

ISSUE ONE • 2023

ENGINEERING INC.

www.acec.org

AWARD-WINNING BUSINESS MAGAZINE • PUBLISHED BY AMERICAN COUNCIL OF ENGINEERING COMPANIES

Navigating Turbulent Times

*Effective firm strategies
to manage economic drama*

Engineers Confront Impact
of Southwest Drought

MO Profile:
ACEC Virginia

ACEC/PAC Achieves
Record Growth

Thornton Tomasetti:
Building Bridges

ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES



Don't miss the voice of the engineering industry with ACEC's
official podcast: Engineering Influence

Listen, like, and subscribe at:
acecnational.podbean.com



CONTENTS

Issue One • 2023

"It's vital to think
in broader and more
holistic terms about
how to operate
the business."

Chuck Roberts
President and CEO
Performance Management Group Inc.

COVER STORY

POTENTIAL ECONOMIC TURBULENCE: ARE YOU READY?

Engineering firms should
always be prepared
for tough times.

12



AMERICAN COUNCIL OF ENGINEERING COMPANIES

2023

ANNUAL
CONVENTION
& LEGISLATIVE **SUMMIT**

#ACEC2023ANNUAL

JUNE 11-14, 2023 | GRAND HYATT WASHINGTON | WASHINGTON, D.C.

ACEC



16



10



40

FEATURES

16

RISING DROUGHT CONCERNS IN THE WILD WEST

Engineers are taking the lead on identifying solutions in the Southwest.

20

2022 PLI CARRIER SURVEY: TIGHTER COVERAGE, INCREASING PREMIUMS

Firms face higher premiums and greater scrutiny.

24

2022 ACEC/PAC WRAP-UP: RECORD GROWTH AND PARTICIPATION

The advocacy support organization is booming despite economic climate.

29

ALL FOR ONE

ACEC Coalitions address daunting workforce shortage while embracing business growth opportunities.

34

ENGINEERING & PUBLIC WORKS ROADSHOW OFFICIALLY LAUNCHED

Infrastructure investment improves U.S. supply chain.

36

ACEC VIRGINIA

Collaboration helps this Member Organization overcome workforce issues.

40

BUILDING BRIDGES

Thornton Tomasetti helps communities at home and abroad.

DEPARTMENTS

4 FROM ACEC TO YOU

Engineering & Public Works Roadshow inaugural stop stressed engineering essentiality.

6 ACEC RESEARCH INSTITUTE

Two new Institute reports point to industry growth and optimism.

8 LEGISLATIVE ACTION

Congress clears a major year-end water package.

10 THE PRIVATE SIDE

Top 5 trends affecting the energy and utilities industry.

44 REDUCING OVERHEAD EXPENSES

The ACEC Business Insurance Trust recommends evaluating business insurance.

46 RISK MANAGEMENT

Shining the Bat-Signal on contract terms.

47 MERGERS AND ACQUISITIONS

Runnin' against the wind.

50 MEMBERS IN THE NEWS

Rich Khalil is named CEO and board chairman of A. Morton Thomas and Associates, Inc.; Bryan Nicol joins RS&H as chief strategy officer.

52 BUSINESS INSIGHTS

New resource for land development firms.

COVER: JOHN LUND/GETTY IMAGES



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.

ACEC-Led Engineering & Public Works Roadshow Stressed Engineering Essentiality

In November, ACEC drove the launch of the first national Engineering & Public Works Roadshow to highlight the essentiality of engineering. Audiences for the Roadshow included policymakers, clients, and potential future engineers.

Held on Cyber Monday, the inaugural Roadshow event was organized through a partnership consisting of ACEC, the American Public Works Association, and the American Society of Civil Engineers to shine a spotlight on the essentiality of engineering and how robust infrastructure investment can provide jobs, enhance the environment, and advance our nation's future. The highlighted project was the Long Beach International Gateway Bridge and the Port of Long Beach.

The gleaming new six-lane, nearly two-mile-long cable-stayed bridge rises 205 feet above the port's access channel to accommodate today's larger cargo ships and the dramatic increase in truck traffic. Project management/construction management services for the bridge project, which received a prestigious Grand Award at the 2022 Engineering Excellence Awards Gala last year, were provided by WSP USA. The design-build project was designed by Arup with the collaboration of ACEC member firms Biggs Cardosa Associates, BKF, Kimley-Horn, and Leighton. Parsons Transportation Group and HNTB provided preliminary engineering and design oversight services for the project.

The event featured leaders from the three-member joint Roadshow collaboration and Congressman Lou Correa, FHWA Chief Counsel Andrew Rogers, and was made even stronger with significant assistance from ACEC California Executive Director Brad Diede, ACEC California President Raul Laborin, ACEC California Past Presidents Kurt Yoshii and Miranda Patton, and WSP USA Senior Vice President Bryce Little, from the firm which was the EEA Award recipient for the project. Sincere thanks for the strong turnout by ACEC California members, all of whom were instrumental in making the event a success (see page 34).

This issue of *Engineering Inc.* also features a cover story on how engineering firm leaders can recession-proof their companies, with industry experts offering takeaways and actions firms can take to withstand economic challenges.



W. Arthur Barrett
ACEC Chair



Linda Bauer Darr
ACEC President & CEO



PUBLISHED BY:
AMERICAN COUNCIL OF ENGINEERING COMPANIES

AMERICAN COUNCIL OF ENGINEERING COMPANIES

CHAIR	W. Arthur Barrett
PRESIDENT & CEO	Linda Bauer Darr
SENIOR VICE PRESIDENT, ADVOCACY	Steven Hall
CHIEF FINANCIAL OFFICER	Caroline Knox Burns
SENIOR VICE PRESIDENT, BUSINESS RESOURCES AND EDUCATION	Marie Ternieden
SENIOR VICE PRESIDENT, MEMBERSHIP AND MO SERVICES	Daphne Bryant
EXECUTIVE DIRECTOR, ACEC RESEARCH INSTITUTE	
SENIOR VICE PRESIDENT, MEETINGS, EXHIBITS, AND AWARDS	Michael Pramstaller
SENIOR VICE PRESIDENT, COMMUNICATIONS AND MARKETING	Jeff Urbanchuk
DIRECTOR, MEMBER COMMUNICATIONS	Alan D. Crockett
STAFF EDITOR	Andrea Keeney akeeney@acec.org 202-682-4347
ADVERTISING SALES	Erin Wander 440-281-0464 ewander@acec.org

IMAGINATION

MANAGING EDITORS	Elizabeth Cotner Glennon Matthew Wright
ART DIRECTOR	Kris Apodaca

Engineering Inc., Volume 34, Number 1 (ISSN 1539-2694), is published quarterly by the American Council of Engineering Companies (ACEC), 1400 L Street, NW, Suite 400, Washington, D.C. 20005-2605. Periodicals postage paid at Washington, D.C., and at additional mailing offices. Annual subscriptions are \$24 for members (included in dues as a non-deductible amount); \$45 for U.S. non-members; \$65 for institutional subscriptions. Back issues are \$15.

POSTMASTER: Send address changes to *Engineering Inc.*, c/o ACEC, 1400 L Street, NW, Suite 400, Washington, D.C. 20005-2605.
© 2023 American Council of Engineering Companies. All rights reserved. This publication may be copied, downloaded from the ACEC website, stored in electronic or hard-copy format, and disseminated to third parties for educational and information purposes. ACEC expressly disclaims any liability for damages of any kind in connection with such copying, downloading, storage, and/or dissemination. By copying, downloading, storing and/or disseminating this publication, the recipient of this publication expressly agrees to defend, indemnify, and hold ACEC, its officers, directors, employees, volunteers and agents harmless from and against any and all losses, damages, claims, causes of action and liabilities, including reasonable attorneys' fees and costs, arising out of or resulting from the recipient's use of this publication. Notwithstanding the above, no part of this publication may be altered, resold, licensed, or used for any other commercial purposes without the prior written permission of ACEC. Recipients may opt out of receiving the electronic version of this publication from ACEC by sending an e-mail with the subject line "Unsubscribe" to ACEC at magazine@acec.org.

Engineering Inc. subscribers: If you have a mailing address correction or need to add or remove an employee from the *Engineering Inc.* mailing list, please contact the ACEC Membership Department at memberservice@acec.org or call 202-347-7474 and ask for Member Records.

The ACEC Research Institute provides the engineering industry with cutting edge research, trend data, and economic analysis to help firm owners make decisions and delivers thought leadership that advances engineering's essential value to society.

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

As of January 2023

Founder Circle (\$50,000+)



Community Foundation
of Greater Muscatine
On Behalf of Richard and Mary Jo Stanley



John & Karen Carrato

Chair Circle (\$25,000+)



Ed & Brenda Alizadeh

Anonymous Contributor

Janice Marsters

Jay & Ann Wolverton

President Circle (\$15,000+)



Daphne & Jeff Bryant

Kenneth & Sheri Smith

Ambassador Circle (\$5,000+)



Elizabeth Stolfus & Steve Mystkowski

ACEC Research Institute

1400 L Street, NW, Suite 400, Washington, DC 20005 | 202.347.7474 | ACECResearchInstitute.org



Two New Institute Reports Point to Industry Growth and Optimism, Even as Inflation Fears Continue

The ACEC Research Institute recently released two reports: *2022 Economic Assessment of the Engineering & Design Services Industry* and *Engineering Business Sentiment 2023 Q1*. Both reports paint a picture of an engineering and design services industry that has roared back from its pandemic-era lows and is poised to further build on its post-COVID-19 gains.

2022 ECONOMIC ASSESSMENT OF THE ENGINEERING & DESIGN SERVICES INDUSTRY

Now in its third annual release, the report focused on the key economic drivers of the engineering and design services industry. As in its two previous iterations, it sought to describe, measure, and

analyze the economic significance of the industry and to highlight its inextricable link to the overall health of the U.S. economy.

The report notes the “outsized impact” COVID-19 had on the engineering and design services sector, pointing to construction projects that were disrupted, delayed, or scrapped altogether. The perfect storm of the pandemic and its concurrent economic downturn spurred a 7 percent decline in A/E activity in 2020. The story here is of the resurgence in 2021, with the industry recovering its 2020 losses—plus an additional \$9 billion.

These successes can be felt throughout the industry, with bullish year-over-year metrics across the board. Highlights include:

- \$373 billion in industry sales, up nearly 10 percent over 2020 (\$339 billion)

- 1.53 million full- and part-time jobs, up 2 percent over 2020 (1.50 million)
- \$100,200 average annual wages, up 3 percent over 2020 (\$97,300)
- \$213 billion direct economic contribution to the U.S. gross domestic product, up 11 percent over 2020 (\$192 billion)

ENGINEERING BUSINESS SENTIMENT 2023 Q1

More projects. More sales. More industry workers earning higher salaries. With trends like these, it is little surprise that current sentiment for firms and the industry overall remains **very** to **extremely optimistic** within all market sectors. For this report, nearly 600 member firm leaders from around the country and from firms of all sizes were asked to weigh in on the current state of the industry and its direction. The survey used a Net Rating methodology, which is calculated by subtracting the negative ratings from the positive ones. Therefore, a positive Net Rating indicates overall sentiment is optimistic, while a negative Net Rating indicates an overall pessimistic sentiment. The higher the number, the stronger the sentiment.

The Net Rating for firms' overall finances was +84 and +82 for the engineering and design services industry, out of a possible +100. Respondents were far less optimistic about the state of the U.S. economy, with a Net Rating of +12. It is worth noting that this is an increase of 12 points from the Q4 survey and +28 points from Q3 2022. Still, despite con-

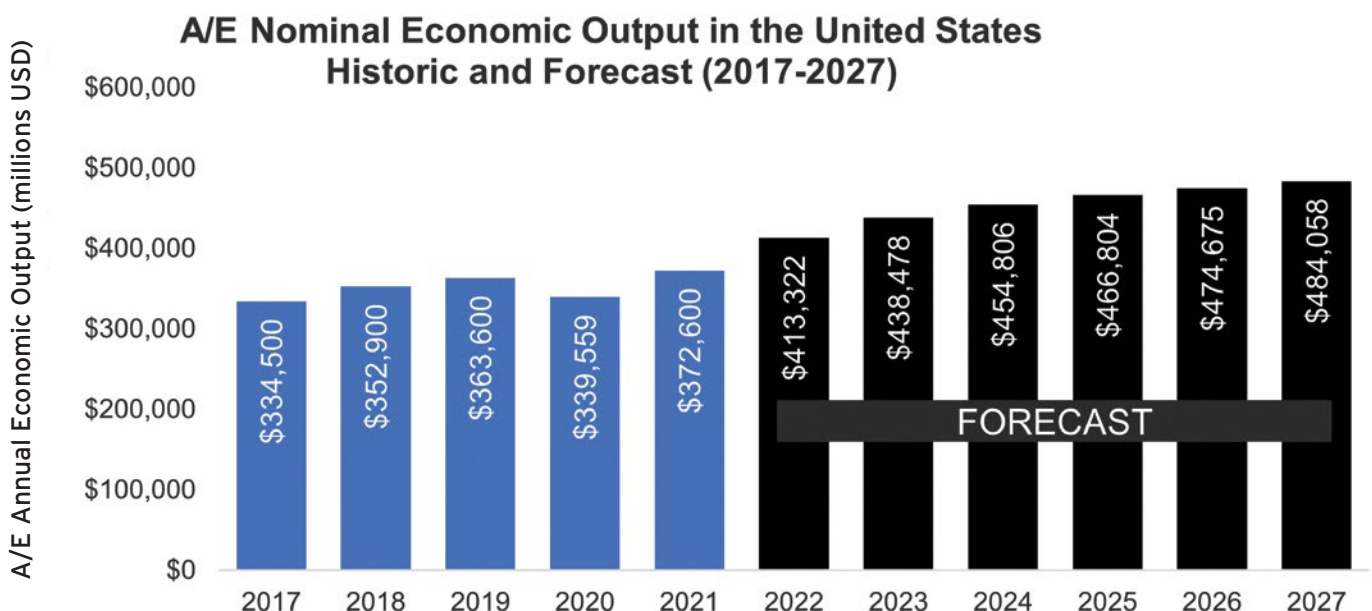


tinued economic pessimism, respondents from across the industry expressed deep confidence in their own sectors, with particularly strong sentiment among Transportation – Roads and Bridges (Net Rating +79), Energy and Utilities (+78), Health Care Facilities (+75), and Water/Wastewater (+74).

When respondents were asked to look ahead to the next 12 months, recession (87 percent) and inflation (86 percent) were the greatest concerns fueling negative future sentiment. Respondents also pointed to spiking interest rates (76 percent), economic uncertainty (73 percent), and workforce shortages (72 percent) as key concerns. Regarding the latter, 69 percent of respondents predict an increase in hiring

over the next 12 months, up from 65 percent who said that in the Q3 survey. Nearly 9 out of 10 respondents indicated their firm has at least one open position, with the median number of openings at five.

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





Congress Clears Major Year-End Water Package

Congress passed the Water Resources Development Act of 2022 (WRDA 2022) as part of the National Defense Authorization Act (PL 117-263) prior to adjournment in December. WRDA 2022 authorizes \$30 billion in Army Corps of Engineers projects and programs for navigation, flood control, environmental mitigation, and other civil works activities.

Specifically, the package authorizes construction of 25 new projects, 94 new feasibility studies, and 12 studies to modify existing projects. Eligibility for Army Corps annual and supplemental appropriations requires prior authorization.

The law includes provisions supported by ACEC that call for climate-related risk management of coastal and riverine infrastructure to increase resilience to extreme

weather events. The measure directs the Army Corps to rebuild and maintain coastal and riverine projects based on projections relative to sea-level rise and extreme weather events.

WRDA 2022 also includes ACEC-supported provisions that require the Army Corps to track and report to Congress on various aspects of National Environmental Policy Act reviews, with the goal of streamlining information requirements and permitting timelines.

Major project authorization provisions in WRDA 2022 include a \$34 billion Coastal Spine project in Texas, which is among the nation's largest Army Corps coastal storm damage management efforts. Coastal Spine is a large-scale storm risk management and ecosystem restoration project to mitigate risk from future hurricanes. WRDA 2022 also authorizes environmental infrastructure assistance (\$6.56 billion) for the design and construction of specified publicly owned and operated wastewater systems.

In addition to supporting project and program authorizations, ACEC continues to engage with Congress and the Army Corps to improve permitting processes and support and align design practices based on climate-related risk management.

Defense Bill Improves Army Corps ID/IQ Process, Promotes Integrated Project Delivery

The National Defense Authorization Act (PL 117-263) includes ACEC-backed language to prevent the Army Corps of Engineers from requesting additional information from ID/IQ contract holders. Specifically, Section 802 states, "when issuing a task or delivery order for architectural and engineering services

under a multiple award contract, the head of an agency may not routinely request additional information relating to qualifications from the contractor for such multiple award contract."

The language seeks to address a problem where the Army Corps has required firms—which have already gone through a Qualifications-

Based Selection (QBS) process to be short-listed for task orders—to undergo a second QBS competition to be awarded a specific task order. ACEC has raised concerns previously that this process is costly and time-consuming and is causing unnecessary delays in projects.

The new law also includes report language calling on the

Government Accountability Office (GAO) to review a sample of A/E contracts to determine: 1) how long it takes the Army Corps of Engineers to acquire a task order; 2) the added costs to request and review task order submissions; 3) if the Army Corps routinely informs unsuccessful proposers that they were not selected and, if so, how promptly; 4)

ACEC Submits Comments on Section 179D

The U.S. Department of the Treasury and the Internal Revenue Service have begun developing guidance to implement the range of tax provisions that were included in the Inflation Reduction Act (IRA), which was signed into law in August 2022.

A key provision of interest to ACEC members is the Section 179D energy-efficient commercial buildings tax deduction. The IRA modified Section 179D so that the deduction ranges from \$0.50 per square foot to \$5.00 per square foot, depending on whether certain energy efficiency, prevailing wage, and apprenticeship targets are met.

Under the IRA, both governmental and tax-exempt entities can now allocate the deduction to the primary designer of the energy-efficient systems. The agencies asked stakeholders to comment on how to identify the designer, and ACEC pointed to the system developed by the General Services Administration (GSA) for allocating the deduction. The GSA requires any contractor seeking allocation of the Section 179D deduction to certify in writing that they have consulted with all other contractors on the project. This method prevents the first contractor seeking the deduction from receiving it in place of designers who should qualify for it.

ACEC also raised the problem of clients and their third-party brokers requiring payment in exchange for allocation of the deduction and asked the Treasury to revisit the chief counsel decision that makes it difficult for engineering firms organized as S corporations to claim the Section 179D deduction.

if the Corps Districts use the same processes; and 5) other observations on contracting for A/E services identified by the GAO.

Also included was a provision calling for greater use of integrated project delivery (IPD) contracts. A comprehensive study by the University of Minnesota linked project success to IPD, finding that such projects using IPD are delivered on time and on budget. The provision calls on each of the military services to include IPD in project delivery for at least one project.

