Garver; and Chip Ashley, RLA, CEI Engineering. Above left, students with Team 5006 Apophis demonstrate how their FIRST Tech Challenge robot can toss a ball. Above right, Sen. Jon Woods, R-Springdale, provides a legislative update.

funding options for highways. In 2013, a bill that would have transferred sales tax revenues from automobiles and auto parts from the general fund to highways failed to make it out of committee despite drawing strong early support.

Afterwards, the highlight of the ACEC/A Annual Meeting was a presentation about succession planning by Nicole Mangino, assistant vice president for the XL Insurance Design Professional group.

## ASPE Engineer of the Year



**GLYNN FULMER, P.E.**, deputy program manager for the Connecting Arkansas Program, poses with maps and designs for some of the 31 projects Garver is coordinating with the Arkansas Highway and Transportation Department and eight other firms.

# Garver's Fulmer dots i's, crosses t's

The deputy manager of the \$1.8 billion Connecting Arkansas Program knows voters expect results.

By **Steve Brawner**  
Editor

The ASPE Engineer of the Year was too busy being an engineer to receive his award in person.

Glynn Fulmer, P.E., Garver's vice president, transportation team leader, couldn't make the award ceremony June 5 because he was attending an American Association of State Highway Transportation Officials Subcommittee on Design meeting in Savannah, Ga. The annual meeting attracted roadway engineers and state highway department assistant chief engineers from across the country. He felt he really had to attend.

"Mixed emotions," he said in describing the scheduling conflict. "I guess the engineer in me wanted to be there at the meeting, and then the personal side of me wanted to be able to be there to get the award. So it was a hard decision."

Fulmer is accustomed to making hard decisions. He heads Garver's Transportation Design Center, which manages the firm's transportation projects and some specialty areas. He is in charge of a staff of about 41, most of whom are engineers.

He currently is the deputy program manager for engineering for the Connecting Arkansas Program (CAP). Garver was selected by the Arkansas Highway and Transportation Department as the lead firm for the \$1.8 billion road program that was approved by voters in 2012. Under the terms of its agreement with the Highway Department, it's ineli-

gible to design any of the program's 31 projects. Instead, it works with the department to select and oversee eight other engineering firms, some of them based out of state.

Fulmer is managing engineers who normally are Garver's competitors. To do that, he and other members of the management team worked with the Highway Department to create policies and procedures that he tries to follow fairly.

"That's something that's not normal in Arkansas," he said of the arrangement. "It does occur in different places, but you just have to have a professional attitude and outlook on it, treat people like you'd want to be treated because next time you might be the one that's being overseen by a competitor. So we just apply the AHTD policies and procedures, make sure they're being met."

It could be awkward, but Fulmer said so far it hasn't been a problem. "Engineers typically tend to be good, honest, down-to-earth folks, and they want to do a good job," he said. "They want the opportunity to have repeat business."

Fulmer has been working on the program for a year and will continue working on it for two more years until the design work is completed. One challenge is the fact that the funding comes from a sales tax, which can generate uncertain revenues. To tackle the program, Garver has moved Fulmer and the rest of his team to a separate building once occupied by surveyors and construction observers. Seven employees work full-time on the project, with other personnel drafted for specific assignments.

Expectations are high, and Fulmer embraces them. It's not lost on him that voters decided to tax themselves to fund the Connecting Arkansas Program. They agreed to do this, he said, because the Highway Department did what it said it would do with the 1999 Interstate Rehabilitation Program.

"I thought it would be a great opportunity, fun, interesting, and it's been all that," he said. "It's been a lot of work. It's been very fast-paced, very hectic, but it's been enjoyable."

His boss, Jerry Holder, P.E., Garver director of transportation and the CAP program manager, gave him high praise.

"Glynn is the hardest working and most ethical engineer I think I've ever

**"(I) like seeing things built that you design. I also like the fact of hopefully you're making the world a little better place, safer, easier for people to use."**

**- Glynn Fulmer**

worked with," he said. "He is as honest as the day is long and always wants to do what's right. Never tries to shortcut a process. He dots every i and crosses every t. I don't know how he gets as much done as he does in the hours of the day. I'm always amazed."

In an emailed statement from the AHTD, Director Scott Bennett, P.E., said Fulmer deserves to be recognized for his achievements.

"Though his formal education ended some time ago, he continues to be a student of the engineering discipline," Bennett said. "He remains eager to study, to learn, and to apply innovative ideas. He is not an employee of the Arkansas State Highway and Transportation Department, but he practically functions as an extension of our staff. As we at the Department have evolved, so has Glynn's career, and we are very appreciative of the working relationship we have cultivated over the years."

