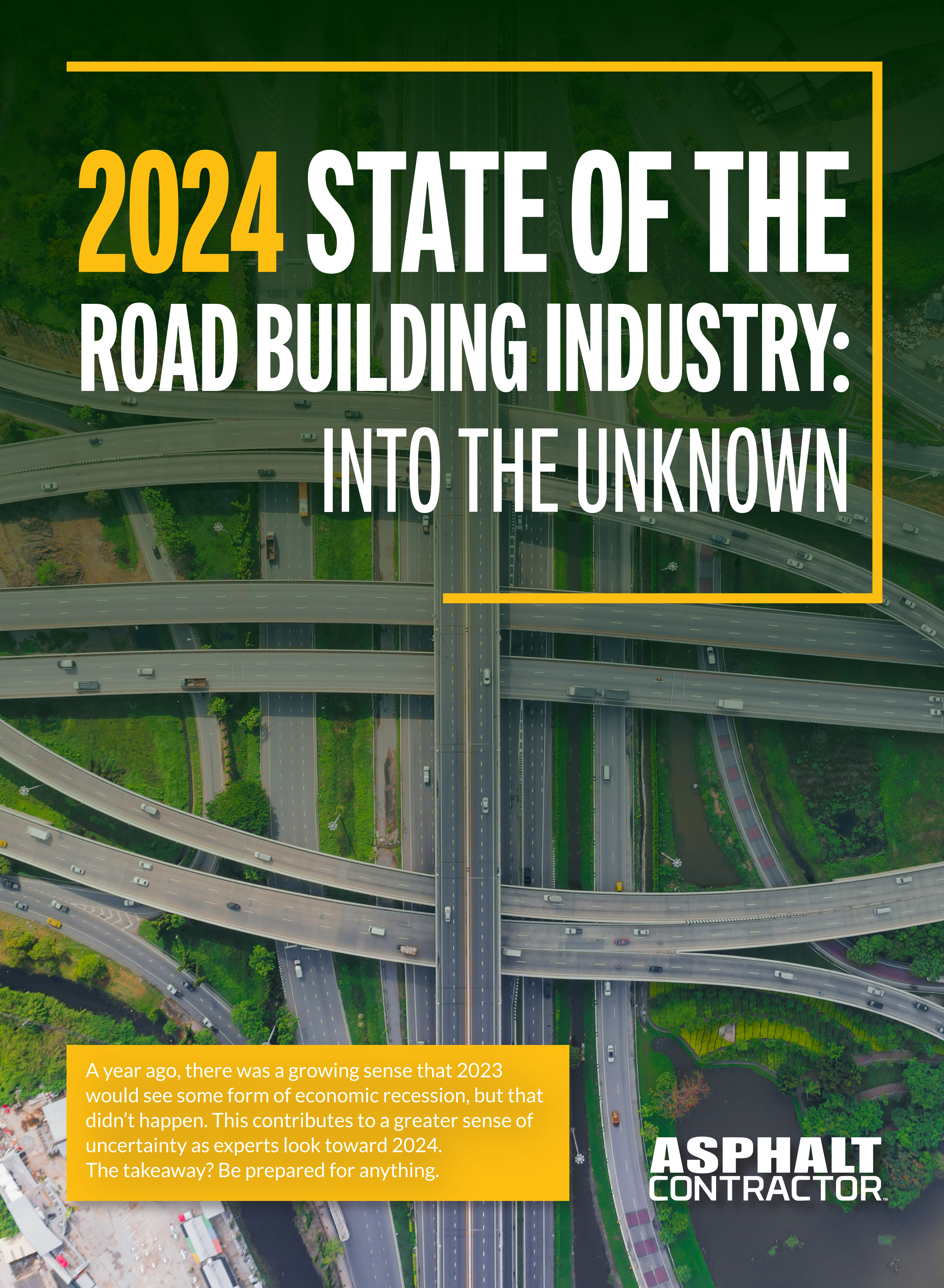

2024 STATE OF THE ROAD BUILDING INDUSTRY: INTO THE UNKNOWN

A year ago, there was a growing sense that 2023 would see some form of economic recession, but that didn't happen. This contributes to a greater sense of uncertainty as experts look toward 2024.
The takeaway? Be prepared for anything.