For More News

For legislative news, visit ACEC's *Last Word* blog online at www.acec.org.

ISSUES ON THE MOVE	WHAT'S NEXT
R&D amortization	Potential action on legislative fix this year
Greenhouse gas reporting	FAR to analyze comments
Army Corps task order reform	GAO study by the end of 2023



FAR Rule to Require Greenhouse Gas Emission Data from Contractors

The Biden administration's proposed rule, the Disclosure of Greenhouse Gas Emissions and Climate-Related Financial Risk, would require major federal contractors to disclose their greenhouse gas emissions. It would also require them to set science-based emissions reduction targets.

The rule creates two classifications for federal contractors: "Significant" contractors receive between \$7.5 and \$49.9 million in federal contracts, while the threshold for "major" contractors is \$50 million in federal contracts annually. Significant contractors are required to report Scope 1 and 2 emissions, which include direct emissions produced by a firm and indirect emissions from generating sources of electricity that are purchased for a firm's consumption from another entity. These requirements also apply to major contractors, as well as a requirement to report Scope 3 emissions, defined as greenhouse gas emissions from the operations of the firm that occur at sources other than those owned or controlled by the firm—usually a subcontractor and other members of a supply chain.

ACEC submitted comments on the rule, reflecting concerns from firms over the cost impact and other implementation issues. As the rule is written, many terms are vague and could be broadly interpreted. This variety of interpretation possibilities has significant cost implications and may create both advantages and disadvantages based on a particular interpretation. Many smaller firms also lack the expertise to determine greenhouse gas emissions, establish appropriate reduction targets, and measure and monitor whether those targets are being achieved. This would result in many small businesses having to hire consultants or outside staff to meet the proposed requirements.



Top 5 Trends Affecting the Energy and Utilities Industry

BY DIANA ALEXANDER

The energy market is quickly evolving and remains one of the most discussed markets globally. The Infrastructure Investment and Jobs Act (IIJA) will allocate \$65 billion to the power and grid market. The Inflation Reduction Act (IRA) will provide tax credits, rebates, and \$9.5 billion for clean hydrogen initiatives. This market is expected to see exponential growth and change over the next 30 to 50 years. The following are the most impactful trends expected in the transition to clean energy.

1. RENEWABLE ENERGY CONSUMPTION IS EXPECTED TO DOUBLE BY 2050.

Petroleum, natural gas, and other liquids led energy consumption in the U.S. from 1990 to 2021, and continued growth is projected through 2050, according to the U.S. Energy Information Administration. Globally, though, demand for natural gas is expected to have declined in 2022, made tighter by the 2022 Russian invasion of Ukraine and Europe's desire to replace the gas supply it receives from the Russian pipeline, according to the International Energy Agency. Renewables are globally poised for long-term growth. They are the fastest growing consumed sources, with consumption rates projected to double by 2050.

2. SOLAR AND WIND WILL BECOME AFFORDABLE.

Historically, coal has been the least expensive energy source in the U.S., and more than one-fourth of the total known world coal reserves are in the country, according to the National Academies of Sciences, Engineering, and Medicine. Renewables have become the cheaper option, however, propelling the energy transition away from fossil fuels. Renewable power alternatives would bring \$156 billion in savings to



emerging economies, according to the International Renewable Energy Agency. Funding from the IRA and associated tax credits are also expected to double domestic wind and solar generation through 2030 with \$370 billion more in funding, according to a report from Energy Innovation.

3. THE WATER SUPPLY MARKET RECEIVES A FUNDING BOOST.

The water supply market became one of the top five hottest markets in 2022 with 12.8 percent year-over-year growth, according to August 2022 construction-put-in-place data released by the U.S. Census Bureau in October 2022. The need for water infrastructure has accelerated in recent years due to the aging infrastructure of pipes and new funding from the IIJA. The IIJA will provide \$55 billion toward clean drinking water initiatives including replacement of all lead pipes and service lines. "Water pipe replacement rates will peak in 2035 at 16,000 to 20,000 miles of pipes replaced per year, four times the current annual replacement rate," according to the U.S. Environmental Protection Agency and McKinsey.

4. THE DOE WILL FUND SIX TO 10 HYDROGEN HUBS.

The IIJA allocated \$9.5 billion for clean hydrogen initiatives. According to the U.S. Department of Energy (DOE), funding is allocated as follows: \$8 billion for six to 10

regional clean hydrogen hubs throughout the U.S., \$1 billion for a clean hydrogen electrolysis program, and \$500 million for clean hydrogen manufacturing recycling initiatives. According to the Great Plains Institute, the potential selection of hydrogen hub regions may be based on core emission areas including the Pacific Northwest, Northern California, Southern California, Utah, the Rockies, the Permian Basin in Texas and New Mexico, Houston, Louisiana, Illinois, Michigan/Ohio, Kansas/Oklahoma, and Western Pennsylvania. The DOE will oversee the location selection. ACEC is also tracking other key programs of interest, including: \$10.5 billion for grid resilience, \$4.9 billion for carbon management, \$2.1 billion for carbon dioxide transportation infrastructure, and \$1 billion for rural energy systems.

5. THE ENERGY MARKET NEEDS PRIVATE INVESTMENT.

Utilities are expected to place more emphasis on resilience strategy in the immediate future due to the recorded frequency of extreme weather events and historic climate change, according to Deloitte's *2022 Power and Utilities Industry Outlook*. The survey reported weather-related losses exceeding \$1 billion per event in the first three quarters of 2021, and 51 percent of respondents reported extreme weather impacting the reliability of electricity delivery. This is where public-private partnerships (P3s) can be a positive source of funding in the market. One example of this type of P3 in action is the District of Columbia Power Line Undergrounding project, which is a partnership between the District and Pepco to provide reliable and resilient electricity to D.C.'s consumers. Dry utility engineering, subsurface utility engineering, transportation, and surveying are a few services required for this type of project.



Dr. Carey King, assistant director of the Energy Institute and research scientist at the University of Texas at Austin, discusses long-term economic trends and the energy industry at the Private Market Energy Symposium.



ACEC Hosts Private Market Energy Symposium

Increasing pressures from climate change, geopolitical conflict, and net-zero goals, combined with billions of dollars in funding, has rapidly accelerated the clean energy transition. Regions in the U.S. are racing to set their own net-zero goals and positioning to win some of the \$65 billion in funding coming to the power and grid markets from the Bipartisan Infrastructure Law.

ACEC recently traveled to Houston to host its first-ever Private Market Energy Symposium, the final stop on its 2021-2022 symposium tour. Houston has been called “the Energy Capital of the World.” Attendees heard from experts from the Center for Houston’s Future, ProgressRail, Jupiter Power, Evolve Houston and the Greater Houston Partnership; scholars at Rice University, the University of Texas at Austin, and the University of Houston; and other industry professionals from Blueprint

Power, the Energy Corridor, Lane Power & Energy Solutions, and Black & Veatch.

“Business opportunities in the energy sector continue to grow,” said ACEC President and CEO Linda Bauer Darr. “With this Private Market Energy Symposium, we are helping member firms prepare for the influx of federal investment in American energy projects.”

The IIJA will provide clean hydrogen initiatives with \$9.5 billion in funding, with \$8 billion specifically for six to 10 regional hydrogen hubs. Chief Executive Officer of the Center for Houston’s Future Brett Perlman joined the “Future of Hydrogen” panel at the Energy Symposium and shared the company’s strategy and efforts to procure one of the hydrogen hubs for Houston. Perlman discussed how Houston has the largest transmission, associated infrastructure, and distribution pipelines in



Commercial & Residential Real Estate



Health Care & Science+Technology



Intermodal & Logistics



Economic Outlook



Energy & Utilities



Education

The Private Side column in *Engineering Inc.* focuses on the private-sector markets listed above, and information and insights on economic data relevant to the industry. For more on these topics, subscribe to ACEC’s bimonthly *Private Industry Briefs*: <https://programs.acec.org/industrybrief>.

Diana Alexander, CPSM, is ACEC’s director of private market resources. She can be reached at dalexander@acec.org.

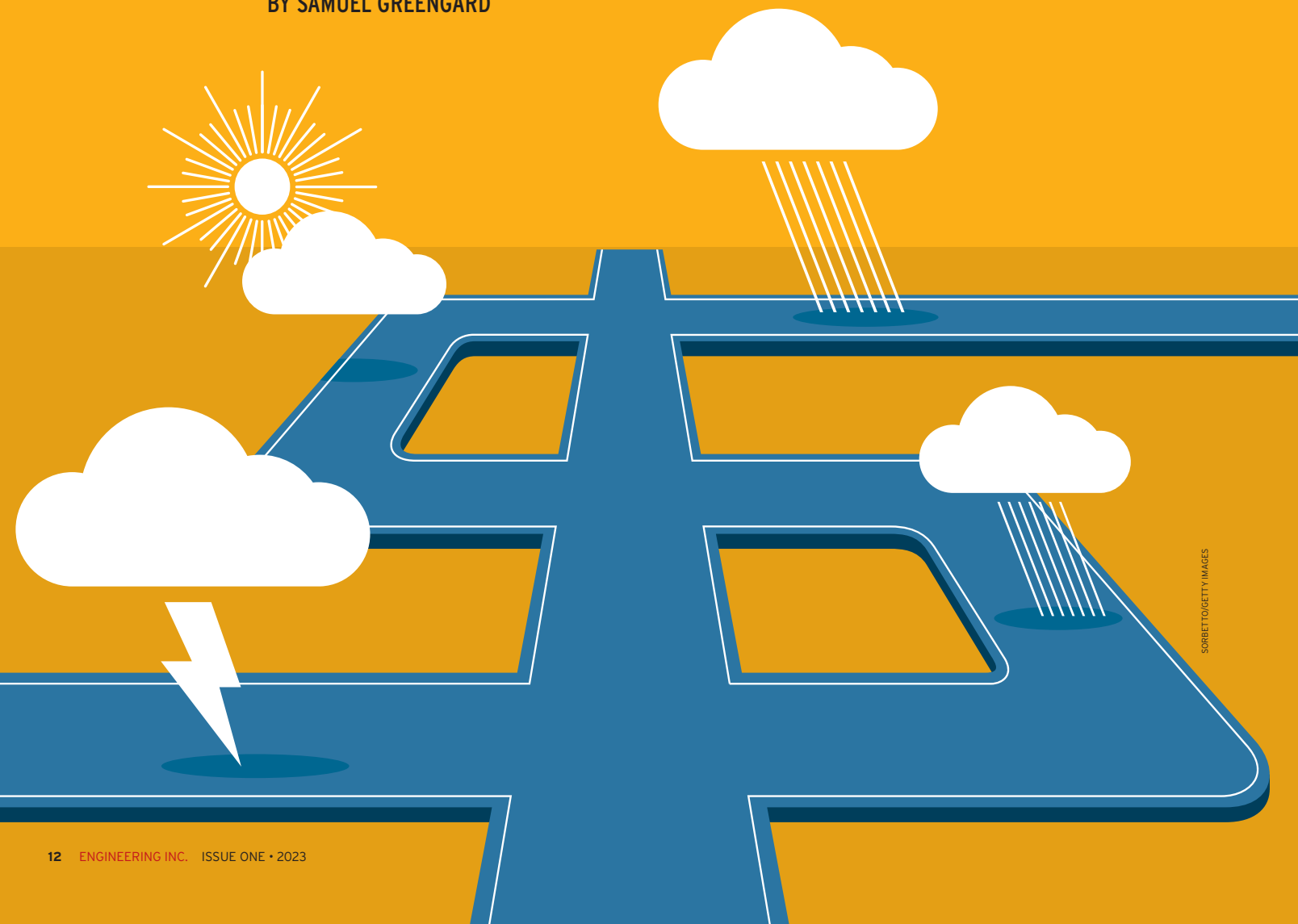
the U.S. with favorable proximity to industrial demand centers and access to acres of salt cavern storage—one of the best options for storing hydrogen. Perlman further laid out the benefits of the Gulf Coast region as a thriving hydrogen ecosystem with a high degree of location-based mobility. The Houston landscape possesses the necessary supply and production for a hydrogen hub, providing a competitive advantage over other regions—one of the reasons for hosting the first Private Market Energy Symposium in Houston.

Potential Economic Turbulence:

Are You Ready?

**HOW FIRMS CAN BE BETTER PREPARED
FOR ECONOMIC UNCERTAINTIES**

BY SAMUEL GREENGARD



SORRETTOGETTY IMAGES

The cyclical nature of business is an ongoing challenge for engineering firms of all shapes and sizes. With high overhead and complex project demands, wringing out efficiencies can be difficult in the best of times. Toss in an economic downturn, and the situation can quickly become unnerving.

At the moment, some economic signals are flashing “recession” while others are not. In September 2022, Wolters Kluwer Blue Chip Economic Indicators reported that there was a 54 percent chance of recession in 2023. Yet many A/E/C firms continue to enjoy project backlogs that extend for months or years, and more projects are on the way, thanks to the \$1.2 trillion Infrastructure Investment and Jobs Act.

Amid these mixed signals, some tough decisions are in order: Is it wise to wait and ride things out, or is it better to respond early? Is it necessary to trim staff, reduce office space spending, or incorporate other potential cost-reduction measures? Is there a way to fortify the balance sheet? “It’s a confusing and difficult environment,” says John Doehring, managing principal at business consulting firm J. Doehring & Co.

Nevertheless, he and other experts say firms can take some proactive steps to prepare for whatever ensues. “The goal should be to become a high-performance organization,” says Chuck Roberts, president and CEO of business management consulting firm Performance Management Group Inc. “This will enhance your revenue and profitability in both good times and bad times.”

MONITORING THE INDICATORS

Attempting to decipher the present mix of economic signals is a formidable task. “The current environment doesn’t fit the classic definition of a recession,” Roberts says. “If people are waiting for an official pronouncement and clear signals, they may never come.”

For now, firms can take tactical steps to buffer the impact of a potential recession. Colvin Matheson, a chartered financial analyst (CFA) and managing director of the A/E/C industry corporate finance advisory firm Matheson Advisors, suggests shifting a firm’s focus to the public sector, which tends to feel the impact of a recession six to 12 months later than the private sector. It’s also wise to keep an eye on a firm’s backlog burn rate and new proposal activity. “If the backlog is not being replaced with new opportunities and wins, it’s critical to balance a firm’s cost structures with the projected new work,” he says.

Finally, Matheson recommends reviewing working capital and net equity levels. “In normal times, we suggest a ratio of net accrual equity to net revenue above 20 percent,” he says. “But when times get tough, firms may need to target a ratio of around 25 percent more cushion.”

A common mistake, Matheson notes, is reacting too slowly and then experiencing a mismatch between operations and workforce and the projected workloads. This in turn can drain cash and lead to a shortage of working capital—particularly if a business also distributes its profits near year-end to avoid corporate taxes. When economic uncertainty rises, protecting balance sheets really matters. “Accounting results are a trailing indicator,”



“The current environment doesn’t fit the classic definition of a recession. If people are waiting for an official pronouncement and clear signals, they may never come.”

CHUCK ROBERTS
PRESIDENT AND CEO
PERFORMANCE MANAGEMENT GROUP INC.

he says. “Accepting lower profits during the economic storm in order to keep the firm’s capacity intact may be necessary.”

At the same time, “No firm wants to find itself at a disadvantage if the economy stabilizes,” says Mark Goodale, principal at business management consulting firm Morrissey Goodale. He and others say that the best way to address uncertainty is to be equipped for both up times and down times—thus reducing the need to respond to specific market conditions.

“There are many factors that can create adverse business conditions, including a recession within an industry or a sector, even if the global economy remains relatively stable,” Roberts says. “It’s vital to think in broader and more holistic terms about how to operate the business.”

A starting point is to recognize a couple of key factors, Roberts says. “As inflationary pressures increase, margins may decrease. A firm may wind up as busy as ever but less profitable.”

It may also have no leverage to raise its fees, and internal conflict can occur when teams are forced to handle more work with no increase in compensation. Second, if demand for A/E/C services ebbs, firms that tend to be hit the hardest are those that lack differentiation. “They—and the services they provide—are viewed by clients as price-sensitive commodities.”

Navigating these challenges requires an organization to have insight and visibility into the overall economy as well as its internal metrics. “When the economy is up, it’s very easy to lose your discipline and get away from good business practices,” Goodale says. “During a downturn, problems become exposed, and many of the things that previously worked are no longer effective.”

“This is when it’s crucial to get into good habits, like investing in the learning and development of your people, continually improving your business processes, and focusing on delivering greater value and a superb experience for your clients. You don’t want chaos, but you don’t want to let moss grow, either, or you’ll wind up losing a lot of ground in a short amount of time if and when conditions deteriorate.”

A FOCUS ON METRICS

Building a recession-proof firm is contingent on recognizing a crucial fact: Companies that follow best practices are better

MARKETING MAKES A DIFFERENCE DURING A DOWNTURN

An economic downturn may seem like an ideal time to trim what seems to be nonessential costs. However, high-performance firms don't skimp when it comes to these marketing tactics:

Develop a robust marketing plan.

"A downturn is an opportunity to refocus on the things you do really well. This serves as the foundation for business success," Cheinman says.

Communicate what really matters. Today, it's vital to build an excellent website, have a social media program, and utilize other digital tools to promote a firm and its social values.

Embrace creativity. Skip the boring press releases that merely regurgitate facts and figures about a project. Instead, consistently share bite-sized chunks of information and intel that your clients will value, and focus PR efforts on the positive impact your projects have on people and their communities, Goodale says.

Demonstrate project expertise. This may take the form of e-books,

videos, or white papers. The best content delivers a service: It informs potential customers and positions a firm as an expert source.

Establish a feedback loop. It's critical to plan incrementally and incorporate metrics that offer insight into what's working and what's not. "An agile marketing plan helps you respond to rapidly changing conditions," Cheinman says.

equipped to handle whatever unfolds in the economy or within an industry. They assess the range of possibilities at any given moment and act accordingly. This requires adaptability, flexibility, and resilience, Doehring notes. "They have the toolkit to manage a vast array of events, scenarios, and possibilities."



"When challenges arise, best practice companies have the tools and expertise to deal with them effectively. They're

better able to prosper through the inevitable economic cycles."

JOHN DOEHRING
MANAGING PRINCIPAL
J. DOEHRING & CO.



"If the backlog is not being replaced with new opportunities and wins, it's critical to balance a firm's cost structures with the

projected new work."

COLVIN MATHESON
CFA AND MANAGING DIRECTOR
MATHESON ADVISORS

How can a firm get to this higher plane? "The first step is identifying exactly what you want to be and build a brand," says Ida Cheinman, principal and creative director at Substance151, a brand strategy, design, and digital firm that focuses on the A/E/C industry. "You must communicate the things you do extremely well. When your clients aren't clear about what value your firm delivers and how it is different than everyone else, they are more likely to haggle over rates."