### Garver for life

May 14 was Fulmer's 30-year anniversary at Garver, where he has spent virtually his entire engineering career. After growing up in Van Buren, he attended the University of Arkansas to earn an as-

sociate's degree in surveying, which was part of the civil engineering program. While there, he gravitated toward a civil engineering degree. After graduating, he accepted a job with Fort Smith Structural Steel in Van Buren, but a month-and-a-half after he arrived his superiors informed him that the company was involved in two lawsuits and was filing for bankruptcy and closing its doors. "I started Garver about two weeks after that and have been at Garver ever since," he said.

He arrived at a company that was much smaller than the one that exists today at a time when much of the drafting was done on a board by hand. An early project was working on a lock and dam on the Red River. When Garver needed him to focus on bridge design, he did that for the next 15 years. He helped design some of the bridges on what is now I-49 from the Bobby Hopper Tunnel north to Fayetteville. The tallest bridge is 210 feet above the valley floor. His signature project is the design of two taxiways that cross over a roadway at the Bill and Hillary Clinton National Airport, which required him to consider a multitude of landing configurations. "There's no code or design criteria ... for an airplane bridge," he said.

*Continued on next page*

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Jeremy Cox, CIC

Fulmer eventually managed the company's roadway design group for several years before being selected to manage the company's newly created Transportation Design Center about four years ago.

He's helped design some of the state's most important transportation struc-

tures. If you're traveling to Northwest Arkansas from elsewhere in the state, you're probably driving over his bridges. His airport taxiways are some of the last transport features travelers see when they leave Little Rock and among the first they see when they land. Now he's leading one

of Arkansas' most important transportation programs ever.

"(I) like seeing things built that you design," he said. "I also like the fact of hopefully you're making the world a little better place, safer, easier for people to use."

## ASPE Young Engineer of the Year

# Tolley: Invite young engineers to join ASPE

Crafton Tull engineer's involvement began because he was invited to luncheon

By **Steve Brawner**  
Editor

Travis Tolley, P.E., a civil engineer with Crafton Tull, became active in the ASPE for the same reason many people first walk into a church – someone invited him. That's how associations like the ASPE can attract young engineers like him.

"I think it takes the involvement of the middle and older engineers taking the young engineers with them to the meeting," he said. "That's how I got involved with the ASPE. I had a senior engineer come to me and say, 'We're going to the luncheon today.' ... I didn't question it. He was going, so I needed to go, and I think that also reflects within other organizations that are having similar (challenges)."

Tolley, 30, is the ASPE Young Engineer of the Year and the Central Chapter's Young Engineer of the Year.

He grew up the son of a construction carpenter in Perryville and graduated from Bigelow High School. He enrolled in the University of Arkansas to study mechanical engineering but soon found civil engineering was a better fit. He joined the staff of Crafton Tull on May 23, 2005, immediately after graduating from college.

Tolley recently completed the ACEC/A's Emerging Leaders program, which teaches young engineers soft skills such as public speaking and communication. His involvement gave him the chance to attend an ACEC/A board meeting and ask questions of senior leadership. It was the first time he had been involved in ACEC/A outside of the annual Engineering Excellence Awards banquet.

Much of his work has been centered around development projects – apartments, banks, commercial developments. One of his first projects was the Links at Fayetteville, an apartment complex and golf course operated by Lindsey Management.

Nine years into his career, Tolley appreciates that the consulting engineering field is undergoing a time of rapid change, and it's not certain where it will be when he leaves the profession. That means young engineers must be prepared to adapt.

"What engineers have put out at the end of the day in the past," he said, "has been a flat piece of paper that's a construction document. ... I don't really know how it will impact construction, but I know that our finished product is changing from a two-dimensional piece of paper to a three-dimensional electronic model."



**TRAVIS TOLLEY, P.E.,** of Crafton Tull is this year's ASPE Young Engineer of the Year.

Tolley lives on an 18-acre piece of property in Perryville with his wife, Kelly, and children Ella and Carter. He is active in the Perryville Baptist Church and a big Arkansas Razorbacks fan. Lunchtimes at work are often spent playing basketball.

"I love being on the basketball court. ... It's just a good place to clear your thoughts," he said.

