# ARKANSAS ASPHALT NEWS

A Publication of Arkansas Asphalt Pavement Association

First Quarter 2024





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2024 Annual Convention Sneak Peek
The Future of Asphalt Technology
Balanced Mix Design Guide



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**Park Estes Executive Director** director@arasphalt.com

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As we make preparations for our 2024 season, let's take some time to reflect on how grateful we are to be in the great state of Arkansas! The 2024 Quality Conference was absolutely one of the best yet. A special thanks to Park and Kathryn for a tremendous job organizing and executing. Thank you both for an exceptional job (well, maybe just Kathryn). Thank you to all the speakers, exhibitors, and sponsors. Last but certainly not least, a Special Thank You to our friends and partners at ARDOT. The success cannot be achieved without the support and leadership from ARDOT. What a great time to be in the asphalt industry.



Murry Cline

Congratulations to ARDOT on their three Perpetual Pavement awards, and congratulations also to Rogers Group for winning both AAPA Safety Awards (Work Zone category and Producer category). The SAFE award is not easy to achieve, but the end results make everything worth the time and effort. This is truly a testament to the commitment from the association to recognize safe operations. Let's have everyone strive and submit for 2024.

I am hopeful for an early and favorable spring so everyone can begin on all the work that is in front of us. As always, make sure to keep safety and quality in the forefront. We have made great strides year after year.

"It will be important for the association to stay actively involved in the local, state, and national races. These races will continue to have an impact on our businesses. AAPA stands in great shape to support friends of our industry."

Please keep the improvement and relationship with ARDOT in our plans as we execute the work in a safe and timely manner.

This will be an election year, so get ready for a year of political unrest. It will be important for the association to stay actively involved in the local, state, and national races. These races will continue to have an impact on our businesses. AAPA stands in great shape to support friends of our industry. If you have not donated to our PAC fund, please do so. It is a must we stay involved.

Please mark your calendars for the Annual Convention at Oaklawn in Hot Springs on April 30-May 2, 2024. A great agenda is being planned, so I am sure you do not want to miss out. It is always a great time to come together.

Finally, begin preparations now for a great, safe, and productive work season in 2024!

May God bless you, your companies, and our association and keep everyone safe.

> Thank you, Murry Cline AAPA Chairman

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ON THE COVER: ARDOT was presented with three perpetual pavement awards at the 2024 AAPA Quality Conference. From left to right: Park Estes (AAPA Executive Director), Rex Vines (ARDOT), Marie Holder (Arkansas Highway Commission), Lorie Tudor (ARDOT Director), Murry Cline (AAPA Chairman). *Photo courtesy of Rusty Hubbard with ARDOT*.

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## **BUILDING INFRASTRUCTURE** TO CONNECT YOUR COMMUNITY.



# **AAPA Welcomes Packed House** at 2024 Quality Conference

by Deborah Horn

While there were more than a few nods to the past work of the Arkansas Department of Transportation and Arkansas's contractors at the 2024 AAPA Quality Paving Conference, many of the speakers were talking about technology's present and future applications.

The Arkansas Asphalt Pavement Association (AAPA) 2024 Quality Paving Conference was held Thursday and Friday, Jan. 4 and 5, at the Embassy Suites in Little Rock. Murry Cline, AAPA Chairman, opened the conference luncheon with a big welcome to AAPA members and guests.

Cline said, "Every time the Arkansas Asphalt Pavement Association hosts an AAPA Quality Asphalt Paving Conference, it's a big deal for us. We are happy to welcome all ARDOT employees and Director Lorie Tudor, and all the contractors and their employees who get up every day and dedicate their careers to making Arkansas' roads the best in the nation. Thank you. We are honored to have you today."

About 350 attended the two-day conference that featured more than 20 speakers over the 13 sessions, as well as an opening day luncheon that included guest speakers Ryan Lindsey (Executive Vice President of Government Relations for CRH Americas) and U.S. Congressman Steve Womack.

"This year, AAPA's focus was primarily on how the industry is rapidly changing through the use of technology and how it can produce longer-lasting roads and safer work environments. In many cases, tomorrow's technology is already in place and making a difference." — Park Estes, AAPA Executive Director

The conference's technological-related topics ranged from discussions about equipment that could scan the slope of a road and the use of Lidar to data mining a vehicle's sensors for information that could lead to the construction and maintenance of longer-lasting asphalt pavements.

Park Estes, AAPA Executive Director, and his staff organized the event. As with every year in the past, his group strives to bring the latest and most useful information to its members.

Estes said, "This year, AAPA's focus was primarily on how the industry is rapidly changing through the use of technology and how it can produce longer-lasting roads and safer work environments. In many cases, tomorrow's technology is already in place and making a difference. We hope our sessions and guests got the conversation started and answered many of your questions."

He added, "AAPA also explored the benefits that can be achieved through public-private partnerships and placed a heavy emphasis on safety."

Chad Adams, ARDOT Assistant Chief Engineer for Construction, closed out the conference with a few words: "This was one of the best conferences we've had. From the beginning to the end, it was all about producing quality roads. We had a great year in 2023; let's make 2024 even better."

