SPRING 2022

ENGINEERING INC.

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A New Era of Infrastructure Arrives

The opportunities and challenges of the new infrastructure bill

Is the Engineering Talent Pipeline Ready?

Fundraising Success for ACEC/PAC

MO Profile: ACEC Ohio

Clark Nexsen Marks 100th Year With Staff Empowerment

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CONTENTS

Spring 2022

12

COVER STORY

A NEW ERA OF INFRASTRUCTURE ARRIVES

The $1.2 trillion infrastructure bill will bring opportunities—and challenges—to the industry.

18

22

FEATURES

18 **IS THE ENGINEERING TALENT PIPELINE READY?**
Firms must ramp up creative strategies to build their workforces.

22 **2021 ACEC/PAC WRAP-UP: ANOTHER RECORD-BREAKING YEAR**
The advocacy support organization had another record-breaking year.

26 **ACEC OHIO**
It's an integral part of Ohio's successful, forward-thinking growth.

30 **100 WAYS TO HELP**
Clark Nexsen marks its 100th anniversary.

34 **NATIONAL ENGINEERS WEEK**
Highlights of Member Organization and member firm activities nationwide.

36 **2021 PLI CARRIER SURVEY: RENEWAL HEADWINDS**
Carriers tighten PLI underwriting amid new risks and rising claims costs.

40 **EDUCATION FACILITY TRANSFORMATIONS**
Member firm innovations are updating schools for modern-day learning.

44 **ACEC BIT EXAMINES PLI**
Insights on criteria leading to successful professional liability insurance service.

DEPARTMENTS

2 **FROM ACEC TO YOU**
Reflection and appreciation during National Engineers Week.

4 **MARKET WATCH**
The residential housing sector advances engineering opportunities.

6 **ACEC RESEARCH INSTITUTE**
Two new reports highlight industry optimism, future growth.

8 **LEGISLATIVE ACTION**
Congress approves full funding for first year of infrastructure investment law.

10 **THE PRIVATE SIDE**
Port and industrial real estate growth is strong in the Southeast.

46 **MERGERS AND ACQUISITIONS**
Deal-makers' bets on infrastructure are poised to pay off.

48 **RISK MANAGEMENT**
Timely claims reporting in the virtual world.

49 **MEMBERS IN THE NEWS**
Thomas Hand named president and CEO of Volkert; Frank Ricciardi named CEO of Weston & Sampson; James Parker named CEO of Simpson Gumpertz & Heger.

52 **BUSINESS INSIGHTS**
Prepare your top talent for executive leadership.

COVER: GETTY IMAGES

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ACEC's award-winning quarterly magazine *Engineering Inc.* provides expert analysis on all issues affecting the overall business of engineering. Other highlights include in-depth interviews with major policy makers whose decisions impact bottom lines; updates on critical advocacy issues and industry news, best practice management trends and marketplace projections, along with member firm innovations and announcements.

The articles and editorials appearing in this magazine do not represent an official ACEC position or policy unless specifically identified as doing so.

National Engineers Week Is a Good Chance for Reflection and Appreciation

The 2022 celebration of National Engineers Week once again allowed the nation's spotlight to shine on the essential role of engineering in protecting and enhancing our lives.

Celebrated since 1951, EWeek is dedicated to ensuring a well-qualified and diverse engineering workforce today and in the future by increasing interest in and awareness of engineering careers.

It was gratifying to see so many Member Organizations and member firms take time to honor engineers in varied efforts during EWeek. Commemoration activities included outreach to middle school students, exhibits at local statehouses, social media posts on why people became engineers, and a statewide radio ad touting the importance of the profession (*see page 34*).

All of this was significant since the recent passage of the massive Infrastructure Investment and Jobs Act promises a much-needed financial boost to improve infrastructure and allow our member firms to do what they do best.

In conjunction, the cover feature for this issue of *Engineering Inc.* takes a detailed look at the new infrastructure legislation and what it means for engineers *(see page 12)*.

An adjoining feature will examine how prepared firms are for the anticipated surge in project opportunities, especially while facing the prolonged talent shortage *(see page 18)*.

We also present our annual ACEC/PAC wrap-up feature which describes how innovative planning and determined diligence among our PAC volunteers throughout the states helped the PAC generate more than $1 million in annual donations in 2021, despite the obvious challenges (*see page 22*).

Plans are coming along for the upcoming 2022 Annual Convention and Legislative Summit (May 22-25) at the Grand Hyatt in Washington, D.C., and the Engineering Excellence Awards Gala on May 24.

We look forward to seeing you there!

Robin S. Greenleaf
ACEC Chair

Linda Bauer Darr
ACEC President & CEO

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The ACEC Research Institute wishes to extend its sincere appreciation to its generous contributors.

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Residential Housing Sector Is Advancing Engineering Opportunities

BY GERRY DONOHUE

SCULPIES/GETTY IMAGES

The residential housing sector is a key leading economic indicator for the A/E/C market. By itself, the sector doesn't have much direct demand for engineering services—limited mostly to land development and surveying—yet it lays the foundation for a wide range of consequent design work.

"Residential—especially single-family residential—is certainly an important piece of the puzzle for engineering firms," says Richard Branch, chief economist at Dodge Data & Analytics. "It's a major driver of nonresidential construction and infrastructure construction."

Over the past 18 months, that has been good news for engineering firms because the single-family residential market has boomed. Since the onset of the COVID-19-fueled recession and the subsequent economic recovery, the residential sector has almost single-handedly propelled U.S. construction spending growth. In September 2021, for example, single-family spending was up 30.4 percent year-over-year, and accounted for 26 percent of total spending.

The profile of this rapid growth has propelled the demand for engineering firm services even further.

In the years following the 2008 Great Recession, a strong trend in the residential sector was re-urbanization. Home

U.S. HOUSING STARTS

	Total	Single-Family	Multifamily
2017	1,205,000	849,000	356,000
2018	1,247,000	871,000	376,000
2019	1,292,000	889,000	403,000
2020	1,397,000	1,004,000	393,000
2021	1,580,000	1,111,000	469,000
2022	1,553,000	1,113,000	440,000
2023	1,551,000	1,111,000	440,000

Source: National Association of Home Builders

buyers were moving back into the cities and into close-in, transit-oriented developments. While any residential development leads to infrastructure design work, it was somewhat muted during this time because much of the infrastructure was already in place.

The current surge in residential activity has so far reversed that trend. Since mid-2020, there has been a strong and steady out-migration from urban centers into the suburbs and even the exurbs. And many of these areas have needed to build new infrastructure at a torrid pace to support these new residents.

"There's an old saying, 'Retail follows rooftops,' and that's really the case this time around," says ACEC Vice President of Private Market Resources Erin McLaughlin. "What we're seeing right now is a lot of community-based infrastructure."

"And that's where the engineering focus comes into play," agrees Branch. "We need new schools. We need new hospitals. We need new roads, and water and sewer systems."

LOOKING AHEAD

Of course, to a significant degree, the increase in design work from the past year and a half of surging single-family market growth is already baked into the cake. The roads have been laid, sewer lines installed, and schools built. What about moving forward? Will the residential market keep overperforming? Will the out-migration continue?

"In 2022, we see the growth becoming not as robust as in 2020 and 2021, and in 2023 we see it slowing to a much more sustainable pace—closer to 3 to 5 percent instead of the double-digit growth," says Branch. "Not necessarily a boom, but still pretty steady growth."

One of the factors constraining the market will be the lack of affordability.

"It's becoming a crisis," says McLaughlin. "On top of really strong demand, we have a host of affordability issues, such as the supply chain problems, labor shortage, and land availability, all of which are combining to push prices out of the reach of a lot of buyers."

As 2021 wound down, Branch says, a slowdown in construction spending was already reflecting the shortage of affordable single-family homes. But, he adds, "In its place, we've seen multifamily construction pick up much stronger than we would have anticipated at this point in the cycle."

The lack of affordability will likely reinforce the current exodus from urban areas. "Historically, when affordability becomes a problem in this country, we just move farther out," says McLaughlin. "And with remote work, if people don't have to commute into work every day, they may be inclined to move even farther out."

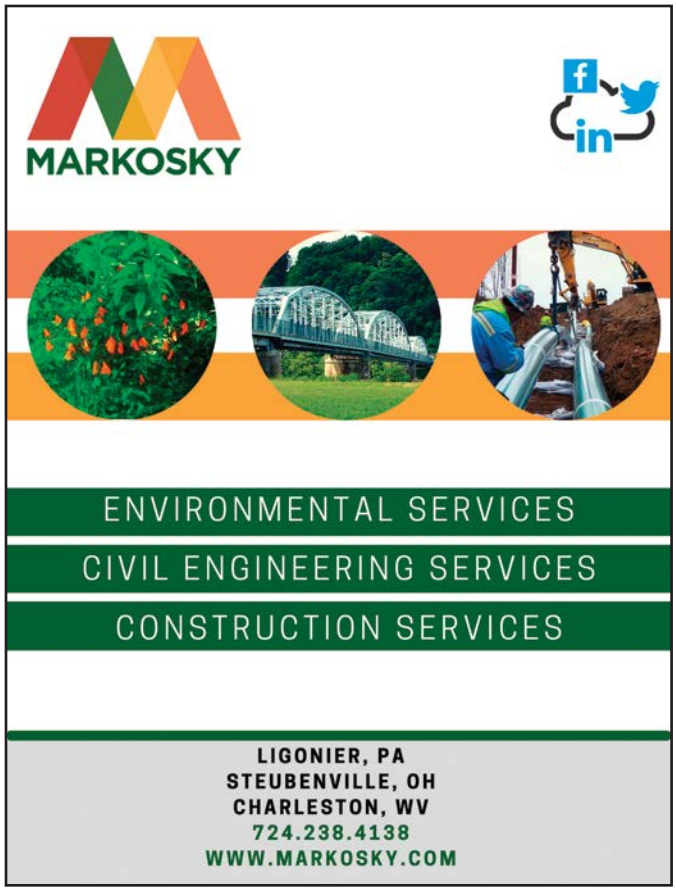
Branch agrees, saying, "I would venture that the bulk of the growth over the coming months will be outside the urban cores and into the suburbs and beyond."

On a regional level, both McLaughlin and Branch say the trend of stronger residential growth in the Sunbelt will continue, while the Northeast and the West Coast will struggle with affordability challenges. The Midwest, which is often more affordable, will also see growth.

While these national and regional trends are important to track, Branch says firms should concentrate on trends that are close to home.

"You want to get a sense of economic mobility in your market," he says. "The best way to do that is to measure demographic growth and household formation at the county level." ■

***Gerry Donohue** is ACEC's senior communications writer.*



Institute's Two New Reports Highlight Industry Optimism, Future Growth

The ACEC Research Institute recently released two reports: *2021 Economic Assessment of the Engineering & Design Services Industry* and the *Engineering Business Sentiment Q1 2022*.

The reports paint a positive picture of the current state and future prospects of the engineering and design services industry.

"I'm extremely optimistic about the direction of the industry and industry growth for the next few years," says Institute Chief Economist Jon Gray. "We expect growth to continue all the way through the forecast horizon in 2026."

2021 ECONOMIC ASSESSMENT OF THE ENGINEERING & DESIGN SERVICES INDUSTRY

The report, which is the second annual release, focuses on the key economic drivers of the engineering and design services industry and serves as a planning resource for ACEC member firms.

The baseline forecast, which did not include the Infrastructure Investment and Jobs Act (IIJA), projected 3.1

METAMORWORKS/GETTY IMAGES

percent average annual growth in the engineering and design services industry through the end of 2023 and just over 2 percent annual growth through the end of 2026.

Factoring in the impact of the IIJA, the forecast calls for a huge 8.4 percent increase in industry output in 2022, 2.7 percent average growth in 2023 and 2024, before tailing off to about 1.0 percent annual growth in 2025 and 2026. Overall, the law will add $132 billion to output in the engineering and design services industry and add about 82,000 jobs. "It's a big boon to the industry," says Gray.

Near-term headwinds that could diminish industry output include potential COVID-19 pandemic surges causing project delays or shutdowns, continued supply chain disruptions, and labor shortage challenges.

The report also measures the size of the engineering and design industry and its impact on the U.S. economy.

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Highlights include:
- $518 billion total economic contribution* (GDP)
- 4.7 million supported jobs
- 97,300 average yearly wages
- $105 billion paid in total federal, state, and local taxes

(*7.3 percent decline YOY due to the pandemic recession)

ENGINEERING BUSINESS SENTIMENT FOR Q1 2022

For this report, the Institute surveyed more than 600 member-firm leaders from around the country and evenly spread among company size about how they view the current state of the industry and its direction.

The survey uses a "Net Rating" system, which is calculated by subtracting the negative ratings from the positive ratings. Therefore, a positive Net Rating indicates sentiment is optimistic, while a negative Net Rating indicates pessimistic sentiment. The higher the numeric value, the stronger the sentiment.

Current sentiment in the engineering and design services industry is extremely optimistic. The Net Rating for the firm's overall finances is a staggering +88 and +82 for the condition of the overall industry, out of a possible +100. Both metrics improved significantly compared to last quarter (Q4 2021).

"You can't get much better sentiment than we have right now," says ACEC Research Institute Consultant Joe Bates, who conducted the study.

The current Net Rating for the U.S. economy is much lower, although still positive, at +29, and represents a significant decline from +40. Bates says, "We are seeing a significant erosion of sentiment regarding the U.S. economy as a whole; however, this is not affecting the Engineering and Design Services industry due to the positive impact of the Infrastructure Investment and Jobs Act."

Among the market sectors, respondents are bullish in nearly all areas with the highest sentiment for Water/Wastewater (Net Rating +77), Healthcare Facilities (+75) and Data Centers (+74).

Future sentiment is also optimistic for the firm's finances (Net Rating +51) and for the industry (+42), but weak for the U.S. economy (-3).

Looking forward among the various market sectors, optimism is strongest for Roads and Bridges (+67) and Water/Wastewater (+59).

Additionally, 66 percent of respondents believe their firm will increase their project backlog over the coming year, an increase of two points over last quarter.

The hot button issues for the industry right now are the labor shortage and inflation. Nine out of 10 (90 percent) respondents said their organization has at least one current opening, and 73 percent of respondents are "very concerned" about inflation.

Learn more about the ACEC Research Institute at **ACECResearchInstitute.org**. ■

Congress Approves Full Funding for First Year of Infrastructure Investment Law; ACEC Focuses on Implementation Priorities

The Council secured one of its legislative priorities for the congressional session with enactment of an omnibus spending package that fully funds the Infrastructure Investment and Jobs Act (IIJA) for Fiscal Year 2022.

While many federal programs under the IIJA received advanced appropriations, much of the surface transportation funding had been held up for the first part of the year under short-term stopgap spending bills. Without passage of the final transportation appropriations bill, states and local agencies could not access their full federal-aid highway and transit funds, and the U.S. Department of Transportation could not launch newly authorized programs.

Passage of the appropriations package released the full $58 billion for highways and $13 billion for transit projects under the law. It also supplemented IIJA funds with additional investments in aviation, water resources, and environmental remediation.

ACEC and its Member Organizations have been collaborating to advance several policy and programmatic priorities for successful implementation of the IIJA. Key issues include engineering workforce challenges, state and local agencies' capacity for effective program management, facilitating efficient environmental and regulatory reviews, promoting best practices in alternative project delivery methods, and aligning climate and transportation goals under the law. The Council has also engaged with other stakeholders and state and local partners on navigating expanded Buy America requirements.

AERIALPERSPECTIVE WORKS/GETTY IMAGES

IIJA Implementation and Administration Executive Orders Create Energy Project Challenges and Opportunities

The IIJA energy provisions and directives from new Executive Orders are expected to be implemented by the Department of Energy (DOE), the Department of the Interior (DOI), and the Federal Energy Regulatory Commission (FERC). ACEC will collaborate with various organizations to meet regulatory challenges to energy infrastructure.

The DOE, which controls over tens of billions in IIJA energy funds, will create major new offices, fill critical leadership vacancies, and incorporate environmental justice into its spending. The DOE created the Office of Clean Energy using $20 billion from IIJA. The office aims to deliver on the administration's climate agenda and advance technology such as hydrogen, carbon capture, grid-scale energy storage, and small nuclear reactors. ACEC plans to support the new office and continue to support the DOE Loan Program Office that has long served a similar role.

The DOI plans to reform its oil and gas program and deploy renewable energy on public lands. The DOI intends to initiate rule-makings on greenhouse gas emissions from onshore oil and gas infrastructure. New regulations will affect the mining industry. New regulation of offshore wind and solar energy project development on public lands is expected.

At FERC, leadership has initiated changes to the agency's reviews of natural gas infrastructure to assess climate and environmental justice impacts. Rules proposed this year may affect planning of new high-voltage power lines and how the lines recover costs. The chairman hopes to drive reforms to the electric transmission system to advance the ongoing shift to carbon-free power. FERC also plans to hold a technical conference to examine ways that the grid can be more resilient to extreme weather events.

ACEC has many opportunities to collaborate with client groups on IIJA implementation and energy infrastructure issues.

Congressional Infrastructure Committees Begin Work on Water Resources Development

House and Senate committees have begun hearings and drafting legislation to reauthorize and reform U.S. Army Corps of Engineers programs and water resources projects. The Water Resources Development Act (WRDA) is a biennial law covering navigation, flood control, environmental protection, and other programs to invest in ports, harbors, and inland waterways. Recent WRDA bills have also included measures on wastewater and drinking water infrastructure programs.

ACEC will continue to work with lawmakers and stakeholders on a number of priorities, including levee safety issues and partnership with the Corps in delivering projects funded through the bipartisan infrastructure law and recent disaster recovery initiatives.

MARIANNEBLAIS/GETTY IMAGES

Lawmakers are likely to focus attention on refining the water resources provisions included in the infrastructure law with a particular emphasis on resilience and environmental protection. The House Transportation and Infrastructure Committee and the Senate Environment and Public Works Committee are expected to unveil their respective legislative proposals later this spring.

Department of Labor to Propose New Overtime Pay Rule

The Department of Labor (DOL) is expected to release a new proposed overtime pay rule this spring. Under the Fair Labor Standards Act (FLSA), employees who earn less than a specified salary threshold must be paid time and a half for any hours over 40 worked in a week. Employees who earn more than the salary threshold may be exempt from overtime pay if their duties qualify them for the executive, administrative, or professional (EAP) exemptions.

After a federal judge struck down the overtime pay rule that was finalized by the DOL in 2016, the agency went through a new regulatory process that resulted in a revised salary threshold of $684 per week/$35,568 annually, which was enacted in 2019. No changes were made to the EAP exemptions at that time.