As a firm grows, it's easy to stray from the initial focus and mission statement. "Many companies wind up becoming a decentralized hot mess," Doehring says. "They wind up trying to be everything to everybody and take on every project."

On the other hand, organizations with a sharp strategic focus and alignment across groups and teams can react to changing conditions faster and better. "Different groups are in sync, and it's possible to adapt hiring, training, and even cross-functional work to fit current conditions," he says.

Differentiation must extend beyond a marketing plan and a mission statement—and it isn't created by a firm simply stating that it is a trusted advisor, a full-service company, or innovative, Roberts says. True differentiation can be achieved when a firm conducts a three-dimensional positioning analysis to identify where it stands in relation to competitors. "It's an iterative process that involves analyzing different combinations of your firm's characteristics, such as service level and pricing, relative to competitors," Roberts says. "It's key to being perceived as different from your competitors and should be a key element of your strategic planning."

In fact, this foundation is critical for recession-proofing a firm. It helps an organization develop a competitive advantage through fundamental operational changes and internal efficiencies. "A common mistake people make is focusing on external competitive advantage, such as getting a product or service to market first," Roberts says.

Yet this is an expensive process, and the advantage is only temporary. As others inevitably enter the market, prices drop and margins decline.

On the other hand, companies that focus on internal, operational advantages can weather economic storms and abrupt

changes in the competitive landscape. “Internal advantages are difficult for competitors to detect and even more difficult for them to replicate,” Roberts says.

The right metrics provide a lens through which to view events—and can help firms determine how to proactively plan and respond. For example, rather than monitoring billable utilization, which measures the percentage of a company’s time spent on billable client work, Roberts suggests focusing on how much work gets completed in a unit of time. “The question is: How effective are engineers and others at getting work done efficiently?”

Goodale believes that this flow efficiency is a make-or-break issue. Value is only created when something is completed. Flow efficiency is a way to track how efficiently that value is being created. It is calculated by dividing the time spent on a task by the amount of total time it took to deliver the task, then multiplying by 100. For example, if a project takes a person 10 hours to deliver but they only worked on it for five hours because they had other tasks and various distractions, flow efficiency for that task would be 50 percent. The same calculation can be applied to an entire process.

Instead, many firms measure resource efficiency, which revolves around how many hours are charged to a particular project. “Most industry firms manage for resource efficiency,” Goodale says. “And that means keeping everyone busy. But what is actually getting done? Is staff working on things that add value? Or instead, is time being spent on rework, resubmittals, or responding to RFIs?”

“While all of those things need to get done, they don’t add value to a project and the client doesn’t get anything more than what they already paid for. How much more efficient and profitable would a firm be if everything the staff started, they finished uninterrupted or close to it? Managing for flow efficiency is about creating and delivering value faster, and with significantly less waste.”

Other metrics can also aid in strategic decision-making—including when economic instability appears. For instance, billing multiple—which measures billings against direct labor costs—provides additional insight into staff efficiency, net revenue per employee demonstrates project efficiency, and working capital offers a snapshot of a firm’s current liquidity. With these indicators in place, a firm can adjust quickly—and understand more completely how decisions will likely play out.

CULTURE COUNTS

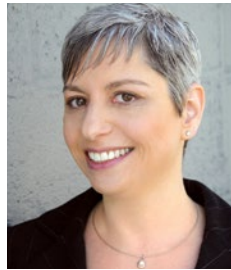
A firm’s culture also plays an important role in navigating economic turbulence. Training, trust, and accountability are critical, Roberts says. “When a firm promotes technical personnel into supervisory positions, they require supervisory skills training,” Roberts says. “This is an opportunity to enhance employee alignment and engagement—and reduce turnover. It’s a chance to build a framework of self-accountability.”

It’s also beneficial to develop a culture that revolves around critical thinking and a willingness to constantly look for ways to improve processes. Business leaders must be willing to listen and consider ideas, even those that seem somewhat threatening. This is especially true during an economic downturn. “It must be acceptable (and better yet, encouraged) to question the status quo and find the things that interfere with flow efficiency and other critical performance metrics,” Goodale says.



“No firm wants to find itself at a disadvantage if the economy stabilizes.”

MARK GOODALE
PRINCIPAL
MORRISSEY GOODALE



“You can measure what’s working, what isn’t working, and fill the gaps accordingly. You’re able to react to conditions as they occur—with the backdrop of having a strong brand that delivers on a clear set of values and capabilities.”

IDA CHEINMAN
PRINCIPAL AND CREATIVE DIRECTOR
SUBSTANCE151

Finally, firms can benefit from flexible work environments. As part of this, it’s important that teams and groups have received some level of cross-training. Then, as different projects come in and some groups end up busier than others, it’s possible to shift resources in a more agile and dynamic way. This approach helps a firm cultivate knowledge and address client needs more effectively, but it also reduces labor overhead—and the possible need for layoffs during a recession.

Goodale says when an organization boosts efficiencies, trims unnecessary costs, and builds a strategic framework around best practices, it’s better equipped to withstand economic downturns—and better-positioned to take advantage of opportunities when the economy rebounds.

Cheinman says that a focused business strategy, along with an agile marketing plan, can help a firm cope—and even flourish—in the most challenging of economic times. “You can measure what’s working, what isn’t working, and fill the gaps accordingly,” she says. “You’re able to react to conditions as they occur—with the backdrop of having a strong brand that delivers on a clear set of values and capabilities.”

Says Doehring: “When challenges arise, best practice companies have the tools and expertise to deal with them effectively. They’re better able to prosper through the inevitable economic cycles.” ■

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



RISING DROUGHT CONCERNS IN THE WILD WEST

**AS DRY CONDITIONS
WORSEN IN THE
SOUTHWEST,
ENGINEERS ARE
TAKING THE LEAD
ON IDENTIFYING
SOLUTIONS**

BY BETH BRAVERMAN

In 2022, the total rainfall in the contiguous United States was more than an inch lower than average, with some parts of the country experiencing significant drought conditions. A shrinking Colorado River, which supplies seven states in the Southwest with water, has led to dangerously low water levels in the Lake Mead and Lake Powell reservoirs. Parts of the Mississippi River are at their lowest water levels in a decade. About 58 percent of the country is now in drought, according to the U.S. Drought Monitor Report.

“The vast majority of the continental United States is in drought, and if you looked at the same statistics a year ago, it was much different,” says Meredith Clement, One Water Community of Practice Leader and a principal at Kennedy Jenks. “The rapidity of this drought and the areal extent of it is quite stunning, honestly.”

Such conditions are nothing new for residents of the Southwest, which is experiencing the driest 22-year period in 1,200 years, according to a study published in *Nature Climate Change*. Engineers in that region have been working for decades to implement solutions and workarounds to keep the water flowing to cities such as Phoenix, San Diego, and Las Vegas.

“Our engineers design the capital projects that create the infrastructure to treat and move our water,” says Tish Berge, assistant general manager of the San Diego County Water Authority and a registered professional engineer. “Once that’s built, they operate the treatment plants and distribution systems, and they maintain these systems through our asset management program.”



For the past 30 years, the San Diego County Water Authority has been working with its 24 member agencies on ways to improve water conservation, diversify water supply, and increase the local supply through potable reuse and desalination.

“Our story shows that it’s possible to survive and thrive during challenging times,” Berge says.

But keeping the water running in the Southwest requires leadership, community commitment, and a major investment in both conservation and infrastructure, she adds.

LONG-TERM THINKING

The Southwest is benefiting now from projects begun by forward-thinking engineers and municipal planners decades ago. Today’s engineers must take a similarly long-term view, especially as the pace of climate change and extreme weather events continues to accelerate.

“We need to be planning decades ahead,” Berge says. “We are in uncharted territory, and water managers everywhere need to be creating sustainable visions for future generations.”

The
Southwest is
experiencing
the worst
22-year
drought
in 1,200
years.

Such foresight, with an eye on climate change, has influenced the way that engineers—and their municipal partners—think about water projects.

“We are being asked by regulators and by our communities to plan and illustrate our plans in a much more transparent way,” says Dawn Taffler, client director and vice president at Kennedy Jenks. “In California, there’s an alphabet soup of required plans, from urban water management plans to integrated regional management plans and risk resiliency plans. They’re all looking at how to be more reliable to deliver and treat water in a changing climate.”

The role of water-focused engineers has also evolved to blend new technologies with the growing threat of climate change. They’re more often dealing with multiple agencies, multiple municipalities, and new and different stakeholders for projects.

“We are now working with multiple agencies, sometimes eight to 10 agencies, and broader geographies and other entities,” Clement says. “Whereas in the past, we used to have one project for one client, and that was it.”



"In the Southwest, the groundwater table is hundreds of feet deep, and increasing in depth every year. And they're all tapping into the same aquifer. It's like they have one big cup, and they just keep putting more straws into it."

KEVIN MACKINNON
SENIOR TECHNICAL LEADER
WATER RESOURCES
WESTON & SAMPSON ENGINEERS



For example, multiple municipalities in the Southwest might work together to fund a project that banks water during wet years to retrieve during a dry year, says Patrick Huston, co-chair, ACEC Water, Energy, and Environment Committee, and vice president of Kennedy Jenks in San Diego. Or a potable reuse project might require looping in a wastewater agency that hadn't traditionally been involved in such projects.

"There are many more stakeholders that are getting involved in projects today because the necessary solutions are no longer simple," Huston says. "You're not just getting more water from a stream, because there is no more water in the stream."

Today's water-focused engineers must have better communication skills and the ability to work through the sometimes bureaucratic and political agencies to find a solution that will benefit all parties.

"We have to get the agencies into a room to help us understand the needs of the region and to understand the feasibility of the potential water supplies," Clement says. "Everyone needs to work together to get the water supply to where it is needed and allow it to move from region to region."

DIVERSIFICATION

Engineers are now helping communities figure out how to diversify the water options they have through a range of solutions,

including potable reuse and looking beyond the surface groundwater that may not be as reliable in the future.

40 million people in seven states rely on the Colorado River for drinking water.

Last year, Kennedy Jenks helped complete a \$125 million water replenishment project, working with public and private stakeholders to build a facility that can treat municipal wastewater, agricultural irrigation return flow, agricultural produce wash wastewater, and urban storm water runoff to create a new 3,500-acre-foot source of clean water.

The firm also worked on a separate project in San Diego County that will use surface water augmentation to provide 30 percent of the East county's potable water needs. That project has been under development for a decade.

"The residents there now have a reliable water supply and a more predictable water cost," Huston says. "It has been a real journey to get some of these projects through the regulators, the permitting, and the departments of health. But I think it paves the way for other projects to follow. If one of these took 15 years, maybe the next one takes 10 or eight. We are creating a path to get them done."

Engineers are also increasingly taking a more holistic view of solutions to current and future water supply issues.

"The challenges are moving beyond what you can do with a pen and paper and design to finding engineering solutions that make economic sense in the near- and the long-term, and that are socially equitable, consider the environment, and balance



"We need to be planning decades ahead. We are in uncharted territory, and water managers everywhere need to be creating sustainable visions for future generations."

TISH BERGE
ASSISTANT GENERAL MANAGER
SAN DIEGO COUNTY WATER AUTHORITY



Man-made Lake Powell reservoir on the Colorado River.



“There are many more stakeholders that are getting involved in projects today because the necessary solutions are no longer simple. You’re not just getting more water from a stream, because there is no more water in the stream.”

PATRICK HUSTON
ACEC WATER, ENERGY, AND ENVIRONMENT COMMITTEE
VICE PRESIDENT
KENNEDY JENKS

environmental needs,” Taffler says. “Agencies that previously may have been thinking about things in terms of the cheapest cost are now realizing the additional benefits and the reasons to push projects forward. That has been a real game changer, and it impacts all type of projects.”

BEYOND THE SOUTHWEST

While the solutions that work in the Southwest may not translate directly to other parts of the country, which have different challenges, engineers across the U.S. are witnessing increased interest from stakeholders in water solutions.

Many clients and municipalities in the Northeast, for example, are interested in forecasts as to when a drought year or a water-scarcity year might hit, as well as when they might see a water-surplus year, says Kevin MacKinnon, senior technical leader, water resources at Weston & Sampson Engineers in Reading, Massachusetts.

About **58 percent** of the contiguous U.S. is now in drought.

In response to such demands, Weston & Sampson has developed a new tool that helps its clients understand their safe yield in any given year. The tool makes predictions using nearly 300 publicly available or client-specific hydrometeorological data sets, such as groundwater levels, snowpack, stream flow, precipitation, and temperature data.

“That’s helpful to communities and water suppliers, to give them an understanding of whether they might be headed into a drought,” he says. “It also allows us to recommend some aquifer management techniques they can use to preserve some of the storage for the summer low-precipitation, high-demand season.”

The firm also works with clients to help them determine the safe yield of their wells and if there are solutions that could improve efficiencies of those wells. Municipalities in the Northeast have an advantage over those in the Southwest when it comes to water because not only does it rain more, but the rain recharges aquifers much more quickly.

“In the Southwest, the groundwater table is hundreds of feet deep, and increasing in depth every year,” MacKinnon says. “And they’re all tapping into the same aquifer. It’s like they have one big cup, and they just keep putting more straws into it.”

In the Northeast, on the other hand, the geology is such that most communities are tapping into discrete aquifers that are not interconnected. So the focus there is on other issues.

“The biggest problem in this area is typically storage, and that will become an increasing issue as we move forward and climate change impacts the way we receive precipitation and recharge,” MacKinnon says. “As storms become more intense, we may be receiving greater volumes of annual precipitation, but it’s coming with greater intensity in shorter periods of time. So it’s more likely to run off into streams and rivers and out to the ocean without effectively recharging the groundwater systems.” ■

Beth Braverman is a business writer based in New York.



“The vast majority of the continental United States is in drought, and if you looked at the same statistics a year ago, it was much different. The rapidity of this drought and the areal extent of it is quite stunning, honestly.”

MEREDITH CLEMENT
ONE WATER COMMUNITY OF PRACTICE LEADER
AND PRINCIPAL
KENNEDY JENKS

2022 PLI CARRIER SURVEY:

TIGHTER COVERAGE, INCREASING PREMIUMS

**ACEC'S LATEST
PLI CARRIER
SURVEY INDICATES
THAT FIRMS ARE
FACING HIGHER
PREMIUMS
AND GREATER
SCRUTINY**

BY BOB VIOLINO

Engineering firms are seeing a rise in expensive claims, higher premiums for professional liability insurance (PLI) policies, and an increasingly competitive insurance market that's seeing some carriers apply greater scrutiny in determining or denying coverage.

These are among the key findings of the 2022 survey of PLI carriers by ACEC, the American Institute of Architects (AIA) Trust, and the National Society of Professional Engineers (NSPE).

KEY TRENDS

Results show that carriers are seeing a significant increase in claims related to large infrastructure projects, in part attributable to increased material cost and supply chain issues and an increase in verdicts in excess of \$10 million.

"We are seeing an uptick in the severity of claims resulting from third-party injuries or deaths from motor vehicle accidents being made against large civil engineering firms working on horizontal infrastructure projects such as roads, highways, and bridges, as well as severe claims involving property losses," says Lawrence Moonan, executive vice president and COO at Berkley Design Professional. "The root cause appears to be the impact of social and economic inflation, which has heavily impacted the value of damages claimed."

Travelers is seeing an increase in bodily injury claims, the breadth of pursuit being made by bodily injury claimant attorneys, and the aggressiveness of the pursuit being made, says John Rapp, assistant vice president for Professional Liability-Design Professionals.

"It's difficult to pinpoint what the root cause is, but we believe that social inflation and inadequate auto insurance limits are factors," Rapp says.

"Social inflation drives higher insurer claim payouts and loss ratios," says Timothy Corbett, founder and president of SmartRisk LLC and a member of the ACEC Risk Management Committee. "Ultimately, policyholders pay more for coverage," Corbett says. "Unlike economic inflation, which carriers can mitigate using pricing models and loss reserves, social inflation can arise from factors that are difficult to foresee such as an increase in outsized jury awards, longer legal proceedings, and the overturn of statutory limits on noneconomic damages. This trend continues to impact the industry with a two to three percent annual impact on severity. Carriers are looking to increase rates as a result."

The trend of increased claims and outcome severity "touches all service disciplines and project types," says Michaela Kendall, manager of strategic partnerships at insurer AXA XL. "While residential continues to be a project type with high claims frequency, the number of claims involving apartment projects has increased in recent years. This is in line with the fact that there has been an increase in apartment construction across the nation leading this development."

AXA XL expects the hard insurance market to remain so for the immediate future. "This is driven by a number of factors, including increasing claim frequency and severity, catastrophic events, and economic uncertainty," Kendall says.

Social inflation and other variables have had a dramatic impact on the damages alleged and the dollar amounts required to negotiate a settlement, Moonan says. "Further complicating matters is the trend of 'nuclear verdicts' being handed down by the courts against insurance companies," he says. "As a result, we are working to reduce our exposure to claim severity by seeking additional rate, higher policy retentions, and by prudent risk selection. Claim trends are causing us to carefully consider where we can offer capacity and at what terms."

Claim severity "is impacting the availability of capacity and pricing in our book of business," Moonan says. "We have also seen the availability of project insurance diminished, which pushes more exposure back to individual practice policies. We will have to consider how to manage and price for this additional exposure." He anticipates most policyholder rates increasing over the next 12 months.

"We have seen continued demand for high insurance limits for engineering firms," Moonan says. "We have also seen project owners who are not willing to negotiate contract terms and a greater number of projects being delivered via contractor-led design-build. Engineering firms need to carefully evaluate the risk they are assuming and will be challenged to find insurance



"We have seen continued demand for high insurance limits for engineering firms."

LAWRENCE MOONAN
EXECUTIVE VICE PRESIDENT AND COO
BERKLEY DESIGN PROFESSIONAL

capacity to meet contractual demands, in particular on larger infrastructure projects."

Berkley Design Professional provides policyholders with continual access to a range of e-learning and free continuing education courses, as well as business consulting tools such as contract review, project templates, and checklists to help improve profitability. Policyholders who complete an e-learning course from the firm's online training program can qualify for a 15 percent premium rating credit, Moonan says.

AXA XL Design Professional offers loss prevention and education resources to its insureds, partnering with its brokers and industry groups to create and deliver content that addresses the current needs of design professionals, Kendall says. Firms may receive a premium credit by completing one or more pre-approved courses, by attending a live webinar, viewing a recorded session, or attending an in-person educational event.

Travelers is continuing its risk management podcast series in 2023 due to popular demand, Rapp says. "We also support our insureds through risk management webinars, contract review services, risk management website, and risk management newsletters," he says. "Part of our underwriting process is reviewing an insured's risk and practice management procedures, which may impact the premium."

CHANGING FIRMS

Aside from premiums, why would a firm consider changing insurance carriers? There are several key reasons, according to brokers.