## ACEC/A Annual Meeting



**NICOLE MANGINO** assistant vice president with XL Insurance's Design Professional group, discusses succession planning at the ACEC/A Annual meeting as Ken Estes with BancorpSouth Insurance Services looks on. BancorpSouth is the only authorized Arkansas agency for XLDP.

# XL exec: Succession planning a must

Firms must consider their options at a time of change, consolidation

By **Steve Brawner**  
Editor

All of us are going to die and most of us hope eventually to retire, so how do firm principals plan for a future of which they won't be a part?

That's a complicated question with many answers. Nicole Mangino, assistant vice president for XL Insurance's Design Professional group, tried to provide some of them at the ACEC/A Annual Meeting June 5. One thing is certain: A firm must have a plan that is consistent with its strategic and business plans.

Mangino told attendees that the architectural and engineering design sector is mature, fragmented and cyclical. Entry barriers are limited, but exit barriers are significant. The economy, the retirement of the baby boomers, and common business practices have depressed the value of many A/E firms. "When that value

of your firm is depressed, you still need the same amount of money to retire," she said.

Principals can sell the business to an external or internal buyer. Both options have their strengths and weaknesses. An internal buyer will pay less than an external one, but the seller maintains more control, and there's a greater chance the firm will be perpetuated.

Valuing the company can be difficult. For the seller, the value is based not

only on the actual investment worth of the firm but also the intangible value associated with the pride of ownership. A seller's ego often can distort his ability to be objective about the firm's worth. For an internal buyer, there's a psychological value associated with owning all or part of the firm where they work. But in almost every case, the intangible value for the seller is greater than the psychological value for the buyer, she said.

*Continued on next page*



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Common internal transfer methods include a direct sale and various stock ownership processes. Complicating the matter is that salaries are relatively low in the design field and that members of Generation X typically have little savings. Owners can address that problem using a variety of tactics, including “priming the pump” by giving employees stock ownership.

More difficult can be transferring leadership responsibilities to design professionals who have never learned business fundamentals. Future leaders must be identified years in advance and then trained. However, owners often find it difficult to abdicate their responsibilities.

How long does it take to make a successful transition? “I’d say there’s no right answer, but it’s like five to seven years to do it right,” she said.

Mangino warned attendees not to become so focused on succession that they lose sight of the firm’s day-to-day success. “(The) entire plan is going to depend on the financial stability of the firm, so again, don’t start paying attention to all of this and not pay attention to running the firm because that decreases the value, and you won’t be able to get anyone to buy into it,” she said.

Mangino said the A/E sector is undergoing a period of consolidation where large firms are buying niche practices.

From 2003 to 2012, the percentage of revenues going to firms with at least 101 employees increased from under 30 percent to about 55 percent – a change driven by federal contracts going to very large firms for design build projects. A decade ago, there were three firms with net revenues of \$1 billion. Now there are 26, with eight with revenues of more than \$2 billion.

That increase came largely at the expense of firms with 6-25 employees, whose market share fell from just below 40 percent to around 10 percent. Percentages changed little among firms with 1-5 employees (around 15 percent) and among those with 26-100 employees (just under 20 percent).

## Will you be involved in engineering?

Committees, legislative session, Emerging Leaders all offer opportunities

You may have heard the old saying about the difference between being involved and being committed is like a meal of ham and eggs; The chicken is involved; the pig is committed.

When it comes to ACEC/A and ASPE, you don’t have to be as committed as the pig – just as involved as the chicken, and there are lots of ways of doing that. We have completed our fiscal years in both organizations, our new officers have taken their places, and our ACEC/A board members have met for their annual retreat. Committee chairs are planning their programs for the year.

So what’s missing? Well, maybe you are! Those newly named committee chairs could always use committee members. It’s never too late to join and add your personal skills and engineering expertise, and there are lots of committees from which to choose. ACEC/A, for example, has four standing committees: Nominating and Election; Finance; Government Affairs; and Membership, as well as 14 special and ad hoc committees that can be appointed on an as-needed basis.

### Civic duties

How else can you be involved? November elections are approaching, so it’s important that you vote, as Garver’s Bert



**Angie W. Cooper**  
Executive Director

Parker, P.E., points out in his column in the front of this magazine.

Then make sure that legislators hear from you during the legislative session that follows. In January, legislators will descend on Little Rock to make laws that will affect our state and definitely our profession. Because of term limits, more than one-third of the members of the House of Representatives will be brand new. Many of them, along with their more experienced colleagues, will have limited understanding of infrastructure issues and may have no clue about the challenges the state faces. Special interest groups will be tapping on their shoulders. Thousands of bills will be introduced, many of them competing with infrastructure for limited state resources.