It is expected that the DOL will consider a significant boost in the salary threshold that resembles or exceeds the 2016 proposal of $913 per week/$47,476 annually. Recent increases in inflation may bolster their case.

ACEC will engage with the DOL, as it has each time the salary threshold is under consideration, to ensure that any changes to the salary threshold do not negatively impact engineering firms across the country.

ISSUES ON THE MOVE	WHAT'S NEXT
Funding for bipartisan infrastructure law	Additional implementation guidance expected this spring and summer
New Corps water bill	WRDA bill to advance in Committee late spring
FLSA overtime regulations	Rule-making expected this spring
New wetlands policy	Rule-making possible this summer

ACEC Provides Input on Scope of Federal Jurisdiction Under the Clean Water Act

The Council filed comments in February on a proposed rule from the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers defining "Waters of the United States" (WOTUS) under the Clean Water Act. ACEC reiterated industry views expressed in a previous rule-making, the 2020 Navigable Waters Protection Rule (2020 NWPR), and raised concerns about withdrawing important jurisdictional limits.

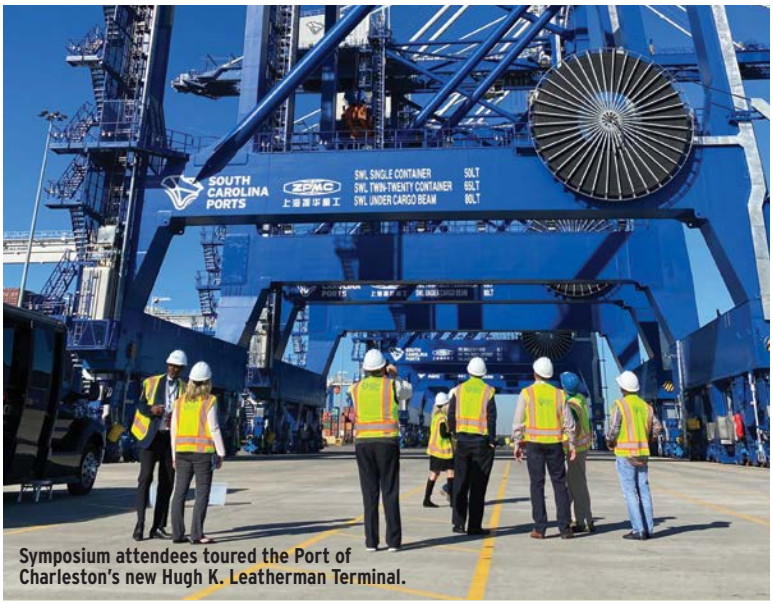
ACEC continues to support efforts to define waters of the U.S. with the goal of achieving consistent standards that can be readily applied in the field. ACEC also supports significant regulatory exclusions for drinking water and clean water utilities. These exclusions should include water and waste treatment systems, stormwater control features and water recycling structures, and green infrastructure projects. These exclusions will enable utilities to continue to perform water, wastewater, stormwater, and water reuse activities that are vital to human health and the nation's water quality.

MAREKULIASZ/GETTY IMAGES

The proposed rule repeals the Trump administration's 2020 NWPR, which had been subject to legal challenges. The repeal would restore regulations—sometimes referred to as the "1986 regulations"—that were in effect prior to the Obama administration's 2015 rule.

The proposed change is the first step of a two-step rule-making process to revise the definition of WOTUS. This first step is intended to be consistent with U.S. Supreme Court decisions. In the second step, the EPA and the Corps, with the benefit of additional stakeholder engagement, intend to develop a proposed rule to consider "categorical approaches" to jurisdiction.

There is no estimated timeline for publication of the next proposed rule. ACEC will follow developments and continue to support industry interests in the development of a pragmatic regulatory framework.



Symposium attendees toured the Port of Charleston's new Hugh K. Leatherman Terminal.

Port and Industrial Real Estate Growth Strong, With Focus in the Southeast

By Erin McLaughlin

The intermodal and logistics market continues to gain global attention as pressures on the supply chain, changes in behavior due to e-commerce, and the long-running hot industrial real estate market impact the funding and design of ports, freight corridors, freight rail facilities, and industrial land sites.

The United States' supply chain is under considerable pressure, as e-commerce booms, the gross domestic product bounces back to pre-COVID-19 levels, and industries such as trucking suffer from severe labor shortages. These pressures will likely increase as the main driver, e-commerce, is expected to grow. According to Statista, global retail e-commerce sales could reach $5.5 trillion in 2022.

This is a continuation of a long-term trend, as detailed in the *2020 Transportation Statistics Annual Report* published by the U.S. Department of Transportation (DOT). The report notes that e-commerce sales increased twentyfold between 2000 and 2019. In 2018, the nation's transportation system—supported by its infrastructure—moved about 51 million tons of goods worth $51.8 billion each day; that amount in 2018 represented a 4 percent increase over 2016. Container ships are getting larger, both to meet demand and to take advantage of the 2016 expansion of the Panama Canal. Larger ships require ports with deep-water drafts, ample overhead clearance, and intermodal connections such as double-stack rail service, notes the DOT. Continued investments will be made, supported by the newly signed into law Infrastructure Investment and Jobs Act (IIJA), to improve such infrastructure and increase both the resiliency and capacity of the supply chain. Growth is especially notable in the Southeastern area of the United States, with the five fastest growing ports in recent years serving this market. *See table.*

With the increase of goods coming into the U.S., it is no surprise that the industrial/distribution market leads in all commercial real estate categories. It ranks first for both investment and development prospects, as it has for nine consecutive years, according to an annual report published by the Urban Land Institute and PricewaterhouseCoopers. The report notes that "the industrial real estate operating environment has never been stronger." The strength of this market is national, with surging growth in the Sunbelt due to population growth. In the Southeast, the seaport markets of Charleston, S.C., Savannah, Ga., and Tidewater, Va., are strong, due not only to demographics, but the drivers of location incentives and training programs for distribution employees and expanded inland ports.

ACEC chose the Charleston, S.C., location for its first-ever Private Market Symposium in December 2021. Attendees, who came from the Southeast and beyond, heard from clients such as the Georgia Ports Authority, South Carolina Ports Authority, Norfolk Southern Corporation, and real estate experts. The event concluded with a tour of the Port of Charleston's new Hugh K. Leatherman Terminal.

Rank	Port	Import & Export TEUs*, 2020	Growth %, 2017-2020
1	Savannah, Ga.	3,637,889	67.5%
2	Mobile, Ala.	349,476	39.1%
3	Houston, Texas	2,488,101	23%
4	Charleston, S.C.	1,762,410	21.5%
5	Wilmington, N.C.	305,054	10.5%

***TEU: Twenty-foot Equivalent Unit, which is used to measure a ship's cargo carrying capacity. The dimensions of one TEU are equal to that of a standard 20-foot by 8-foot shipping container.**

Source: *The Journal of Commerce*

Private Water Systems a Key Client in a Growing Market

About 12 percent of the U.S. population is served by private water systems, with about 14 publicly traded companies serving customers in 33 states in 2019, according to analysis by the U.S. Government Accountability Office (GAO) and the University of North Carolina. Growth is expected in this market, with a boost in spending expected from the new infrastructure bill.

Although some have expressed hesitancy over private utilities providing critical public services connected to the provision of safe drinking water, the need for significant investment in water systems has many communities looking beyond municipal-owned models.

The March 2021 GAO study *Private Water Utilities: Actions Needed to Enhance Ownership Data* details that the estimated 50,000 drinking water utilities in the United States face more than $470 billion in costs over the next 20 years to repair and replace drinking water infrastructure. The study calls for the U.S. Environmental Protection Agency (EPA) to update and correct inaccuracies regarding ownership information in its Safe Drinking Water Information System. According to the report, the EPA provided over $500 million in Drinking Water State Revolving Fund (DWSRF) assistance to for-profit utilities for 226 projects from January 2010 through June 2020. Funding for the DWSRF is growing substantially. Thanks to the recently passed IIJA and a booming residential market, the water market—including on the private side—is positioned for growth. The IIJA includes $550 billion in new spending, with $48.4 billion targeted for EPA drinking water and wastewater spending over five years, and $11.7 billion of this targeted specifically for the DWSRF.

Let's look at some of the larger private water utilities operating in the United States that serve this growing market:

American Water Works Company Inc. (NYSE: AWK): Headquartered in Camden, N.J., the largest private water utility domestically, with operations in 16 states: Calif., Ga., Hawaii, Ill., Ind., Iowa, Ky., Md., Mich., Mo., N.J., N.Y., Pa., Tenn., Va., and W.Va.

Aqua America Inc. (NYSE: WTRU): Headquartered in Bryn Mawr, Pa., there are Aqua subsidiaries in eight states: Ill., Ind., N.J., N.C., Ohio, Pa., Texas, and Va.

SJW Group (NYSE: SJW): Headquartered in San Jose, Calif., the company has subsidiaries in four states: Calif., Conn., Maine, and Texas.

Suez (Paris stock exchange: SEV): A French-based international company with North American headquarters in Paramus, N.J., Suez owns 16 regulated water utilities domestically.

Veolia North America LLC: A privately held subsidiary of the French-headquartered Veolia Group, listed as Veolia Environnement (Paris stock exchange: VIE). The Veolia North American head office is in Boston, and it has government water clients in 24 states.

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A New Era of Infrastructure Arrives

THE $1.2 TRILLION BILL ADDRESSES MUCH-NEEDED IMPROVEMENTS, BUT REMAINS A MAJOR OPPORTUNITY—AND CHALLENGE—FOR THE INDUSTRY

BY SAMUEL GREENGARD

The road to infrastructure funding has been a long and bumpy one. For decades, Congress neglected to pass any significant bill above the basic minimum to fund improvements to America's roads, bridges, tunnels, electrical grid, and water treatment facilities. The consequences have ranged from inconvenient and frustrating to dangerous and fatal.

That situation changed on November 15, 2021, when President Joe Biden signed a $1.2 trillion infrastructure bill into law. The sprawling piece of legislation, officially known as the Infrastructure Investment and Jobs Act (IIJA), aims to transform everything from transportation and energy to environmental remediation and broadband access.

"It's a monumental piece of legislation—and one that promises to reshape the nation," states Andrew McCune, president and CEO of Wade Trim. "It addresses deteriorating infrastructure and emerging requirements. But it also represents a huge boost for the engineering industry. It will translate into a tremendous amount of work in an array of areas."

In fact, it's a once-in-a-generation opportunity to advance the U.S. in several critical areas—and build a stronger economy. "This legislation represents an enormous infusion of funding, touching nearly every facet of the American economy and fortifying the nation's infrastructure," observes Michelle Meisels, principal at Deloitte.

For the engineering industry, it's both an opportunity and a challenge. On one hand, the IIJA will create projects across a spectrum of disciplines. On the other hand, a lack of visibility into what the projects will actually entail, combined with an ongoing talent shortage, makes it difficult for engineering firms to prepare for any uptick in work.

"It's a monumental piece of legislation—and one that promises to reshape the nation."

ANDREW McCUNE
PRESIDENT AND CEO
WADE TRIM

A BRIDGE TO THE FUTURE

It's no secret that highways, airports, water treatment facilities, and other critical infrastructure have long been neglected. For years these systems have posed growing economic, safety, and practical risks.

What's more, the problems have piled up to the point where in some communities it can be difficult to commute, obtain clean water, or know that critical infrastructure and systems will work dependably. Deteriorating infrastructure undermines supply chains and logistics and imposes health and social costs. There's also the fact that climate change has become a major factor. There's a need to modernize systems, reduce greenhouse gas emissions, and embrace a zero-carbon framework.

Yet, for years, getting legislation passed has been next to impossible. So when President Biden signed the current bill into law, it represented a major win for the country and for the engineering industry. It's among the largest federal investments in infrastructure in the nation's history, with $550 billion in federal funding over baseline levels for the next five years. The bill is large in scope, covering more than highways and byways; it addresses numerous projects, including expanding access to broadband and shoring up cybersecurity.

Although some critics have taken aim at the IIJA, mainly focusing on the cost, Charles Penland, managing principal at Walter P Moore, says that this represents a myopic and misguided view. "The cost of not having the bill and the cost of those important items that were dropped will still cost us," he states. "It's very clear that we are way behind in maintenance for the country's infrastructure, not even counting what is needed to upgrade it to be safer and more resilient."

The legislation will deliver benefits across several key areas. It will create jobs, improve commutes, provide increased defense against natural disasters and climate change, and support environmental gains.

It will also modernize airports, shipping ports, rail systems, and other infrastructure that directly impact business and supply chains. It achieves many of these gains while reducing carbon emissions through the use of alternative energy and new technologies. For example, the bill funds a national network of electrical vehicle chargers.

The impact will be monumental. Deloitte reports that the infrastructure package could generate $56 billion in economic growth, with a 33 percent return on investment from long-term projects. The biggest impacts on the engineering field, Meisels says, are $40 billion designated for bridge repair, replacement, and rehabilitation; $39 billion to modernize public transit; $66 billion for passenger and freight rail improvements; and a $65 billion investment to rebuild the electrical grid, including new power lines and expanded renewable energy.

Although many observers say the infrastructure bill is only a starting point for addressing decades of neglect, they are nevertheless sold on its value. "This legislation should produce real gains associated with the manufacture, transport, and export of goods and services," says Matthew Richards, president and CEO of Strand Associates. In addition, "it improves the resiliency of

"This legislation represents an enormous infusion of funding, touching nearly every facet of the American economy and fortifying the nation's infrastructure."

MICHELLE MEISELS
PRINCIPAL
DELOITTE

our communities to withstand the impacts of major weather events and hopefully mitigate some of those impacts."

The real-world effects shouldn't be ignored, Richards says. For example, more than $50 billion is designated for water improvements, including access to clean drinking water, and $65 billion will go to rural and low-income broadband deployment. "From a municipal aspect, the water infrastructure funding will promote replacing lead pipes and address per- and polyfluoroalkyl substances (PFAS) contaminants in public and private wells," Richards says. "The climate resilience investment will help protect against flooding, while other provisions will help create safer infrastructure and communities."

"This legislation should produce real gains associated with the manufacture, transport, and export of goods and services."

MATTHEW RICHARDS
PRESIDENT AND CEO
STRAND ASSOCIATES

IMPACT ON ENGINEERING

Navigating the sprawling infrastructure bill will likely prove challenging for engineering firms. Because many of the actual projects aren't yet defined, the specific size and shape they will take remains largely unknown. There's also a lack of visibility into the role of federal, state, and local governments in developing and overseeing projects—and whether these projects will be handled entirely by government entities or by public-private partnerships.

Engineering firms should monitor how government agencies approach various projects, how they procure services, and the timing and scope of funding, Richards says. This means developing better links to officials—particularly at the state and local levels. "There may be a need to hire new staff, including engineers, or find ways to distribute workloads differently, such as using new technologies to address infrastructure needs in ways that are more cost-effective, lower maintenance, and better suited to handle today's loads," he explains.

In fact, staffing will be a critical challenge, McCune notes. Over the last couple of decades the number of civil engineers has shrunk, and many firms aren't equipped to ramp up their capabilities quickly. Adding to the difficulty, "the vagueness of much of the bill makes it difficult to take definitive action around hiring new talent," he continues. Instead of attempting to chase after all projects—or the biggest or most profitable—McCune suggests specializing and looking for work in a narrower space. "For many firms, it doesn't pay to be a jack-of-all-trades. It can also be a disservice to the industry," he cautions.

To remain apprised of the situation, McCune has assigned two staff members to monitor developments with the bill and track how it potentially impacts the A/E/C industry, as well as his firm. "We want to make sure we know when funding is available and how we can manage staff and resources to take advantage of

THE INFRASTRUCTURE BILL AT-A-GLANCE

Here are some of the key areas addressed in the Infrastructure Investment and Jobs Act:

$110 BILLION in new funding for roads, bridges, and major infrastructure projects

$66 BILLION in improvements to passenger and freight rail

$65 BILLION to improve broadband infrastructure

$65 BILLION in clean energy transmission by upgrading existing lines and installing smart grid technologies

$55 BILLION to upgrade water infrastructure

$40 BILLION for bridge repair, replacement, and rehabilitation

$39 BILLION to modernize public transit systems

$25 BILLION for airports to address repair and maintenance backlogs and reduce congestion and emissions while promoting low-carbon technologies

$17 BILLION in port infrastructure

$12 BILLION in partnership grants for intercity rail service, including high-speed rail

$11 BILLION for transportation safety programs, including helping states and localities reduce crashes and fatalities, particularly related to cyclists and pedestrians

$7.5 BILLION to build a nationwide network of plug-in electric vehicle chargers

$5 BILLION for low- or zero-emission buses

$2.5 BILLION for low- or zero-emission ferries

$1 BILLION to reconnect communities divided by highways and other existing infrastructure

APPLEUZR/GETTY IMAGES

"It's very clear that we are way behind in maintenance for the country's infrastructure, not even counting what is needed to upgrade it to be safer and more resilient."

CHARLES PENLAND
MANAGING PRINCIPAL
WALTER P MOORE

opportunities as they arise," he explains. He also began hiring in anticipation of an infrastructure bill passing. While some may have viewed this as a gamble, McCune says that he felt confident some form of the bill would pass and he wanted to gain a head start.

UNFINISHED BUSINESS

The infrastructure bill is one of many growth drivers that will help fuel the economy, Meisels says. However, the backlog of projects demanding attention far exceeds the funding. In addition, the bill is vague and leaves some key areas—ranging from modernizing highways and building a more resilient power grid—severely underfunded. The Congressional Budget Office estimates the IIJA will add $256 billion to the U.S. deficit over the next 10 years.

Penland believes that the bill—and the attempt to address climate change at least partially through innovation and infrastructure upgrades—is a good start, though there's still plenty of unfinished work. In the months and years ahead, "we have a lot to learn to better understand the impacts of all energy sources and how they are interrelated."

Still, McCune and others say that the infrastructure bill is good for the country and the A/E/C industry—at least in the short term. "It's a tremendous shot in the arm for the next six years or so. But when the funding runs out, the question is going to be: Do we continue supporting the economy and building a foundation for the future, or do we go back to political battles while infrastructure deteriorates and the economy takes a blow?" he asks.

Richards hopes that enthusiasm for the bill and demand for engineering talent will generate greater interest in STEM and engineering programs across the country. He also hopes that when the public sees the direct results of the funding—and the final projects—it will ramp up enthusiasm, along with the willingness to fund additional projects. "We need to produce results that the public can appreciate," he says.