ASPHALT CONTRACTOR

CONTENTS

PAGE 3: THE INFLATION REDUCTION ACT: ONE YEAR LATER

PAGE 4: BUY AMERICAN, BUY CLEAN

PAGE 5: DRIVING UNION MEMBERSHIP THROUGH ENHANCED EDUCATION

PAGE 6: CONTINUED LABOR ISSUES

PAGE 7: TECHNOLOGY: AUTOMATION AND EVS

THE INFLATION REDUCTION ACT: ONE YEAR LATER

With the consecutive passage of multiple pieces of groundbreaking infrastructure legislation (the IIJA and IRA) what do you see as the next funding frontier? Where did these legislative efforts fall short of that might be a goal for the next policy-horizon?

Audrey Copeland, CEO, NAPA: Looking toward the next Congress, our goal is to ensure that the momentum achieved from IIJA for robust federal funding across our surface transportation network grows as the next highway reauthorization package is addressed within the next two years. In the interim, maintaining annual appropriations for agencies implementing these infrastructure projects is key, though it has been more difficult in an increasingly divisive and partisan Congress. We continue to work with our coalition partners, SAPA partners, and industry allies to build momentum for the next highway bill. We must show Capitol Hill that IIJA needs to be the rule, not the exception, when it comes to robust federal funding for our surface transportation network.

Zachary Fritz, COO, Sage Policy Group: These legislative efforts have failed to address the severe worker shortages that have plagued the construction industry for several years and now, since the start of the pandemic, affects a majority economic segment. Worker scarcity, especially for occupations that require certain technical skills, has and will continue to put upward pressure on construction wages. That means that, in addition to slower project deliveries, taxpayers are getting less infrastructure per dollar of funding.

Zachary Fritz is the chief operating officer at Sage Policy Group, an economic and policy consulting firm in Baltimore, Maryland. He studied economics at Auburn University and formerly researched policy at one of D.C.'s largest think tanks.

Where have there been direct impacts from the funding of these bills over the last year? Has the industry shifted as a direct result of those federal monies coming down the pipeline?

Alison Black, SVP, ARTBA: The Infrastructure Investment and Jobs Act (IIJA) continues to have a significant market impact as year three of the program gets underway, supporting over 30,000 new project commitments in 2023 alone. This impact has been amplified by states increasing their own transportation revenues through bond issues, raising recurring revenues, new user fees, and General Fund transfers.

Contractors were busy last year – with significant increases in the value of work completed on highways (+17 percent versus 2022), bridges (+8 percent), and airport runways (+35 percent).

These markets are expected to continue to show growth in 2024, according to ARTBA's market outlook, with total transportation construction activity across all modes increasing 14 percent compared to a record-level of work in 2023.

Highway and bridge capital spending by state Departments of Transportation (DOTs) is expected to grow over 13 percent, according to ARTBA analysis of all 50 state DOT budgets, with 43 states planning to increase or maintain highway and bridge capital spending levels in FY 2024.

Copeland: The monies from the IRA package continue to trickle out as various programs and agency guidelines are established, but within IIJA, state DOTs are supporting numerous highway and surface transportation projects across the country, as federal investment exceeds previous levels of support. We have noticed industry enthusiasm for these opportunities, but we also recognize that some states, compared to others, were better prepared from a budget and planning perspective, had overcome local labor and raw material sourcing hurdles, or more aggressively took advantage of federal-matched dollars for certain projects.

Audrey Copeland was appointed National Asphalt Pavement Association (NAPA) President & CEO in 2019. Previously, she served as NAPA's Vice President of Engineering, Research, and Technology beginning in 2012.

She began her career as a highway engineer at the Federal Highway Administration (FHWA) and then went on to be a highway materials research engineer at FHWA's Turner Fairbank Highway Research Center where she managed asphalt-related research laboratories and projects.

Audrey earned a doctorate degree in civil engineering from Vanderbilt University in 2007 and master's and bachelor of science degrees in civil and environmental engineering from Tennessee Technological University. She is a registered engineer in Virginia and Maryland.