### On the Importance of Keeping it Personal

Ryan Lindsey, the first speaker at the conference luncheon, opened with a positive message packed with humor and wisdom.

Lindsey has been Executive Vice President of Government Relations for CRH Americas since 2011 and leads their federal and state advocacy and political engagement in North America.



"I'm pumped to be here," Lindsey said.

He started with a little anecdote: "Three pavers, one from Arkansas, Delaware, and Missouri, were bidding on a government job. The Arkansas paver said, 'I'll do it for \$100,' while Delaware said, 'I'll do it for \$500. Two hundred for me, \$200 for you, and we'll get the old boy from Missouri to do it for \$100."

However, Lindsey added, "Everyone knows the best pavers are from Arkansas."

Then, thoughtfully, he said, "What we do and how we do it really matters."

"Your part is a big part of it. Be personal; it's not just business," Lindsey said about all the various public and private organizations and their employees involved in the asphalt industry.

After showing several major brand symbols on the overhead scene, Lindsey asked the audience to consider "your own personal brand", whether it's a problem solver, energy taker or giver, trash talker, and do you think of others in the process?

He encouraged audience members to build relationships by being sincere, honest, trustworthy, and "putting others in front of yourself. Make other people a priority. Be present." As well, be consistent, create value, show up daily, and remember, "Your brand is what people say about you when you are not in the room."

He said about his organization, "We're in 48 states. Congratulations on ARDOT's and its contractors' relationship. Don't take that for granted, because it doesn't exist everywhere."

Lindsey has held various industry-related positions, including a Construction Operations Area Manager, and moved into Government Relations about ten years ago. He helped develop and launch the grassroots advocacy organization, "Engage. Educate. Impact.".

### Not a Shutdown-Kind-of-Politician

Rep. Steve Womack, a Republican who has served the



Third District since 2011, took the stage immediately following Lindsey.

"Ryan made us laugh, and I'm probably going to make you cry," Womack said in his opening statement.

While some see a government shutdown as a protest statement, Womack said, "I'm not a shutdown

kind of guy."

He asked the audience to consider the ramifications, such as the country's inability to execute or write new

contracts, fund projects that impact infrastructure, and more.

Womack said that as mayor of Rogers, he saw firsthand the impact of infrastructure improvements on his town and surrounding towns such as Bentonville, Fayetteville, and Springdale. "Shutting down the government means you can't plan for national security," Womack said. "It could result in people dying. That means something to me."

While VA benefits and Medicare would continue without interruption, small community healthcare systems (like in Arkansas) could be impacted, laying off medical personnel and leaving patients with few medical care options.

The IRS might also see layoffs, as well as other nonessential federal employees.

However, he said, the country "just hit a milestone. It's about \$34 trillion in debt, which must be addressed. The interest payment on this amount alone is about \$1 trillion." Everyone in this room would probably agree that "we spend too much money", but no one is willing to address Social Security or Medicare, which could "implode" by the early 2030s.

"My goal is to make sure we do policy changes and fixes," Womack said, and not use the threat of a shutdown as a tactic. "Congress needs to get back to work and find (solutions) that we can agree on."

Womack graduated from Arkansas Tech University and, in 2014, was inducted into their Hall of Fame.

Col. Womack served in the Arkansas Army National Guard for 30 years, is a member of their Hall of Fame, received their Harry S. Truman award, and was the 2022 recipient of the "Dick Trammel Good Neighbor Award" for his impact on Northwest Arkansas.

#### Word from the Federal Side of the Street

For those who rely on the Federal Highway

Administration's (FHWA) expertise, there are personnel and policy changes of note, said Vivien Hoang, FHWA Arkansas Division Director, during her session "FHWA Update."

She talked about FHWA's Strategic Plan that's now in place.

"There have been infrastructure law updates, Buy America (requirements when possible), and we have new administrators (at FHWA)."

have new administrators (at FHWA)," Hoang said.
These include FHWA Executive Director Gloria M.

Shepherd and Public and Private Sector Senior Executive Shailen Bhatt.

In Arkansas, Hoang said, "We've been hiring," and of the six new employees, three are new transportation engineers. Her department is also moving forward with the Bipartisan Infrastructure Law (IIJA/BIL), setting up programs and funding.

The Infrastructure Investment and Jobs Act (IIJA), aka the Bipartisan Infrastructure Law (BIL), was signed into law by President Joe Biden in late 2021. It authorizes \$1.2 trillion for transportation and infrastructure spending over through 2026, with \$550 billion going toward "new" investments and programs.

Projects include roads, bridges, mass transit, water infrastructure, and broadband.

Hoang said there are new programs and new grants. "This year, we are getting those out to bid and to the construction phase. Get those out to the street."

"There is a process to bypass Buy American for certain construction materials," she said. "There's a lot of money that's coming, a lot of money that's been awarded. My office is here to help with any problems."

Finally, she said the FHWA Mobile Asphalt Technology Center (MATC) will be in Arkansas this spring, and they plan to host an open house.

Hoang became FHWA Arkansas Division Administer in 2020 and leads an office of 19 professionals who deliver more than \$170 million in federal highway money in Arkansas in cooperation with ARDOT.