To that end, A/E/C firms must continue to promote their interests and public well-being through ongoing dialogue with government officials and political leaders. They also must focus on lobbying and educating the public. "Investing in infrastructure is investing in the future," McCune says. "It's critical for staying competitive globally. These investments are essential for the business community and for society." ■

Samuel Greengard *is a technology writer based in West Linn, Oregon.*

WHAT'S NEXT?

Amid enthusiasm about the massive infrastructure bill, "there are many unknowns," says Andrew McCune, president and CEO of Wade Trim. These unknowns include how the federal government will dole out the money to states and localities, as well as how those entities will distribute projects.

One of the interesting and unusual provisions of the bill is that approximately $120 billion in funding remains under the jurisdiction of the federal government. One method of distribution will revolve around competitive grants, which arms federal officials with a great deal of latitude about the scope and size of projects.

"The pace at which federal funds reach different places nationally depends on the types of projects pursued and the types of programs channeling resources to these projects," according to a November 2021 Brookings report.

Typically, projects such as resurfacing or improving roads occur faster than more sophisticated capital projects like new system expansions. "Funding in existing federal programs, including those distributed by formula, also tends to move faster than funding in new competitive grant programs, which involve new rule-making," the Brookings report notes.

The takeaway? It will be years before the industry fully understands how the bill plays out. But as Brookings put it: "Regardless of how enormous the implementation lift may be, Congress has now done their part. America is ready to invest in itself again, and the investment amount is only likely to grow."

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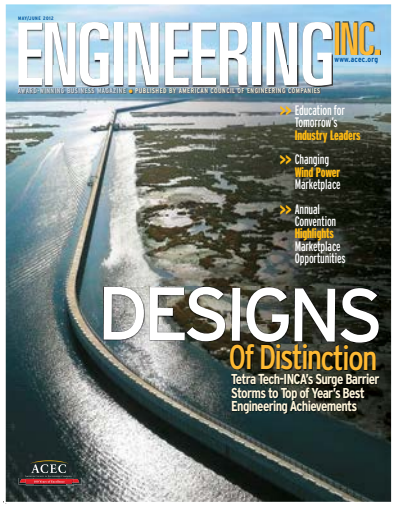

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IS THE ENGINEERING TALENT PIPELINE READY?

Big infrastructure projects are coming.

To meet the growing demand for engineers, firms must ramp up creative strategies to build their workforces

BY KATE ROCKWOOD

Depending on how you look at it, the near future for engineering firms appears either exciting or extremely challenging—though it's probably a bit of both.

The bipartisan Infrastructure Investment and Jobs Act (IIJA), signed by President Joe Biden on November 15, will pump $1.2 trillion into a wide range of projects, including fixing bridges and roadways, replacing lead water pipes, and rehabilitating airports. Some $500 billion of that funding is going toward new projects—equivalent to almost one-third of total U.S. construction spending in 2021 ($1.6 trillion, according to October U.S. Census figures).

The engineering and construction industry's revenue for 2021 was projected to be about 6.9 percent and will "likely accelerate further in 2022," according to Deloitte's *2022 Engineering and Construction Industry Outlook*. That's the good news. But the report also warns that "labor shortages could reach crisis proportions." More than half of engineering and construction executives said they are facing severe labor and talent shortages on job sites. In addition, 6 in 10 firms surveyed in August 2021 by the Associated General Contractors of America reported project delays due to workforce shortages.

Those shortages are exacerbated by workers retiring and resigning in droves. With growth on the horizon, the strain may feel more acute. Experts say the pressure is on to think creatively and inclusively about recruiting and retaining workers, many of whom may have different expectations of what an attractive job looks like.

REELING FROM RESIGNATIONS AND RETIREMENTS

The A/E/C industry is certainly going to face a talent shortage over the next several years, says Jay Bowman, a partner at FMI Corporation, a consulting and investment banking firm serving the built environment, including architects, engineers, and contractors. But that's nothing new, he stresses, and not necessarily a problem to be fixed. "Using the word 'problem' suggests it can be solved and one day the problem will be gone," Bowman says. The way he sees it, the constant search for talent is a feature, not a bug.

"Talent has been an issue for the industry for decades. I don't think we have a talent problem in the A/E/C industry. I think it's a characteristic of the industry," Bowman says. "A/E/C is all professional services, and because of that, talent is the asset. It can get punctuated where that shortage is acute or challenging, and we're in one of those cycles."

"A/E/C is making a much more significant effort to bring more women and minorities into the industry. That opens up about 50 percent of the marketplace that was overlooked for a long time."

JAY BOWMAN
PARTNER
FMI CORPORATION

One major factor is the widespread retirement of baby boomers. Millions of boomers are retiring from their jobs each year, and this loss is especially noticeable in the professional workforce, where people aged 55 and older make up a larger proportion of workers (25.5 percent) compared with the total American workforce. "This is a massive exit of talent," Bowman says.

Already, the percentage of boomers in upper- and middle-management positions is declining, according to a May 2021 Deltek study of 480 architecture and engineering firms. The pandemic appears to be accelerating retirements. Boomers retired at a significantly faster pace in 2020 than they did in 2019, according to a Pew Research survey.

This could be called "the Great Retirement," but it is only a part of the much talked about "Great Resignation," where about 4 million people quit their jobs in each month of 2021, according to the U.S. Bureau of Labor Statistics. That compares to about 3.5 million in pre-pandemic times. The A/E/C industry is by no means immune. Bowman worries that the results could mirror what happened during and after the 2008 recession, pointing out that construction dropped significantly between 2006 and 2011. "A lot of architects and engineers left the industry, and many never came back," he says.

Those realities and the demand for more construction make finding qualified talent imperative. "All this together will make this one of the most important strategic issues in the industry," Bowman says.

Staffing more projects amid a talent shortage has put the focus on recruitment for many firms. "We have grown since 2020 and have added 60 brand-new positions," says Anne Harney, senior vice president of human resources at Collins Engineers. "As a result, in the past few years, talent has been a huge issue for us."

A DEEPER DIVE INTO THE TALENT POOL

While Bowman believes the engineering industry can make up for losses due to the waves of retirements and resignations, not all experts are optimistic about the talent pipeline over the next decade.

"Due to demographic shifts, there will be a talent shortfall even before accounting for boomer retirements," according to Norman Fortenberry, executive director of the American Society for Engineering Education.

The demand for engineers will increase, he says, but if historical trends from the past 30 years continue, the percentage of college students who are pursuing engineering degrees is expected to stay about the same: 3 percent to 5 percent. The growth for civil engineer employment, meanwhile, is expected to be 8 percent between 2020 and 2030. That rate is similar to other occupations, but the demand for engineering talent is expected to be fierce.

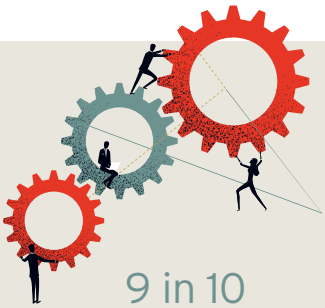
Firms will have to focus on recruiting young talent and workers from historically underrepresented groups. Cooperative education programs, for example, allow undergraduates to alternate between studying full time and working full time in their desired field, which gives them experience before graduation while providing firms with workers. There are even such programs for high school students.

In addition to luring undergrads to their campus recruitment events with pizza, soda, and Amazon gift card giveaways, Harney says Collins Engineers shows presentations at high schools to interest students in the field.

The firm secures promising interns by offering them positions while they're still in college—at the end of their sophomore year, in fact.

THE TALENT GAP BY THE NUMBERS

Engineering firms looking to expand their workforces must adapt to the expectations of younger employees and make concerted efforts to attract new workers from diverse backgrounds. Workers with engineering degrees are beginning to skew younger.



Average employee age in 2019:
43

The majority of people with engineering degrees are men*:
76.6 percent

1/3
of firms reported having more open positions in 2021 than in 2020.

9 in 10
firms cite the availability of good candidates as a top concern in 2021.

Sources: *Architecture & Engineering Industry Study*, Deltek Clarity, 2021; Data USA: Engineering
*At the five schools with the highest number of engineering graduates

To attract even more applicants, Harney added a virtual internship program, where interns meet with an executive from the company every other week. "The opportunity to learn from an engineer who has been doing it for decades is an uncommon advantage for the interns who participate," she says.

When recruiting professionals out of college, some firms are looking for individuals who have degrees outside traditional A/E/C degrees, says Bowman. Candidates who studied psychology or history, for example, could be placed in nontechnical management roles.

Other companies have targeted former collegiate athletes, who, Bowman explains, have high motivation and can be coached well. Harney says her firm looks at applicants' extracurricular experiences: "Because Collins does a lot of underwater bridge inspections, we seek candidates who have experience as recreational divers, lifeguards, or Eagle Scouts to apply their skills and interests in a new way," Harney says.

Firms are realizing it is imperative to increase inclusivity in their recruiting practices, and are targeting their searches to bring in more women and those from underrepresented racial and ethnic groups.

For now, the college-to-career pipeline is heavily weighted toward white men. The five biggest engineering schools in the country graduate three times as many men as women. White people made up 47.7 percent of engineering graduates in 2019, while only 3.4 percent of degrees went to black students and 9.6 percent went to Latino students.

These figures are mirrored in the professional workforce and are only moderately better today than they were a decade ago. In 2020, 16.5 percent of architecture and engineering workers were women (up from 15.6 percent in 2010), 6 percent were black (up from 4.8 percent), and 10.6 percent were Latino (up from 7 percent), according to the Department for Professional Employees.

"A/E/C is making a much more significant effort to bring more women and minorities into the industry. That opens up about 50 percent of the marketplace that was overlooked for a long time," Bowman says. "It's a good time to make this change."

RETHINKING RETENTION

Some initiatives that will help firms recruit talent will do double duty by keeping good workers from leaving. One major perk that employees are looking for now? Flexibility.

"The pandemic changed how we think about work for the foreseeable future," Bowman says. "Whether we want to admit it or not, people coming in are going to expect some type of flexibility from a work situation."

"Due to demographic shifts, there will be a talent shortfall even before accounting for boomer retirements."

NORMAN FORTENBERRY
EXECUTIVE DIRECTOR
AMERICAN SOCIETY FOR ENGINEERING EDUCATION

The Deltek study concluded that "recruiting and competition for candidates is expected to heat up," and suggested that "firms should consider widening the reach of their recruiting efforts to include employees previously not considered due to location."

But flexibility is about more than location. It's also about corporate culture and expectations. Younger workers value employee benefits differently. A flexible work arrangement was the top choice for Generation Z (62 percent) and millennial (60 percent) workers in a Bankrate survey.

That's a challenge for an industry that by its nature demands on-site workers. "It's exponentially more difficult to offer flexibility in the field," Bowman concedes.

It's also vital to help employees grow and see a future in their workplace. Training and development opportunities are powerful recruitment and retention tools. Harney focuses on engineers' career development to grow talent from within—for instance, planning out tracks toward project management roles. What's more, Collins Engineers has hired almost every college intern it has ever had, usually before they graduate. "Other companies are doing the same thing," Harney says.

When talent is scarce and competition fierce, time is of the essence.

"Those who are waiting for the industry to solve this problem will be waiting for a long time. It's not the industry that will solve it—the firms will need to solve it for themselves," Bowman says. "Every day you wait is a day lost." ■

***Kate Rockwood** is a Chicago-based journalist whose work has appeared in* HR Magazine, Fast Company, Inc., *and* Time.

"Because Collins does a lot of underwater bridge inspections, we seek candidates who have experience as recreational divers, lifeguards, or Eagle Scouts to apply their skills and interests in a new way."

ANNE HARNEY
SENIOR VICE PRESIDENT OF HUMAN RESOURCES
COLLINS ENGINEERS

2021 ACEC/PAC WRAP-UP:

ANOTHER RECORD-BREAKING YEAR

The advocacy support organization exceeds $1 million in donations for the sixth straight year

BY BOB VIOLINO

Ongoing challenges related to the pandemic, along with government restrictions and uncertain business conditions, could not stop the ACEC Political Action Committee (ACEC/PAC) from experiencing yet another successful year in 2021.

Due to the efforts of countless volunteers, ACEC/PAC—the only political organization that looks out for engineering firms and their legislative interests—received more than $1 million in donations for the sixth straight year. Total disbursements for the year were $719,050. This includes $9,550 in ACEC direct funds, which are direct contributions made to candidates from members via a new conduit website. There were 2,793 individual donors.

ACEC/PAC, which is regulated by the Federal Election Commission and overseen by a committee of PAC Champions comprised of engineering firm executives from ACEC Member Organizations, is the largest federal PAC in the design industry. The committee has grown more than 500 percent in 10 years.

ACEC/PAC plays a key part in the success of ACEC's advocacy program. It supports federal candidates on a bipartisan basis who support the engineering and design industry's business political agenda in Congress.

"While we fell short of getting all 52 Member Organizations to their individual PAC goals, we did set another record in total receipts of over $1.15 million," says Dr. Gary Raba, ACEC/PAC chair and chief growth officer at civil engineering firm Raba Kistner, Inc.

Raba says that he, along with ACEC/PAC vice chairs Jason Matson and Kevin McOmber, takes pride in the efforts of the ACEC/PAC National Advocacy/Political Affairs team, the Member Organization executive directors, and their respective Member Organization PAC Champions to achieve the record amount.

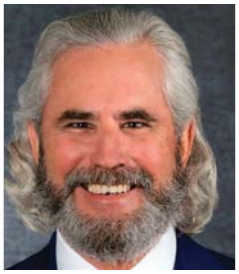
"It truly was a coast-to-coast team effort," highlighted by 43 states meeting or exceeding their ACEC/PAC goals, Raba says. "All of this takes time, energy, creativity, and the commitment of our Member Organizations' volunteers."

Some Member Organizations created inventive ways to raise money, including golf outings, scotch tastings, raffles, and a crab fest, Raba says.

"Our PAC success in 2021 was phenomenal, as you step back and recognize the broad level of support across the nation," says Matson, ACEC/PAC vice chair and California regional leader at Kimley-Horn. "We are grateful for the hard work and focus of each of our PAC Champions and Member Organization leadership from coast to coast that helped us achieve 43 of 50 states exceeding their Member Organization PAC goal."

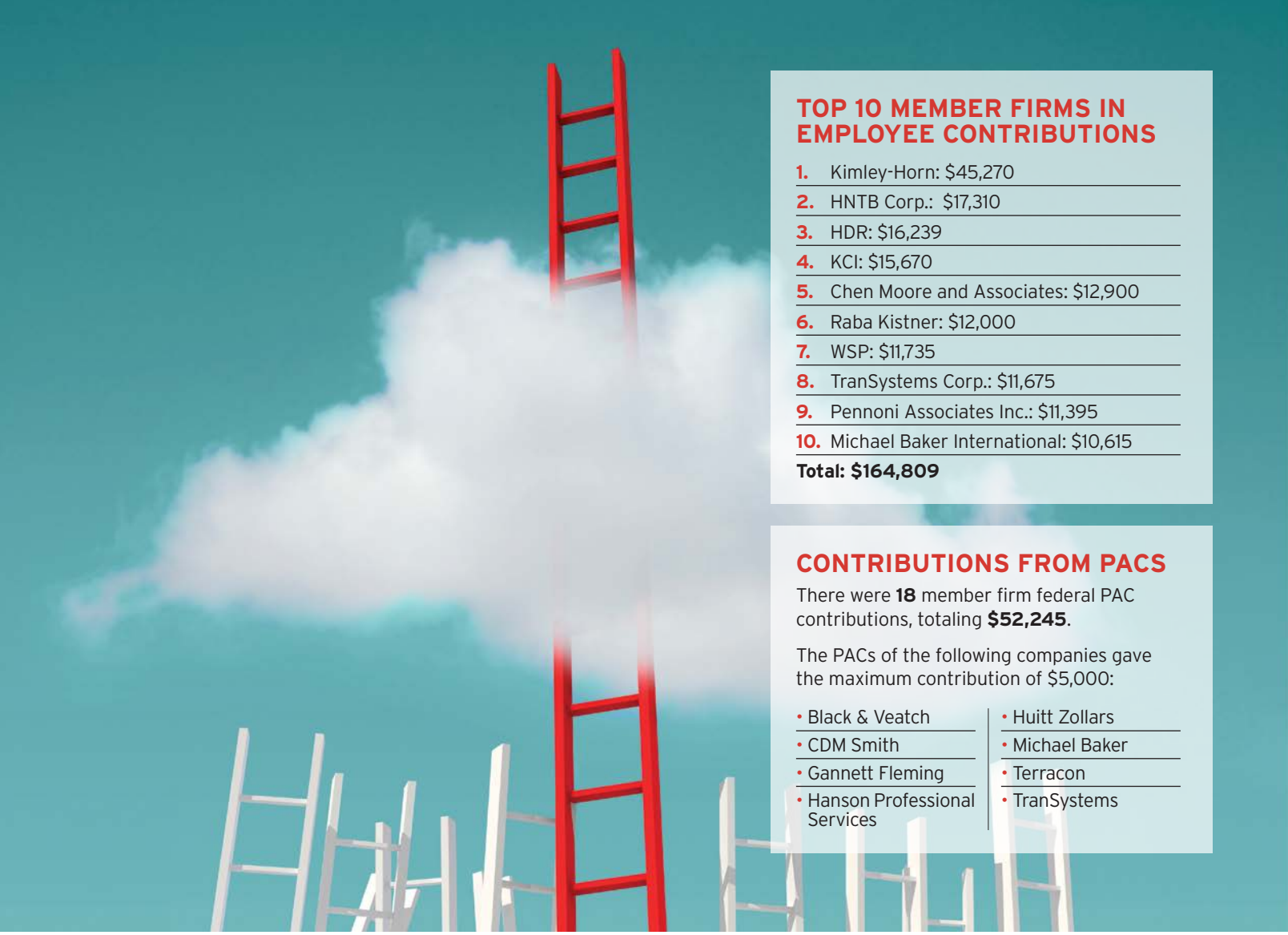
Although several states did not make their goals, "they made strong late-year rallies to help us deliver an all-time record year," Matson says. Member Organizations are not only focused on their fundraising priorities but also on building relationships with their respective congressional delegations, he says.

"We desire to have more members involved in our legislative outreach or PAC check presentations, whether in Washington, D.C., or back in their districts," Matson says.



"It truly was a coast-to-coast team effort. All of this takes time, energy, creativity, and the commitment of our Member Organizations' volunteers."

DR. GARY RABA
CHAIR, ACEC/PAC
CHIEF GROWTH OFFICER
RABA KISTNER, INC.