Audrey lives in Kensington, Maryland, with her husband, Jose Albertini, and their two children.

Fritz: Highway and street related construction spending has risen in the past few years, but not as quickly as one would have expected given these funding packages. While it takes time for funding to translate into construction put-in-place, environmental review laws continue to delay projects, including those with obvious environmental benefits, while also adding to project costs.

Several metrics that measure inflation show a steady decline over 12 consecutive months, but other economic indicators indicate that purchasing power is low, confidence is low, and costs of raw materials (and manufactured goods) are still at record highs. Why are these two economic points out of sync? What is keeping construction costs at these higher levels? What might it take to see them come down?

Fritz: Construction input prices have been well behaved over the past year, increasing just 0.3 percent from September 2022 to September 2023, but are still up more than 40 percent since the start of the pandemic. While supply chain improvements are largely to thank for the recent moderation in prices, I don't anticipate those costs falling in the coming months; once the toothpaste is out of the tube, it's not going back in.

I think labor shortages are at least partly to blame for the growing chasm between sentiment, which has been pretty dour, and hard data, which shows an economy with ample momentum. Employers are having to raise wages to compete for workers.

I'd also point to inflation. Yes, we've seen remarkable disinflation over the past year, as the rate of price increases has fallen sharply, but many consumers were actually hoping for deflation. Again, once prices go up, they rarely come back down (and that would be an entirely different and arguably worse problem).

Black: Overall, price indices for highway and bridge construction have moderated in 2023 but remain at elevated levels, meaning the index has stabilized but is not going down.

Dr. Alison Premo Black joined the American Road & Transportation Builders Association (ARTBA) in August 2000. In addition to serving as senior vice president and chief economist for ARTBA, she is managing director of the Transportation Investment Advocacy Center program. Black manages ARTBA's economics staff and is responsible for over 100 studies examining national and state transportation funding and investment patterns, including the association's landmark economic profile of the transportation construction industry, state bridge condition profiles and annual modal forecast.

She has been interviewed numerous times as an industry expert for national and local print, television and radio, including the NBC TODAY show, the Washington Post, NPR, USA Today, the Wall Street Journal, The Economist and industry publications. She has testified before state legislative committees in Illinois, Tennessee, Kansas, North Carolina and Pennsylvania.

Black completed her doctorate in economics at George Washington University and holds a master's degree in international economics and Latin American studies from the Johns Hopkins School of Advanced International Studies (SAIS). Black graduated magna cum laude from Syracuse University with majors in international relations, Latin American studies and Spanish. She is a member of the Phi Beta Kappa and Golden Key Honors societies, and a recipient of the Syracuse Remembrance Scholarship. A native of the eastern shore of Maryland, Black resides in Washington, D.C. with her husband and four children.

The U.S. Bureau of Labor Statistics measures average prices for key materials used in highway and street construction. While prices have eased for asphalt, plastic conduits, fuel, iron and steel and some services, other commodities and goods continue to show an increase in average costs. This includes ready-mix concrete, pavers and equipment, concrete block, and brick, aggregates, and concrete pipe.

Copeland: There are many factors beyond our control, but it is clear that inflationary pressures have hurt the construction materials supply chain harder than other sectors. FHWA shared data illustrating that between July and September of 2022 – peak paving season for many – inflationary costs were up 50 percent compared to costs in December of 2020. A combination of labor shortages, difficulty acquiring raw materials (aggregate or asphalt binder), and increased demand for public works projects across the country has resulted in the construction industry experiencing modest gains from IIJA compared to when the bill first passed at the end of 2021.

BUY AMERICAN, BUY CLEAN

What is the current attitude and level of buy-in concerning the implementation of Environmental Product Declarations (EPD)?

Copeland: In general, paving contractors and asphalt mix producers already engaged with this topic have great anticipation. There is a growing recognition that pavement owners are interested in EPDs to quantify embodied carbon, and that this will create opportunities for companies to differentiate themselves from their competitors. But there is still a lot of uncertainty around how pavement owners will use EPDs in the context of procurement, project delivery, and other decision-making aspects of asset management. Some of the procurement policies already implemented lack the nuance needed to address the complexity of our industry with respect to agency specifications, local availability of aggregates, and other factors.