During the last session, for example, a bill that would have transferred tax revenues from the sale of cars and car parts

to highways seemed to have momentum and then failed to get out of committee. Opponents were concerned it would reduce funding for other needs. Would it have passed had more engineers pressed its case? It certainly couldn’t have hurt. We could use your voices in the Capitol.

### Emerging Leaders

Finally, I encourage your firms to be involved in the Emerging Leaders program. Every year, ACEC/A gives young engineers a chance to practice “soft skills” that aren’t taught in engineering school. Participants engage in a fun team-building exercise, study public speaking with a Dale Carnegie trainer, and learn conflict resolution with the help of an expert in the field. They also participate in an ACEC/A board meeting to give them an understanding of the roles they eventually will play in our associations. As Crafton Tull’s Travis Tolley, P.E., said in a story in this magazine, it was his first real exposure to the organization outside of the Engineering Excellence Awards.

Momentum for the Emerging Leaders program is building. This was its fifth year of being offered, and this year it attracted a full class of 10.

Engineers have plenty to do building this country’s infrastructure. That’s why we have associations like ASPE and ACEC/A – to do the full-time work. But the associations can’t get much done without members – not as committed as the pig, but as involved as the chicken.

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## ACEC/A Member Spotlight

# CWB Engineers is hometown firm

Founder Clint Bell chose to serve water, wastewater clients from Heber Springs

Home is where the heart is, and it's also where Clint Bell, P.E., decided to locate his firm.

Bell, 36, founded CWB Engineers, Inc., in Heber Springs in February 2008 on a part-time basis at age 30 while working for Little Rock Wastewater. In January 2009, it became a full-time operation. He selected Heber Springs for a simple reason: It was home, and he'd always wanted to return there.

"There's just not a lot of engineering jobs available around here, so you kind of have to make your own way," he said.

The firm specializes in water and wastewater projects. It recently completed a yearlong \$2.2 million project for City Corporation in Russellville that upsized a sewage line's hydraulic capacity to provide more flow. It performs sewage pipe rehabilitations using three processes: cured in place, where an old pipe is restored using a new liner; pipe bursting, where a new polyethylene pipe is forced through an old pipe; and the traditional relay in place method where the pipe is simply replaced. The cured in place method involves no digging, while pipe bursting requires very little.

CWB Engineers is designing a \$2 million treatment process for the city of Heber Springs that will use a fixed membrane as opposed to sand and other filters. The skid-mounted membrane is designed so that anything larger than a certain size will not pass through. The client was looking for a technology with a small footprint for an existing building that also is portable in case the client decides to move. A small-scale pilot built to test its effectiveness on raw wastewater has tested well, and the project should be completed by next summer.

"It just fits really well with this application, and we wanted to think long-term and try to get them in the best equipment for their needs, so this is a perfect fit in our opinion," Bell said.



**CWB ENGINEERS**, founded by Clint Bell, P.E., in his hometown of Heber Springs, specializes in water and wastewater projects. Top photo is a 12-inch waterline bore in Vilonia. At left is an 18-inch sewer bore in Russellville that was part of a \$2.2 million sewer improvement for City Corporation. Below is a beach restoration project in Heber Springs. The sand was screened on site with a mobile unit after a 2011 flood.

From his modest start, Bell has built the firm into a staff of eight, including two other engineers, Oren Noble, P.E., and Kyle Breckenridge, P.E.

There are pluses and minuses to locating in Heber Springs and outside the major metropolitan areas. Talent can be a little harder to attract. On the plus side, Bell said his firm is conveniently located near his clients in north-central Arkansas. All of his clients are within a couple hours' drive. Also, he said a small-town firm can better speak the language of small towns.

"It's been a benefit because being in a small town, we can relate to some of the smaller municipalities a little better," he said. "We know some of their struggles



because it's just different doing business in Little Rock than it is in, say, Heber Springs or Vilonia, some of the smaller clients we work with. There's a little different aspect, and you have to know that to deal with them, so I think we can relate to them better somewhat."

## Education News

### Ex-dean Saxena returns to UA to lead biomedicine



**Saxena**

Ashok Saxena, the former dean of the University of Arkansas College of Engineering, has returned to Fayetteville to be the first permanent head of the Department of Biomedical Engineering.

The department was created in 2012. Terry Martin was interim department head from 2012-14.