"The number one reason that causes our team to recommend a change in insurance carriers is inadequate claim handling," says Stephen Agnew, principal at Nexus Professional Risk and board member of broker network a/e ProNet. "A claim handled well allows an insured firm to continue its other operations with limited disruption and preserve relationships with key stakeholders in the claim where possible, all while proceeding through the claim process to a successful resolution as expeditiously as possible."



"It's difficult to pinpoint what the root cause is, but we believe that social inflation and inadequate auto insurance limits are factors."

JOHN RAPP
ASSISTANT VICE PRESIDENT FOR PROFESSIONAL LIABILITY-DESIGN PROFESSIONALS
TRAVELERS

A carrier that is unable or unwilling to provide this level of service should be reevaluated at renewal, or even sooner, if necessary, Agnew says.

A lack of overall service is another factor. "Whether it's recurring coverage questions, high turnover among claims representatives, or a lack of risk management resources, service from your insurer should not be an exception, but a rule," says Roger Guilian, J.D., senior vice president at Greyling Insurance Brokerage & Risk Consulting, a division of EPIC.

"Insurers can differentiate themselves by providing service throughout the policy year that results in reduced frequency and less severity, which is good for everyone involved," Guilian says.

The service issue extends to the relationship between the insurer and the client. "When it comes to something as personal and important as professional liability insurance to an engineering firm, relationships matter," Guilian says. "Modest rate increases at annual renewals are a lot easier to stomach when you and your firm have a partnering relationship with your insurer's underwriter and claims representatives."

Another common reason for changing insurance carriers is a change in underwriting appetite—the incumbent carrier no longer has a desire to underwrite the operations of the firm in a competitive manner, Agnew says. Yet another is when the carrier no longer offers terms that meet the firm's contractual requirements.

"Examples might include an unwillingness to offer the limits required by contract, the inability of the carrier to meet specified financial strength ratings, or a reluctance to offer specific coverages related to exposures like pollution, asbestos, or intellectual property," Agnew says.

Firms should also consider factors such as whether the new carrier has policy forms and better financial strength, says Ken Estes, senior vice president and risk consultant at Cadence Insurance and a member of the board of directors of Professional Liability Agents Network (PLAN).

If firms select insurance carriers based primarily on premium, "they can be in a situation where coverage and claims handling aren't as good," Estes says.

The legacy carriers have kept rates fairly stable over the years, but they will adjust up or down based on the loss history and quality of the firm, he says. "Generally, new carriers are trying to obtain critical mass, so they start with very aggressive pricing. They then have to adjust once claims start hitting their book," Estes says.

Newer entrants often choose a "sweet spot" and underwrite aggressively within it, so their rates are typically lower if the risk fits within their appetite, Agnew says. "Legacy carriers often have a broader underwriting appetite because they can support it with more premium on the books, but they may exhibit less flexibility on rates, particularly on renewals of firms with claims."

BEST PRACTICES IN A COMPETITIVE MARKET

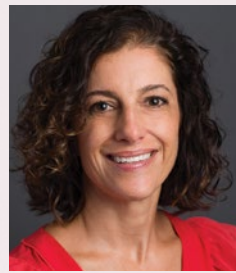
In this competitive insurance market, brokers see a greater scrutiny being applied by certain carriers in determining and/or denying coverage.

"When insurers' programs are more profitable, they can be more lenient in their coverage analyses and provide coverage even in the gray areas," Agnew says. "As their profitability erodes,



"Social inflation drives higher insurer claim payouts and loss ratios. Ultimately, policyholders pay more for coverage."

TIMOTHY CORBETT
ACEC RISK MANAGEMENT COMMITTEE
FOUNDER AND PRESIDENT
SMARTRISK LLC



"This is driven by a number of factors, including increasing claim frequency and severity, catastrophic events, and economic uncertainty."

MICHAELA KENDALL
MANAGER OF STRATEGIC PARTNERSHIPS
AXA XL



"All of the carriers try to diversify their portfolio of firms to manage their risk. This tells me that A/E firms need to work closely with their brokers to closely match up the needs of the firm with the capabilities, capacity, and criteria that the carriers are looking for."

JIM MESSMORE
ACEC RISK MANAGEMENT COMMITTEE
SENIOR VICE PRESIDENT
HANSON PROFESSIONAL SERVICES



"Generally, new carriers are trying to obtain critical mass, so they start with very aggressive pricing. They

then have to adjust once claims start hitting their book."

KEN ESTES
SENIOR VICE PRESIDENT AND RISK CONSULTANT
CADENCE INSURANCE
BOARD OF DIRECTORS
PROFESSIONAL LIABILITY AGENTS NETWORK (PLAN)



"The number one reason that causes our team to recommend a change in insurance carriers is inadequate claim handling."

STEPHEN AGNEW
PRINCIPAL
NEXUS PROFESSIONAL RISK
BOARD OF DIRECTORS
A/E PRONET



"When it comes to something as personal and important as professional liability insurance to an engineering firm, relationships matter."

ROGER GUILIAN
SENIOR VICE PRESIDENT
GREYLING INSURANCE BROKERAGE & RISK CONSULTING

insurers respond in a variety of ways. Some tighten up their underwriting requirements, some restrict their limit deployment, and others scrutinize their policy forms more closely and issue more coverage denials and reservations of their rights. Sometimes we see a combination of all those approaches from one insurer."

The most important advice for firms is to report all claims in a timely manner, Agnew says. "Read your policy's definition of 'claim,' and review it with your staff," he says. "Send out intermittent reminders to staff that all claims must be reported to the insurer or else the firm risks a denial of coverage."

A second recommendation Agnew makes is to discuss any merger or acquisition activity with the firm's broker early in the process. "There are multiple options for handling the transition on the insurance side, and your broker can help you evaluate those options to choose the one that's best for your firm," he says.

Each carrier has its own specific criteria and risk profile for clients, including size of the firm, size of coverage they are willing to underwrite, and specific project types they are willing to underwrite, says Jim Messmore, senior vice president at Hanson Professional Services and a member of ACEC's Risk Management Committee.

"All of the carriers try to diversify their portfolio of firms to manage their risk," Messmore says. "This tells me that A/E firms need to work closely with their brokers to closely match up the needs of the firm with the capabilities, capacity, and criteria that the carriers are looking for."

Firms also need to be aware of cyber threats and how they can protect themselves from liabilities. "Professional service firms remain a top target for cyber criminals," says Brian Welker, senior vice president and COO of Crawford, Murphy & Tilly and a member of the Risk Management Committee.

The majority of A/E professional liability policies provide some level of cyber coverage. "However, it is limited, with some carriers reducing coverage based on the increased risk and exposure," Corbett says. "The cyber coverage included in the PL policy is not adequate for the market risk today. It is recommended that firms obtain a standalone cyber insurance policy."

Firms need to understand that the largest nontechnical risk driver for professional liability claims is ineffective communication, Agnew says.

"Consider the appropriate means—email, phone, or a face-to-face meeting—to communicate each time, and give some thought to what may be discoverable in the event of a claim," Agnew says. "Involving too many parties in the communication and overcomplicating the decision-making process or, conversely, leaving out a key party in the process could cause the difference between a small problem and a policy limits claim. Good brokers and strong insurance carriers can help with training in this area, including real-life examples of claims."

A firm should also work with its broker to build a relationship with the insurer, Guilian says. "Get to know your underwriter and your claims team," he says. "Stay in contact with them throughout the policy year and, working alongside your broker, keep your carrier in tune with what's going on at your firm. The more your insurer can be a business partner, the better." ■

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



2022 ACEC/PAC WRAP-UP:

Record Growth and Participation

THE ADVOCACY SUPPORT ORGANIZATION ACHIEVES EXCELLENCE DESPITE CHALLENGES

BY BOB VIOLINO

Despite several challenges including a difficult economy, workforce shortages, and ongoing effects of the COVID-19 pandemic, the ACEC Political Action Committee (ACEC/PAC) enjoyed another triumphant fundraising year in 2022.

Thanks to the hard work of many volunteers, ACEC/PAC achieved \$1,277,645 in donations—an all-time record.

ACEC/PAC is the nation's only political organization looking out for engineering firms and their legislative interests. ACEC/PAC is regulated by the Federal Election Commission and overseen by a committee of PAC Champions made up of engineering firm executives from ACEC Member Organizations.

The political committee plays a key role in the success of ACEC's advocacy program, supporting federal candidates on a bipartisan basis who support the engineering industry's business agenda in Congress. ACEC/PAC is currently the largest PAC in the design industry and ranks in the top 3 percent among all association PACs.

NATIONAL MISSION

The 2022 ACEC/PAC campaign achieved record growth in both dollars raised and member participation, despite “member firm employees remaining historically busy executing the business of engineering and delivering value to the marketplace while solving complex problems,” says Derek Clyburn, president at ECS Southeast LLP, and ACEC/PAC vice chair.

With an average of two open jobs per available employee, member firm employees were frequently too busy to participate in fundraising initiatives, Clyburn says. “Kudos to our PAC Champions across the country for asking early and often for contributions to the PAC and for producing off-hour educational events held at engaging venues,” he says.

The proudest moment of 2022 was surpassing \$1 million in ACEC/PAC giving on the way to a record-setting year, says Jason Matson, principal at Kimley-Horn and Associates and ACEC/PAC chair.

“On the advocacy side, our members should be pleased with the level of engagement by ACEC staff and members, allowing ACEC to have a seat at the table as it relates to the passing of the Infrastructure Investment and Jobs Act; continued efforts on Paycheck Protection Program loan forgiveness; creative solutions to our workforce challenges via science, technology, engineering, and math (STEM) education priorities; and encouraging the lifting of limitations on green card allotments,” Matson says.

Many people are responsible for this year’s success. “We owe it to our network of ACEC/PAC Champions, their respective state executive directors, as well as Member Organization leadership who continue to trade best practices and lessons learned for our fundraising and advocacy efforts,” Matson says.

The energy and enthusiasm among the larger states in competition for PAC bragging rights for highest contributing Member Organization has been exciting to experience firsthand, Matson says. “The fact that 2022 could finish with multiple states approaching or exceeding \$100,000 in giving is remarkable,” he says. “So special thanks to New York, Texas, Illinois, and California for their competitive efforts to land our national PAC in seven-digit territory in 2022.”

Member Organizations incorporated a lot of creativity to engage members in PAC giving during the COVID-19 pandemic, says Dawn Cartier, managing principal at CivTech Inc. and ACEC/PAC vice chair. “Prior to that, most activities were in person, allowing constant communication with members about the importance of giving to the PAC,” she says. “I really enjoyed Arizona’s PAC Smackdown, which engaged firms in competition with each other to help drive higher participation during the pandemic.”

Challenges remain ahead for ACEC/PAC, but the organization is prepared to take them on. Engaging member firm staff outside of the executive level is the biggest challenge, Clyburn says, as many executive-level staff will be exiting the industry as the baby boomer generation reaches retirement. “ACEC/PAC must continue to grow the base of its next generation of contributors,” he says.

The National PAC Team “has done a great job in providing tools and resources to increase synergy and member involvement in ACEC/PAC,” Clyburn says. “In addition to the messaging of



“Our board of directors has been very supportive.”

TONY ROOS
ACEC/PAC CHAMPION FOR ACEC OREGON
PRINCIPAL ENGINEER
KITTELSON & ASSOCIATES

By the Numbers

\$1,277,645

Total receipts for 2022

\$1,151,518

Total receipts for 2021

2022 ACEC/PAC Totals

32 Capitol Club Members (\$5,000)

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

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

3,043 Unique contributors

\$815,900 raised from the four PAC sweepstakes programs, with **5,606** entries

16 member firm federal PAC contributions totaling **\$54,400**

Giving the max contribution of \$5,000 were:

Michael Baker, Black & Veatch, CDM Smith, Hanson Professional Services, Huitt-Zollars, KCI Holdings, Terracon, and TranSystems

Top Member Firms in Employee Contributions

Kimley-Horn and Associates, Inc. – **\$71,511**

HDR – **\$20,035**

HNTB Corp. – **\$19,580**

BGE, Inc. – **\$17,000**

Gannett Fleming – **\$13,600**

WSP USA – **\$13,135**

Chen Moore & Associates – **\$12,450**

Terracon Consultants, Inc. – **\$12,445**

Thomas & Hutton – **\$12,200**

Burns & McDonnell – **\$10,775**

State Member Organization Achievements

46 states achieved their PAC goal

California raised the most (\$113,886), and **Illinois** had the most contributors (272)

Indiana was the first state to achieve its PAC goal and raised 232 percent over their goal

California and Texas achieved their goals for the first time

ACEC/PAC activities, improved ease of giving due to enhancement in the giving portals and the encouragement of use of the ACEC townhouse for fundraising events are examples of effective efforts from 2022.”

“The record-setting year was made possible through an industry team effort from our PAC Champions, Member Organization executives, and member firm contributors,” says Dave Bender, ACEC vice president of political affairs.

With many of the larger donors retiring from the industry, “this creates a need to get our younger engineers involved in the PAC and engaged in the political process,” Cartier says. “Our goal is to increase the number of individual donors, especially those newer to our industry.”

“We know as a leading PAC in Washington, D.C., that we must broaden the contribution base to a diverse, sustainable level,” Matson says. “So, I’m pleased the number of unique contributors continues to increase in many of the Member Organizations. We have learned that the likelihood of a first-time contributor to repeat their PAC engagement annually is high.”

The PAC experiences ongoing impacts to both its membership and its participation levels with increased merger and acquisition activity of member firms, Matson says. “We need to ensure as firms get larger through these activities that we overcome the erosion of PAC involvement and ensure larger firms are doing their part,” he says.

INNOVATIVE FUNDRAISING

Various ACEC/PAC state organizations around the country launched campaigns to achieve their goals in 2022.

ACEC Texas had record-setting PAC fundraising, according to Lee Lennard, ACEC/PAC Champion and president and CEO of BGE Inc.

For the first time in its history, the Texas PAC exceeded its goal and raised more than \$100,000, leading the fundraising among the state ACEC/PACs. “This was a team effort of many that raised awareness and engagement of Texas member firms,” Lennard says. “It was the culmination of a vision created in 2020 by ACEC Texas leadership that has Texas becoming deeply involved in and integrated into the overall political strategic plan of ACEC National.”

Texas significantly increased member participation in the National PAC, Lennard says. ACEC Texas President Peyton McKnight and members of the board toured the state as part of an “ACEC Texas Road Show” and shared a new “Roadmap to Member Engagement” plan and website.

The effort addressed some of the misconceptions held by members that political engagement is an activity limited to a few, Lennard says. “Instead, we led a grassroots effort with peer-to-peer recruiting, resulting in members getting in the game,” he says. “The program was a tremendous success, led to the success we see today, and provides momentum into the future.”

Texas member firms have for many years contributed to national candidates and incumbents through a robust direct giving program, Lennard says. “ACEC National is on a path to integrate and coordinate direct giving with the PAC,” he says. “When this is fully realized, ACEC will enjoy a multiplying effect in its advocacy and influence at the national level.”

In this future model, ACEC “will further leverage relationships with key elected officials using PAC dollars as seed money



“We owe it to our network of ACEC/PAC Champions, their respective state executive directors, as well as Member

Organization leadership who continue to trade best practices and lessons learned for our fundraising and advocacy efforts.”

JASON MATSON
ACEC/PAC CHAIR
PRINCIPAL
KIMLEY-HORN AND ASSOCIATES



“This creates a need to get our younger engineers involved in the PAC and engaged

in the political process. Our goal is to increase the number of individual donors, especially those newer to our industry.”

DAWN CARTIER
ACEC/PAC VICE CHAIR
MANAGING PRINCIPAL
CIVTECH INC.

The Annual ACEC-CT ACEC/PAC golf tournament at Keney Park, in Windsor, Connecticut. The foursome, pictured from left to right, are Craig Goff, STV Inc.; Dave Breza, STV Inc.; Steve Drechsler, Benesch; and Kevin Hussain, AI Engineers, Inc.



The ACEC townhouse hosted a fly-in for several ACEC Texas board members and national leaders. Pictured front row, left to right, are Gary Raba, Raba Kistner; Rep. Joaquin Castro (D-Texas); Peyton McKnight, President—ACEC Texas. Pictured second row, left to right, are Bob Jones, Jones Engineering Solutions; Edwin Friedrichs, Walter P Moore and Associates; and Lee Lennard, BGE, Inc.



ACEC Oregon held its ACEC/PAC golf tournament August 3, at the beautiful Chehalem Glenn course in Newberg, Oregon. Twenty players participated and generated more than \$4,000 in PAC contributions. Pictured, from left: Tracy Ellwein, Kevin Johns, and Chad Gipson—all with HDR.



"ACEC/PAC must continue to grow the base of its next generation of contributors."

DEREK CLYBURN
ACEC/PAC VICE CHAIR
PRESIDENT
ECS SOUTHEAST, LLP

and member firm direct giving to contribute significantly to our friends in Congress,” Lennard says.

In Connecticut, ACEC-CT members have been committed to supporting the ACEC National PAC for decades, says Kevin Hussain, associate vice president at AI Engineers and ACEC/PAC Champion for ACEC-CT.

“Originally, our Member Organization’s fundraising efforts featured a holiday party with gift baskets as a giveaway,” Hussain says. “This fundraising event was an opportunity to bring the members together to celebrate accomplishments while raising funds for the PAC so that ACEC could continue to have a strong voice in Washington, D.C. Educating our members as to the importance of supporting federal legislators who understand the issues impacting engineering not only in Connecticut but across the country is key to the success of our industry.”

ACEC-CT has transitioned the holiday party to a scholarship fundraiser to reward hardworking students who are looking to attend college and major in an engineering-related field, Hussain says.

Interest and support for the PAC has grown over the years, and ACEC-CT added a golf tournament as another fundraising event. “The annual golf tournament has become so successful that four-somes have sold out for the past three years,” Hussain says.

ACEC-CT first met its PAC goal in 2006, and its targeted amount has grown over the years. “We continue to not only meet our annual goal but surpass it,” Hussain says. “As chair of the ACEC-CT PAC committee, I am incredibly proud of our organization’s commitment to ACEC’s efforts on the national level. ACEC-CT members are looking forward to adding more PAC fundraising events that allow for the opportunity to educate our members

and federal legislators about the important issues facing the engineering profession.”

ACEC Oregon focuses on several major events each year to reach its goals. In January, it holds a Spring Sweepstakes in which each of its board members is assigned a list of prior contributors to contact, says Tony Roos, principal engineer at Kittelson & Associates and ACEC/PAC Champion for ACEC Oregon. The board president sends a letter to each of the prior year contributors to thank them, and major donors get a personal call from the board president.

In the spring, the PAC has its annual business meeting and hosts a giveaway, which counts toward the National Sweepstakes.

In the summer, ACEC Oregon hosts a PAC golf tournament. “Sponsors fund the tournament for us, and participants contribute to the PAC,” Roos says. Sponsors of the event are encouraged to send a young professional to play in the tournament at a reduced entry fee.