TOP 10 MEMBER FIRMS IN EMPLOYEE CONTRIBUTIONS

1. Kimley-Horn: $45,270
2. HNTB Corp.: $17,310
3. HDR: $16,239
4. KCI: $15,670
5. Chen Moore and Associates: $12,900
6. Raba Kistner: $12,000
7. WSP: $11,735
8. TranSystems Corp.: $11,675
9. Pennoni Associates Inc.: $11,395
10. Michael Baker International: $10,615

Total: $164,809

CONTRIBUTIONS FROM PACS

There were **18** member firm federal PAC contributions, totaling **$52,245**.

The PACs of the following companies gave the maximum contribution of $5,000:

- Black & Veatch
- CDM Smith
- Gannett Fleming
- Hanson Professional Services
- Huitt Zollars
- Michael Baker
- Terracon
- TranSystems

"We want members of Congress to view ACEC and our members as their trusted advisors who can demonstrate the benefits of our legislative priorities such as infrastructure funding, Qualifications-Based Selection, and consultant outsourcing in a bipartisan and collaborative way."

With the upcoming midterm elections this year, "we should not have a shortage of opportunities to convey ACEC's legislative priorities and maintain our seat at the table on issues important to our member firms," Matson says.

OVERCOMING CHALLENGES

There were significant challenges to overcome in 2021, including the riots at the U.S. Capitol building. "The events of January 6 created a national period of reluctance to raise monies or make contributions across all business lobby factions for the first two months of 2021," Raba says. "ACEC/PAC followed the same ethos."

The COVID-19 pandemic interfered with ACEC's spring convention, where the committee typically raises $50,000 to $75,000 at its annual fundraising kickoff. Then there was the ongoing impact of the pandemic at the Member Organization level, with the lack of in-person meetings and gatherings. "It's hard to twist someone's arm over Zoom," Raba says.

But challenges can lead to opportunities. "Our profession and our members faced several concerning pieces of legislation this session—Paycheck Protection Program loan repayment, the Infrastructure Investment and Jobs Act, and the Water Resources Development Act, to name a few. I believe that for our membership, large to small firm size, these pieces of legislation resulted in more interaction than ever before," Raba says.

And that was all due to ACEC national leadership, Raba says. "The challenges were recognized, and several means and modes of communication were established for Member Organization and member interaction," he says. "Without dialogue and a common vision, synergy is lost."

While some of these challenges still exist, "I firmly believe the profession and our members have been provoked," Raba says. "They see that business and politics are inextricably intertwined. It is now incumbent upon the advocacy team to visit with the Member Organizations virtually and in person in 2022 to continue our ACEC/PAC growth in number of contributors and direct giving, all of which will lead to synergy and success."

STATE CHAMPIONS

A fundraising highlight each year occurs at ACEC Delaware. It's called the ACEC Annual Crab Fest and is held in early October

DELIORMANI/GETTY IMAGES

"Aligning our state and federal political giving programs has created greater excitement about our advocacy programs and led to a significant increase in giving to both our state and federal efforts."

JONATHAN CURRY
EXECUTIVE DIRECTOR, ACEC/MN

at a venue strategically located in the center of the state. The event has become a "Save the Calendar Event" that members try to attend each year.

The location is a key to the event's success, as is the reasonable price of $45 per person for all-you-can-eat crabs and two drink tickets, says Ted Januszka, ACEC/PAC Champion, ACEC Delaware, and vice president and principal bridge engineer of consulting engineering firm Pennoni Associates.

"This allows new donors to contribute to ACEC/PAC, and it also allows principals and managers to purchase tickets for their staff and use it as a team-building or employee relations event," Januszka says. "This is a great event in that most of the key players in the consulting engineering community attend. This makes it more attractive."

Kim Willson, executive director of the PAC, and her deputy Bailey Brooks have worked closely with the ACEC Delaware board in the planning and execution of the fundraiser, Januszka says. "It's a total team effort," he says.

Thanks in part to the event, ACEC Delaware made its ACEC/PAC goal for the 15th consecutive year in 2021. "The 2022 fundraising outlook is cautiously optimistic, as this is a big election year nationwide," Januszka says. "With the passing of the IIJA and the recent bridge failure in Pittsburgh, there is a heightened awareness to continue to support infrastructure investment and the representatives and senators that advocate for such investment."

ACEC/MN's PAC committee also had a successful fundraising year, according to Jonathan Curry, executive director of ACEC/MN. "We hit our national goal for the second time in

2021 ACEC Annual Crab Fest fundraiser hosted by ACEC Delaware.

our organization's history, and we also increased the number of individual contributions," he says.

This was achieved in part by developing a strong partnership with the leaders of the state campaign fund, Curry says. "Aligning our state and federal political giving programs has created greater excitement about our advocacy programs and led to a significant increase in giving to both our state and federal efforts," he says.

Members of the committee "are committed to making the national PAC a key priority, and ACEC/MN is taking steps to ensure we hit our goal every year going forward," Curry says.

ACEC/MN is "looking forward to a robust 2022 fundraising year," Curry says. "We will be hosting multiple fundraisers and aggressively promoting the good work our PAC does to promote ACEC's legislative agenda in Washington, D.C."

Indeed, with hopes that live events will become more frequent again, the future is looking brighter.

"We are optimistic that 2022 will allow even more fun activities for PAC outreach," Matson says. "In my own state of California, our PAC is at its best when our members are able to network and socialize in support of the PAC, such as at our September wine-tasting event."

The PAC committee of Member Organization Champions will also focus on broadening the number of unique contributors, which was slightly down in 2021 compared with the year before, Matson says. "Our member firms, big or small, reap the benefits of PAC advocacy," he says. "So we desire to increase the total number of contributors and really focus on messaging to that first-time PAC supporter." ■

"Our PAC success in 2021 was phenomenal, as you step back and recognize the broad level of support across the nation."

JASON MATSON
ACEC/PAC VICE CHAIR
CALIFORNIA REGIONAL LEADER
KIMLEY-HORN

Bob Violino *is a business and technology writer based in Massapequa Park, New York.*

High Achievers

ACEC/PAC's fundraising efforts continue to pay off.

ACEC/PAC TOTAL RECEIPTS FOR 2021 WERE

THE HIGHEST EVER.

$1,151,518
Total receipts for 2021

ACEC/PAC YEARLY RECEIPTS

2008:	$607,500
2009:	$573,000
2010:	$580,000
2011:	$709,000
2012:	$732,170
2013:	$770,436
2014:	$834,705
2015:	$982,430
2016:	**$1,010,433**
2017:	**$1,069,704**
2018:	**$1,090,683**
2019:	**$1,102,528**
2020:	**$1,085,915**
2021:	**$1,151,518**

More than $1 million for six straight years

DONORS GAVE GENEROUSLY.

26
Capitol Club Members ($5,000)

60
Chairman's Club Members ($2,500+)

261
Millennium Club Members ($1,000–$2,499)

2,793
Unique contributors

STATE MEMBER ORGANIZATION SUPPORT WAS SUCCESSFUL.

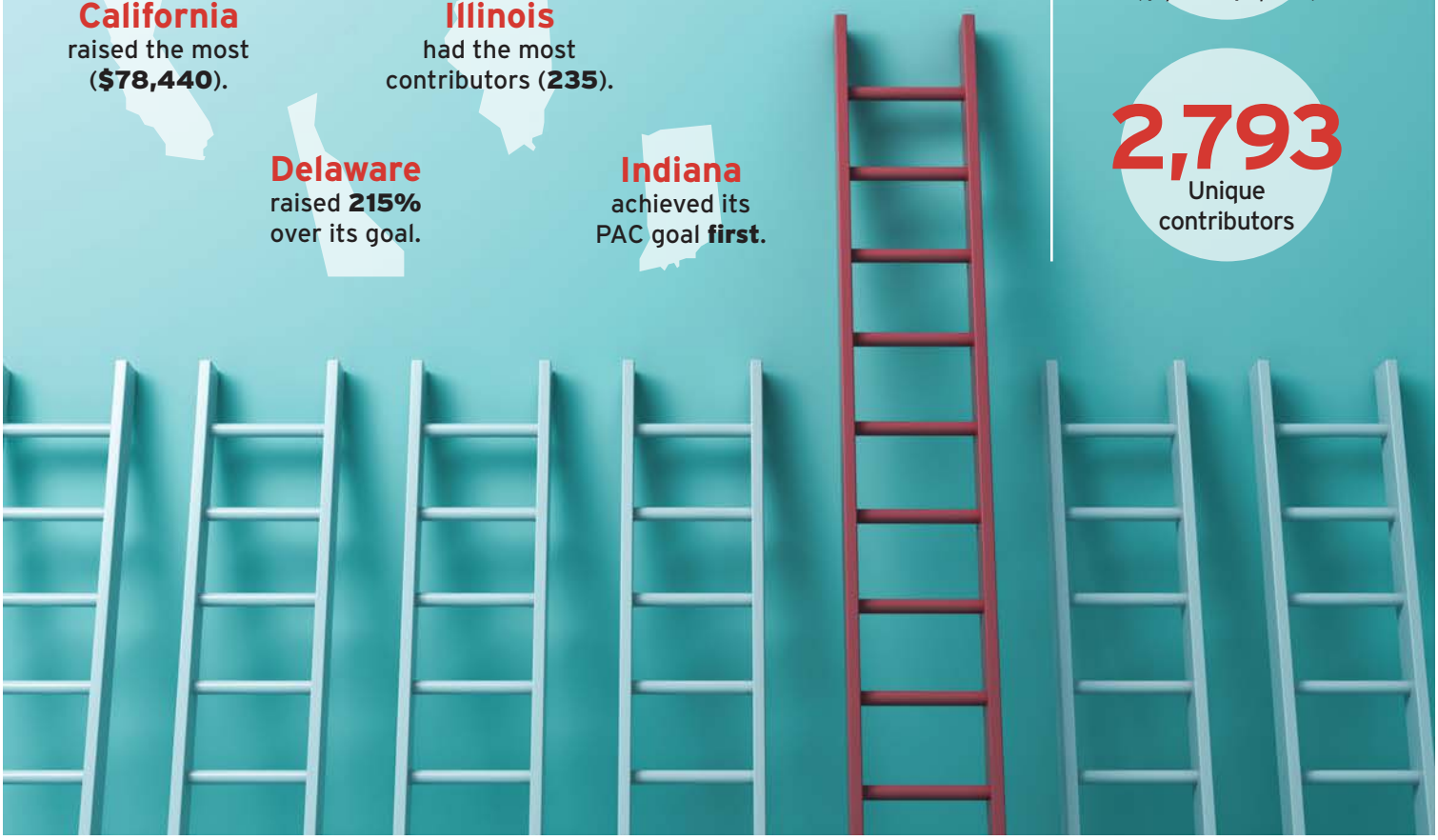
43 states achieved their PAC goal.

California
raised the most (**$78,440**).

Illinois
had the most contributors (**235**).

Delaware
raised **215%** over its goal.

Indiana
achieved its PAC goal **first**.



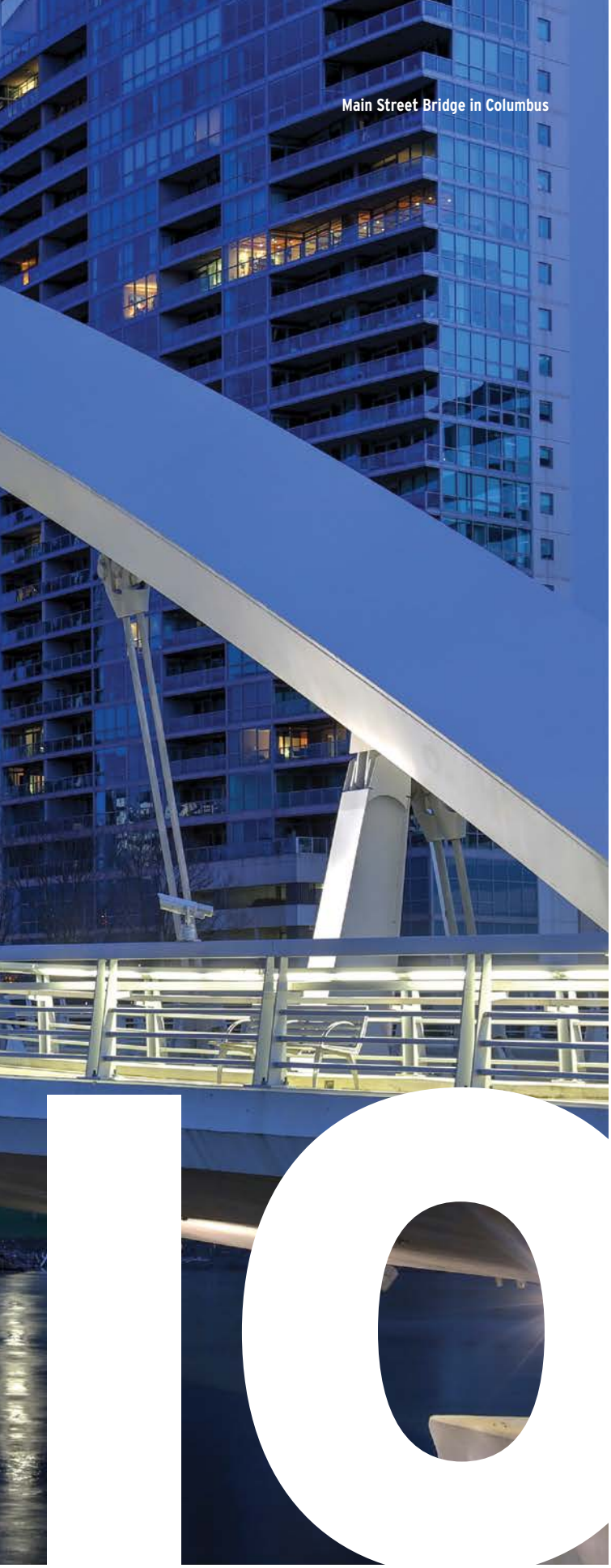
MASTER2PHOTO/GETTY IMAGES

ACEC OHIO AT-A-GLANCE

ACEC Ohio traces its roots to the early 1950s, when owners of private engineering firms began meeting informally to discuss business issues. While several organizations merged and changed names over the years, ACEC Ohio remains the only professional group focused solely on the unique needs of engineering firms. Today it has four regional chapters representing 8,400 employees from 167 member firms.

The Member Organization is led by Chair Richard Allen, Vice Chair C.K. Satyapriya, and President Beth Easterday.

STYXCLICK/GETTY IMAGES



Main Street Bridge in Columbus

HOW THIS MEMBER ORGANIZATION HAS MADE ITSELF AN INTEGRAL PART OF OHIO'S SUCCESSFUL, FORWARD-THINKING GROWTH

BY STACEY FREED

The work of engineers touches nearly everything humans do. For that reason, engineers are vital to the decision-making process on projects that affect daily life. That's the message ACEC Ohio has been driving home with its political and consumer advocacy and education for nearly 70 years.

"Our solutions are not partisan. We all need clean drinking water and the ability to get to and from jobs and get goods and services across our state," says Greg Heaton, vice president and aviation group manager for Crawford, Murphy & Tilly in Columbus, and current chair of ACEC Ohio's government affairs committee. "The organization's objective—going back many years—has been to be a powerful advocate for the engineering industry and to be thought leaders."

Through the efforts of its dozen-plus committees and approximately 167 member firms representing 8,400 employees, ACEC Ohio participates in discussions at the highest levels of state government. "It's exciting to be viewed as partners who provide solutions for the future," Heaton says.

ORGANIZE AND CONQUER

In March 2017, Lynn Miggins, president of KS Associates and then-director serving a one-year term as past chair of the ACEC Ohio board of directors, was doing double duty while vacationing in Hawaii. She says she was waking up at 3 a.m. for conference calls about former Ohio Gov. John Kasich's initiative to add a sales tax to professional services.

Having a sales tax on the services of Ohio's engineering firms would have been a huge cost and a major disadvantage to Ohio businesses in competition with firms in other states.

The organization mobilized members throughout Ohio to write letters to, develop relationships with, and educate legislators. ACEC Ohio had 150 firms contact assembly members and explain what a tax would mean to their businesses. "This is the value of ACEC. The group speaks louder than each of our individual voices," Heaton says.

The work was particularly challenging because Ohio's state legislators have a term limit of eight years. "We're constantly dealing with new folks, and they don't understand our business," Miggins says. "We fought tooth and nail for four years to defeat this tax." And ACEC Ohio did just that in 2017.

The organization also saw a major win on the recent transportation budget bill, which increased the state's motor fuel tax by 10.5 cents per gallon for gasoline and 19 cents per gallon

Access improvements to the Port of Toledo

"It is ACEC Ohio's role to keep the business of engineering in Ohio strong and growing through our efforts in advocacy, education, and recognition. Ultimately these efforts benefit the state's economic vitality."

BETH EASTERDAY
PRESIDENT
ACEC OHIO

Easterly CSO Tunnel System in Cleveland

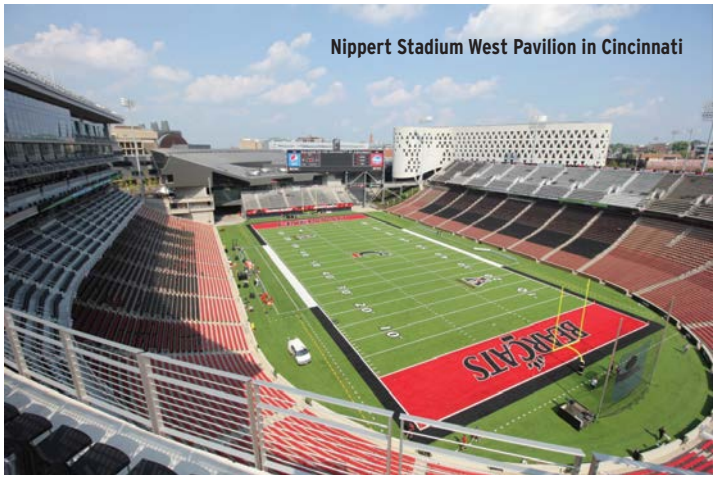
for diesel to fund the Ohio Department of Transportation's (ODOT) local projects. ODOT was underfunded and had accumulated a lot of debt and, as a result, the state's infrastructure was badly in need of repair. According to ACEC Ohio, nearly 20 percent of major roads in the state had been rated as in poor condition, and more than 1,600 bridges were found to be deficient.

ACEC supported increasing the state gas tax, which hadn't been adjusted since 2005. "The gas tax is constitutionally protected in Ohio," says Beth Easterday, who came on board as ACEC Ohio president in 2016 with experience in both the advocacy and business side of the engineering world.