For more information, call the FWHA's Arkansas Division at (501) 324-6436 or email Vivien Hoang at: vivien.hoang@dot.gov.

#### Word from the Arkansas Side of the Street

"2023 was great, but 2024 is going to be even better," said ARDOT Director Lorie Tudor during the "ARDOT Update" portion of Thursday afternoon's lineup.

Last year, ARDOT awarded \$409 million for Pavement Preservation (PP) projects, and from 2025 through 2027, PP project spending will increase to \$450 annually, or about \$1,350 million for the three years.

This year, PP project spending will be about \$130 million in January, \$90 million in February, \$80 million in April, and \$150 million in May and the following months. In 2025, ARDOT plans also include \$450 million for road widening, \$40 million for bridge preservation, \$170 million for bridge replacement, and \$40 million for safety.

The CAP (Connecting Arkansas Program) was completed "on time and as promised," and included 31 projects, about 200 miles of roadway, at a cost of about \$2 billion, Tudor said. In 2012, voters approved CAP, one of the largest highway construction programs undertaken by



#### ARDOT.

On Oct. 2, ARDOT launched "Ask ARDOT," an online customer service platform. It allows residents to submit questions or comments about Arkansas' highways and interstates – anything from construction project details to potholes and trucking permits to submitting job applications.

Tudor said, "ARDOT has always prided itself on its high standard of communication with the public. This new customer service platform furthers that commitment. This software allows us to track stakeholder input and inquiries and to use that data to better serve the citizens of Arkansas."

Tudor said going forward, the "Phone Down" campaign will focus on college-age students, who are more likely to be involved in distracted accidents.

The state expects as many as two million visitors during the days before and following the solar eclipse on Monday, April 8, because a large swath of Arkansas falls into the path of totality.

Tudor said their goal was "safe and efficient traffic management" through planning, public education, and conversations with state and local governments and agencies.

Tudor is working to create a permanent, privatelyfunded fallen ARDOT memorial fund, saying she welcomes any donations or ideas.

"Hopefully, next year, we will have the money in place and design in the works," Tudor said.

Questions or donations can be made at FallenWorker@ ardot.gov.

Tudor started with ARDOT in 1981 and was named Director in 2020. She is a licensed engineer and is currently a member of the American Association of State Highway Transportation Board of Directors and President of the Southern Association of State Highway and Transportation Board of Directors.

### Working Together for Better, Innovative Mixes

Dr. Kevin Hall led the panel discussion, "Pilot Project Panel", which closed out the first day of the AAPA Quality Conference.



The ARDOT-industry partnership began with the TRC 2201, "ARDOT Superpave Gyratory Compaction Specification to Increase Pavement Durability", in January 2023.

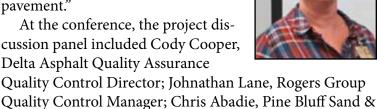
Basically, ARDOT contacted contractors to participate in Balanced Mix Design and scheduled monthly progress meetings to maintain consistent

communication.

The design restrictions were loosened, allowing the contractors to innovate using their specific materials. ARDOT challenged the contractors to produce Amazing

Asphalts, said Tisha Reynolds, ARDOT Materials Division and TRC 2201 Chair. She said, "The goal was to increase the life of the asphalt and reduce the risk of cracks in the pavement."

At the conference, the project discussion panel included Cody Cooper, Delta Asphalt Quality Assurance



Gravel Technical Advisor; Andrew Lee, Atlas Asphalt Inc. Project Manager, and Reynolds. Over the past year, the partnership has fostered "open,

honest discussions resulting in multiple specification changes that all agree will be extremely beneficial to the life of our asphalt pavements," Reynolds said.

At the end of the discussion, Hall said, "This is success for all Arkansans, long-lasting roads that don't break the bank."

Hall is the University of Arkansas at Fayetteville's (UA) Civil Engineering Department Professor of Infrastructure Engineering and Associate Dean for Academics at the UA College of Engineering.

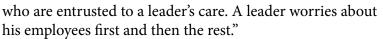
### The Unfortunate Story of the SS Sultana

David Miguel was the last speaker of the Quality Conference, but his message during his "Safety" presentation was heartfelt and

impactful.

As part of his opening, he asked, "What makes a person a leader or a boss?"

Beyond dealing with client, budget, and scheduling pressures, Miguel said, "It's making decisions that affect the work and the folks



Miguel added, "You don't see that often. Any idiot can do the job when everything is going right, but it takes courage to lead when the chips are down, and money and clients are at stake. Most leaders fall apart at that point and are just too scared."

He used several of the world's worst shipwrecks in modern maritime history to drive his point home, including the tragic story of the SS Sultana.

Despite recent shoddy boiler engine repairs to the SS Sultana in Vicksburg, Tenn., and with greed as a motivator - the U.S. government was paying for the transport of POWs, \$4 for enlisted soldiers, and \$10 per officer -Captain James Mason ignored the ship's legal passenger capacity of 376 and put about 2,300 onboard.

"They were not healthy people but sick and injured," Miguel said.

The water ran high and historically fast, but Mason continued up the Mississippi River. Then, on the morning of April 27, 1865, the boilers exploded near Mound City (now Marion).