In the fall, the organization holds an Oregon Fall Conference, which features another giveaway opportunity with tickets costing \$200 each.

And in the winter, the board finishes the year with another round of calls to prior year contributors. In addition, major contributors (\$1,000 or more) automatically get a ticket in each giveaway and to the golf tournament, Roos says.

Oregon has made its annual PAC goal for at least the past 10 years, Roos says. The PAC committee has grown to three members. “We started with a small ask of \$100 per contributor and have slowly increased it to \$200 per contributor. Our board of directors has been very supportive.” ■

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



“Educating our members as to the importance of supporting federal legislators who understand the

issues impacting engineering not only in Connecticut but across the country is key to the success of our industry.”

KEVIN HUSSAIN
ACEC/PAC CHAMPION FOR ACEC-CT
ASSOCIATE VICE PRESIDENT
AI ENGINEERS



“Instead, we led a grassroots effort with peer-to-peer recruiting, resulting in members getting in the game. The

program was a tremendous success, led to the success we see today, and provides momentum into the future.”

LEE LENNARD
ACEC/PAC CHAMPION FOR ACEC TEXAS
PRESIDENT AND CEO
BGE INC.



ACEC COALITIONS ADDRESS DAUNTING WORKFORCE SHORTAGE WHILE EMBRACING BUSINESS GROWTH OPPORTUNITIES

BY BOB VIOLINO



"For employees to be retained by a firm or to stay in the field of engineering, they need to see

a pathway to their future."

JOHN BURNS
CHAIR
COALITION OF AMERICAN MECHANICAL AND
ELECTRICAL ENGINEERS (CAMEE)
SENIOR VICE PRESIDENT
BURNS ENGINEERING



"We are seeing an issue with finding enough field staff. Two things we are doing in response to this are facilitating roundtables

within ACEC and partnering with other geoprofessional organizations to tackle this issue."

JEFF GEBHARD
CHAIR
GEOPROFESSIONAL COALITION (GEO)
VICE PRESIDENT
BRAUN INTERTEC

The leaders of ACEC's seven coalitions are prepared to deal with an array of market challenges facing the industry, while at the same time looking to leverage new opportunities for business growth.

These coalitions are groups of firms organized by practice. They are the foundation of ACEC and represent each of the organization's key market sectors. The level of experience and insights they contribute helps ACEC better advocate for their interests in Washington, D.C.

The seven coalitions include the Coalition of American Mechanical and Electrical Engineers, Coalition of American Structural Engineers, Coalition of Professional Surveyors, Geoprofessional Coalition, Land Development Coalition, Small Firm Coalition, and Design Professionals Coalition.

These coalitions are facing a range of challenges, says **Ken Brown, Coalition leaders chair** and project team leader at CHA Consulting. These include finding and retaining experienced staff at a time when there is a lack of students entering into the engineering field, and dealing with post-pandemic fall-out such as the remote work model. "The coalitions are focused on attracting young students into each respective discipline. Scholarships and career fair attendance are a couple of the programs being implemented," says Brown.

At the same time, the coalitions are presented with big opportunities for business expansion. Chief among these are the Infrastructure Investment and Jobs Act (IIJA), a \$1.2 trillion bill that is aimed at modernizing the nation's infrastructure, and

the Inflation Reduction Act of 2022, which represents the single biggest investment in climate action in U.S. history.

Each coalition also faces its own unique challenges and opportunities, and leaders and members are poised to tackle these as effectively as they can.

ADDRESSING CHALLENGES

The various coalitions are facing a number of business and industry issues, some more urgent than others.

The Coalition of American Mechanical and Electrical Engineers (CAMEE) is focused on two areas: development of qualified engineers and decarbonization of the built environment, says **John Burns, chair of CAMEE** and the COO and senior vice president of Burns Engineering.

"With a tight labor market and strong demand for mechanical, electrical, and plumbing (MEP) engineering services, CAMEE is helping member firms advance their technical learning and professional development," Burns says.

Such efforts are imperative for employee retention and for the future of the industry. "For employees to be retained by a firm or to stay in the field of engineering, they need to see a pathway to their future," he says.

CAMEE will soon release a road map of skills for MEP and fire protection engineers. The publication describes the skills and competencies at each level throughout the career progression. "This tool will allow member firms to easily create development plans for their technical staff and to discuss goals and expectations for career growth," Burns says.



"One of the largest issues we face is a shortage of experienced employees and new employees entering the survey field."

RICHARD SULLIVAN
CHAIR
COALITION OF PROFESSIONAL SURVEYORS (COPS)
VICE PRESIDENT
PSOMAS



"Our clients' capacity to deliver their current capital programs and ongoing operations is starting to show strain due to workforce challenges."

JOHN EDDY
CHAIR
DESIGN PROFESSIONALS COALITION (DPC)
PRINCIPAL
ARUP

Workforce needs are also a challenge for the Geoprofessional Coalition (GEO). "We are seeing an issue with finding enough field staff," says **Jeff Gebhard, GEO chair** and vice president of Braun Intertec. "Two things we are doing in response to this are facilitating roundtables within ACEC and partnering with other geoprofessional organizations to tackle this issue."

GEO also supports the larger ACEC workforce initiatives such as STEM education and showcasing project award winners to show children the value of the profession, Gebhard says.

Reducing greenhouse gas emissions is a major focus of federal, state, and local governments, Burns says, and mechanical and electrical engineers play a significant role in reducing emissions from buildings. Systems such as lighting and HVAC are designed for energy efficiency, and heating and cooling equipment powered by fossil fuels is being replaced with electric machines, he says.

CAMEE is developing contract language guidance to define the role of reducing emissions for both the engineer and the facility owner. "The engineer should not be liable for fines if the owner is not operating the MEP systems properly," Burns says. CAMEE plans to collaborate with ACEC's Government Affairs team to educate them on MEP engineers' role in decarbonization, so that CAMEE is a resource for government policy and can convey the value of the engineer's role.

For the Coalition of Professional Surveyors (COPS), the lack of skilled workers is a key challenge.

"One of the largest issues we face is a shortage of experienced employees and new employees entering the survey field," says **Richard Sullivan, chair of COPS** and vice president of Psomas.

"We are working on ways to highlight and educate students about the surveying profession at the high school and junior college level, as well as retention of existing staff," Sullivan says. "We also provide publications for companies to use for training and career advancement."

The future of the workforce is the dominant topic within the Design Professionals Coalition (DPC) meeting programs and the very large firm roundtable discussions the coalition hosts at ACEC's annual and fall meetings.

"This topic encompasses increasing the inflow of young, diverse, and inclusive talent; securing higher hourly rates for higher salaries; trialing adaptive ways of working; and promoting the value engineers bring society," says **John Eddy, chair of DPC** and principal at Arup. "Our clients' capacity to deliver their current capital programs and ongoing operations is starting to show strain due to workforce challenges."

DPC is in the early days of crafting potential solutions such as helping clients manage procurements to better meet their project delivery obligations and operational imperatives, even with limited resources.

Small firms are facing a number of challenges today, including staffing, ownership transition, IT security, and health care to name a few, says **Brandon Claborn, chair of the Small Firm Coalition (SFC)** and CEO of Meshek & Associates LLC.

"During our CEO roundtables, we share our experiences and learn from one another about how to better manage these issues," Claborn says. "Specifically, the SFC sponsored a webinar on cybersecurity that was developed for issues facing small firms. We also worked to provide a project management training course designed for small projects in response to feedback from our members."

The members of the Coalition of American Structural Engineers (CASE) are also facing challenges, which include recruiting, hiring and retaining talent, adapting to a virtual workforce, and preparing for the next generation of firm leaders, says **Kevin Chamberlain, chair of CASE** and principal at DeStefano & Chamberlain. An effective way to address these is frequent collaboration.

"The best thing CASE does is meet in person twice or more each year for networking and committee work," Chamberlain says.

During conferences, CASE hosts a roundtable that's focused on business practice topics of most interest to firms.

"It's a tremendous benefit to learn what issues are affecting other firms," Chamberlain says. "Our membership has a diverse range of firm types, sizes, locations, and area of practice, and yet there are a lot of commonalities in the topics people want to dig into."

The talent shortage is also a challenge for the Land Development Coalition (LDC).

"One of the biggest challenges that is affecting civil engineering firms is the lack of qualified talent to meet demand,"

according to **Paul Navarro, LDC chair** and president and CEO of Navarro & Wright Consulting Engineers. "Over the last several years, low interest rates fueled the surge of real estate projects including residential, commercial, and industrial projects. Also, many municipalities refunded their bonds at lower rates, which gave them infusions of capital to undertake deferred maintenance of public infrastructure."

In addition, "Our coalition has published several papers on recruiting and retaining talent and adapting to the new hybrid work model that many firms resorted to during the pandemic," Navarro says. "Much of the remote workforce has now chosen to work from home permanently, which presents other challenges. We regularly share our experiences with the member base on how to best deal with those challenges."

MARKETPLACE TRENDS AND OPPORTUNITIES

Even as they are addressing challenges, the coalitions are taking advantage of the latest trends in the marketplace that create opportunities for business growth and success.

For a lot of firms, the U.S. government's major emphasis on infrastructure enhancement via the IIJA presents many opportunities.

"We are very excited about the nationwide focus on infrastructure," Sullivan says. "This has the potential to create new markets as well as boost existing ones."

The increasing investment in infrastructure at the federal level and in many states is great news for small firms, Claborn says. "We specialize in building relationships with our clients and



"During our CEO roundtables, we share our experiences and learn from one another about how to better manage these issues."

BRANDON CLABORN
CHAIR
SMALL FIRM COALITION (SFC)
CEO
MESHEK & ASSOCIATES LLC



"The coalitions are focused on attracting young students into each respective discipline.

Scholarships and career fair attendance are a couple of the programs being implemented."

KEN BROWN
COALITION LEADERS CHAIR
PROJECT TEAM LEADER
CHA CONSULTING

have solid understanding of local issues,” he says.

GEO members also see opportunities from the growing focus on infrastructure improvement.

“The public sector appears to be strong with additional funding from the IIJA,” Gebhard says. In addition, “climate change offers interesting opportunities for geoprofessionals who must deal with resilient infrastructure and flood/drought mitigation.”

LDC members are also excited about the market opportunities due to the IIJA.

“We remain very optimistic that the energy sector will continue to provide opportunities with the electric vehicle movement and the necessary improvements to the electric grid,” Navarro says. “The IIJA proposes to invest heavily on various sectors of infrastructure including transportation, broadband, energy, and climate change, so all these areas require civil engineering as part of their delivery. Our members will play a strong role in making projects in all those areas a reality.”

The economy overall is being challenged by inflation, supply chain issues, and rising interest rates, “all things which can chill the construction market,” Chamberlain says. “Despite this, the demand for structural engineering services remains strong and steady. Our members can never seem to hire enough engineers to handle all the work clients want done. With a finite number of structural engineers able to deliver projects, firms are able to be more selective and command the fees they deserve.”

The decarbonization movement also has significant impacts and opportunities for mechanical and electrical engineers,

Burns says. Public agencies, private entities, and institutional clients are focused on environment and sustainability initiatives, he says.

“Buildings, campuses, manufacturing plants, and mobility fleets are being retrofitted with lower emission systems to reduce their carbon footprint,” Burns says. “For CAMEE members, this means engineering services for electric vehicle charging, building energy consumption studies, boiler/chiller replacements, high efficiency system upgrades, and many other services. Mechanical and electrical engineers are the leaders in developing and implementing decarbonization solutions.”

Environmental issues are also providing opportunities. “At our core, DPC member firms advise our clients on how to select the best paths to achieve their objectives and support them along those paths,” Eddy says. “The climate-driven imperatives of decarbonizing our power supply, bringing water in and keeping water out, and ever hotter and often burning regions of our planet are shaping our clients’ needs and the upskilling we are currently doing to better help them.”

Improving social equity will have an increasingly prominent place in the missions of DPC members’ clients, “and we are working at pace to support their missions,” Eddy says. “Continuing to shed light on solutions that benefit impacted communities will help drive the needed change in project planning and implementation to remedy historic social inequities and prevent new ones.” ■

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



“One of the biggest challenges that is affecting civil engineering firms is the lack of qualified talent to meet demand.”

PAUL NAVARRO
CHAIR
LAND DEVELOPMENT COALITION (LDC)
PRESIDENT AND CEO
NAVARRO & WRIGHT CONSULTING ENGINEERS



“It’s a tremendous benefit to learn what issues are affecting other firms. Our membership has a diverse range of firm types, sizes, locations, and area of practice, and yet there are a lot of commonalities in the topics people want to dig into.”

KEVIN CHAMBERLAIN
CHAIR
COALITION OF AMERICAN
STRUCTURAL ENGINEERS (CASE)
PRINCIPAL
DESTEFANO & CHAMBERLAIN

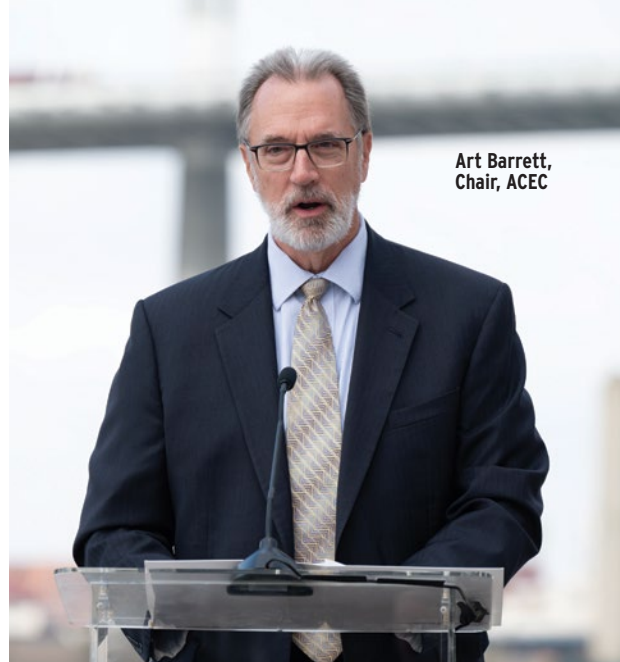
Engineering & Public Works Roadshow Officially Launched

The Long Beach International Gateway Bridge and the Port of Long Beach are recognized for improvements to the U.S. supply chain

Cyber Monday marked the official start of the national Engineering & Public Works Roadshow, which highlighted how infrastructure investment can improve a community and spark economic growth with its inaugural stop at the Long Beach International Gateway Bridge and the Port of Long Beach in California.

The Engineering & Public Works Roadshow is a joint partnership of the American Council of Engineering Companies (ACEC), the American Public Works Association (APWA), and the American Society of Civil Engineers (ASCE) and represents the first time that the leading organizations representing the designers and public operators of America's infrastructure have joined together to shine a spotlight on what successful infrastructure investment means for the nation's economy, jobs, the environment, and our future.

Project management/construction management services for the bridge project, which received a prestigious Grand Award at the 2022 Engineering Excellence Awards Gala last year, were provided by WSP USA. The design-build project was designed by Arup with the collaboration of ACEC member firms Biggs Cardosa Associates, BKF, Kimley-Horn, and Leighton. Parsons Transportation Group and HNTB provided preliminary engineering and design oversight services for the project. The bridge, which opened in 2020, replaced the decades-old Gerald Desmond Bridge and now provides significantly enhanced clearance for larger container ships to service the ports of Long Beach and Los Angeles, while giving commuters more lanes of traffic and a safer crossing and providing greater seismic resilience. The Port of Long Beach handles \$200 billion in trade annually and sustains 1 in 5 local jobs, more than 575,000 jobs in California, and 2.6 million jobs across the nation. The International Gateway Bridge is an integral part of this success.



Art Barrett,
Chair, ACEC



Tom Smith,
Executive Director,
American Society
of Civil Engineers

"America's ports are the engine that keeps commerce flowing, and with every click to add to an online shopping cart this holiday season, the supply chain kicks into action," said ACEC President and CEO Linda Bauer Darr. "Bridges like this one connect the world to our doorsteps, and they would not be possible without the time, talent, and dedication of engineers and their partners in public works who design, build, and maintain it all."

"More than half a million engineers call California home, and their work contributes billions of dollars to America's economy," said ACEC Chair Art Barrett. "Still, we need thousands more engineers to do the work made possible by the Bipartisan Infrastructure Law. We're here to celebrate the amazing economic contribution of the Long Beach International Gateway Bridge through the work of dedicated public and private sector engineering and public works professionals. We hope this can be the spark that inspires the next generation of engineers to make their mark in improving the nation."

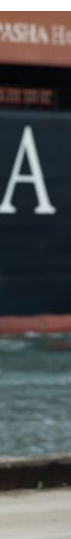
As the federal government continues to implement this monumental legislation, the second year of the Infrastructure Investment and Jobs Act (IIJA) will not be fully realized without



Linda Bauer Darr,
President and CEO, ACEC



Congressman
Lou Correa
(D-Calif.)



Andrew Rogers,
Chief Counsel,
Federal Highway
Administration



Scott D. Grayson, CEO, American
Public Works Association

an expanded and robust workforce. It is imperative that students nationwide are educated on the rewarding careers of civil engineering and public works so that these professions have the necessary staffing to complete transformative projects.

“A year after President Biden signed IIJA into law, the bipartisan measure is threatened by Congress’ ongoing reliance on continuing resolutions,” said APWA CEO Scott D. Grayson. “One needs only to visit this fantastic bridge to see how infrastructure transforms communities and to understand how engineers and public works employees are vital to the work.”

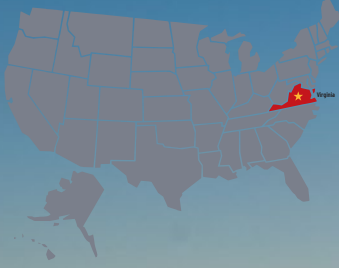
“When Americans flip on their lights, drink water from the tap, or accept Amazon packages delivered straight to their doorsteps, they often forget the monumental engineering achievement behind each of these seemingly mundane daily services,” said Tom Smith, ASCE executive director. “The Long Beach International Gateway Bridge and other recent innovations at the Port of Long Beach are examples of what can be accomplished when bright minds come together to make the world a better place, and we’ll need more of that in the years to come.”

At the Engineering & Public Works Roadshow event, leaders

from each organization were joined by officials from the Port of Long Beach, federal and state representatives from the U.S. Department of Transportation’s Federal Highway Administration, Caltrans, Congressman Lou Correa (D-Calif.), and other notable professionals in engineering and infrastructure. The hard work of ACEC California leadership, especially Executive Director Brad Diede and President Raul Laborin, ACEC California Past Presidents Kurt Yoshii and Miranda Patton, and WSP USA Senior Vice President Bryce Little, to help organize this event resulted in its success.

The Roadshow plans to showcase innovative projects like the new Long Beach International Gateway Bridge across the country to demonstrate the essential value that engineering and public works deliver to every American and to attract more people to the profession. Eighty-two thousand new engineers will be needed to fulfill the mandate of the IIJA.