Saxena was dean of the College of Engineering from 2004 until 2012. He left on a two-year appointment as vice chancellor at Delhi, India's new Galgotias University, where he oversaw the growth of the school from its birth to 6,500 students. He also helped India gain admission to the Washington Accord, which is an international engineering accreditation organization.

Saxena has worked in multidisciplinary fields. While he has focused mostly on mechanical engineering and materials science, he long has been interested in biomedicine and said in a UA press release that the concepts overlap. For example, a bone fracture is a mechanical issue just as a fracture in metal or concrete is.

Saxena hopes to increase research funding, increase collaboration with the University of Arkansas for Medical Sciences, and attract more doctoral students.

"This is an opportunity to pursue my dream," Saxena said in the press release. "I just hope it will be as good for the department as it is for me."

#### Nachtmann to head research

In other UA news, Heather Nachtmann, professor of industrial engineering, is the new associate dean for research for the College of Engineering. She will be in charge of coordinating the research

and graduate education activities in the college, according to a UA press release. She will promote scholarship, facilitate research collaboration within the college and with other colleges and universities, and carry out the college's research vision.



**Nachtmann**

### Mixon to serve as A-State dean



**Mixon**

Dr. Paul Nixon, P.E., will serve as interim dean of the Arkansas State University College of Engineering following the retirement of Dr. David Beasley.

Mixon has served 18 years at Arkansas State and has been director of electrical engineering for about four years. He said the administration has said it



**Beasley**

will delay its search for a new dean for a year. He plans to teach one class per semester.

Mixon takes over a college that is growing and in transition. Enrollment is between 300-350 students and is increasing. In fact, according to Nixon, "We've got, it looks like maybe, the largest enrollment I've ever seen since I've been here. In many of our classes, we're full to capacity and trying to figure out where we're going to put all these students, which of course is a good problem for us to have."

The faculty has increased by about 50 percent since Beasley became dean in 2009. Now there are 16-17 full-time faculty members, but several recently have taken early retirements.

Meanwhile, the college's degree structure recently changed. As of the spring of 2013, three separate degrees have been accredited by the Accreditation Board for Engineering and Technology (ABET). Undergraduate students now can earn degrees in electrical, mechanical, and civil engineering. Previously, students could earn a degree in engineering with a concentration in one of those areas. Arkansas State also offers a master of engineering management as well as a master of science in engineering.

Mixon said Beasley's involvement in ABET's upper leadership helped make the college's change in accreditation possible. Beasley came to Arkansas State from North Carolina State University, where he had served as professor of biological and agricultural engineering. He spent his childhood on a farm near Hughes in eastern Arkansas.

*Continued on page 25*



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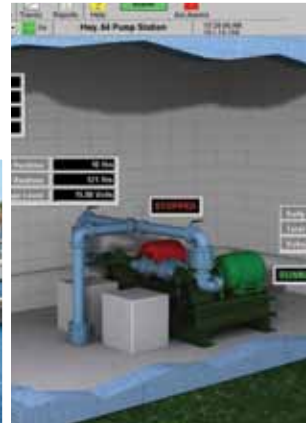
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## Education, continued

Mixon said as interim dean he hopes to grow enrollment and also build relationships with local industry, including smaller employers.

"STEM is a hot topic. We have opportunities to go into high schools and talk to high school students who are interested in STEM, and we think that's going to pay off for us," he said.

## UALR camps expose students to engineering field

The University of Arkansas at Little Rock has given about 100 Arkansas students in grades 6-12 a taste of engineering and other scientific and technical careers through six summer camps,

The Exxon-Mobil Bernard Harris Summer Science Camp attracted 48 students in grades six through eight, while a

research-based camp offered high school students one-on-one time with faculty. Meanwhile, three one-week Engineering Scholars camps exposed high school students to civil, electrical and mechanical engineering. In a culminating project, students estimated how long it would take to build a bridge and then attempted to construct it under budget in less than 20 minutes.

"It gives the students an idea of some of the design challenges that engineers face," said Vernard Henley, assistant dean of the College of Engineering.

The camps were free, including meals and dorms plus social activities. One popular activity was "dessert with an engineer."

"Some of these sessions last anywhere from an hour to when we have to force the students out of the room because the ice cream has melted," said Henley. "And two hours is way too long, but, you know, the students basically drive the length of the session, but for a lot of them, especial-

ly in the rural areas of the state, it's really their only chance to talk to an engineer."