Miguel said, "One thousand, one hundred and eightyfour were killed, and it's considered the worst maritime shipwreck in American history."

Capt. Mason wasn't thinking about the men in his charge but of the payout and the schedule, and "while these are important to the success of any operation, it's not the most important thing," Miguel concluded.

David Miguel is a 1988 Boston College graduate with almost 30 years of experience in construction, mining, and general industry safety and health. He is an OSHA 10 Construction Safety and Health Outreach Instructor and an American Safety & Health Institute Level 3 Instructor for First Aid, CPR, and AED. He also holds a Safety and Health Specialist Certification from the National Safety Council.

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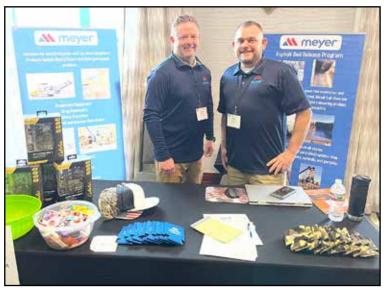
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# Vendors!



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### **Buying Smart: When Every Penny Counts**

During his "Automated Equipment/Future Technology" session, Joey Farrell, Jobsite Technologies, Inc. President and CEO, removed his sales-and-service hat to discuss how a company might best benefit from today's technologies.

Farrell has a few recommendations for those considering purchasing automated equipment and systems that might serve a company best. His recommendations are based upon a company's primary business, whether it's repaving small to medium-sized parking lots and county roads or building new large-scale parking lots and interstates with complex designs.

He said, "Most commercial asphalt companies start with basic 2D Grade and slope automation for yield control."

Contractors purchase a 2D Grade and Slope System; this helps with yield and smoothness. Either platform is scalable up to complete 3D control with steering, endgate control, elevation, and cross-slope, Farrell said. It also works well for those undertaking heavy construction projects.

"Depending on the job specs, technology is available today that allows medium to large contractors to scan surface data, design, and create a best fit 3D design to achieve maximum material and smoothness control. The software can input a compaction value and complex cross-slope with elevation design data based on surface conditions," Farrell said.

Also, "Cross-slope correction, yield, and smoothness (IRI) are today's hot topics for most highway contractors. A desired leveling course or mill/inlay is where we start talking about yield control and smoothness, which is basically where rate & grade collide," he added.

This particular technology may allow a company to better meet its deadlines and achieve maximum ride bonuses.

He said, "I certainly believe technology will play a key role in whether or not a contractor competes in the future, but we still have to have people that understand it and embrace it. If we don't take ownership of any technology, we will fail. We are faced with labor shortages unlike we have ever seen, and the gravitational pull towards adapting such technologies could likely be a determining factor for adding fully autonomous machines to the future job site."

### **Data Mining for Better Roads**

"The industry is changing pretty dramatically," said Dr. Bill Vavrik, ARA, in the opening of his session titled "The

### Future of Data for Pavements & Beyond."

He added, "The pavement world is realizing that we might need data scientists and others, like data engineers,

to continue building roads."



In the past, "data was collected over time, and much of the acquired knowledge lived at the DOTs, but then as contractors gained more knowledge and experience about mix design, it shifted to the contractors," Vavrik said.

The industry is in flux again.

"Data science is going to become more important to us," and it can be mined to enhance road design mixes and to build smoother, safer roads with minimal cracking at some point in the future, he said.

Pavement data comes in many forms. The industry started with manual measurements, but now tech is in play. For example, 3D high-speed lasers are attached to vehicles to measure bumps instead of being done by hand and recorded on a clipboard, as in the past.

"Lidar can show us what's going on (below the surface)," including revealing hidden problems in areas of cracking and rutting, marking stoplights and ditches, measuring the road slope, and more, Vavrik said.

Lidar or LiDAR (Light Detection and Ranging) is a method of remotely examining surfaces in great detail, and many newer cell phones use Lidar.

A real game changer in road design could be the usage of data collected from sensors, such as on suspension control, placed on every vehicle built since about 2015. Vavrik said, "These sensors can tell us the road's condition and help us design better roads," but the car companies aren't willing to share this information for free. They want to sell more cars, not data, and they won't give it away for free. It may result in an offer from the federal government, he said.

This data is being collected on every city and rural road, highway, and interstate in the country, and DOTs can look at this information and decide which mixes and/or applications are giving them the longest road life.

There may be a workaround to purchasing the information: government vehicles, such as ones used by law enforcement, postal carriers, and other state and federal workers, could be used to collect the same data.

Software is improving, but we have yet to take humans out of the mix. Vavrik said, "We now make our road mix decisions based on small test sections, but access to this

data could greatly broaden our knowledge. It's the first step."

### It's About Saving Lives

Traditionally, flagging has been one of the most dangerous jobs in roadway construction. According to Work Zone Barriers' website, national work zone fatalities increased by 61 percent between 2013 and 2021, resulting in about 954 deaths and more than 42,000 injuries.

"Work zone fatalities reached a 17-year high in 2021," the website stated.

Even Arkansas has had flaggers die on the job, but what if the industry could minimize the risk? That's the question



Dave Martineau with Site 20/20 tried to answer during his session titled "Automatic Flagging".