As the schedule for future Roadshow events is finalized, details will be posted on www.infrastructureroadshow.org, where members can view the livestream and photo gallery from the Long Beach event. ■



**COLLABORATION HELPS THIS MEMBER ORGANIZATION OVERCOME
CHALLENGES—FROM A SHORT LEGISLATIVE SEASON TO WORKFORCE ISSUES**

BY STACEY FREED

ACEC VIRG



ACEC VIRGINIA AT A GLANCE

Incorporated in 1968 with 31 member firms, ACEC Virginia now represents approximately 120 firms with 5,800 employees.

Since 2003, the Member Organization has been led by President Nancy Israel, who is only the third person to hold the position. ACEC Virginia is led by a board of directors, including Eric Burke, chair (2021-2022) and national director; Chadd Yeatts, chair-elect; and Michael Matthews, current chair of the board of directors.

Richmond, Virginia, downtown skyline.

"Maybe we'll bring in a hostage negotiator," says Nancy Israel, ACEC Virginia's president. Israel isn't worried she's about to face a dire situation. She is referring to a keynote speaker for the AEC Conference that ACEC Virginia is planning for April 25-26, 2023.

"It might be a little out of the box, but who better to talk about negotiating? I find that engineers like things that make them think. It's one of the things I've always loved about working with them," she says.

Israel has been leading ACEC Virginia since 2003, helping to guide the organization through the Great Recession and smaller national fiscal crises, as well as the recent COVID-19 pandemic and legislative challenges on issues ranging from Qualifications-Based Selection (QBS) to indemnification to term contracts to pay-if-paid. But the biggest challenge facing engineers in Virginia—and the overall engineering industry—is that there just aren't enough of them. "It's workforce, workforce, workforce," she says.

ACEC VIRGINIA'S COMMITTEES STEP IN

ACEC Virginia's education committee, one of the organization's 12 volunteer committees, is one of the most important because its mission is vital to answering questions about the labor shortage.

The U.S. has only about 70,000 engineering graduates per year, says Michael Matthews, chair of ACEC Virginia's board of directors and CEO and president of The Structures Group, a consulting engineering company with a specialty in structural design and forensic analysis. "China has approximately 600,000 engineers and India 350,000," he notes. "Seventy thousand just isn't going to cut it. All the engineering firms are feeling it. If we intend to build our businesses, we must create a bigger pipeline."

ACEC Virginia's board of directors and committee chairs meet periodically with the deans of Virginia engineering schools to learn about curricula, "to collaborate on how to bolster their offerings to meet what we need as employers," Matthews says. "We also encourage regional VPs to take an interest in promoting science, technology, engineering, and math (STEM) in their own region."



"All the engineering firms are feeling it. If we intend to build our businesses, we must create a bigger pipeline."

MICHAEL MATTHEWS
CHAIR
ACEC VIRGINIA BOARD OF DIRECTORS
CEO AND PRESIDENT
THE STRUCTURES GROUP



New U.S. Embassy Campus, Jakarta, Indonesia, by Mason & Hanger
Grand Award Winner, 2022 Engineering Excellence Awards.



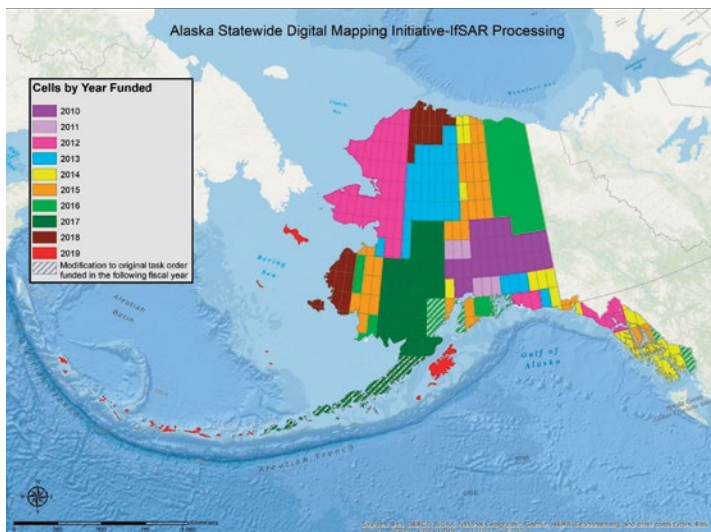
"I find that engineers like things that make them think. It's one of the things I've always loved about working with them."

NANCY ISRAEL
PRESIDENT
ACEC VIRGINIA

In his firm, Matthews champions STEM programs for fifth through seventh grade students. "During Engineers Week in February, my firm will present engineering workshops to the STEM programs within the local middle schools," Matthews says. "We also participate in the Greater Richmond Council of Teachers of Mathematics, where middle schoolers are brought to the University of Richmond for a series of 50-minute workshops to illustrate aspects of engineering and get them excited about building projects." Additionally during Engineers Week, his firm rents a theater in the local cinema for a day to show "Dream Big: Engineering Our World," a 40-minute documentary narrated by Jeff Bridges, to help inspire or ignite the students' interest in engineering.

ACEC Virginia also keeps up with the education pipeline of working engineers through its NextGen committee, which uses networking events to help newer professionals engage with the organization and understand its importance to their careers, and in developing talent through its Emerging Leaders Institute and Enhanced Leadership Program.

Janet Webster, the first female president of ACEC Virginia (June 2020–June 2021), went through the Emerging Leaders program in 2012. A principal at Clark Nexsen, she says the year-



Alaska Statewide Mapping, by Dewberry
Detailed mapping of elevation in the State of Alaska
Pinnacle Award Winner, 2022 Engineering Excellence Awards.

long program was one of the most impactful leadership learning opportunities she has ever experienced. Attendees learned how to be a leader in a firm, which included sessions on soft skills and human resources, as well as contracts and finance issues.

“Through the training program, I recognized the importance of giving back to the engineering community. I got on the education committee and was chairing it soon after. Then I was asked to join the board four years ago,” Webster says.

As a woman in the industry, she is keenly aware of issues facing underrepresented talent. During her tenure as president, she started a Diversity, Equity, Inclusion, and Belonging (DEI&B) group. “It started as a women’s group,” she says, “but during my presidency there was a lot of unrest in the world, and it became clear the group needed to be about more than just women in STEM careers.”

The unit began conducting Zoom roundtables and reached out to member firms to gather information on how those firms



“We were overwhelmingly surprised by the participation of our membership. They volunteered to help and provide the group with content.”

JANET WEBSTER
PAST PRESIDENT
ACEC VIRGINIA
PRINCIPAL
CLARK NEXSEN

were working on diversity issues. “We were overwhelmingly surprised by the participation of our membership. They volunteered to help and provide the group with content,” Webster says.

The DEI&B group worked with the Virginia Center for Inclusive Communities and Richard Coughlan, faculty director of executive education at the University of Richmond’s Robins School of Business, to create content that could be shared at the annual conference. “They offered professional content that was both inspirational and HR-oriented,” she says.

WORKING THE LEGISLATURE

While the pandemic slowed things down for everyone, the legislative engine never stops. Israel says she spends the first two weeks of January each year reading thousands of bills headed for the state’s General Assembly to find those that will impact the engineering industry. “I might see one that’s environmental or energy related—is there something in it we should be concerned about? Then I work with the subject experts in that area to come up with revised language,” says Israel, who long ago hired a lobbyist to work with the organization. She explains that Virginia has the shortest legislative session in the United States. “Our long session is 60 days, and our short session is only 45 days. The reality is that we have to have it all together before the sessions. If there is conflict over a bill during the session, it is tabled until the next year.”

Israel prides herself on working collaboratively with other organizations, such as the American Institute of Architects, the Associated General Contractors of America, and state agencies, and she has developed solid working relationships with legislators. This effort helps her determine the concerns and possible conflicts to make sure any needed opposition to a bill impacting ACEC Virginia members is prepared before the session begins.

One recent example was the effort to change the language in a bill covering term contracts. “The law had been changed, modified, and changed again, until we literally had a full-page spreadsheet of who was allowed how much money for how long and all these different clarifications. It was crazy to try to keep up with. So we introduced a bill that basically leveled the playing field,” Israel says.

It took two years to work through the issues with all the stakeholders. ACEC Virginia defined the issue and industry needs with its lobbyist, who created a spreadsheet of all the different ways the term contracts were available to state and local governments. ACEC Virginia talked with the state agencies affected and met with stakeholders, such as the Virginia Association of Counties, the Virginia Municipal League, and the Virginia Association of Governmental Purchasing. Ultimately, ACEC Virginia prevailed, and the new ruling took effect July 1, 2022. “It was a good win, something important to the industry,” Israel says.

She’s not quite sure what the next big legislative battles will be, but she believes they’ll likely have to do with environmental issues or energy. “There’s a lot of churn, and we don’t know what’s going to come up. Not everyone tells us what they’re going to do. But there’s never a dull moment.” ■

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



Building Bridges

THORNTON TOMASETTI HELPS COMMUNITIES AT HOME AND ABROAD

BY MICHELE MEYER

“When others say ‘No,’ we say, ‘Here’s how.’” That’s the mindset of Thornton Tomasetti, the New York City-based organization of engineers, scientists, architects, and other professionals.

With nearly 50 offices around the globe, Thornton Tomasetti has worked on many of the world’s tallest skyscrapers, including the 128-floor Shanghai Tower and Manhattan’s 101-floor 30 Hudson Yards.

The firm’s community service goals are also sky-high. “When I came here 12 years ago, I saw people volunteering on their own time,” says Corporate Responsibility Officer Amy Hattan. “I was touched by their generosity but realized there was no avenue to track and expand it.”

So Thornton Tomasetti established paid volunteer time in 2014 and launched Thornton Tomasetti Gives Back, a community service program that aims to boost the yearly hours employees give by 10 percent.

Under its partnership with Bridges to Prosperity, Thornton Tomasetti funds employee teams for the construction of pedestrian bridges in remote locations. Senior Principal Mark Coggin (pictured) was among the volunteers who constructed a 50-meter suspension bridge (inset) in Boca de Lura, Panama.



Along with volunteerism, the firm commits its financial support to various causes. Last year, Thornton Tomasetti and its independent, mostly scholarship-oriented 501(c)(3) Thornton Tomasetti Foundation gave \$467,000 to organizations such as Habitat for Humanity and the Global Orphan Project.

But Thornton Tomasetti Gives Back is about time, not money. It's driven by the hard work of the staff, via three programs: the Volunteer Days Program, the ACE Mentor Program, and Bridges to Prosperity.

HELPING NEIGHBORS

Employees can devote two salaried days each year to community projects. The first day involves personal passions such as

volunteering for animal shelters, serving at soup kitchens, or cleaning parks. The second day is a group effort linked to architecture or engineering.

Helping to organize such activities are the firm's Green Champions—60 corporate responsibility leaders who strive to meet Thornton Tomasetti's goal of operating carbon neutral by 2030.

"After the pandemic, our employees were eager to get out and have a hands-on experience," says Luis Mauricio-Perez, a senior engineer in Denver. "They are passionate about giving back to the community."

The Denver Green Champions used a \$1,000 Thornton Tomasetti Corporate Responsibility grant to spend a day cleaning up City Park near Thornton Tomasetti's office. "We spread 12 yards of mulch and collected 200 gallons of weeds and 240 gallons of debris that day," Mauricio-Perez says.

Employees in Philadelphia also groomed, mulched, and planted gardens of tomatoes and peppers at a local park.

"We created a welcoming space for the community," says Allison Partridge, project engineer in the Philadelphia office.

Hattan's Portland, Maine, office planted a garden at a local preschool and introduced children to organic produce. "The kids and teachers loved it, and it was a great bonding activity for our staff," she says.

"Being more hands-on also helps us with our work," Partridge says. "Connecting with the community makes you think more about your designs' impact."

BUILDING THE TALENT PIPELINE

Like many of her colleagues, Partridge devotes paid time off for mentoring school children through the ACE Mentor program. It inspires and trains 10,000 high school students nationally in architecture, construction, and engineering, with 90 percent of Thornton Tomasetti offices in the U.S. participating in the program.

The firm has been closely aligned with ACE Mentor since its 1994 beginnings, when Charles Thornton, a Thornton Tomasetti founder, helped devise the program to introduce high school students to the industry. The program also awards \$2.5 million in college scholarships to students each year.

"ACE Mentor's mission is to create a pipeline of new talent," says Geoff Dauksas, vice president in Thornton Tomasetti's Chicago office.

Mentors teach students the basics by helping them draw plans as architects and designers do, calculate costs as contractors would, construct models as engineers would, and then present their work. Some students go on to intern at Thornton Tomasetti or elsewhere.

"It's so inspiring to see them develop," Partridge says. "It reminds me why I became an engineer."

Last year, the firm's ACE Mentors devoted 2,000 hours to the program. Sixty-nine percent of the students are from minority groups, 40 percent are female, and 25 percent will be first-generation college students.

While sharing their expertise with the younger generation, mentors are also honing their own skills in project management while networking with fellow professionals.

"But the biggest reward is seeing these students succeed in the industry," says Dauksas. "Much of the credit goes to our team, who really care about the students and go that extra mile to help enrich the lives of others."

EXPANDING EFFORTS ACROSS THE WORLD

Nonprofit group Bridges to Prosperity builds footbridges in isolated and impoverished rural communities where rivers cut people off from schools, health care, and jobs.

"It's heartwrenching that people drown before a footbridge is built," Hattan says. "We can fix that while helping people become economically self-sufficient."

Partnering with Bridges to Prosperity, Thornton Tomasetti has built bridges in Panama and Rwanda. Teams of 10 employees, each of whom plays a specific role including project lead, construction lead, and community engagement liaison, spend two weeks on the projects.

The cost to Thornton Tomasetti has topped \$100,000 for materials, travel, and paid time off. That figure is expected to grow this year, when another team heads to Rwanda in July.

The human value is immeasurable, says Mark Coggin, senior principal in the Philadelphia office. He went to Panama during Thornton Tomasetti's 2018 international service trip.

"We rarely see how we make an impact on people's lives," he says. "We design on paper and interact with contractors. But I got to meet people who live a very simple life, who were so accepting of and thankful for our help."

The trip's destination was an isolated mountainous rainforest community that was a three-hour drive from Panama City.

"It wasn't even big enough to call a village," Coggin says. "It rained every day, and people couldn't cross the river until the torrents subsided. Mothers would have to guide their children through the river to get them to the school, which was just a concrete slab and a roof containing two classrooms."

Each evening, community members cooked meals for team members, who played soccer with the kids. When the bridge was done, "the community made a huge meal for us and played music," Coggin says.

But the biggest reward was seeing children walk across that bridge, Coggin says. He views things differently after having had that experience.

"My 'rough' commute is riding a train to work," he says. "I don't have to take crops on a horse through muddy roads in a rainforest. Now I appreciate things more and get upset less often. I took away a lot from that experience."

The diverse team built not just a bridge, but a bond among themselves. "We've stayed in touch," Coggin says. "We worked long, exhausting hours in hot, humid conditions, but nobody complained because it was such a worthy cause."

Many Thornton Tomasetti volunteers apply for such teams, Hattan says. "It's very sought-after. Employees come back so energized and say the experience was the best thing they've done in their lives."

"I know it changed me," Coggin says. "It's great to work at a place that values helping others and cares enough to make this happen." ■

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



Thanks to a pedestrian bridge constructed by Thornton Tomasetti and Bridges to Prosperity in Boca de Lura, Panama, community members can now access the local market, health center, and schools even during periods of extreme flooding.



"Being more hands-on also helps us with our work. Connecting with the community makes you think more about your designs' impact."

ALLISON PARTRIDGE
PROJECT ENGINEER
THORNTON TOMASETTI



"The biggest reward is seeing these students succeed in the industry. Much of the credit goes to our team, who really care about the students and go that extra mile to help enrich the lives of others."

GEOFF DAUKSAS
VICE PRESIDENT
THORNTON TOMASETTI



Thornton Tomasetti's Denver team helped clean up City Park, one of the area's largest green spaces, during a volunteer event organized by the office's Green Champions.

HIDDEN BENEFITS TO COMPANY GIVING

Volunteerism is good for the community and employees alike.

Volunteerism benefits recruitment. "Younger people especially are excited to help out," Hattan says.

Serving builds bonds between employees. "People connect to the company and to their coworkers," she says. "It builds trust and teamwork in a natural way."

Helping others can build an employee's soft skills. "Being involved in programs like ACE Mentor can boost a person's confidence and abilities," Hattan says. "It can impact everything from leadership to public speaking."

Clients take note. "They see you care about your community," Hattan says.



"It's great to work at a place that values helping others and cares enough to make this happen."

MARK COGGIN
SENIOR PRINCIPAL
THORNTON TOMASETTI



"After the pandemic, our employees were eager to get out and have a hands-on experience. They are passionate about giving back to the community."

LUIS MAURICIO-PEREZ
SENIOR ENGINEER
THORNTON TOMASETTI



"Employees come back so energized and say the experience was the best thing they've done in their lives."

AMY HATTAN
CORPORATE RESPONSIBILITY OFFICER
THORNTON TOMASETTI



ACEC

Business Insurance Trust

Engineered for Peace of Mind

Reducing Overhead Expenses

EVALUATE YOUR INSURANCE PROGRAM

With the uncertainty of the current economic slowdown, the potential for stagflation, and staffing difficulties, firms are aggressively moving to manage costs. With project delays and shutdowns, clients processing invoices slower, and new opportunities delayed or limited, managing expenses and overhead costs is critical.

One area for potentially significant cost reductions is business insurance. Total insurance program costs for professional services firms average from roughly 1 percent to as much as 3.5 percent of gross revenue. Depending on the size of your firm, the potential for savings ranges from thousands to millions of dollars.

SHORT-TERM INSURANCE PREMIUM SAVINGS

Has your firm been provided with a benchmark report showing what comparable firms pay for insurance? Without access to legitimate and meaningful benchmark data on insurance program design, coverage, and cost, you do not have the data to determine if your firm has a competitive deal. Not every insurance broker has the needed data for benchmarking for three typical reasons:

- Many insurance brokers operate only in a single regional market and do not see program design and pricing throughout the country. While it's not supposed to happen, some insurance companies are more competitive in some regions than others.
- There is no sharing of data. An insurance broker with multiple offices, or account managers who operate in silos without collaboration across teams and offices, do not aggregate information in a way that allows competitive analysis.
- Many brokers simply lack the client portfolio for effective benchmarking and thus offer only what wholesalers or insurers can provide or offer no benchmarking at all. Even those insurance brokers with enough clients in the professional services space to create benchmark data can only do so by revenue—but not by discipline. Rates, limits, and retentions vary tremendously among disciplines.