Driving Union Membership Through Enhanced Education

In a separate conversation with Chris Treml (Executive Director of the International Union of Operating Engineers, National Training Fund), we discussed the role of education in recruitment, as well as, reasons why union membership is more attractive than ever to those entering into the construction industry.

In Crosby, Texas, the union had the Training and Education Center for all our members to take classes, whether they be in construction, stationery, pipeline, or safety and health. Once they get approved by their local union, all they have to do is pack a suitcase and get to the airport. All costs are covered by the National Training Fund.

Thousands of members come through every year, because we offer all stages of training to fit the needs of the operating engineer, or for our local union instructors, we offer additional training for them, as well. For our members, it does make them more marketable.

All the local outfits have their own prestigious training programs. This is simply an augmentation to what they're already doing. We have state of the art equipment, the latest and greatest machinery, GPS equipment, excavation equipment, and everything in-between. If a class isn't available at the local level, and they see it available through us, they can sign up for it. We are partnered with many of the industry's top manufacturers enabling us to have their components and/or equipment on site when we train our members. That means our members go back to the job with that first-hand experience.

This includes emerging trends in things like autonomous equipment. We want to meet all the demands of the industry, ensuring our members are ahead of the curve on any and all new technology that's out there. However, we also believe that you're always going to have a place for the human element. There's a place for everything, you're never going to get rid of the human worker completely, but this technology is here, so we should embrace it. If we don't get out in front of changes in the market, then we're at risk of falling behind.

While the industry definitely continues to experience labor shortages, it's always our goal to increase membership. We see these training opportunities as a large part of how we accomplish that. We believe our members can do better in life, because of things like, better education, higher wages, and retirement benefits. The new workers coming in to the industry today might not always look down the road, or be planning ahead, but at the end of a career, you want to have something to show for it.

Mix producers that have developed EPDs for their own products are in a unique position to drive the development of these policies in a way that benefits the industry while helping pavement owners achieve their goals.

How is the majority of the industry positioned concerning both the many new environmental and sourcing regulations? Is it where it needs to be or is it lagging behind?

Copeland: In reference to Buy Clean policies and EPDs, the industry is still in the early adopter stage of technological innovation, since fewer than 10 percent of asphalt mix plants have published EPDs. Likewise, only a handful of agencies

have formal policies that require contractors to supply EPDs. But there is substantial growth on both fronts, with a steady stream of new asphalt mix plants developing EPDs and at least 39 states expressing interest in using EPDs. As mix producers continue to develop EPDs and evaluate their own operations, they are identifying ways to use the data to advance their interests, whether it's looking for the ability to use more RAP, communicating the environmental benefits of their products, or implementing energy efficiency projects at their asphalt plants.

The supply chain obviously plays an indisputable role in these issues. Is the current supply chain poised to handle the demands that policy makers are placing upon the asphalt and road building industry?

Copeland: As agencies advance their efforts to adopt and deploy Buy Clean policies, there is no doubt there will be a strong push for EPDs to fill existing data gaps and include supply chain-specific data, meaning there will be a need for material suppliers such as asphalt terminals, quarries, and additive manufacturers to develop their own product-specific EPDs.

AdobeStock/ Enrique del Barrio

Alternatively, and to a lesser extent, they could participate in industry-wide life cycle assessments (LCAs) and EPDs. The learning curve on this is pretty steep for most companies, but NAPA is filling the gap with the development of interim guidance for upstream suppliers.

Have there been any early impacts from either the Buy Clean or Buy American policies?

Copeland: We're starting to see mix producers take a hard look at their own operations to prepare for the changes driven by Buy Clean policies. Some improvements we are seeing include using warm-mix asphalt technologies to reduce mix production temperatures, converting to cleaner fuels, electrifying asphalt plant equipment, and upgrading old batch plants and parallel flow plants to more efficient counter-flow plants. We are also seeing some agencies take a more open-minded approach to updating their specifications, such as exploring policies that allow more RAP in the mix or investigating the use of locally sourced aggregates.