Flaggers are often the first line of defense between a motorist and a crew, and they are essential to every worksite; however, it is a dangerous job.

There are only a few feet of separation between the flagger

and oncoming traffic – often consisting of speeders, road ragers, and intoxicated and distracted drivers – and the ATSSA (American Traffic Safety Services Association) now recognizes it as a hazardous workplace environment. Martineau's Canadian-passed company has developed an Automated Flagger Assistance Device, the Guardian SmartFlagger, a remotely-operated temporary traffic control device equipped with an automated gate arm and a light head.

Instead of utilizing two to three live flaggers with stop-and-go paddles, basically standing in a traffic lane, the Automated Flagger can direct and control traffic from the same lane while using only one (remotely located) operator. It can be used for daily and short-term lane closures and deployed instantly.

The system has two cameras providing a 365-degree view of the worksite. Later, insurance or law enforcement can review the camera's recorded video.

Martineau said, "The Guardian SmartFlagger has been on over 200,000 worksites with zero work zone injuries." According to experts, drivers are "more likely to obey electronic flagger than person (flagger) because we're conditioned from birth to obey signal lights" and other signals, Martineau said. It also integrates with Google Maps and Waze, alerting drivers of delays and construction zones.

The Guardian can also help alleviate employee shortages that many companies and DOTs across the country are experiencing, he said.

Martineau is the National Sales Director for Site 20/20, which manufactures the Guardian Smartflagger, and he has been with the company since its inception about five years ago. Its products now include The Guardian Cone, an on-site safety device, and The Onyx, a traffic control integrated software program.

He said their goal is to utilize technology to advance work zone safety.

### We Click It, Then Write the Ticket

In the "Work Zone Safety Legislation Update", Capt. Louis Hatchett, Arkansas Highway Police (AHP)



Commander of Special Services, talked about the use of the Jenoptik speed trailer, a precision laser technology.

"It's an automated, semistationary (speed) enforcement device," Hatchett said.

For example, he said, "Once a driver goes over 70 mph, it will take a photo. It can be downloaded, and once the vehicle safely leaves a work

zone, it's immediately pulled over, and an officer can issue either a ticket or a warning.

As of the conference, the AHP had issued 2,548 warnings and 504 citations.

"We've written more warnings than tickets in order to allow folks to get used to it. In the future, we will probably issue more tickets than warnings," Hatchett added. "The system helps reduce driving speeds in dangerous areas, such as schools, work zones, and other high-risk areas."

According to the company's website, it's powerful enough to detect every vehicle within the measurement range, across multiple lanes, and in both directions.

The speed enforcement trailer's laser equipment is compact, and one person can transport and position it quickly. The Jenoptik is operational within a few minutes and can be used as a speed-reduction tool.

Currently, the department has one device that cost about \$700,000 but hopes to purchase a second. Hatchett said he believes it will cost "a little more than the first". Eventually, they would like enough units to cover the state's five districts.

Hatchett started with AHP in 2001, first serving at the Bridgeport Weigh Station in West Memphis, and later worked on patrol units. Last year, he was promoted to

Special Services Commander, overseeing hiring, training, investigations, and the Heat Team.

### The Cube is Coming

In the "TRC2201 Update" session, Dr. Andrew Braham, P.E., focused much of his discussion on the future of



Superpave and a remarkable new piece of testing equipment called The Cube.

"The Cube will allow the University of Arkansas-Fayetteville to explore two concepts simultaneously, changing the number of gyrations and changing the binder content. Multiple states have changed one or the other, but ARDOT is interested in

learning how changing can impact cracking and rutting simultaneously. The cracking behavior will be captured using the IDEAL-CT, while the rutting behavior will be captured using the Asphalt Pavement Analyzer."

Currently, the university is working with ARDOT and several contractors, "Playing with and seeing what the boundaries are, with the overall field objective of collecting project data and sample aging (asphalt). The goal is to obtain higher-performing asphalt pavements," Braham said.

He also offered the audience a brief history of Superpave.

Before accepting an Assistant Professor and Research position in the Civil Engineering Department at UA-Fayetteville, Braham worked as a field and research engineer for Koch Materials Company. He developed and tracked innovative pavement maintenance and rehabilitation products.

Superpave was developed by the Strategic Highway Research Program beginning in the late 1980s to create a performance-based asphalt binder specification, asphalt mixture specification, and mix design system. Braham said it was the mid-1990s before its use in Arkansas, and it's still used today but with several modifications to the original mix.

The summer of 1999 was extremely hot, and ARDOT decided there "might be too much binder in the mix", so it was adjusted, he said.

APA would do rut testing between 2000 and 2003, and about 20 years later, the IDEAL CT for cracking was introduced. The goal was to find a mix balance that was not too wet or too dry, Braham said.

Air voids were examined and reduced through gyration compaction, "But you're not compacting once you hit a certain point," he said.

For more information, contact Dr. Andrew Braham, P.E., at: afbraham@uark.edu.

### The Greening of Asphalt

In his discussion, "Sustainability for the Asphalt Industry," David Farris, Quality and Sustainability Director



at Rogers Group, Inc., said he took one class on sustainability 12 years

"That made me the expert at the Rogers Group," he said.