The key to effective benchmarking is not only collection of information for similar sized firms but also those with similar disciplines. To further drive home the point on the importance of

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.

insightful comparative data, here are some examples of potential scenarios and solutions that could impact the cost of insurance:

Misunderstood Exposure: The underwriter of a unique firm may misunderstand the exposure thinking it is a lot riskier than it is. After successful communication, the underwriter's opinion could be changed, and the premium reduced.

Multiple Policies: As a design firm grows and adds new services and exposures, the insurance broker keeps adding new policies. The correct solution is not more policies but simply to find a new insurance company that could handle all exposures in one policy, reducing cost.

No Other Design Firm Clients: The service team at a large national broker may not be experienced in serving design firms. The bigger broker was selected for their perceived market “clout” rather than their familiarity with the client's unique needs.

Excessive Limits: In some cases firms will purchase, perhaps on the advice of their broker, a policy limit well in excess of what benchmark data indicates their peers have purchased.

LONG-TERM RELATIONSHIPS

For many firms, a long relationship with an insurance company or broker provides certainty and peace of mind. Insurance is a product that depends on trust—design firms pay premium now for the promise of quality coverage and claim service in the future. A long-term arrangement should result in a good deal for both sides. But is that always the case? And is the perceived trust warranted? In cases where a design firm makes the decision to leave a long-term broker relationship, they might be surprised by one or all the following issues:

- The premium that had been paid in the past, often for many years, is much higher than prevailing benchmarks. The cumulative additional cost incurred can be substantial.
- Coverage gaps can be considerable. Despite higher premiums, firms are unknowingly uninsured for major risks. As one example, a firm that mostly does work for public entities may have an exclusion in their policy for all work done for government agencies.
- Some design firms outgrow their insurer. Many insurance carriers specialize in representing firms of a particular size or discipline or focus on smaller firms with revenues below a certain threshold. The insurer may maintain an insured as they grow but normally at a less competitive premium with gaps in coverage.

Loyalty should result in a better deal, with lower premiums and better coverage, but that is not always the case. Usually one of two things has happened:

- The insurance program suffers neglect and drifts higher, just a little each year, than market pricing. Over several years, the cumulative difference become considerable.
- The incumbent broker has limited experience working with design firms and is unaware of what options are available.

The argument isn't against long-term relationships between insurance companies and insureds. However, an insurance program must be properly tested against market pricing so an “open book” decision can be made on cost and coverage. This can be achieved without planning to obtain competitive options each year – which could exhaust underwriters and leave the insurance marketplace less competitive over time—by using benchmark data and the timeframe outlined below.

TIMING MATTERS

While it might seem an easy goal to achieve, few insurance brokers complete the renewal process well ahead of policy expiration. Last minute renewals result in a time crunch that limits options, reduces negotiating strength, gives little time for making decisions, and causes late issuance of certificates of insurance—which can negatively affect cash flow when clients will not process invoices without a renewal certificate.

Your renewal should be started many months ahead of the renewal date (as much as six) and planned to finish at least 30 days ahead of policy expiration. That means if your firm's insurance renews on July 1, your kick-off renewal planning meeting should happen around February 1. Working well ahead of time not only reduces stress, but it also allows time to pursue and evaluate cost-competitive options. Many firms with summer and early fall renewals this year may soon find that their renewals are progressing slower than they should because brokers and underwriters are affected by the shift to remote working and a hardening insurance marketplace.

CREATIVE SOLUTIONS

Larger firms have even more creative solutions available to address cost savings related to their business insurance programs. For firms of \$50M in revenue or more, this is particularly true. They have the option to enter a group captive insurance program for their workers compensation, commercial general liability, and business auto coverage, potentially saving millions of dollars over the long term.

A group captive works and looks like traditional insurance with two key differences:

- The investment income that insurers normally keep is instead paid to policyholders.
- The premium is not fixed regardless of losses. If your firm has favorable losses in these lines of coverage, as most design firms do, then the group captive program will provide a refund of most unused premium dollars.

CONCLUSION

Access to benchmark data and creative alternative risk programs, plus being open to competitive options, has the potential to save your firm significant dollars at a time when reducing expenses may be critical.

Shining the Bat-Signal on Contract Terms

BY KAREN ERGER

Every generation has its own Batman, going back to the Caped Crusader's first appearance in Detective Comics in 1939. Mine is Adam West from the campy TV series that debuted in 1966, ran for three seasons, and was in syndication by the time it became one of my favorite after-school shows.

One of that Batman's hallmarks was his propensity for convoluted speech. Ideas that ordinary people would communicate in a few brief words would come out of Batman's mouth as a complex statement salted with multisyllabic words and obscure phrases. A simple concept like "Let's go!" would become "Time is of the essence, Robin! Let us proceed post-haste to the Batpoles!"

Some contract terms sound like Batman could have written them. Ostensibly in English, they stand out because no normal person would speak or write that way. While it is unlikely that Batman drafted your contract, there is another group of people notorious for weird expressions and arcane lingo: Lawyers.

When you run across one of these bizarre phrases, it is likely a legal term of art. It is easy to read a phrase like "time is of the essence" and think, "Well, duh, everybody knows time is important" and move on, but that is a mistake. Oddly phrased terms frequently turn out to be legal "magic words" that create all manner of unachievable and uninsurable obligations. They need to be reviewed with your own lawyer, so you know what you're getting into.

Here are a couple of examples.

'TIME IS OF THE ESSENCE'

"Time is of the essence" is a quintessential Batman clause. By agreeing to this language, you guarantee that all stated time limits will be met, even if circumstances beyond your control make this impossible. This seemingly innocuous language can transform even a trivial deviation from the schedule into a material breach of contract, potentially entitling your client to claim damages or terminate the contract for cause.

"Time is of the essence" is a common provision in construction contracts, but they are inappropriate in professional



Karen Erger

services agreements because they make meeting the schedule of paramount importance, trumping any other aspect of the design professional's performance. At times, designing to the professional standard of care means that a milestone date will not be met. It is not in the client's best interest to prioritize timely delivery over non-negligent performance.

Avoid schedule guarantees like "time is of the essence," and include provisions entitling you to equitable adjustments in the schedule for circumstances beyond your control.

'IN WHOLE OR IN PART'

The phrase comes from a part of the contract that is rife with lawyer lingo and Bat-phrases: the indemnity clause. Specifically, many clients want to be indemnified for all damages caused "in whole or in part" by the design professional. The fact that no one talks like that is your first clue that this language should be investigated.

This simple phrase is in reality a powerful risk-shifting clause. It means that if your actions caused any part of your client's damages, you must indemnify your client for all damages, including those caused by your client, its consultants, or other parties beyond your control. Let's say your negligence caused 60 percent of your client's damages. An indemnity for damages you caused "in whole or in part" means that you will pay 100 percent. Your professional liability insurance will only cover the portion of damages caused by you, leaving the other 40 percent uninsured.

Be on the lookout for oddly phrased language, including Latin terms (e.g., "force majeure"), in your contracts, and be sure to have your legal counsel shine a Bat-signal on their meaning and potential implications for your firm. ■

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.

The material in this article is provided for informational purposes only and is not to be regarded as a substitute for technical, legal, or other professional advice. The reader seeking such advice is encouraged to confer with an appropriate professional consultant or attorney. ACEC and its officers, directors, agents, volunteers, and employees are not responsible for, and expressly disclaim, liability for any and all losses, damages, claims, and causes of action of any sort, whether direct, indirect, or consequential, arising out of or resulting from any use, reference to, or reliance on information contained in this article.

Runnin' Against the Wind

BY NICK BELITZ

Substantial interest rate hikes, historic inflation levels, and stock market fluctuations are combining to produce headwinds for the overall U.S. economy. It has been smooth sailing, though, for the engineering industry, which has yet to experience a downturn or pullback in spending. ACEC deal-makers remain cautiously optimistic and continue to pursue acquisitions as a growth strategy, as evidenced by the transactions detailed below that involved member firms.

While final numbers for 2022 are still coming in as of this writing, Morrissey Goodale expects transactions involving A/E and environmental firms in the U.S. to reach a record-high figure and exceed 500 deals. That total would surpass the previous high of 427 deals in 2021. With the percentage of mergers and acquisitions made across state lines in 2022 hovering near the prior year's record of 68 percent, industry firms clearly feel confident in the market fundamentals to pursue geographic expansion.

Here are some highlights of the recent deals by ACEC members:

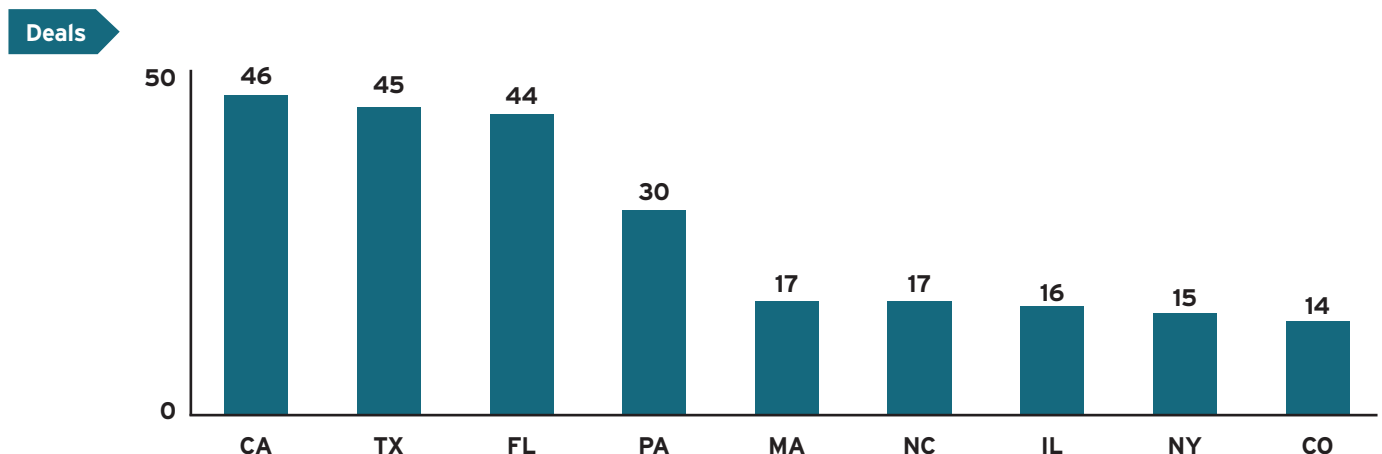
- The **most popular states** for ACEC buyers were Pennsylvania (six deals) and North Carolina (four deals), followed by Florida, Texas, and Illinois (three deals each). The 30 announced acquisitions of A/E and environmental firms in Pennsylvania through the first 10 months of 2022 far surpassed 2021's total of nine Keystone State sales and nearly matched that of the previous three years combined. Thanks to the flurry

of activity, Pennsylvania trailed only Texas, California, and Florida in 2022 transaction volume.

- The **most active** ACEC deal-maker on the international front was **Arcadis** (Amsterdam, the Netherlands), which acquired Ireland's DPS Group and Germany's Giftge Consult and sold its UK Contract Solutions Practice (London) to J.S. Held. Domestically, private equity firm Godspeed Capital built upon its investment in **Huckabee** (Fort Worth, Texas) by forming the new holding company brand MOREgroup and making a trio of acquisitions—TSK Architects, E4H Environments for Health Architecture, and **Image Engineering Group** (Westlake, Texas).
- The **biggest** transactions included the acquisition of Sheehan Nagle Hartray Architects (Chicago) (*Engineering News-Record* #395) by **Woolpert** (Dayton, Ohio) (*ENR* #51), the MOREgroup acquisition of E4H Environments for Health Architecture (Boston) (*ENR* #282), and the acquisition of **SEPI** (Raleigh, N.C.) (*ENR* #408) by **TranSystems** (Kansas City, Mo.) (*ENR* #77). Those three deals continued the unprecedented consolidation of the *ENR* 500. More than 40 transactions since the start of 2021 have involved sellers that were on the *ENR* 500.

Despite the broader economic challenges, we anticipate that the record level of industry consolidation will continue, given that most engineering firm deals are smaller in scale (less than \$100 million in enterprise value), relative to M&A in the economy at large, and less dependent on heavy amounts of leverage to close.

MOST ACTIVE U.S. STATES FOR DEAL-MAKING Through First 10 Months of 2022



In addition, the persistently tight labor market for engineering professionals continues to drive the viability of the “acqui-hire” model of talent acquisition, at least among the industry’s biggest players. Since the start of 2021, publicly traded A/E industry acquirers have bought *twice* as many firms with 25 or fewer employees as they have firms of 100 employees or more.

Morrissey Goodale projects that industry acquisitions will rise to 550 deals in 2023—and eventually peak at 650 in 2026—as the drivers of consolidation remain strong. The Infrastructure Investment and Jobs Act (IIJA), maturation of the engineering industry, and interest from private equity firms will continue to drive demand. On the supply side, a post-pandemic retirement boom among engineering firm leaders and owners, as well as deal valuations remaining at or near record highs, are bringing plenty of sellers into the market.

Which types of firms will be the most likely acquisition targets in the coming year? Morrissey Goodale surveyed 70 of the industry’s most active buyers to get a read on their priorities for 2023 and found that firms that provide transportation services are most in demand, followed by water and wastewater service providers. Ranking third is environmental services, followed in order by MEP, geospatial/surveying, and architecture. It’s clear that buyers will be following the money to those markets expected to receive massive public sector spending infusions from the IIJA—and sellers of firms working in those markets may be the ones to cash in.

Following is a list of recent transactions, with ACEC members highlighted in **bold**.

OCTOBER 2022

Leading Southeast consulting, planning, and engineering design services firm **Thomas & Hutton** (Savannah, Ga.) acquired Coulter Jewell Thames (Durham, N.C.), a consulting, engineering, land planning, landscape architecture, surveying, and construction administration services firm.

Pioneering AEG and strategic consulting firm **Woolpert** (Dayton, Ohio) (*ENR* #51) acquired Sheehan Nagle Hartray Architects (Chicago) (*ENR* #395), a full-service architecture firm that specializes in mission-critical and technically challenging projects.

Civil engineering, surveying, planning, and environmental firm **Sambatek** (Minnetonka, Minn.) acquired Commercial Site Design (Raleigh, N.C.), a civil engineering and land surveying firm with a special emphasis on projects for quick-serve restaurants, fast-casual diners, and retail stores.

MOREgroup (Fort Worth, Texas), the new holding company brand for the family of companies formerly known as **Huckabee Architects** (Fort Worth, Texas) (*ENR* #212), acquired consulting, planning, and facility design firm E4H Environments for Health Architecture (Boston) (*ENR* #282).

Horticulture engineering and design firm urban-gro (Lafayette, Colo.) signed a binding letter of intent to acquire **Dawson Van Orden** (Houston), an MEP and fire protection engineering firm.

GAI Consultants (Homestead, Pa.) (*ENR* #145) and Comvest Partners (West Palm Beach, Fla.) have entered into an agreement for Comvest to make a strategic private equity

investment in GAI. GAI will remain a stand-alone business within Comvest’s portfolio.

Innovative, full-service engineering consulting and CM firm **CHA Consulting** (Albany, N.Y.) (*ENR* #61) acquired Frazier Engineering (Charlotte, N.C.), a civil engineering firm focused on sanitary sewer system assessments, design, and rehabilitation.

Transportation consulting firm **TranSystems** (Kansas City, Mo.) (*ENR* #77) acquired Overland, Pacific & Cutler (Long Beach, Calif.), a firm that offers right-of-way and related services for vital infrastructure projects.

Architecture, interior design, and planning firm L2P (Philadelphia) is joining *ENR*’s #12 ranked global design firm, **Stantec** (Edmonton, Canada). The acquisition will bolster Stantec’s science and technology and commercial workplace offerings in greater Philadelphia and beyond.

Fast-growing design, consulting, and PM/CM firm **DCCM** (Houston) (*ENR* #174) acquired Matthews Design Group (St. Augustine, Fla.), a full-service civil engineering, roadway design, land development, landscape architecture, and consulting firm serving public and private clients throughout the Southeast.

TRC Companies (Windsor, Conn.) (*ENR* #17) expanded its technology solutions with the acquisition of MagikMinds (Warrenville, Ill.), a firm that offers geospatial information systems (GIS) consulting and implementation services to the utilities and telecom industries.

Structural engineering firm **Shigemura, Lau, Sakanashi, Higuchi and Associates** (Honolulu, Hawaii) executed a letter of intent to join **Coffman Engineers** (Seattle) (*ENR* #157).

Engineering, architectural, and planning services firm **CT Consultants** (Mentor, Ohio) merged with Henry T. Welka and Associates (Erie, Pa.), a land surveying, civil engineering, and land planning services firm.

Employee-owned engineering, environmental, and surveying consulting firm **Haley Ward** (Bangor, Maine) acquired The MilCor Group (Hobe Sound, Fla.), a civil-site, roadway, stormwater, utilities, agricultural engineering, construction inspection, and PM services firm.

ENR’s #8 ranked global design firm, **Arcadis** (Amsterdam, the Netherlands), entered into an agreement to acquire *ENR*’s #103 ranked global design firm, DPS Group (Cork, Ireland).

Multidisciplinary consulting firm **Pennoni** (Philadelphia) (*ENR* #95) purchased certain assets of Hygenix (Stamford, Conn.), an environmental consulting, testing, and laboratory services firm.

HG Design Studio (Richmond, Va.), a land planning and landscape architectural consulting business, joined forces with **VHB** (Watertown, Mass.) (*ENR* #62).

Pangolin Structural (Phoenix), a structural engineering, design, and consulting firm, joined planning and design consulting firm **Kimley-Horn** (Raleigh, N.C.) (*ENR* #10).

Employee-owned engineering and environmental consulting firm **POWER Engineers** (Hailey, Idaho) (*ENR* #32) acquired Hardy Engineering (Birmingham, Ala.), a power delivery engineering and design firm.

Johnson, Mirmiran & Thompson (JMT) (Hunt Valley, Md.) (*ENR* #60) acquired ECM International (El Paso,

Texas), a CM and PM services firm specializing in the local government, education, housing, roadways, airports, and utilities sectors.

ENR's #6 ranked global design firm, **WSP** (Montreal, Canada), acquired Odeh Engineers (North Providence, R.I.), a structural engineering firm serving the property and buildings sector.

Employee-owned consulting firm **Shannon & Wilson** (Seattle) (*ENR* #238) acquired Hultgren-Tillis Engineers (Concord, Calif.), a geotechnical engineering firm with expertise in industrial, municipal, commercial, and civil works projects.

Jensen Hughes (Baltimore) (*ENR* #80), a global leader in safety, security, and risk-based engineering and consulting services, acquired Crossfire (Auckland, New Zealand), a fire safety engineering and performance-based design engineering firm.

Engineering, architecture, and field services firm **The Thrasher Group** (Bridgeport, W.V.) (*ENR* #342), acquired Dunn Engineers (Charleston, W.V.), a specialized design firm focused on potable water treatment and wastewater treatment processes.