CONTINUED LABOR ISSUES

In February, the Bureau of Labor Statistics predicted that the construction industry would see a labor shortfall of more than half a million workers in 2023. Road construction being only a portion of that larger figure, how do you feel our industry has fared in relation to other recent years?

Fritz: The industry appears to have had an easier time hiring than other construction segments, adding jobs two times faster than the overall construction industry since the start of the pandemic and three times faster over the past year. Despite this rapid hiring, wages in the segment have increased at a slower rate than overall construction wages over the past year, suggesting slightly better labor availability.

That is not, however, to suggest that the road construction segment is not facing worker shortages, and the broader construction industry, long plagued by worker scarcity issues, is a poor measuring stick for healthy labor availability. Given population dynamics, long term fertility trends, and recent federal funding, the segment will likely continue to grapple with worker shortages for years to come.

Black: Highway construction employment is at record levels, but could probably be even higher, given the current volume of construction activity.

The number of workers employed by highway, street, and bridge contractors reached record levels during the 2023 summer construction season, with over 30,000 new workers on the payroll, an increase of 8 percent, compared to 2022.

Despite this good news, job openings in the entire construction industry remain at high levels, indicating a demand for workers that is not being filled.

TECHNOLOGY: AUTOMATION AND EVS

Fleet electrification was big at all the major trade shows this year, as well as in the media. When it comes to the heavy machinery our industry relies on, is there a large group of early-adopters out there? Or do you see most people across the industry hanging back, waiting to see?

Copeland: The landscape of electrified construction equipment appears to be in its early stages of implementation. We anticipate that adoption will gain momentum as more products are introduced to the market. While certain operations and tasks may lend themselves more readily to the transition to electrified equipment, the concentrated efforts of manufacturers in this sphere lead us to expect ongoing technological advancements that will promote adoption.

When it comes to automation, while most manufacturers are building these features into more and more of their products, do you believe there is real-world-demand for increased automation, or is it the greater push coming from the producer/developer side?

Copeland: Automation has played a crucial role in the asphalt pavement industry for a long time, with applications such as asphalt mix plant controls and automatic grade control systems on pavers. The trend toward automation is poised to evolve further, with asphalt mix producers and contractors eagerly adopting advanced automation technologies. These innovations aim to guarantee the utmost quality in asphalt pavement while enhancing the efficiency of equipment and operators across a company's projects/operations.

While AI has been the tech-topic of the year, arguments surrounding its place and effectiveness in the road building industry have gone back-and-forth. Where do you see its potential place, if any?

Copeland: AI has potential in the road-building industry, particularly in areas such as construction planning, predictive maintenance, quality control, and safety enhancement. AI can:

- help in optimizing construction schedules and resource allocation,
- be used to monitor sensors and review maintenance records to better predict the need for equipment maintenance,
- enhance the quality control process when paired with technologies that capture and process images, allowing crews to proactively avoid construction defects, and
- be used to monitor construction sites in real time to identify potential safety hazards and alert personnel.

AI has the potential to revolutionize the road-building industry by improving efficiency, quality, safety, and cost-effectiveness. However, the implementation of AI in this industry requires careful planning and consideration to ensure it is used effectively and ethically.

What pain-points or technology gaps remain in the industry, from your perspective, that might be primed for the next big advancement? Where in the industry could there be beneficial advances that have yet to recieve much attention.

Copeland: Prospects such as robotics, cutting-edge systems for effortless real-time data capture and utilization, and innovative technologies dedicated to increasing mixture performance properties at drastically reduced (or cold) production temperatures are all opportunities in the asphalt pavement industry. **AC**

For more information visit ***https://asph.link/asphalt***

ForConstructionPros.com/Asphalt

Follow us on:

IRONMARKETS
CONNECTED SOLUTIONS

IRONMARKETS is a leading business-to-business media and business intelligence company with a portfolio of renowned brands in heavy construction, asphalt, concrete, paving, rental, sustainability, landscape, manufacturing, logistics and supply chain markets. IRONMARKETS delivers relevant, cutting edge content to its audiences through its industry-leading digital properties, trade shows, videos, magazines, webinars and newsletters. It also provides adverters the analytics, data and ability to reach their target audience.

ASPHALT CONTRACTOR™