In 2018, ACEC Ohio brought together like-minded organizations to form Fix Our Roads (FOR) Ohio. Even before Gov. Mike DeWine was elected in 2018, ACEC Ohio reached out to both gubernatorial candidates to educate them and their policy staffs on what an increased user fee would mean. "Gov. DeWine said, 'I hear what you're saying as an industry, but what does my DOT say?'" Easterday says. He found out that Ohio needed to raise the gas tax to remain economically competitive and to repair and maintain the state's roads and bridges.

"It was about six months of pounding the pavement," Easterday says. ACEC Ohio, through FOR Ohio, produced educational pieces that explained the value of strong infrastructure facilities in the state. Every coalition member spoke to their individual members, who then put pressure on their assembly members. There

Scioto Greenways in Columbus



Nippert Stadium West Pavilion in Cincinnati

"We fought tooth and nail for four years to defeat this tax."

LYNN MIGGINS
NATIONAL DIRECTOR
ACEC OHIO BOARD OF DIRECTORS
PRESIDENT
KS ASSOCIATES

was strong coverage in the local newspapers. Ultimately, the bill passed, and the user fee went into effect in 2019.

ACEC Ohio is now working on its next legislative effort, the indemnification bill. "Many of our member firms have been asked to sign a contract with a state or local agency that included uninsurable 'broad form' indemnification and/or defense requirements," Easterday says. "As design professionals, we won't skirt any issues that are our own responsibility, but we don't want to take responsibility for things done under someone else's purview. It's a matter of fairness."

The next legislative battles ACEC Ohio is tracking? Bills related to capital funding, universal licensing, and the use of American Rescue Plan Act (ARPA) funding in Ohio, which includes water/wastewater and broadband grants.

AN EYE ON THE FUTURE

Despite the upheavals of the COVID-19 pandemic, Easterday reports that Ohio's engineering firms—from those working on

"Our solutions are not partisan. We all need clean drinking water and the ability to get to and from jobs and get goods and services across our state."

GREG HEATON
CHAIR, ACEC OHIO GOVERNMENT AFFAIRS COMMITTEE
FORMER NATIONAL DIRECTOR AND
ACEC OHIO BOARD CHAIR
VICE PRESIDENT AND AVIATION GROUP MANAGER
CRAWFORD, MURPHY & TILLY

residential projects to transportation to hospital and educational facilities—have fared well. And, because of an influx of money from the federally funded ARPA, many infrastructure projects are getting underway. Easterday points to water-related projects, specifically those in a new program called Ohio Builds, which dedicates $250 million to drinking water quality. Gas tax revenue is just beginning to be captured for use in projects devoted to infrastructure, surface roads, and bridges. With the federal infrastructure bill passed in November, ACEC Ohio is evaluating possible impacts. "There are a lot of fact sheets with numbers coming into Ohio, but how does that translate to projects?" Easterday asks.

The Member Organization is working with state agencies to figure that out. They're also looking ahead to the future: They're asking questions and educating themselves on issues such as electric car use and its impact on gas tax revenue, and the electrification of interstates, along with where to locate charging stations—before heading down to the general assembly to educate legislators.

While advocacy is its bread and butter, ACEC Ohio also prepares itself for the future through its Rising Leader program, scholarship funding, and membership initiatives in areas such as diversity and inclusion. These efforts help to bring in younger professionals and diversify the membership base. They also create networking and education opportunities for members to improve their own businesses and to become engaged in big-picture thinking that will benefit everyone in the industry.

When ACEC Ohio attends a committee hearing to support or oppose an issue, legislators take note. "When they see us walk into the room, they know we're not there just to complain," Easterday says. "If we oppose something, they want to know why we oppose it. It is ACEC Ohio's role to keep the business of engineering in Ohio strong and growing through our efforts in advocacy, education, and recognition. Ultimately, these efforts benefit the state's economic vitality." ■

***Stacey Freed** is a writer based in Pittsford, New York, who has contributed to* This Old House, Professional Builder, *and* USA Today.

10 WAYS TO HELP

CLARK NEXSEN MARKS ITS 100TH ANNIVERSARY BY LAUNCHING AN EMPLOYEE-DRIVEN VOLUNTEER INITIATIVE

BY MICHELE MEYER

You only turn 100 years old once, so engineering and architecture firm Clark Nexsen had ambitious plans to mark its centennial celebration.

"We didn't want the celebration's emphasis to be on us, but rather on our communities," says Terri Hall, president of Clark Nexsen, founded in 1920.

To kick off its 100th anniversary, the company launched 100 Ways of Giving in 2020, packing that year's calendar with events to serve each community where it has offices—11 in all, across Virginia, Georgia, North Carolina, Texas, and Tennessee.

"At first it felt overwhelming and intimidating to think of 100 ways to help our communities," says John Rash, an electrical engineer who was on the planning committee.

The firm-wide kickoff in January 2020 was a success, as employees volunteered at their local food pantries. In Raleigh, "we sat in a circle and bagged potatoes while chatting. It was such fun," says Katelyn Ottaway, senior architect in Raleigh and a 100 Ways organizer.

But by March, COVID-19 burst in, and in-person events dropped out.

PERSEVERING IN A PANDEMIC

After the pandemic hit, the planners asked their communities how Clark Nexsen could help them navigate through the uncertain times.

"It became obvious we needed to pivot from in-person to virtual and socially distant activities," says Ottaway. "We also looked for things we could do together while apart."

But one thing remained certain: Failure to reach their 100 Ways of Giving goal was not an option.

That's because active altruism in local communities is central to Clark Nexsen's culture. It's a natural extension of the firm's mission statement of creating spaces and experiences for recreation, education, and governing that make the world healthier and happier.

What came next was remarkable: The firm not only made its new ways work but work incredibly well.

Among its 340 employees, 140 individuals volunteered 597 hours for 105 organizations during 2020. They held 39 group events, wrote 170 letters to seniors and first responders, and collected 400 pounds of groceries for food banks.

5 WAYS
TO BOOST VOLUNTEERISM

Don't wait for a special occasion to raise your generosity game. Clark Nexsen shows how giving can reach a higher level.

1. **Paid time off** increases participation in charitable causes.
2. **When employees can pick the project,** they're more likely to contribute time and money.
3. **Friendly competition** between offices fosters team spirit. Make it fun.
4. **Create an internal social platform** to post photos from past events, alert workers to upcoming ones, and give them ideas for possible future functions.
5. **When employees share activities with their families**—for example, making art for nursing home residents or writing letters to firefighters—parents can reinforce gratitude and children develop altruism.

Employees sort potatoes at the Food Bank of Central and Eastern North Carolina in Raleigh, North Carolina.

"In a year when people felt helpless, our campaign gave our staff ways not just to give, but also to feel empowered, boost morale, and build team camaraderie," Hall says.

COMING TOGETHER

Sustaining the spirit of volunteering was tough when people couldn't see those they were helping, Ottaway says. "The key to volunteering is connecting to other people," she says.

Clark Nexsen coped by launching an intranet platform where staffers across the company could brainstorm, collaborate, and share photos from events.

Volunteers also gathered on a Microsoft Teams social platform, such as when they united to compose letters to residents of past client Magnolia Manor Senior Living in Americus, Georgia. There, seniors were isolated from their families due to pandemic constraints.

"So many people were lonely last year, especially the elderly in assisted living facilities since they couldn't get visitors," says Cat Brutvan, corporate communications manager. "We wanted to brighten their day."

"We also felt less isolated ourselves while encouraging them," Ottaway says.

140 individuals volunteered **597 hours** for **105 organizations** during 2020.

SUPPORTING PERSONAL PASSIONS

Another triumph of 100 Ways of Giving was encouraging employees to pursue personal passions. Clark Nexsen decided to give workers eight hours of paid time off for volunteering each year. That "took our giving to the next level," Rash says.

For him, a Hops for Hope event proved to be the perfect combination of fun and fundraising for Children's Flight of Hope, a nonprofit that flies children to hospitals for specialized care.

"After the tough times we've had during COVID, we look at life differently and want to keep helping others. As the world reopens, we can do even more."

TERRI HALL
PRESIDENT
CLARK NEXSEN

"So many people were lonely last year, especially the elderly in assisted living facilities since they couldn't get visitors. We wanted to brighten their day."

CAT BRUTVAN
CORPORATE COMMUNICATIONS MANAGER
CLARK NEXSEN

"I love beer—and I love Flight of Hope's mission," says Rash, whose corporate team and a local brewery together created and sold a custom beer they dubbed Category Buzz.

"I have a daughter who's under 2 and was sick every other week while we waited for her immune system to kick in," he says. "We're very fortunate to be able to pay for her care, but not everyone is."

Bethany Whitehurst, a Charlotte, North Carolina, structural engineer who adopted three cats from the local humane society, joined colleagues to make tie blankets for the shelter. "We then competed to see who could tie knots fastest," she says. "It was so much fun."

Outdoor projects were a natural fit for a company that works on waterfront infrastructure as well as roads and bridges. Volunteers planted trees at a daycare for TreesCharlotte in North Carolina and collected litter along Norfolk's Newtown Creek for Virginia's Adopt-a-Stream program. They also biked to benefit the National Multiple Sclerosis Society, walked to fight ALS, and ran the Susan G. Komen Race for the Cure.

LOOKING AHEAD

The 100 Ways campaign sparked awareness that people were in need in 2020—and moving forward, Hall says. "After the tough times we've had during COVID, we look at life differently and want to keep helping others. As the world reopens, we can do even more. 100 Ways of Giving was only the beginning."

Projects gained momentum in 2021, and Rash and others have already committed to 2022 events. "As soon as one event ends, my team signs up for the next," he says.

"We've always been a firm that appreciates one another and helping the community," Hall says. "But I didn't realize how much our people do and how much they really care. That we came together as one shows how the human spirit perseveres through challenging times. It's astounding and something about which we can be proud." ■

***Michele Meyer** is a management and marketing writer based in Houston. She has written for Forbes, Entrepreneur, and the International Association of Business Communicators.*

A group of volunteers plant trees with TreesCharlotte at the Smart Start campus of ABC Academy in Charlotte, North Carolina.

A group of employees make no-sew blankets for dogs and cats awaiting adoption at the Humane Society of Charlotte, North Carolina.

A team of employees from the Virginia Beach Civil Department complete a stream clean up of Newtown Creek in Norfolk County, Virginia.

"The key to volunteering is connecting to other people."

KATELYN OTTAWAY
SENIOR ARCHITECT
CLARK NEXSEN

2022 NATIONAL ENGINEERS WEEK:

Reflection and Appreciation

Several ACEC Member Organizations and member firms utilized innovation and creativity during National Engineers Week, February 20-26, to recognize and highlight the essential value of engineering while sharing the importance of the profession with as many others as possible. The following are examples of those celebrations:

NASA astronaut Story Musgrave tells his life story and explains how the lessons he's learned made him a better person and engineer.

ACEC OHIO HOSTS NASA ASTRONAUT MUSGRAVE

ACEC Ohio's Central Chapter's celebration of National Engineers Week was highlighted by famed astronaut Story Musgrave who discussed his life's journey from farm kid to trauma surgeon to rocket man and beyond. He spoke about how the lessons he's learned have made him a better person and a better engineer.

Musgrave was a NASA astronaut for over 30 years, flying on six spaceflights. He performed the first shuttle spacewalk during Challenger's first flight. Today, he is a multimedia producer/director, a landscape architect, a heavy equipment operator, an artist/designer/engineer with Applied Minds LLC, and a professor of design at Art Center College of Design in Pasadena, Calif.

Also, ACEC Ohio's Northwest Chapter conducted a virtual EWeek Engineer of the Year award ceremony and acknowledged EWeek on several ACEC Ohio social media platforms.

ACEC/MS STATEWIDE RADIO AD PROMOTES ESSENTIAL NEED FOR ENGINEERING

ACEC/MS produced a statewide radio ad promoting the engineering profession in celebration of National Engineers Week.

The Member Organization also had an exhibit in the rotunda of the Mississippi State Capitol building and was recognized in the House and Senate.

ACEC/MS members exhibit and meet with lawmakers at the Mississippi State Capitol building to celebrate National Engineers Week. Pictured from left to right: Blake Mendrop (Mendrop Engineering Resources), David Bowman (Neel-Schaffer), Koby Wofford (Mendrop Engineering Resources), Jessica Dilley (Mississippi Engineering Society), Jessica Gosa (ACEC/MS), Wayne Black (Garver), and Kyle Wallace (Shows, Dearman & Waits).

ACEC NEBRASKA HONORED INDUSTRY, STAFF, AND PROJECT EXCELLENCE

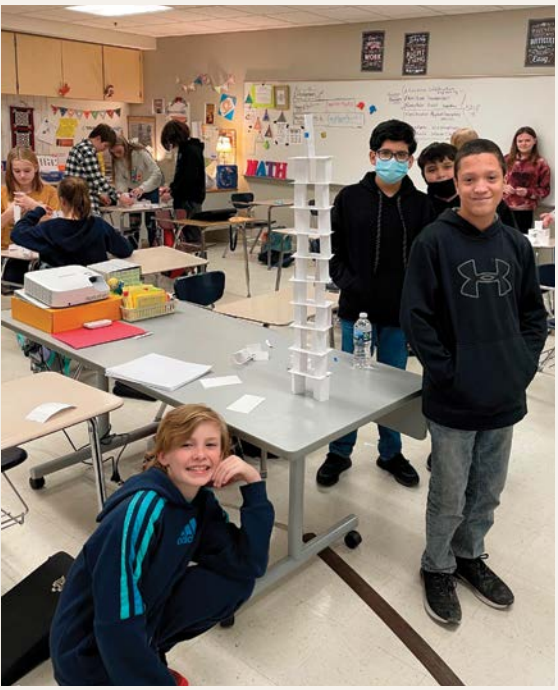
ACEC Nebraska used this year's EWeek to not only celebrate the industry but also to announce its 2022 Engineering Excellence Awards, along with recipients of the Charles Durham Achievement Award and the Young Professional of the Year.

It also sponsored special sections in the regional *Midlands Business Journal* and the *Omaha World-Herald*.

ACEC INDIANA ENCOURAGES STUDENTS TO CONSIDER ENGINEERING

ACEC Indiana conducted its annual National Engineers Week student outreach effort in February. Member firm engineers conducted presentations at elementary, middle, and high schools throughout the state, encouraging students to consider a job in engineering or related fields.

In partnership with Citizens Energy Group, the Indiana Department of Transportation, and the Indianapolis Department of Public Works, the effort included virtual and in-person classroom presentations and reached more than 1,000 students in 74 classrooms across the state this year.



Lebanon Middle School students competed for the tallest paper structure during National Engineers Week.

The staff of Wright Water Engineers gather at their Denver office before celebrating National Engineers Week with a luncheon.

ACEC COLORADO HIGHLIGHTS 'REIMAGINING THE POSSIBLE'

ACEC Colorado's celebration embraced this year's EWeek theme of "Reimagining the Possible," emphasizing how engineers are on the front lines of critical societal advances from green buildings to fuel-efficient cars to life-saving vaccines.

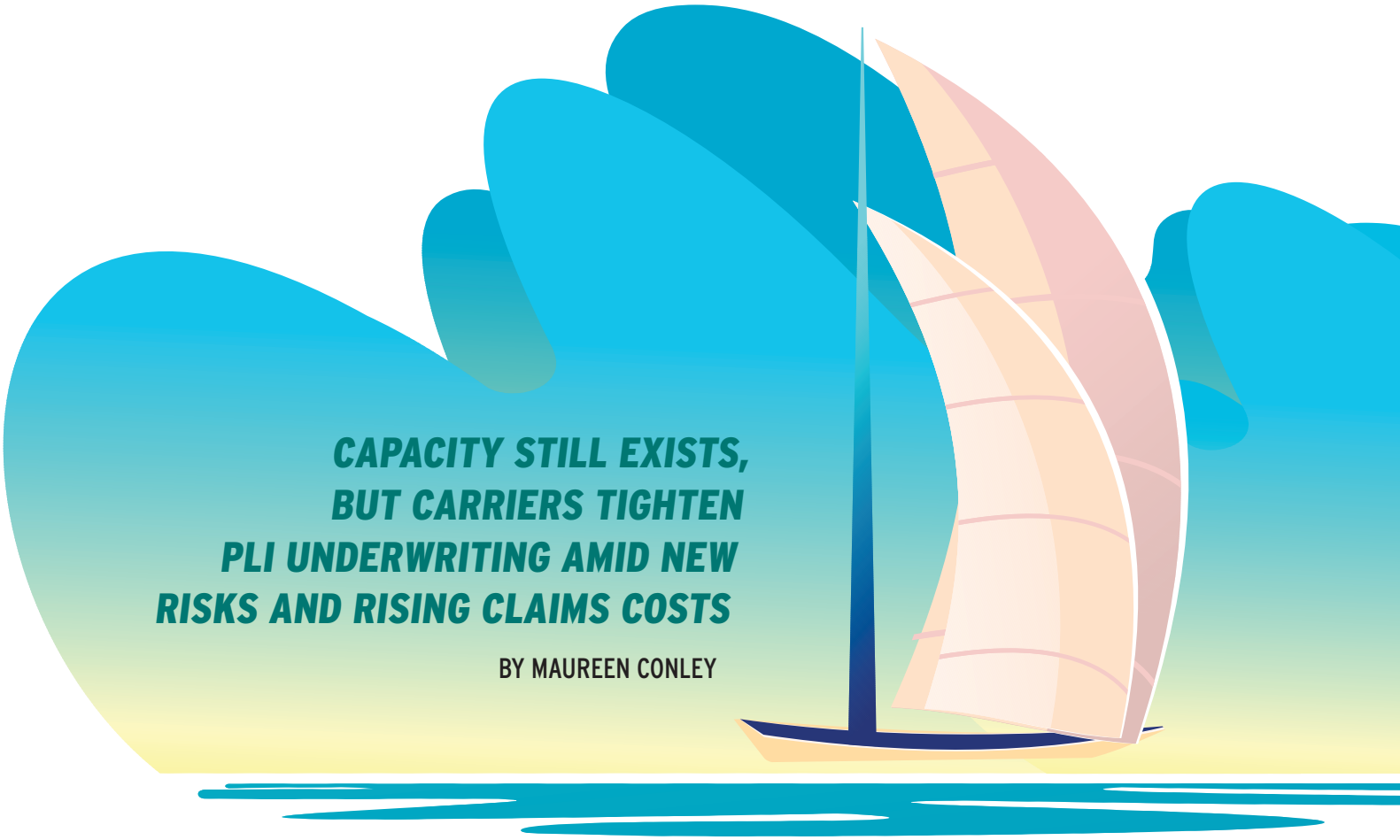
The association's always impressive lineup of EWeek activities included its annual Reception with Legislators with member firm leaders, an Engineering (& Other Fun Facts!) Trivia Contest, a presentation on "Getting There: How do we build the infrastructure to support self-driving cars that serve the diverse needs of rural and urban communities?" and a collaborative learning adventure for middle school students featuring member firm volunteers.