SEPTEMBER 2022

Sevee & Maher Engineers (Cumberland, Maine), an engineering firm that serves the commercial, industrial, residential, and municipal sectors, acquired Bono Consulting (Park Ridge, Ill.), a civil engineering firm focused on stormwater, surveying, and construction oversight services.

IMEG Corp. (Rock Island, Ill.) (*ENR* #71) acquired the engineering division of Veregy, formerly Dynamix Engineering (Columbus, Ohio), which specializes in offering engineering services for building and infrastructure systems in the health care, education, government, transportation, and commercial markets.

TRC Companies (Windsor, Conn.) (*ENR* #17) expanded its climate solutions offerings and ESG capabilities with the addition of Enzo Advisors (New York, N.Y.), a sustainability consulting firm that helps companies build sustainable business models within an ESG construct.

Employee-owned engineering, environmental, and surveying consulting firm **Haley Ward** (Bangor, Maine) acquired Lenard Engineering (Glastonbury, Conn.), a multidiscipline engineering and environmental firm.

Transportation consulting firm **TranSystems** (Kansas City, Mo.) (*ENR* #77) acquired engineering, land planning, land development, environmental, construction inspection, and asset management firm **SEPI** (Raleigh, N.C.) (*ENR* #408).

Tetra Tech (Pasadena, Calif.) (*ENR* #4) reached an agreement with *ENR's* #66 ranked environmental firm, RPS Group (Abingdon, UK), on the terms of an all-cash acquisition of RPS Group.

NV5 (Hollywood, Fla.) (*ENR* #24) acquired technology design and consulting services firm KMK Technologies (Monroeville, N.J.). KMK serves public and private sector clients that require advanced audiovisual, lighting, security, and IT systems for their facilities.

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, ownership transition, executive coaching, and leadership development services. He can be reached at nbelitz@morrisseygoodale.com.

T-O Engineers (Meridian, Idaho), a 200-person, full-service consulting, planning, and engineering firm, joined fast-growing Ardurra Group (Tampa, Fla.) (*ENR* #114). T-O Engineers will serve as a platform for Ardurra's expansion in the aviation market and geographically in the Northwest.

ENR's #11 ranked global design firm, **Arcadis** (Amsterdam, the Netherlands), agreed to acquire Giftge Consult GmbH (Hildesheim, Germany), a consulting and engineering company offering energy transition solutions.

Verdantas (Dublin, Ohio) (*ENR* #195), an environmental, engineering, and technical consulting company, acquired JM Sorge (Somerville, N.J.), an Environmental Assessment and Remediation (EAR) and Environmental, Health, and Safety (EHS) consulting services firm. **Verdantas** also acquired Environmental Strategies & Management (Norton, Mass.), a firm that offers EHS consulting and engineering services.

Engineering, architecture, and planning services firm **MRB Group** (Rochester, N.Y.) merged with HBT Architects (Rochester, N.Y.), an architecture firm serving the adaptive reuse, civic, health care, higher education, and hospitality markets.

AUGUST 2022

Fast-growing **Bowman** (Reston, Va.) (*ENR* #118) acquired Anchor Consultants (Chadds Ford, Pa.), a planning, inspection, design, environmental permitting, dredging engineering, and CM services firm.

Modjeski and Masters (Mechanicsburg, Pa.) (*ENR* #343), a national leader in the design, inspection, and rehabilitation of bridges, acquired structural engineering firm Flanders Engineering Group (Middleburg, Fla.).

One of the A/E industry's most prolific buyers, J.S. Held (Jericho, N.Y.), entered into an agreement with *ENR's* #8 ranked global design firm, **Arcadis** (Amsterdam, the Netherlands), to acquire its UK Contract Solutions Practice (London).

Architectural, engineering, and planning services firm **Huckabee** (Fort Worth, Texas) (*ENR* #212) acquired MEP engineering firm **Image Engineering Group** (Westlake, Texas).

Arora Engineers (Chadds Ford, Pa.) (*ENR* #487), an engineering, PM/CM, information technology, and facilities management services firm, announced a strategic partnership with minority-owned, private investment firm Jacmel Growth Partners (Brooklyn, N.Y.). ■

On the Move

Rockville, Md.-based **A. Morton Thomas and Associates, Inc. (AMT)** announced the following leadership appointments: Chief Financial Officer **Rich Khalil** was named chief executive officer and chairman of the board, succeeding **Mike Wiercinski**, who announced his retirement with the company after 36 years of service. **Wiercinski**, who is an ACEC Fellow and past president of ACEC/MW, will remain as an advisor to the board of directors. Khalil, who will also continue to serve as CFO, currently serves as a Trustee for the ACEC Retirement Trust. **Tim Kirk** will assume the role as president in support of the CEO. Kirk has developed a significant West Virginia practice including transportation design, traffic engineering, structures, and CEI services, and will divide his time between the corporate office and all other AMT offices including West Virginia. He will assume the position of president of ACEC/West Virginia in 2023.

Bryan Nicol has joined Jacksonville, Fla.-based **RS&H** as chief strategy officer. Nicol will lead the development and execution of the firm's strategic initiatives, short- and long-term growth objectives, and new business and expansion opportunities. Nicol most recently served as managing

director of Deloitte and has 17 years of private-sector business operations, consulting, and advisory experience with global A/E/C firms Jacobs and CH2M.

New York-based **WSP USA** announced the following appointments: **Davin Ruohomaki** has been named deputy national aviation market leader and a vice president and will be responsible for new business development, quality delivery, execution of projects, and support growth of the aviation sector across the U.S. Ruohomaki formerly served as senior director of the Greater Orlando Aviation Authority. **Stephen Famularo** has joined the company as its Maritime East leader and vice president and will be responsible for identifying and pursuing project opportunities and managing client relationships, tasks, and staff for coastal and marine engineering projects primarily across the eastern U.S. Famularo, who has more than 25 years of experience in waterfront engineering, including underwater inspection, marine structure rehabilitation, coastal engineering, and climate resiliency planning, will be based in New York City. **Charles (Chuck) Harris** has joined the company as Navy program director for the firm's federal programs national business line. Harris will direct

the growth of the Federal team's Navy program, which includes a recent joint venture win to directly support the \$500 million U.S. Navy's Shipyard Infrastructure Optimization Program.

Brad Curtis has been promoted to vice president of Fort Collins, Colorado-based **Northern Engineering Services, Inc.** Curtis has led Northern Engineering's Municipal Services department from his director position since joining the firm in 2019 and also serves as the Town Engineer for half a dozen Weld County communities.

Jeong K. Hong has joined New York-based **Thornton Tomasetti** as vice president on its forensics team where he will assist clients with the performance of welded structures. Hong has more than 25 years of experience in the management, investigation, and evaluation of engineering research and development programs in the oil and gas, nuclear energy, shipbuilding, heavy machinery, and automotive industries. Hong most recently served as a senior research engineer with Engineering Mechanics Corporation of Columbus. He is based in the New York office.

Dr. Christopher Corwin has joined Walnut Creek, Calif.-based **Brown and Caldwell** as national drinking water leader who will manage the firm's strategy to solidify its position as the leading drinking water solutions provider for municipalities, private industry, and government agencies throughout North America and the Pacific. Corwin most recently served as partner and director of Operations of Corona Environmental Consulting. He is based in the firm's Denver office.



Rich Khalil



Tim Kirk



Bryan Nicol



Davin Ruohomaki



Stephen Famularo



Charles (Chuck) Harris



Brad Curtis



Jeong K. Hong



Christopher Corwin

Welcome New Member Firms

ACEC Alabama

Engineering Design
Technologies, Inc.
Birmingham

ACEC Arizona

Infinity Land Surveying LLC
Phoenix
SustainRNG, LLC
Scottsdale
Terrascope Consulting, LLC
Phoenix

ACEC California

General Technologies
and Solutions
Los Angeles
Jules Engineering
Management
Highland
Lewis Jones, Inc.
San Diego

Robert Harder Engineering
Windsor

Seachange Engineering, Inc.
Monterey

SSC Inc.

Oakland

Oakland

ACEC Colorado

Kilduff Underground
Engineering
Denver

MCE Consulting Engineers
Denver

Denver

Oddo Engineering
Glenwood Springs

Glenwood Springs

ACEC-FL

Bayer United Engineering
Consultants
Tampa

Tampa

Encobridge, Inc.
Miami

Miami

Florida Bridge and
Transportation, Inc.

Orlando

Orlando

GM2 Associates, Inc.
Tampa

Tampa

Haskell Company
Jacksonville

Jacksonville

M2E, LLC
South Miami

South Miami

OM Engineering Services, Inc.
Orlando

Orlando

ACEC Georgia

Contineo Group, LLC
Atlanta

Atlanta

DA Engineering Services, LLC
Buford

Buford

Wolf Engineering, LLC
Dalton

Dalton

ACEC Indiana

V3 Companies, Ltd.
Indianapolis

Indianapolis

ACEC-KY

Lochmueller Group, Inc.
Louisville

Louisville

ACEC of Louisiana

Alvin Fairburn & Associates
Denham Springs

Denham Springs

Basin Engineering and
Surveying
New Orleans

New Orleans

ACEC/MW

Arup
Washington, D.C.

Washington, D.C.

Loring Consulting
Engineers, Inc.
Washington, D.C.

Washington, D.C.

ACEC/Missouri

Antella Consulting
Engineers, Inc.
Kansas City

Kansas City

KimHEC LLC
Saint Louis

Saint Louis

ACEC-Montana

Tesla Engineering, LLC
Vaughn

Vaughn

ACEC Nebraska

Embris Group, LLC
Fort Calhoun

Fort Calhoun

ACEC-NJ

Grant Engineering and
Construction Group, LLC
Newark

Newark

M & J Engineering, PC
New Hyde Park, N.Y.

New Hyde Park, N.Y.

ACEC New York

Buro Happold Consulting
Engineers, P.C.
New York

New York

PS&S
Long Island City

Long Island City

SJH Engineering, P.C.

New York

ACEC Ohio

Heapy Engineering
Dayton

Dayton

TES Engineering
Westlake

Westlake

ACEC-SC

Soil Consultants, Inc.
Charleston

Charleston

ACEC Tennessee

Surveying and Mapping,
LLC (SAM)
Knoxville

Knoxville

ACEC Texas

Dawson Van Orden
Engineering
Houston

Houston

Gresham Smith
Dallas

Dallas

McManus and Johnson
Consulting Engineers, LLC
Van Alstyne

Van Alstyne

Mendez Engineering, PLLC
San Antonio

San Antonio

Star Geoenvironmental, LLC
Katy

Katy

TJ Hunter Engineering, Inc.
Addison

Addison

ACEC of Vermont

Engineering Ventures, Inc.
Burlington

Burlington

ACEC Virginia

Atlas Long
Glen Allen

Glen Allen

Hana Engineers
North Chesterfield

North Chesterfield

ACEC Washington

Kennewick
Peak Engineers

Peak Engineers

ACECWV

Stahl Sheaffer
Engineering, LLC
Morgantown

Morgantown

ACEC Wisconsin

Water Technology Inc.
Beaver Dam

Beaver Dam

APRIL 2023

- 18 2023 Valuations - Interest Rates, Inflation, and Supply Chain (online class)
- 20 Signs of a Weak or Ineffective Project Management System (online class)
- 25 Time is Money: Construction Contract Times, Delays, and Schedules (online class)
- 26 Mastering the SF-330 - A Key Step in Winning Government Business (online class)

MAY

- 2 Integrating Climate-Resilience Into Critical Public Infrastructure: Emerging Trends In Design, Risk Mitigation, and Insurance (online class)
- 9 The Four Cornerstones of Risk Management: Contract Negotiation and Integration of Subcontracts (online class)

JUNE

- 11-14 ACEC Annual Convention and Legislative Summit, Washington, D.C.
- 21 Getting More Work from Your Existing Clients (online class)

Welcome New National Affiliate Members

Accounting & Tax Services

KBKG

Communication Services, Consultants - Strategic Planning

Savio Infrastructure

Solutions, LLC

The Jennings Group LLC

Construction - Integrated Engineering Services, Consultants - Business Management

Cybrik Inc.

Cybrik Inc.

Consulting

Barney Ventures LLC

Human Resources - Recruitment Services

AECIQ

Insurance - Business Insurance

HDI Global Insurance

Patterson & Associates

Insurance Agency, Inc.

Van Oppen & Co. 2

Investing Firm/Holding Company

Investors Management

Corporation

Technology

DTP Consulting (Development

Technology and Planning LLC)

Technology - Cloud Service Provider

Egnyte, Inc.

Technology - Software

5 Factor Technology, LLC

HeadLight

Technology - Website Services

Point5 Managed Services LLC

For further information on national affiliate members, go to: <http://bit.do/ACEC-natl-affiliate-memb> or contact Erin Wander at 440-281-0464 or ewander@acec.org.

To sign up for ACEC online seminars, go to www.acec.org/education.

Additional information on all ACEC activities is available at www.acec.org.

New Resource for Land Development Firms

Investing resources in the retention of employees is a key element of success for an organization. The costs from both a financial and a time management standpoint of recruiting new staff can be very high, so it's vital that employers not only understand the issues caused by a high turnover rate, but also develop and implement strategies to retain their staff.



Project performance will often suffer as a direct result of high employee turnover. Some common issues include: the adverse impact to the project's schedules and budgets due to staffing shortages and transitions, the general disruption of project teams and company departments, and the lack of suitable candidates for replacement positions.

In addition, other employees may become concerned when they notice the departure of their colleagues, which can create an unbalanced work environment and lead to further turnover. In some extreme cases, it can even lead to the potential loss of proprietary information to competitors.

LDC 5-4: Employee Retention outlines 10 key employee retention strategies. Implementing these strategies will promote a greater sense of stability and inclusivity for current and prospective employees.

Purchase today at bit.do/LDC_5-4.

EJCDC® CONSTRUCTION SERIES (C-SERIES) DOCUMENTS

The EJCDC® Construction Series (C-Series) includes 23 essential documents specifically written for use on public and private engineered facility projects, including:



- Core contract documents such as the Standard General Conditions, the Agreement between Owner & Contractor form, and Supplementary Conditions
 - Forms for gathering information needed to draft bidding and contract documents
 - Instructions to bidders and a standard bid form
 - Bonds (bid, performance, and payment)
 - Administrative forms, such as change order forms and the Certificate of Substantial Completion
- Review the entire EJCDC C-Series at bit.do/EJCDC_C-990.

Pathways to Executive Leadership

Core skills that build critical business acumen and personal influence for successful firm leadership

PATHWAYS TO EXECUTIVE LEADERSHIP, CLASS 8, NOW OPEN

Registration is now open for Class 8 of Pathways to Executive Leadership, ACEC's midcareer leadership development program, beginning October 14-16, 2023, in Austin, Texas. 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 can 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 program.acec.org/pathways-to-executive-leadership or contact Katie Goodman, director of leadership programs, at 202-682-4332 or email kgoodman@acec.org. Registration is limited. ■

FOR MORE BUSINESS INSIGHTS

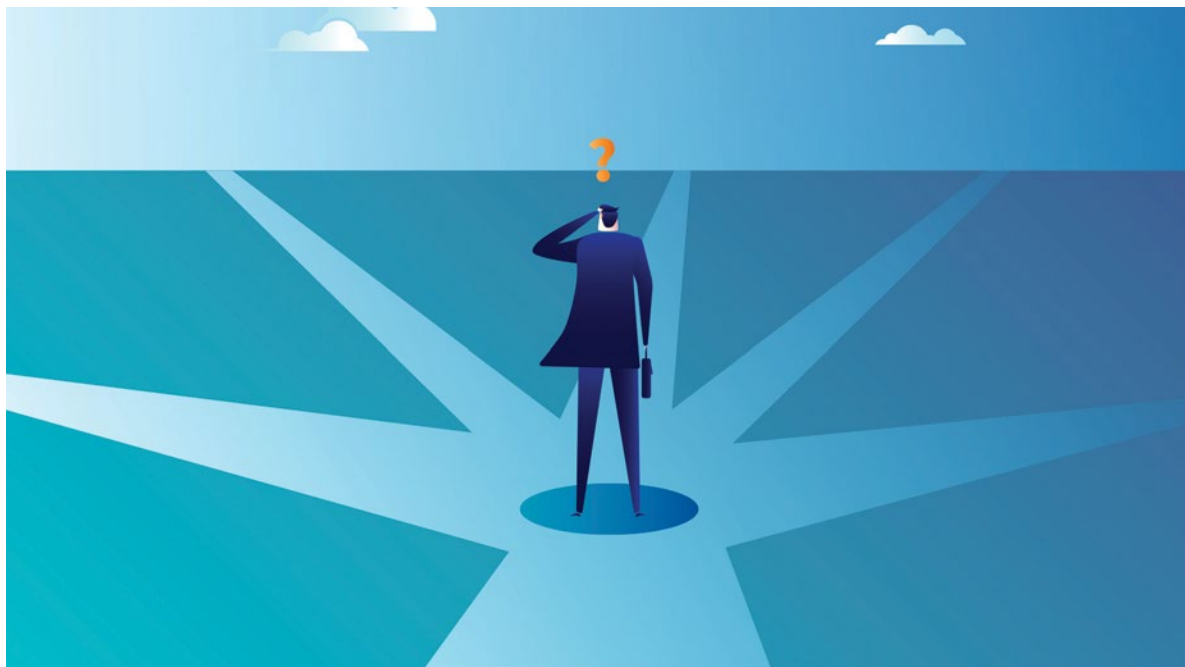
- Better Business Planning
- Factoring Executive Compensation
- Cyberattacks and Data Security
- High-Impact Proposal Writing

Go to: <https://education.acec.org/diweb/catalog>

ACEC's Business Resources and Education Department provides comprehensive and online-accessible business management education.

Visit ACEC's online educational events calendar at <https://www.acec.org/education/online-classes/> or call 202-347-7474, ext. 349, for further information.

Will your 401(k) plan hold up to the challenges of 2023 and beyond?



See if your plan has what it takes.

On close inspection, can you check off these key attributes?

- ☐ Enhanced fiduciary insulation
- ☐ Low expense ratio, leaving more money in employee accounts
- ☐ Access to best-in-class, institutional-grade investments
- ☐ Open architecture: fund line-up with no strings attached
- ☐ Personal advisory service for participants
- ☐ A full interactive savings experience

The ACEC RT 401(k) solution offers all this and more as we begin our 50th year of exceptional service. See why our client retention rate is 99%. Ask for a free benchmarking analysis. It may be time for a change.

For more information,
email Lydia.Zabrycki@captrust.com
or call (559) 284-0370

Visit www.acecrt.com



The Museum at the Gateway Arch
Alper Audi, Inc.
An ACEC Life/Health Trust member firm

ACEC

LIFE/HEALTH TRUST

**An Association Health Plan serving
ACEC member firms since 1965.**

We provide a national network of providers, flexible plan options and value added services as we strive to make engineering the healthiest industry in the United States.

www.ACECLifeHealthTrust.com