## Engineering grad is Arkansas Tech's top female student



Lynsie Whitlow, a recent electrical engineering graduate of Arkansas Tech University, is the 2014 Margaret Young Award winner as the school's most outstanding female student.

ing female student.

Whitlow, an Alma native, graduated with a 3.97 grade point average. She credited Dr. Patricia Buford, associate dean of

*Continued on next page*



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## Education, continued

engineering and associate professor of electrical engineering, as one of the reasons for her success.

She was elected the first president of the Arkansas Tech Student Alumni Association, which was founded during the 2012-13 academic year.

Whitlow is now working for Lockheed Martin as a system engineer associate. She hopes eventually to earn her master of business administration degree.

# Marketplace

*Editor's Note: This page contains news of interest from Arkansas Professional Engineer advertisers that are not members of ACEC/A*



**A CHLORIDE DIOXIDE GENERATOR** at one of Central Arkansas Water's plants is pictured. Photo courtesy of Central Arkansas Water.

## ETEC, Van Horn help with chlorine dioxide upgrade

Chlorine dioxide generators installed by Van Horn Construction and sold by ETEC are helping Central Arkansas Water treat drinking water and reduce disinfection byproducts.

The Evoqua Millennium III systems began generating the chlorine dioxide in January at both of Central Arkansas Water's (CAW) treatment plants. CAW's water treatment plants serve 400,000 customers.

The EPA in 2014 required all large water utilities to comply with new rules for treating disinfection byproducts, which are thought to cause a health risk and are created by the reaction of organic materials such as decomposed leaves with disinfection agents such as chlorine.

The generator mixes sodium hypochlorite, hydrochloric acid and sodium chloride to create chlorine dioxide, which changes the molecular formula of the organic materials so they don't form the byproducts.

The utility chose the chlorine dioxide generator over other technologies because of safety and other factors. CAW's water treatment plants are located in highly populated residential areas. Due to safety issues, the system had already switched from using on-site chlorine gas to sodium hypochlorite – one of the three chemicals employed by the Evoqua Millennium III system. The project was designed by Jacobs Engineering.

John Tynan, CAW director of communications, said almost a million Arkansans are served by chlorine dioxide generators, which Central Arkansas Water is using for the first time.

Chad Cooley, P.E., of Environmental Technical Sales ([www.etc-sales.com](http://www.etc-sales.com)) was the sales representative for the system. Doug Graham, CAW assistant director of operations, said Cooley has been easy to work with.

"If I'm looking for a new product, or if I've got a question about something he's recommended, when you call him, he gets back to you quickly, and he gets your question answered," Graham said.

Brian Rohlman, P.E., with Van Horn Construction also praised ETEC.

"They always provide excellent service," he said. "I mean excellent. You can't say enough. ... They're responsive."

The generators were part of a \$15 million upgrade, most of it managed by Van Horn Construction ([www.vanhornconstruction.com](http://www.vanhornconstruction.com)). Joe O'Hara, P.E., CAW's project engineer, said working with the contractor was a good experience. "The whole time during the project, they were on site, they were friendly, courteous, conscious of safety," he said. "If you brought anything to their attention, they got right on it. We'd hire them again. They're a very good contractor."

Van Horn's Rohlman said installation of the equipment was simple and that no plant shutdown was required. He said

chlorine dioxide generators are becoming a common method for dealing with disinfection byproducts.

## ICM epoxy coating extends clarifier's life

An epoxy coating installed by Improved Construction Methods will extend the life of a primary clarifier in a Harrison wastewater treatment facility by 25 years, the consulting engineer who designed the project said.

Jacksonville-based Improved Construction Methods ([improvedconstructionmethods.com](http://improvedconstructionmethods.com)) recently installed a Sauereisen 100 percent epoxy coating on a 45-year-old primary clarifier, which is the first settling area wastewater enters before it undergoes biological treatment. Decades of exposure to the wastewater had worn some of the surface, exposing aggregate in the concrete wall. ICM was the low bidder among five competing firms, some from out of state.

"They came in, they completed the project without any change orders, and we got the finished product for the same price that we bid the thing for, and they did a really good job," said Vernon Williams, P.E., of Benton-based GarNat Engineering, which designed the project.

Williams pointed out that this and other structural repairs were completed within a couple of weeks, versus the months it would have taken to replace it.

"I think it's probably going to extend the life of that tank ... at least 25 years," he said. "I'm certain that it will. It's considerably less expensive to go in there and use this product to prop up that existing structure than it would be to go in and replace it with a new structure."

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