The three pillars of sustainability are social equity, economic viability, and environmental protection, and the federal government is pushing us to be greener.

"We need to prepare for

upcoming regulations," Farris said.

Executive Order 14057 included funding and requirements, including about \$7.5 billion for Rebuilding American Infrastructure with Sustainability and Equity grants, also known as RAISE funding and more than \$6 billion for the Carbon Reduction Program.

Farris said it also allotted \$2 billion in FHWA grants, about \$2 billion in grants through FEMA, and more than \$3 billion for low-carbon buildings, renovations, and materials.

Furthermore, Federal Acquisition Regulations (FAR) could become part of the job, he said. It could require companies to set targets and collect emission data in the form of what it refers to as Scope 1 and Scope 2, or direct and indirect emissions, respectively. These might be emissions from an asphalt plant or electric usage.

Scope 3 is a little tricker and might require information such as employee commute distances, leased assets, and products used. It will need to be better defined, Farris said.

"NAPA has stepped up to ensure it (any legislation or requirements) is done correctly. The question is: How do we transition the industry so as not to hit a big stopgap at some point in the future?" Farris asked.

Farris earned his undergraduate and master's degrees from Auburn University while working at the NCAT (National Center for Asphalt Technology). He is a registered professional engineer in Tennessee.

For questions or more information, email David Farris at: David.farris@rogersgroupinc.com.

# **ARDOT Brings Home the Gold**

by Deborah Horn

For a second consecutive year, ARDOT earned three prestigious Asphalt Pavement Alliance (APA) 2022 Perpetual Pavement Awards (PPA) in the following categories, "By Performance," "By Design, "and "By Conversion." ARDOT's awards and hard work were recognized at the Quality Conference.

Conversion" awards.

(Photos courtesy of ARDOT.)

Since the program began in 2001, this is ARDOT's 13th "By Performance" award and its second "By Design" and second "By

Lorie Tudor, ARDOT Director, said, "We appreciate the Asphalt Pavement Alliance for recognizing ARDOT. It is an honor to be selected for and acknowledged by our industry peers."

Park Estes, AAPA Executive Director, said during the presentation, "It's hard to overstate the importance of the Asphalt Pavement Alliance's recognition. It should instill confidence in Arkansas voters. Through taxpayerapproved funding, ARDOT is working to improve its highways and interstates in every sector of the state. These awards symbolize all the dedication and the commitment to excellence of ARDOT's staff along with the entire asphalt road construction industry."

### The Three Awards **Explained**

The APA's "By Performance" award recognized a 45-year-old, 2.8-mile section of Arkansas Highway 24 in Ouachita County.

To qualify for the award, it must be a "high-performing asphalt pavement that is at least 35 years old", have not suffered a structural failure, and have an average interval

between resurfacing of no less than 13 years, according to the APA.

Arkansas was one of 11 "By Performance" awards handed out nationwide, and since the program's inception, only about 181 pavements located in 32 states have earned this designation.

They earned a "By Design" award for the new construction of 7.7 miles of Interstate 530 in Lincoln County. It was one of seven DOTs recognized by NCAT in 2022. Pine Bluff Sand & Gravel Co. of White Hall and D & D Paving Inc. of Sherrill completed the project. "By Design" recognizes newly designed and constructed asphalt roads built over new subgrades that meet strict Perpetual Pavement criteria.

Also, ARDOT earned a "By Conversion" award for a 7.2-mile section of Interstate 40 in Pulaski County.



Cranford Construction of North Little Rock paved the project. The "By Conversion" award honors new asphalt roads built over existing roads that meet strict Perpetual Pavement criteria.

#### What's a Good Road?

Amy Miller, P.E., Asphalt Pavement Alliance (APA) National Director, said, "One key indicator of quality in construction is a smooth, long-life pavement." But there are other criteria that engineers at the NCAT (National Center for Asphalt Technology) at Auburn University carefully consider.

Pavements in all three categories must meet strict

Perpetual Pavement criteria and demonstrate the characteristics expected from long-life asphalt pavements, such as excellence in design, quality construction, and monetary value for the traveling public as determined by the APA.

Miller added asphalt roads can be engineered to last almost indefinitely with only routine maintenance and periodic surface renewal.

"Long-life asphalt pavements serve the community, reduce the money needed for maintenance, and conserve raw materials, ultimately leading to a truly sustainable structure that exemplifies the triple bottom line," Miller said. 🙋



# **More Gold: AAPA Pays Tribute to Safety**

by Deborah Horn

During the Quality Conference, AAPA announced that Rogers Group of Arkansas won both of its two 2023 Safety Awards for Excellence (SAFE). These included the "Work Zone Award" and the "Producer Award".

The AAPA Safety Award for Excellence (SAFE) was developed to recognize the industry's safety leaders. "We recognize and value safety in the work zone. These aren't easy awards to win," said D.B. Hill, III, President of D.B. Hill Contractors Inc. "AAPA understands the efforts required to maintain outstanding health and safety programs."