ACEC WISCONSIN EXPLAINS ENGINEERING RELEVANCE TO 5-YEAR-OLDS

ACEC Wisconsin planned a full slate of activities to celebrate EWeek, including online STEM activities for children and interviews featuring council leadership.

A new effort involved promoting the importance of engineering … to kindergartners! The results were hilarious. Watch the conversation with two of these young students in the links to the right:

- Twitter: **https://twitter.com/ACECWisconsin/status/1495852152966852610**
- LinkedIn: **https://www.linkedin.com/posts/american-council-of-engineering-companies-of-wisconsin_engineers-week-what-do-engineers-do-activity-6901613891344830464-yPkB**
- Facebook: **https://fb.watch/bnkq-BRS3Co/** ■



CAPACITY STILL EXISTS, BUT CARRIERS TIGHTEN PLI UNDERWRITING AMID NEW RISKS AND RISING CLAIMS COSTS

BY MAUREEN CONLEY

2021 PLI Carrier Survey:

Renewal Head

Views are mixed on where rates are heading, but some engineering firms may see increases when they renew their professional liability insurance (PLI) policies, according to the 2021 survey of PLI carriers by ACEC, the American Institute of Architects (AIA), the AIA Trust, and the National Society of Professional Engineers (NSPE).

In the summer of 2021, 15 PLI carriers were surveyed, and 11 of those were subsequently interviewed on September 30 by members of the ACEC Risk Management Committee and the other three sponsoring organizations.

The primary factors in determining a PLI premium for nearly every carrier in the survey were annual billings, claims history, type of practice, and project type. The carriers shared increasing concerns related to cyber coverage, climate change, staffing, the infrastructure bill, and "social inflation" that is driving settlement costs higher.

Some carriers think rates are hardening, "while some adjusted their rates in past years and said it's a buyer's market," says Brian Welker, senior vice president and COO of Crawford, Murphy & Tilly, and a member of the ACEC Risk Management Committee.

Vince Costello, a director at RLI insurance company, explains that carriers opt for higher rates when they see losses. He expects potential rate increases in the 2 percent to 5 percent range for some disciplines and project types, with increases for structural, geotech, and transportation/road/highway firms toward the higher end of that range. Carriers may evaluate risk management practices among insureds that experience losses, says RLI Loss Control Director Laura Malloy.

About half of the carriers are raising rates, but "firms with effective risk management programs will see more competitive rates," says Tim Corbett, founder and president of SmartRisk and ACEC Risk Management Committee member.

MARRISHUANNA/GETTY IMAGES; PAVLO STAVNICHUK/GETTY IMAGES

winds

Underwriting has tightened, so firms with projects including residential and schools may see an increase in premiums. Still, some carriers continue to underwrite riskier projects such as condos for designers who keep them to 25 percent or less of their billings, says Jim Messmore, senior vice president and infrastructure market principal at Hanson Professional Services and member of the ACEC Risk Management Committee. If these go much higher, the carriers may shy away or seek higher rates. RLI might ask more questions about a multi-unit residential project and ask to see the contract, says Costello.

While the professional liability market hasn't hardened yet, "the tide is definitely turning" after years of being soft, says Johnna Wangensteen, president of a/e ProNet. The construction market has already turned, and the A/E market generally follows a little behind, she explains. Another change: The movement of carriers in and out of the marketplace has slowed, providing market stabilization for now, says Mike Cosgrove, president of the Professional Liability Agents Network (PLAN) and president of Professional Concepts Insurance Agency.

Cosgrove adds that the legacy insurers "do a better job of drilling into the details" of a firm's practice to assess risk fairly.

This "may translate to more competitive rates," says Kevin Collins, A/E practice leader and managing director at Victor Insurance Managers. "So, for example, there may be differences based on the location or the type of condo and the discipline. Victor's rates are client-specific and may be lower for firms with strong risk management practices and good claims history." Wangensteen says that with their strong books of business and statistical history, the legacy carriers are not tightening rates as quickly as the newer carriers.

As carriers become more selective, they may charge higher premiums and increase deductibles for firms engaged in structural projects and, increasingly, mechanical work, according to Jeff Connelly, senior vice president at Greyling, a division of EPIC, and program manager for the ACEC Business Insurance Trust. Wangensteen also sees professional liability carriers "having issues with capacity and cutting back on giving higher limits." She agrees that carriers are "underwriting more aggressively, wanting more details" on renewal applications, particularly for insureds with claims or those that are shopping the marketplace—making it critical that firms plan ahead and start the renewal process early.

A change in a PLI carrier's appetite may be a reason to switch carriers, says Connelly, as is dissatisfaction with claims handling or the inability to obtain the higher limits that a firm needs. But while "there are still plenty of options," Connelly counsels his clients not to shop their PLI every year, noting the importance in this market of "developing a relationship" with the carrier.

CLAIMS

Technical errors are driving the preponderance of claims, according to the survey, followed by project management issues (including contractual terms), poor communication, and poor documentation.

Claims frequency has been largely steady, while severity is higher, says Dan Cecchi, president of Collins Engineers, and a member of the ACEC Risk Management Committee. He says higher material and labor costs make it more expensive to fix problems. Medical costs have also increased, leading to higher bodily injury claims, and "a million dollars is not what it used to be," says Larry Moonan, executive vice president and COO of Berkley Design Professional. Supply chain issues may continue to drive repair costs higher and affect project schedules, which ultimately could increase claims frequency as project owners seek to recover those costs, says Collins.

"We really haven't seen any COVID-specific claims," says John Rapp, assistant vice president of Travelers. He adds that frequency and severity are stable, with inflation predictably driving costs higher and the potential for further increases due to fluctuations in the economy. Travelers has noticed a slight increase in errors and omissions, and Rapp says mechanical engineering claims are "trending up a little," particularly due to

energy efficiency and humidity issues. But he does not anticipate drastic changes to the market.

Fewer carriers are offering project-specific policies, which some experts link to losses from the design-build delivery favored on large infrastructure projects that have historically been more prone to high-dollar settlements. Contractors often "see us as their contingency fund" when they need to recoup costs on a design-build project, says Cecchi. Moonan calls large infrastructure projects "not a great fit for design-build delivery." Cosgrove points out that many developers seek project policies on riskier projects, so the opportunity for claims can be more significant. The engineering firm must have a say in the project policy coverage before coverage is bound. In some cases, the coverage may be less than the engineering firm's practice policy and may have a greater deductible risk for the engineering firm.

Berkley Design Professional is keeping an eye on the economy, says Moonan, as slowdowns historically have triggered more frequent claims. Passage of the federal infrastructure bill means work will increase, which can challenge firms' ability to control risk and may also result in more claims, according to Connelly.

CYBER

With the increasing prevalence of ransomware and denial of services attacks, rates for stand-alone cyber policies are up almost 30 percent and may continue to rise, says Messmore. Cyber coverage under PLI policies will be limited to claims related to professional services, he explains, such as damage caused by a corrupted file originating from the designer's email server, but losses from a ransomware attack would only be covered under a stand-alone cyber policy.

Cosgrove calls it "playing with fire" not to have a cyber policy, as ransomware attacks continue to rise and "professional services firms are one of the main targets." He notes that some carriers will non-renew an existing insured that has not adopted multifactor authentication. The continuing evolution of cyber-attacks and the high frequency of claims combined with high potential severity are making it "close to an uninsurable risk," Collins says. Wangensteen predicts cyber insurance may, in the next several years, "become like flood insurance, where there is a national program due to the risk involved with the coverage."

Rates for stand-alone cyber policies are up almost 30 percent and may continue to rise.

While the professional liability market hasn't hardened yet, "the tide is definitely turning."

JOHNNA WANGENSTEEN
PRESIDENT
A/E PRONET

EVOLVING STANDARD OF CARE

Changing weather patterns, higher and more frequent floods, and increasing winds and temperatures are driving code changes. Professional liability may be impacted as project owners try to hold the engineer accountable for anticipating new extremes and designing for them, says Corbett. He counsels firms to identify potential areas of risk related to climate change and "let the owner decide" whether to design to a higher level and at what cost, and to document that decision. As long as the project is designed to the current codes and standard of care, the designer should be covered, Corbett says. Collins notes that even in cases where the designer meets the standard of care, claims stemming from severe climate change-related events are being brought and settled.

Carriers are also focused on the potential for an evolving standard of care related to Building Information Modeling, says Messmore. For example, many state departments of transportation are moving towards BIM models as legal documents, which is a new trend for engineering firms. One risk of this trend is the potential for clients and contractors to believe that the models are more accurate than they really are.

TALENT SHORTAGE

Corbett says 9 out of 10 firms are looking for but having difficulty finding qualified staff, posing a risk to adequate quality control, particularly as construction accelerates under the new infrastructure legislation. That means nontechnical issues around staffing and project management could result in technical claims such as errors in design documents, he adds. Noting that the Great Resignation of 2021 included engineers, Connelly says the infrastructure legislation means more work at a time when there are fewer people to do it. Contractors face similar staffing challenges, which could exacerbate risk as construction defect claims are poised to rise, says Corbett.

RISK MANAGEMENT

Cosgrove encourages engineering firms to use the carrier's risk management tools, such as contract resources and educational seminars. Most have educational publications, and some will audit the firm's risk management practices. But not all risk management programs are created equal, says Corbett. For example, some carriers offer pre-claims services only at their discretion.

That makes it critical for design firms seeking lower premiums to clearly understand any limitations on carrier services. Wangensteen counsels firms "to really know what they are getting," as lower premiums often signal less coverage or fewer services. If the designer knows the lower premium means forgoing risk management tools or a dedicated claims staff, "then that is a business decision," she says.

Carriers might offer credits for mediation and alternate dispute resolution, and they should obtain the insured's consent to settle a claim, according to the survey. RLI offers a 10 percent credit to insureds that follow its education program, which historically has featured live webinars but increasingly offers on-demand training.

RLI also offers a "go/no-go" assessment tool to help engineers identify and minimize potential exposures so "they can walk into a project with their eyes wide open," says Costello.

In early 2021, Travelers launched a 10-episode podcast series featuring claims managers discussing specific contractual issues they've seen and ways to address them. Rapp says another 10 episodes are planned for 2022.

FACTORS TO CONSIDER

"I've been in the insurance business for over 25 years. One of the most critical decisions an engineering firm can make is to evaluate the insurance company's claims philosophy in addition to the policy form," says Cosgrove. Carriers with dedicated claims staff specific to engineering firms better represent the engineering firm, he says.

Cosgrove urges design firms to seek out carriers that participate with their agent or broker to improve their practice by implementing a risk management philosophy. He suggests that engineering firms that train their staff to improve their communication skills also improve their risk management practices. Noting the importance of picking up the phone or meeting in person, he calls email "a terrible communication tool but an excellent documentation tool." Another word of advice? Give junior-level staff access to a firm's principals and their knowledge so they learn how to negotiate a contract, handle a claim, and manage risks. It's one of the best ways to train the next generation of managers and principals, he says.

Connelly agrees that firm-wide education is crucial, particularly on the need for circumstances and claims reporting. PLI is expensive, but firms only see that value if they report properly. "When you suspect a problem, don't sit on it. Notify your broker, engage the carrier in pre-claims assistance," he counsels. "Rates won't go up because of reporting a circumstance. They may go up if the carrier pays out."

"Firms with effective risk management programs will see more competitive rates."

TIM CORBETT
FOUNDER AND PRESIDENT
SMARTRISK

"When you suspect a problem, don't sit on it. Notify your broker, engage the carrier in pre-claims assistance."

JEFF CONNELLY
SENIOR VICE PRESIDENT
GREYLING

THE FUTURE

The insurance industry, "like every other industry, is focused on innovation and how to improve the customer experience," says Moonan. While it can be a complex and difficult process, he predicts that one day, buying insurance will become a more streamlined and simple experience. ■

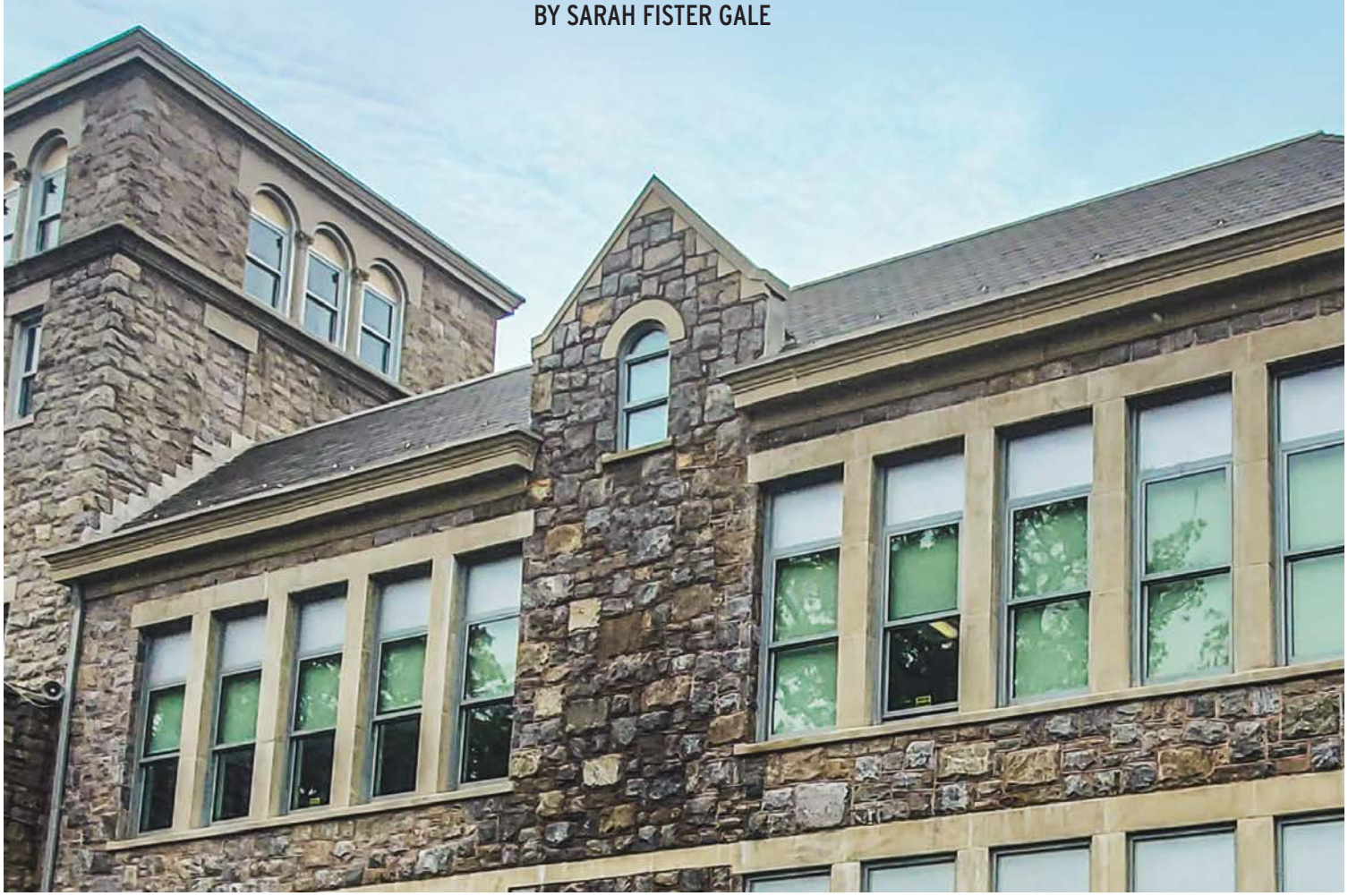
***Maureen Conley** is based in Washington, D.C., and has more than 25 years of experience writing about science, engineering, and government policy.*

Education Facility Transformations

Member firm innovations are updating schools for modern-day learning

THE WOOTEN COMPANY | **H2M ARCHITECTS + ENGINEERS** | **OSBORN ENGINEERING**

BY SARAH FISTER GALE



Larry Murphy
Project Manager
The Wooten Company

Teaching by Example

PROJECT: CONN MAGNET ELEMENTARY SCHOOL OF ENTREPRENEURIAL DESIGN
RALEIGH, NORTH CAROLINA

FIRM: THE WOOTEN COMPANY
RALEIGH, NORTH CAROLINA

If you are going to focus an elementary school's curriculum around entrepreneurial design, the building design should be as modern as the lessons. "We wanted to bring innovation into the classrooms," says Larry Murphy, project manager for The Wooten Company.

Conn Elementary has been a part of the Raleigh, North Carolina, community since the 1950s, and it has evolved with the times. In the '80s it became a magnet school, and in 2016 it adopted an educational focus on "entrepreneurial design."

To support that transformation, the Wake County Public School System commissioned Clark Nexsen for a start-from-scratch renovation of the building and grounds, and Wooten was brought in to update the fire protection, mechanical, electrical, and plumbing systems. Wooten has been the engineering firm of record for 43 new schools in Wake County over the last 25 years.

HVAC EXPOSED

The primary goal of the redesign was to make the school more intuitive to navigate, while improving the building's envelope and updating security and meeting spaces to accommodate modern needs.

To address the entrepreneurial theme, Wooten worked with the architect to leave many of the building's systems exposed so teachers could incorporate them into lessons. "We wanted to bring to life how humans can shape their environment through architecture and engineering," Murphy says.

That meant the ductwork and HVAC coiling—which is normally hidden in the walls—had to be elegantly laid out and attractive to passersby. The firm also had to stay within strict budget constraints for the project, while providing a highly efficient system.

Wooten made sustainable design a key component of its project plan, incorporating high-efficiency fans with energy-saving motors, sustainability-geared faucets and flush valves, responsive LED lighting, and smart HVAC systems designed to adapt to occupancy. It also added wet pipe sprinkler fire protection throughout the building. The new systems make the interior more comfortable in all seasons, with less noise to disrupt the learning process.

To accommodate the exposed systems, Murphy's team worked with the contractor to thoughtfully lay out all of the ductwork in a logical pattern and painted the insulation to help it blend into the background. "We didn't want them to see a bunch of spaghetti wiring," Murphy says. The team added glazing components to illuminate the exposed features, then labeled the pieces and created easy-to-follow diagrams so teachers could explain the exposed system to their students.

The work was completed in March 2021, and the community is thrilled. "We are very proud of this project," Murphy says. "We look forward to seeing what the young minds at Conn Magnet go on to accomplish in this space."