Hill said the Work Zone Award is presented to a group actively involved in roadway construction zones and

recognizes exceptional performance. The second award recognizes outstanding production practices inside a quarry or an asphalt plant.

A team of industry experts judged the award submissions; however, no contractor, AAPA staff, or AAPA member acted as a judge.

Any company entering for consideration can't have incurred work-related fatalities during the recording year and must have TRIR and DART averages below current industry averages.

"SAFE not only provides companies the opportunity to share their success but also helps others improve their programs," Hill said.





Work Zone Award Above, L to R: Derek Davis, Kory Flippo, Steve Stackhouse, Mark St. Pierre, Jimmy Hanners, Bobby Foster, Billy Allen, Ben Welch



Producer Award Above, L to R: Dwayne Gabbard, Kory Flippo, Marcus Andrews, Scott Verstraten, Hunter Mccoy, Ronnie Humphrey, Justin Dees.

At left: The AAPA SAFE Awards were presented to Rogers Group representatives at the **AAPA Quality Conference** on January 4, 2024. (Photo courtesy of Rusty Hubbard, ARDOT)

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# Women of Asphalt

1st Quarter Update

by Jill Marchese & Katie Russell



The Women of Asphalt met in conjunction with the AAPA Quality Conference held January 4th and 5th. Our guest speaker was Dr. Stacy Williams, a Research Associate Professor at the University of Arkansas with research focuses on pavement materials, testing methods, and pavement surface characteristics. Her presentation was focused on her career path into the asphalt industry and Asphalt 101.

Dr. Williams explored numerous careers before landing in asphalt. She explained that she didn't know what her focus should be when she went to college, so her father suggested she take one of the career tests to see what sparked her interest. All the results pointed to engineering. Civil Engineering was her first choice, because she liked that it provided the most tangible results compared to other focuses in engineering. Upon graduation, she went to Exxon Baytown Refinery as the engineer over the docks. She then decided to go back to grad school at the U of A and was asked to work on an asphalt project for the Superpave implementation in the late 90s. This research solidified her interest in asphalt, and she decided to continue her education and complete the PhD program. She worked on a wheel tracking test method which you can see in the APA test we have for mix designs.



Dr. Williams then spoke to the group about the fundamentals of asphalt. She explained how asphalt is made and the different characteristics of the materials that can cause variances in the mix. She spoke about flexible pavements, asphalt failure modes, permeability, pavement textures, and testing. Her seminar further discussed longitudinal joints, pavement quality, warm mix asphalt,

and compaction.

Dr. Williams concluded the presentation by mentioning the programs she teaches at the U of A Lab with the CTTP and LTAP programs, which can be found online by going to this website: https://cttp.uark.edu/.

Thank you to all the Woman of Asphalt-Arkansas sponsors for your continued support!







### WHAT IS BALANCED MIXTURE DESIGN?

A critical step in achieving long-lasting asphalt pavement performance begins with mixture design. An asphalt mixture should possess adequate stability (i.e., resistance to permanent deformation/rutting) and durability (i.e., resistance to cracking) for the intended design application (pavement). Recently, State Departments of Transportation (DOTs) researched and implemented a variety of approaches, including Balanced Mixture Design (BMD), aimed at improving the long-term performance of asphalt mixtures. Defined as "using performance tests on appropriately conditioned specimens that address multiple modes of distress taking into consideration mixture aging, traffic, climate and location within the pavement structure" Balanced Mixture Design means designing the right mixture for the right job.

Balanced Mixture Design can use one of four main approaches. One approach, Volumetric Design with Performance Verification, evaluates mixture performance using traditional volumetric mixture design. Expanding on the first approach, the Volumetric Design with Performance Optimization approach also starts with a current volumetric design, but evaluates mixture performance at interval binder contents, including the optimal binder content, resulting in selection of a final binder content which satisfies the performance criteria. Another approach, Performance-Modified Volumetric Design, begins with volumetric design, then modifies the design based on performance testing results. A fourth conceptual

approach, Performance Design, utilizes performance testing to engineer the design for performance, minimizing the use of the traditional design requirements. Nationwide usage of the Performance Design approach is the ultimate goal as it maximizes the innovation and value potential for both the pavement owner and asphalt producer.

### **BUSINESS OPPORTUNITIES**

BMD implementation efforts are ongoing in several states and the design approach will be increasingly used by owner agencies.

For asphalt producers, BMD offers significant business opportunities which are highlighted below.

- 1. Ability to Optimize Mixes: BMD allows for the optimization of mixes in terms of cost-effective material use (e.g., asphalt binder, aggregate, recycled material, additive, etc.) and performance. Without knowing the true performance of mixes, decisions on material use will likely be made based on assumptions, experience (which may not hold true), raw material cost, or specification limits or constraints.
- 2. Reduce Risk: Understanding the anticipated mix performance provides enhanced mix performance reliability (i.e., reduced exposure or risk to penalties and performance issues that may arise during production/construction and post-construction). In simple terms, knowing the mix performance beforehand via performance testing can help limit bad surprises afterwards.