Saverio Belfiore
Vice President and Market Director
H2M Architects + Engineers

A Seamless School Expansion

PROJECT: PARSONS MEMORIAL ELEMENTARY SCHOOL
HARRISON, NEW YORK

FIRM: H2M ARCHITECTS + ENGINEERS, MELVILLE, NEW YORK

Parsons Memorial Elementary School in Harrison, New York, looks like it belongs on a historic college campus. The soaring stone structure, which dates to the late 1800s, features an interlocking pattern of granite and limestone bricks decorated with lintels, tablatures, a bell tower, and other Gothic details. "It's very ornate," says Saverio Belfiore, vice president and market director at H2M architects + engineers.

Parsons is a central architectural structure for the Harrison community and is registered on the State and National Registers of Historic Places. But with enrollment climbing and students wanting more space and modern facilities, the structure needed a significant update. The district worked with H2M to expand and modernize the building, without interfering with its iconic charm.

The project included a two-story multiuse addition with 6,000 square feet on the first floor and 2,000 square feet on the second. "Our biggest fear in adding an addition to this school was that it wouldn't reflect the original design," Belfiore says.

To preserve the historical feel of the building, Belfiore's team dug deep into the history of the building and discovered the original stone supplier was still in business nearby. "The quarry is family owned and has been in operation for generations," he says. It meant his team was able to source stone that exactly matches the original exterior, allowing the new addition to blend seamlessly into the structural design. "It looks like it has always been part of the building."

MODERN GOTHIC

The new addition houses a multilevel kitchen and cafeteria that can double as classrooms. It also provides an elevator and wheelchair-accessible entrance to bring the building into compliance with the Americans with Disabilities Act. The elevator was a vital addition to the school, as the building's floors were previously only accessible by stairs.

The building site has a high water table and is built on a foundation of bedrock, which complicated construction. The contractor couldn't blast the site because it was so close to the original structure, so workers dug out the site manually, then pinned the new construction directly to the bedrock. "That addition isn't going anywhere," Belfiore says.

H2M completed the project in the summer of 2020, which allowed the school to leverage the new multifunctional space as additional classrooms during the pandemic to create a socially distanced learning environment.

Belfiore believes the project is an excellent example of how companies can balance modernization with classic design in historic buildings. "In this case, H2M was able to meet both goals through innovative solutions that will meet the needs of students well into the future."

Modernizing a 1950s High School

PROJECT: WESTERVILLE SOUTH HIGH SCHOOL WESTERVILLE, OHIO

FIRM: OSBORN ENGINEERING CLEVELAND

Kurt Lohrmann
Director
Osborn Engineering

Westerville South High School is going through a six-phase $38 million renovation, and Osborn Engineering is supporting this massive transformation at every stage.

"This is our bread and butter work," says Kurt Lohrmann, Osborn's director. "These kinds of renovations are never simple, but they are what we do best."

In the first phase of the project, which was completed in November 2020, the team added a 35,000-square-foot gym and 10,000 square feet of new classroom spaces, plus it converted the existing auxiliary gym into a two-story wing that added 20 classrooms to the school. The new rooms will replace 19 that will be lost in later phases, when existing classrooms are expanded to accommodate more students. The project also included building a connection to link the former auxiliary gym to the main school, making it easier for students to move between classroom spaces and to improve circulation throughout the school.

Osborn completed all of the civil, structural, HVAC, plumbing, electrical, technology, and fire protection engineering design services in this phase.

A TIGHT FIT

The prior structure had no fire protection and wasn't designed for a modern HVAC system. "It was interesting trying to squeeze the HVAC into the space allotted," Lohrmann says.

The Osborn team worked with the architect and equipment manufacturer to modify the system, altering the shape and layout of the equipment to fit the existing space. "It was a collaborative effort," Lohrmann says, noting that every team had to make small compromises to ensure the final goals could be met. "In the end, we all wanted to provide the school with a high-quality environment. So we made it work."

That collaborative approach helped them elevate this outdated 1950s-era school into a modern environment with open, airy spaces and clean, energy-efficient systems.

Subsequent phases of the remodel will include classroom renovations throughout the remaining 254,000 square feet of the existing building.

"The school used to feel very institutional," Lohrmann concludes. "Now it's an exciting new space for students to learn." ■

__Sarah Fister Gale__ is a Chicago-based writer who covers the construction, software, and engineering industries.

FINDING THE RIGHT PROFESSIONAL LIABILITY INSURER FOR YOUR A/E FIRM: Criteria for Evaluation

There are some 50 insurers that offer professional liability insurance (PLI) for architects and engineers (A/E) today, and they place more than $2 billion of annual premium. The good news is that this large number of insurers creates considerable competition in the marketplace, which can help keep premiums down and keep broad coverage available. The bad news is that you must factor in the many differences among these insurers when choosing where to place your coverage.

But where do you begin? An independent broker with design firm-specific experience can help you sort through the many facets of insurer offerings in premium, coverage, and other services, and can provide important context that will help you make a knowledgeable decision.

This article provides an overview of the key differences among the many A/E PLI insurers—financial strength, underwriting appetite, scope of coverage, claims handling, risk management services, underwriting flexibility, and pricing sensitivity—and explains how an experienced broker can help your firm make a well-informed selection.

FINANCIAL STRENGTH

There are some basic financial ratings that could affect your firm's ability to comply with certain contractual insurance requirements. Many construction contracts, for example, require an AM Best rating of at least A-:VII. (The AM Best rating symbol is a grade of the insurer's financial strength, and any insurer with an A rating is considered in the "excellent" range. The second part of

ABSTRACT AERIAL ART/GETTY IMAGES

the rating indicates the financial size category of the insurer.) Also, some project owners will not allow their design consultants to have a non-admitted (or surplus lines) PLI policy.

UNDERWRITING APPETITE

Underwriting plays a major role in A/E PLI pricing and coverage. Underwriters can apply pricing credits or debits to a policy as they see fit based on a firm's claims history, risk management practices, areas of practice, and client selection. Coverage enhancements or exclusions can also be added by underwriters at their discretion. Some insurers may also prefer certain disciplines and project types over others. For example, some insurers will not agree to write a geotechnical or structural engineer. Other insurers specialize in firms under $5 million in revenue, and some prefer to write excess policies but not primary.

PRICING SENSITIVITY

Underwriter flexibility in both pricing and coverage should be taken into account when determining which insurer is best for your firm. Some underwriters are more sensitive to adverse claims experience and market conditions than others. An underwriter's pricing pressure is determined by your firm's individual loss experience, their A/E PLI book of business, the overall PLI book, the specialty book (PLI, property, and casualty) and, ultimately, the overall performance of the insurer as a company.

Insurer premium rates vary greatly depending on discipline, loss experience, project type, and even geographical location. Insurers have a base rate that is applied to a firm's revenue that generates the starting point for the premium. The premium can then increase or decrease based on credits and debits applied by the underwriter. Positive things like ideal project type, good risk management practices, and good loss experience will generate credits and lower the premium, while the opposite is true for debits.

SCOPE OF COVERAGE

Since there is no standard coverage form for A/E PLI like there is for other lines of coverage, the coverages offered are different from insurer to insurer. For example, some insurers provide worldwide coverage territory while others only cover claims arising out of projects in the United States, and some cover pollution incidents caused by your firm's activities while others exclude such claims. More often than not, policy amendments or endorsements are needed to sufficiently cover your firm's exposure, which makes having a broker with A/E experience who can negotiate those coverages all the more important.

CLAIMS HANDLING

Insurers' claims handling capabilities can vary widely. Before choosing an insurer, you'll want to vet the claims handlers by inquiring about experience, case load, and areas of expertise. Will your firm work with one claims handler for all claims, or will the handler be assigned based on geographical location or case load? Is the person assigned a lawyer? Will the carrier allow you to choose or have input on defense counsel? Some insurers reserve the right to force you to settle a claim, otherwise known as a "hammer clause," while others will not settle without your approval. Pre-claims assistance is a must-have that can potentially save your firm from a sticky situation becoming a full-blown claim.

To complicate matters further, new insurers are constantly entering the A/E PLI market. Ask your broker if they have any claims experience with an insurer. If your firm has frequent claims activity, choosing an unproven insurer may not be the best option for your firm, even if they have the best pricing and coverage.

READY TO LEARN MORE?

Please contact Jeff Connelly at Greyling, the broker and program administrator for the ACEC BIT, if you would like to discuss choosing the right insurer for your firm. Email Jeff at jeff.connelly@greyling.com or call 833-223-2248.

RISK MANAGEMENT SERVICES

Most A/E PLI insurers offer risk management to their insureds, but the quality varies widely. These services may be provided on a website platform with webinars, white papers, and claims studies, while some carriers offer in-person training programs.

Contract review is another risk management offering from some insurers. To ensure that this service is effective, you'll want to make sure the reviews are handled by qualified personnel, are turned around in a timely manner, and are redlined so the edits can be easily sent back to your clients for negotiation.

Some insurers also offer credits to premium if your firm meets a certain threshold of risk management education during the policy period. There are pros and cons to these credits, however. Risk management credits do force your firm to do some risk management training throughout the year, which is a good thing. Many insurers offer live in-person or online training, which can be beneficial to your staff. However, some of these "canned" sessions may not offer much value to your firm—other than the 10 percent premium credit you get for attending.

OTHER CONSIDERATIONS

- **Capacity:** How much limit can any one particular insurer deploy for your firm?
- **Premium installment plans:** If cash flow is a concern for your firm, some insurers offer interest-free installment plans. These could potentially save your firm hundreds or thousands in finance costs or keep your line of credit free for other expenses.
- **Meeting your underwriter in person:** For larger firms, meeting with potential new insurers before renewal and again with their incumbent underwriters each year makes sense and will help solidify the relationship. Ask your broker how much business they have with a particular insurer and about their relationship with the underwriter. How long has that particular underwriter been at that insurer? Is that position a revolving door or is there stability? An underwriter will typically be more flexible with coverage and may not penalize as much for adverse claims history if they have a good relationship with your broker. Being connected to the top leaders of an insurer may pay dividends down the road. ■

Queue the Party Music: Deal-Makers' Bets on Infrastructure Poised to Pay Off

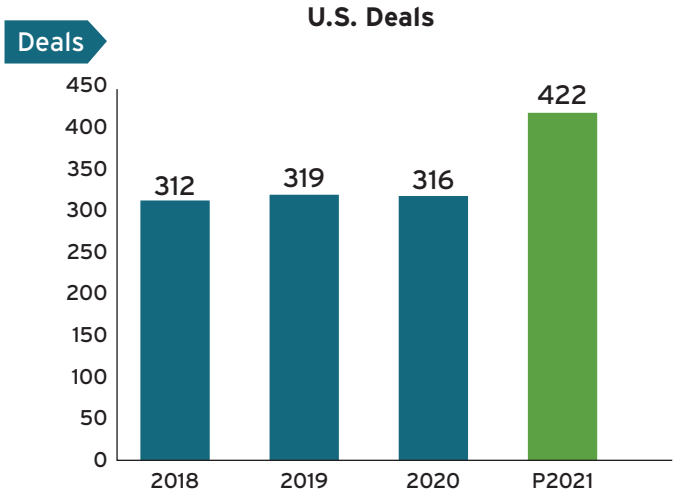
BY NICK BELITZ

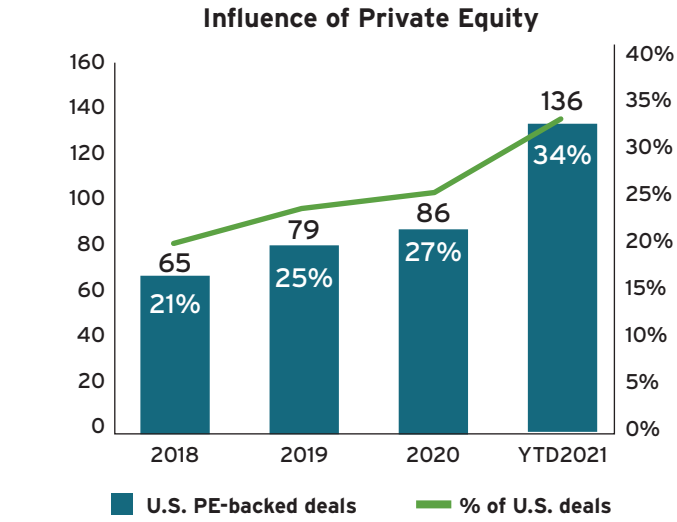
At long last, it's party time! Near the end of the best-ever year for engineering industry acquisition activity, ACEC deal-makers and business executives—not to mention the project managers and engineers actually doing the design each day—received welcome news with the passage of the federal infrastructure bill. Talked about for years (really decades) without ever getting much further than an "infrastructure week" here or there, the Infrastructure Investment and Jobs Act (IIJA) signed into law on November 15, 2021, by President Joe Biden, marks the largest federal public infrastructure investment in decades, to the tune of $1.2 trillion. That's trillion with a "t," to be spent over a period of years, which means engineering firms can structure business plans and staff resources around it. *Finally.*

By the looks of things over the last few months of 2021, ACEC deal-makers have been more than willing to place their bets in anticipation of the bill's passage. While final numbers for 2021 are still coming in as of this writing, the year by any measure ranks as the most active to date in terms of industry consolidation, with more than 400 announced deals. That count represents essentially a step-function increase in transactions over the most recent years—see accompanying chart—which were themselves record-setting performances by deal-makers across the country. An increase of this magnitude suggests deal-makers spent the year stocking up on party supplies in the form of infrastructure-oriented acquisitions.

While the latest list of deal-makers includes the very large publicly traded buyers like Tetra Tech and WSP, we also see significant activity from growth-oriented players looking to get ahead of infrastructure spending in critical states and geographies. Here are some highlights of parties already in progress from the—count 'em—52 deals by ACEC members detailed below:

- The **biggest** transactions go to deal-makers Kleinfelder (San Diego), with the acquisition of Century Engineering (Hunt Valley, Md.), Colliers Engineering & Design (Red Bank, N.J.), with the transaction for Bergmann (Rochester, N.Y.), and STV's (Douglassville, Pa.) enviable entrance into Texas with CP&Y (Dallas).
- The **most frequent** deal-maker in the last several months, Anser Advisory (Santa Ana, Calif.), announced three transactions from Virginia to Florida to California, including two in the water space.
- The **most tech-oriented** deals go to Jacobs with the acquisition of BlackLynx (Rockville, Md.), Tetra Tech (Pasadena, Calif.) via the transaction with Enterprise Automation (Irvine, Calif.), and Anser Advisory's acquisition of Markon Solutions (Falls Church, Va.).
- The **most popular states** were the sunny, well-known party environments of California (6 deals), Florida (5 deals), and Texas (4 deals).





True to form, private equity-backed firms continued their rising pace of deals as a percentage of overall transactions as Ardurra and CONSOR brought the party—and their money—to sellers in Tennessee. Meanwhile, strategic buyers KCI, Burgess & Niple, Larson Design Group, and Fehr Graham made deals in their core geographies, while innovation-focused RESPEC ventured further afield, to Alaska.

Also of note, **New Mountain Capital** exited its investment—a term that means "sold" to those of us not working at a private equity firm—in TRC and made way for **Warbug Pincus** to join the fray as a backer of a well-known engineering firm. If past performance is an accurate predictor of future trends, expect a new round of acquisitions from TRC.

For those looking to acquire, opportunities will abound in the near to medium term, and aspiring deal-makers should take comfort that it's not too late to join the party. The IIJA includes $37 billion for a new bridge investment program, which is the single largest outlay for bridges since the construction of the Interstate Highway System in the 1950s. Also in the legislation is $66 billion for passenger and freight rail, $39 billion for public transit, and $25 billion for airports, which includes $5 billion for a new airport terminal improvement program. While those funds are much needed, planes, trains, and automobiles do not have all the fun in the IIJA. The $65 billion allocated to energy infrastructure is the single largest federal investment in the power grid in U.S. history. There is also $65 billion to bring high-speed internet to rural communities, $55 billion for drinking water and wastewater systems, $21 billion to clean up Superfund and brownfield sites, $7.5 billion to develop a network of electric vehicle charging stations, $1 billion to restore the Great Lakes, and $500 million for smart city projects. And $46 billion allotted to resiliency will fund cybersecurity, flood and wildfire mitigation, and ecosystem restoration projects.

In 2022, we look to the happy combination of federal funding and the widespread, sustained need for engineering services to drive demand for engineering to new highs, and with that, we expect the party of consolidation to continue through 2022.

NOVEMBER 2021

Public infrastructure construction management firm **Wallace & Associates** (Murrieta, Calif.) joined *Engineering News-Record*'s (*ENR*'s) #31 ranked construction management-for-fee firm, **Anser Advisory** (Santa Ana, Calif.), expanding Anser's water and wastewater consulting capabilities. Anser Advisory is an ACEC member. **Anser Advisory** also acquired **Government Services Group** (Tallahassee, Fla.), a firm that focuses on water and wastewater management, financial management consulting, and special assessment and support.

ACEC member **WSB** (Minneapolis) (*ENR* #185) acquired **Peaks to Plains Design** (Billings, Mont.), a landscape architecture, civil engineering, and planning services firm.

Qualus Power Services (Cincinnati), an electric power engineering and field services firm, acquired ACEC member **Phoenix Engineering Services** (Tucker, Ga.), an engineering and testing service firm.

Kleinfelder (San Diego) (*ENR* #46) continued its rapid growth through the acquisition of multidisciplinary engineering firm **Century Engineering** (Hunt Valley, Md.) (*ENR* #186). Both firms are ACEC members.

Employee-owned engineering and environmental services firm **Shannon & Wilson** (Seattle) (*ENR* #234) announced its plans to acquire geotechnical engineering and materials testing services firm **American Geotechnics** (Boise, Idaho). Both firms are ACEC members.

To view the most up-to-date and "live" versions of the M&A heat maps, and to see who are the buyers and sellers in each state, go to www.morrisseygoodale.com.

Nick Belitz is a principal with Morrissey Goodale, LLC, a management consulting firm that specializes in the A/E industry and provides strategic business planning, merger and acquisition, valuation, executive coaching, leadership development, and executive search services. He can be reached at nbelitz@morrisseygoodale.com.

Gaskins Surveying & Engineering (Marietta, Ga.) and **LeCraw Engineering** (Duluth, Ga.) are merging into Gaskins + LeCraw. The merger will create a full-service company offering survey, planning, and engineering capabilities. LeCraw Engineering is an ACEC member.