- **3. Opportunity to Lead:** BMD will enable individual companies, and ultimately the entire industry, to lead quality and innovation initiative development. Establishing the state of performance of commonly used mixes (i.e., cataloging mixes) and optimizing those mixes for performance allows companies to move asphalt related specifications forward while ensuring obtainable field performance. Additionally, improved asphalt mixture performance yields lower life cycle costs for owners enabling road owners to go longer between maintenance and a lower cost, better performing pavement to owners.
- 4. Enhanced Workforce Knowledge and Expertise: BMD can assist in building personnel knowledge and expertise. Training and educating personnel to truly understand the factors that influence mixture performance is critical. A highly trained workforce is required for industry success. Advanced testing may also attract new employees that have interests in engineering and technology, leading to advancements in other areas of your organization's business.

# CHALLENGES FOR **IMPLEMENTATION**

- 1. Skilled workforce: Properly trained and educated personnel is the key to BMD success. The performance testing conducted within BMD requires additional knowledge (perhaps even dedicated BMD related personnel in addition to normal quality control personnel) to understand the performance tests, factors influencing the test results, and how to modify the mix to achieve the required performance.
- 2. Cost and time: Performance testing can be conducted internally or via third party testing laboratories, with testing conducted internally likely being the most cost effective and providing contractors the best ability to optimize the mix. Testing at independent laboratories can be expensive costing between \$1,000 and \$2,000+ per mix. Performance testing equipment cost ranges from ~ \$5,000 to \$50,000+ based on the specific test equipment, however, the return on investment (ROI) of most performance testing equipment purchases will generally be short. Even with a short ROI, significant cost would be incurred.
- **3. Construction Delay:** The time required for the mix design and subsequent field acceptance testing can

- also present challenges. Some performance tests take minutes to complete, but specimen preparation may take longer, especially if cutting/trimming of the specimen is required. The time to conduct performance testing will likely extend the mix design time and needs to be addressed during production.
- **4. Production acceptance:** Aside from the time to conduct production testing, there is some concern with the variability of the performance tests. Some tests do not have precision statements established, which presents issues using them for acceptance and payment. With high variability the producer will likely have to "over design" the mix in terms of performance to obtain the minimum performance thresholds.

### RECOMMENDATIONS

Balanced Mixture Design offers a great opportunity to move the asphalt industry forward in terms of asphalt mixtures quality and innovation. Historically, specifications were established and modified to provide a very structured "recipe" to achieve desired field performance. While the intent was good, many of these specifications have become convoluted over time and parts of the specifications may conflict with the goal of providing long-term performance.

For most projects (i.e., sufficient tonnage and time allowed for testing), it is recommended that the performance design BMD approach be utilized, moving away from the traditional specification towards performance and innovation. Substantial testing to ensure the performance tests and associated thresholds are appropriate is required to help ensure acceptable field performance. The BMD approach, along with minimal traditional design requirements, can best be used to design future mixtures. As mentioned previously, this approach maximizes the innovation and value potential for the asphalt producer and owner and should be considered the ultimate goal.



Contact: Richard Willis, PhD, Vice President for Engineering, Research, and Technology, NAPA, rwillis@asphaltpavement.org

# AAPA Hot Mixers Club 2024

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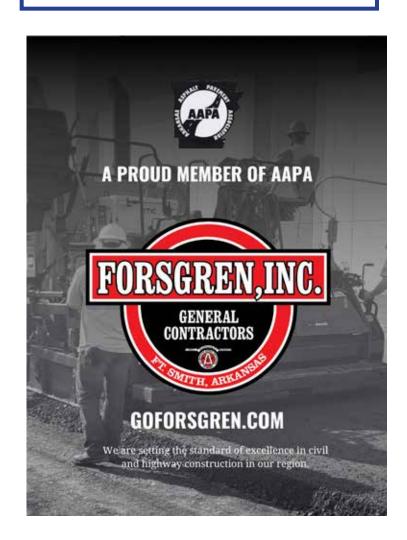
# ARDOT PERSONNEL **TRANSITIONS**



John Lamb has been selected as the Captain in Arkansas Highway Police District 2 effective January 27, 2024.

Lamb began his career with Arkansas Highway Police as a Patrol Officer in January 2008. A year later, Lamb advanced to Patrol Officer First Class. Lamb was promoted to Corporal in January 2015

and advanced to Sergeant in June 2016. Lamb obtained his current position of Second Lieutenant in May 2022.





# What can you expect at the 2024 AAPA **Annual Convention on April 30 - May 2?**

Visit www.hotsprings.org for a list of offsite activities/events.

On **Tuesday**, check into the new Oaklawn Racing Casino Resort (2705 Central Ave.) and stop by the registration desk for your gift!



Join us for the Chairman's Reception and Slot Tournament on **Tuesday** evening and compete for prizes!





**Wednesday** morning presentations will be given by Jared Wiley, Lorie Tudor and Buzz Powell, followed by activity options that include golf at the Hot Springs Country Club or a tour and tasting at Origami Sake.



On Wednesday night, we will have a grand reception with buffet dinner and open bar, live and silent auction, and the always popular heads-or-tails game. Don't forget to bring your auction items!





Thursday will close out the Convention with presentations by Rex Vines and Jon Harrison, followed by the installation of the 2024-2025 AAPA Board and the presentation of the Statewide Paving Awards.

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