ACEC member **Larson Design Group** (Williamsport, Pa.) (*ENR* #287), a national architecture, engineering, and professional consulting firm, announced that **LWPB** (Oklahoma City), an architecture and interior design firm, will join its team as a subsidiary.

ACEC member **RESPEC** (Rapid City, S.D.) acquired electrical engineering firm **Haight & Associates** (Juneau, Alaska). This partnership brings together a complete team of engineering disciplines to Juneau and the southeast coast of Alaska.

ACEC member **Bennett & Pless** (Atlanta) joined forces with **Zabik Turner Engineering** (Winter Garden, Fla.), a structural engineering firm that specializes in cold-formed steel framing, exterior facades, office buildings, hotels, and storage buildings.

ACEC member **Jacobs** (Dallas) (*ENR* #1) entered into a definitive agreement to acquire **BlackLynx** (Rockville, Md.), a provider of high-performance software, to complement Jacobs' portfolio of cyber, intelligence, and digital solutions.

ACEC member **H2M architects + engineers** (Melville, N.Y.) (*ENR* #208) acquired **Dennis Noskin Architects** (Tarrytown, N.Y.), an architectural, interior design, and space planning services firm.

ACEC member **Deuchler Engineering** (Aurora, Ill.) joined environmental and engineering firm **Fehr Graham** (Freeport, Ill.), strengthening the firm's water and wastewater, structural, environmental regulation, compliance, assessment, and remediation services.

OCTOBER 2021

Architecture, engineering, environmental, and planning firm **LaBella Associates** (Rochester, N.Y.) (*ENR* #163) acquired **Odell Associates** (Charlotte, N.C.), an architecture firm. LaBella Associates is an ACEC member.

ACEC member **Colliers Engineering & Design** (Red Bank, N.J.) (*ENR* #109) acquired **Northern Survey Engineering** (Brunswick, Maine), a surveying firm that serves residential clients, commercial developers, construction companies, consulting firms, large-scale energy infrastructure, and utility owners. ■

Timely Claims Reporting in the Virtual World

BY KAREN ERGER

The concept of "management by walking around" was popularized by management consultants Thomas J. Peters and Robert H. Waterman Jr. in their 1982 book *In Search of Excellence.* The idea is that managers need to take random, unplanned strolls through the workplace, talking and listening, staying in touch with their people, and establishing themselves as approachable leaders.

In the old days, a project manager walking the floor might overhear a conversation signaling a relationship breakdown with a client or subconsultant or might be waved over to weigh in on a thorny design dilemma. A manager might be approached after a meeting by an engineer who didn't feel comfortable raising an issue in front of the entire team. Many a budding catastrophe has been revealed with the preamble, "I'm sure this isn't a big deal, but…"

Now that many engineers are frequently working remotely, these happenstance observations, informal discussions, and post-meeting confessional moments seem much less likely to take place. Accordingly, many problems may not come to light until it is too late to take effective action. To paraphrase the famous line in the movie *Alien*: In remote space no one can hear your team scream.

One specific risk an engineering firm must address is that professional liability claims may not be identified and reported to the carrier in a timely manner. Compared with myriad complex and critical challenges posed by the transition to remote work, this one might seem relatively insignificant. However, late reporting of a professional liability claim can result in the loss of coverage for that claim, with potentially devastating consequences for the insured engineering firm. Let's review why this is so.

'CLAIMS-MADE' TRIGGER MAKES TIMELY REPORTING A MUST

Timely reporting of professional liability claims is crucial because professional liability insurance policies have a "claims-made and reported" coverage trigger. The term "coverage trigger" refers to the event that must happen to activate coverage under a particular insurance policy. Many lines of insurance have an "occurrence-based" trigger, meaning that the occurrence of a covered event (such as bodily injury or property damage) will trigger coverage under the policy that is in force when that event occurs.

The claims-made and reported coverage trigger on professional liability policies operates differently. For coverage to exist under a particular policy, a claim (as defined by the policy) must be first made against the insured ***and*** reported to the insurer during the same policy period. The word "and" in the previous sentence is of critical importance. If a claim is made during one policy period but not reported until the next, there will be no coverage for that claim under a claims-made and reported policy.

Karen Erger

DOES YOUR TEAM KNOW A CLAIM WHEN THEY SEE ONE?

Because late reporting can result in loss of coverage, your team needs to recognize a claim when they see one. Remember that all professional liability policies are different—there is no universal standard form—so educating your team requires knowing how *your* particular policy defines a claim. There is no substitute for reading the policy and discussing any questions with your insurance broker.

That said, most professional liability policies define the term "claim" to include much more than just a lawsuit against the insured firm. For example, the definition might be "a demand for money or services alleging negligence in the performance of your professional services." This might include a statement by your client that you owe them money due to alleged errors in your design, or a client's refusal to pay for your services for the same reason. *These statements might not even need to be in writing* to constitute a claim that must be reported to the insurance carrier.

It is easy to see how a busy engineer might perceive these occurrences to be client relationship issues or accounts receivable problems, while failing to recognize they also can constitute a claim that must be timely reported to the professional liability insurer. This is not a new problem, but a virtual work environment makes it much less likely that other team members will become aware of these kinds of situations and suggest they be reported as claims.

A CULTURE OF TRUST IS THE KEY

Educating engineers to recognize claims and take prompt and appropriate action has always been essential, but it is especially so in a remote or partially remote workplace where "claims-spotting by walking around" is not a viable strategy.

Of equal if not greater importance is the need to build a culture of trust. Team members must be confident that revealing mistakes and asking for help are not career-limiting maneuvers, but rather expected actions that will be met with understanding and ready assistance.

Fostering this ethos and building strong relationships may be more difficult when work is being done remotely, but it has never been more imperative and worthy of thoughtful and intentional effort. ■

Karen Erger *is senior vice president and director of practice risk management at Lockton Companies. She also is a member of the ACEC Risk Management Committee and can be reached at kerger@lockton.com.*

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On the Move

Mobile, Ala.-based **Volkert, Inc.** named **Thomas Hand** president and CEO, succeeding **David Allsbrook**, who retired in January 2022. Allsbrook served as CEO since 2020. He remains as chairman of the board supporting the CEO in corporate activities. Hand has served as chief marketing officer since 2017.

Reading, Mass.-based **Weston & Sampson** announced that **Frank Ricciardi** has assumed the role of chief executive officer from **Michael Scipione**, who served as CEO since 2005 and will continue with the firm in a client-facing role. Ricciardi brings more than 28 years of experience to the role in project management, climate resiliency, environmental consulting, and infrastructure engineering projects.

Waltham, Mass.-based **Simpson Gumpertz & Heger (SGH)** announced the following executive promotions: **James Parker** has been named SGH's chief executive officer. **Niklas Vigener** will take on a new role as chief technical officer. Parker previously served as head of structural engineering and structural mechanics, and Vigener served as head of building technology.

Aaron Gallagher has been named chief operating officer (COO) of Boston-based **Nitsch Engineering**. He most recently served as the director of civil engineering at the company and remains a vice president. He is a graduate of ACEC National's Pathways to Executive Leadership program.

Kansas City, Mo.-based **TranSystems Corp.** announced the following appointments: **Tim Rock** was promoted to executive vice president of operations. Rock most recently oversaw both sales and operations for the firm's Central region, which is comprised of eight offices in five states. **Bo Sanchez** has joined the firm as senior vice president and Southeast regional leader overseeing sales and operations in seven offices across Florida, Georgia, and the Carolinas. **Brian Fairwood** has been named Central region senior vice president overseeing sales and operations for eight offices in five states in the Central region. **Kevin Chafin** joined the firm as senior vice president and federal market sector leader. He will oversee sales and strategy for the services provided to federal agencies.

Scott Hillman has joined San Diego-based **Kleinfelder** as senior vice president and general counsel. Hillman most recently served as general counsel for Langan Engineering and Environmental Services, and prior to Langan, he served as vice president and region chief counsel for AECOM, Inc. | URS Corporation.

Neil Churman has joined Dayton, Ohio-based **Woolpert** as its chief corporate development officer where he will identify strategic firms and support those acquired through due diligence and integration. Churman held previous roles at TRC Companies, 7 Mile Advisors, and Morrissey Goodale, and led and advised on numerous mergers

Thomas Hand

Frank Ricciardi

James Parker

Niklas Vigener

Aaron Gallagher

Tim Rock

Bo Sanchez

Brian Fairwood

Kevin Chafin

Scott Hillman

Neil Churman

Matthew D. Washkowiak

and acquisitions across the architecture, engineering, and technology industries. He will be based in Pittsburgh.

Crystal Lake, Ill.-based **Baxter & Woodman** announced several appointments: **Matthew D. Washkowiak** was promoted to chief innovation officer. Washkowiak will drive innovation strategies within the company. **Jason J. Fluhr** was promoted to vice president of transportation and will oversee the company's transportation design engineering and management throughout the firm's Midwest region. **Carolyn A. Grieves** has been promoted to vice president of business development. She will direct efforts throughout all regions of the firm, including the Midwest, Florida, and Texas. Grieves also serves as president of the firm's 501(c)(3) not-for-profit organization, B&W CARES, and chair of its Young Professionals Group. All are based out of the firm's headquarters office.

Hunt Valley, Md.-based **EA Engineering, Science, and Technology, Inc., PBC** named **Jason Echelle** as senior vice president and chief financial officer and **Candice LaFleur** as vice president and controller. Echelle most recently served as vice president and controller and LaFleur previously served as accounting manager.

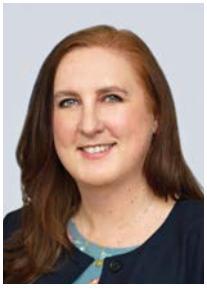
New York-based **WSP USA** announced the following appointments: **Indhira Figuereo** has been promoted to national aviation market leader. She previously served as the Northeast region aviation practice leader and is based in New York. **Anne Darnall** has been named deputy national transit and rail market sector leader, Eastern region. Darnall most recently served as vice president and business development director for Parsons Corporation's transportation and water infrastructure business in the Eastern U.S. She is based in Charlotte.

New York-based **Syska Hennessy Group** promoted **Robert Ioanna** to chief technical officer and **John Passanante** to executive principal. **Ioanna** also oversees Syska Innovations, a subsidiary that invests in seed-stage companies, pilots their software and products, and promotes ideation and technology development within Syska. Passanante will oversee the financial performance and management of multiple practices while spearheading business development and the growth of the firm globally.

Walnut Creek, Calif.-based **Brown and Caldwell** announced the following appointments: **Wendy Broley** has been named chief technical officer (CTO) succeeding **Cindy Paulson** who is retiring after 35 years with the firm. Paulson will remain at the firm through 2022, serving on its board of directors during the transition. Broley, a water industry leader, serves as the company's One Water leader. She is based in San Diego. **Erin Williams** has joined the firm as vice president and leader of its growing Mid-South business serving clients in the region's water, wastewater, and stormwater sector. Williams will direct the firm's Atlanta, Nashville, Chattanooga, and Memphis offices. She is based in Atlanta.

Percival Buxhoeveden has been named vice president and national signals manager at New York-based **STV**. He will provide project and technical leadership for STV's signal practice and expand its signal and train control services with existing and new clients across North America.

Jason J. Fluhr


Carolyn A. Grieves

Jason Echelle

Candice LaFleur

Indhira Figuereo

Anne Darnall

Robert Ioanna

John Passanante

Wendy Broley

Erin Williams

Percival Buxhoeveden

Welcome New Member Firms

ACEC Alabama
Alabama Engineering Company, Inc.
Hoover
TP Engineering, Inc.
Trussville

ACEC Arizona
Zell Company, LLC
Avondale

ACEC California
Behrens and Associates, Inc.
Hawthorne
FTF Engineering, Inc.
San Francisco
J Design & Consulting Engineers
Rancho Murieta
North Coast Engineering, Inc.
Paso Robles
PSM Associates, Inc.
San Carlos
Riechers Spence and Associates (RSA+)
Napa
VectorVision, PC
Belmont
VSCE, Inc.
Oakland

ACEC Colorado
Matrix Design Group, Inc.
Denver
RIVET Engineering
Colorado Springs
Rummel, Klepper & Kahl, LLP (RK&K)
Golden
SLR International Corporation
Fort Collins
Steamboat Engineering & Design
Steamboat Springs

ACEC-CT
Smart Structural Solutions, LLC
Enfield

ACEC Delaware
Rossi Transportation Group
Dover

ACEC-FL
Drummond Carpenter, PLLC
Orlando
GEN3 Engineering
Wesley Chapel
Matern Professional Engineering
Maitland
H. Rodriguez Consulting Engineering, Inc.
Doral
RS&H, Inc.
Jacksonville
Whitman, Requardt and Associates, LLP
Baltimore, Md.
Willmer Engineering, Inc.
Atlanta, Ga.

ACEC Georgia
Advance Engineering and Construction, LLC
Stone Mountain
AE Engineering, Inc.
Jacksonville, Fla.
Axis Infrastructure, LLC
Alpharetta
Capital Projects
Woodstock
Douglas Consulting Group
Atlanta
Graham & Associates, Inc.
Tucker
Hazen and Sawyer, PC
Atlanta
Infrastructure Systems Management, LLC
Augusta
Johnson, Spellman & Associates, Inc.
Peachtree Corners
Metro Trafix
Kennesaw

ACEC Illinois
Cotter Consulting, Inc.
Chicago
Mead & Hunt
Middleton, Wis.
Oneida Engineering Solutions, LLC
Milwaukee, Wis.
Surveying And Mapping, LLC (SAM)
Elk Grove Village

ACEC Indiana
Mussett Nicholas Associates
Indianapolis
The Schneider Corporation
Indianapolis

ACEC/Iowa
Long Engineering, LLC
Urbandale

ACEC of Louisiana
Intracoastal Consultants, LLC
Baton Rouge

ACEC/MD
CDM Smith
Towson
EXP Global
Towson

ACEC/MA
Fenagh, LLC
Natick

ACEC/MW
CES Consulting, LLC
Dulles, Va.
Gannett Fleming, Inc.
Fairfax, Va.
JED Engineering, PC
Columbia, Md.
PRIME AE Group
Fairfax, Va.

ACEC/Michigan
Larsen Structural Engineering, PLLC
Dexter
Matteo Engineering & Consulting, LLC
Washington Township
T.Y. Lin International
Ann Arbor

ACEC/Missouri
DOTec Corp.
Saint Charles
Kimley-Horn
Kansas City

ACEC Nevada
Atlas Technical Consultants
Henderson
Sigma Engineering Solutions, Inc.
Las Vegas

ACECNJ
Omsum Engineering, LLC
Piscataway

ACEC New York
Liriano & Associates Engineering, Consulting Services, PLLC
Long Island City
Mirabal Engineering
New York

ACEC/NC
Finch & Associates Consulting Group, PLLC
Raleigh
Geo-Hydro Engineers, Inc.
Greensboro
Heath and Associates, Inc.
Shelby
UtilityEngineering, LLC
Raleigh
Vrettos Pappas Consulting Engineers
Charlotte
Wildlands Engineering, Inc.
Charlotte

ACEC North Dakota
Sauber Engineering, Inc.
Mandan

ACEC Ohio
A. Morton Thomas and Associates, Inc.
Columbus
Hunt Engineering, LLC
Tarlton
Tetra Tech
Toledo

ACEC OKLAHOMA
Cornerstone Civil Engineering, PLLC
Norman

ACEC Oregon
Altman Browning & Company
Portland
BKF Engineers
Portland
Hardesty & Hanover, LLC
Portland
KF Structural, PC
Hillsboro

ACEC/PA
American Engineers Group, LLC
Harrisburg
Construction Methods & Coordination, Inc., d/b/a CMC Engineering
Kimberton
KMJ Consulting, Inc.
Ardmore

ACEC-SC
Haley & Aldrich, Inc.
Greenville

ACEC Tennessee
Chastain-Skillman, Inc.
Brentwood
Power Centric Solutions, LLC
Gallatin

ACEC Texas
Aperture, LLC
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Doucet & Associates, Inc.
Austin
ECS Southwest, LLP
Carrollton
Ellison Gage & Associates, PLLC
Plano
EST, Inc.
Melissa
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Mott MacDonald
West Lake Hills

ACECWV
Ghosh Engineers
Charleston
Mackin Engineering Company
Pittsburgh, Pa.
Summit Design and Engineering Services
Fairmont

ACEC Wisconsin
Building Envelope Consultants, Ltd.
Waukesha
National FacilitySolutions, LLC
Hastings, Minn.

Prepare Your Top Talent for Executive Leadership

Registration is now open for Class 7 of Pathways to Executive Leadership, ACEC's midcareer leadership development program, beginning October 15-18, 2022, in Colorado Springs, Colo. Sessions prepare participants for new leadership roles by teaching them how to explore personal mastery, recognize industry trends, and build long-term client relationships.

In addition to coursework, participants have the opportunity to connect with a trusted national network of colleagues from whom to draw best practices and exchange knowledge. The hybrid program consists of two in-person seminars and three virtual learning sessions tailored to those transitioning to managing teams and other managers.

For more information, visit **https://programs.acec.org/pathways/** or contact Katie Goodman, director of leadership programs, at 202-682-4332 or email **kgoodman@acec.org**. Registration is limited.

BUILD PROJECT MANAGEMENT EXPERTISE WEEK BY WEEK

Designed to help new project managers gain skills and confidence to fit their firm's unique workflow specifications, *Project Management 101: Laying the Foundation for Superior Project Managers* offers online, schedule-friendly training in the field of project management.

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Project Management 101 begins July 12, 2022. For full details, visit **https://program.acec.org/project-management-101** or contact Maureen Brown at **mbrown@acec.org**.

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The 23 documents in this new edition of the C-series from the Engineers Joint Contract Documents Committee (EJCDC) are specifically written for use on public and private engineered-facility projects, including:

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- Forms for gathering information needed to draft bidding and contract documents
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- Bonds (bid, performance, and payment)
- Administrative forms, such as change order forms and the certificate of substantial completion

Review the EJCDC Catalog at **www.acec.org/bookstore**, and search "Contracts." ■

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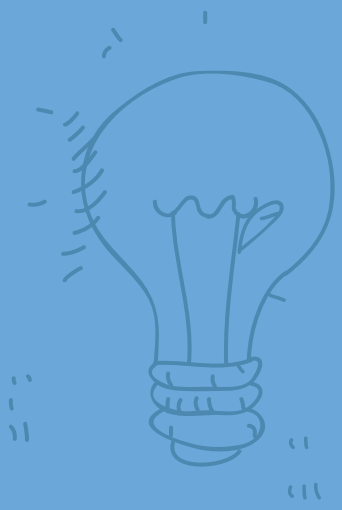

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