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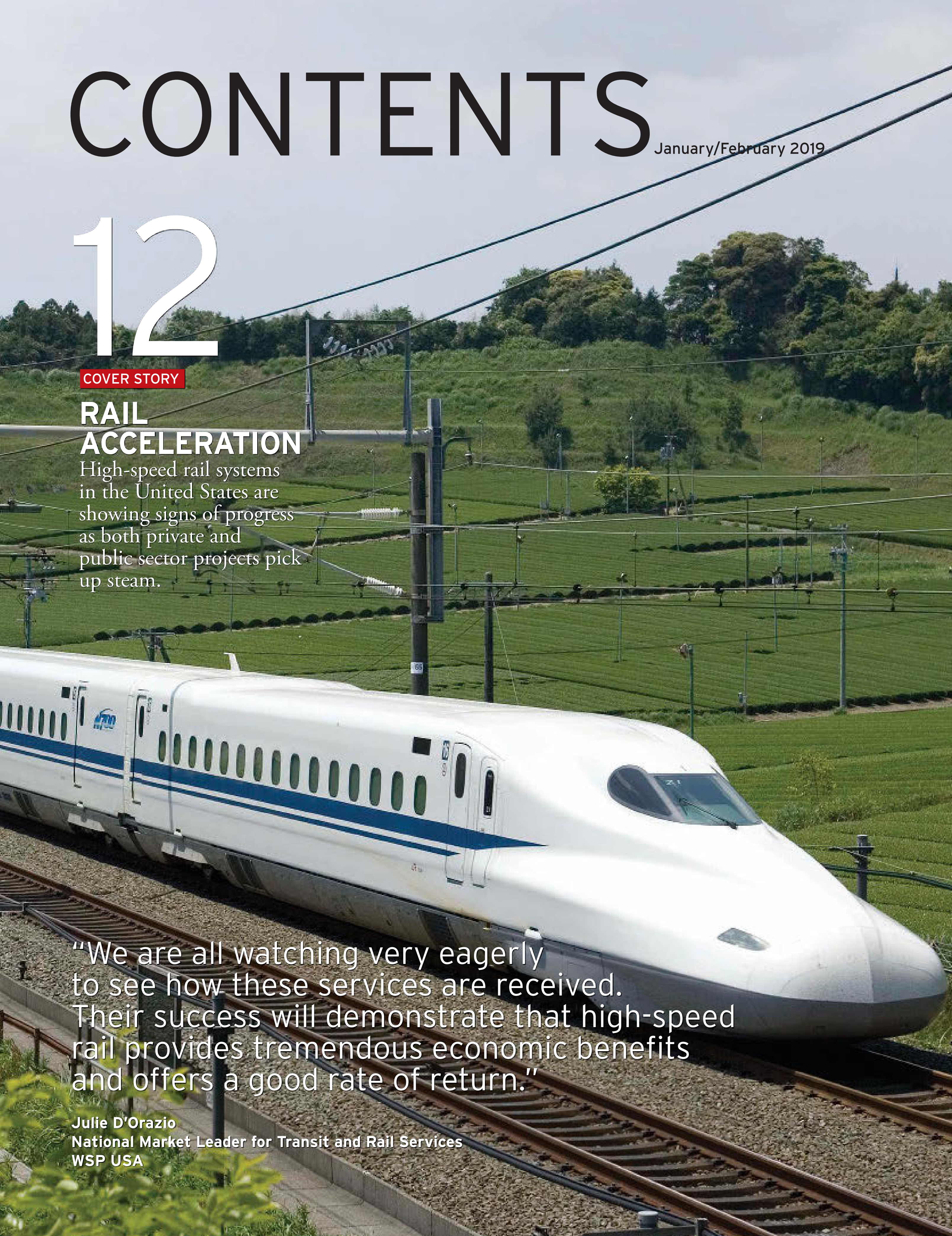

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"We are all watching very eagerly to see how these services are received. Their success will demonstrate that high-speed rail provides tremendous economic benefits and offers a good rate of return."

Julie D'Orazio
National Market Leader for Transit and Rail Services
WSP USA

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Engineering Inc. promotes the advocacy and business interests of ACEC by offering news, legislative analysis and business practice information to member firms, clients, opinion leaders and policy makers.

New Year Promises New Council Direction

After three months of digesting valuable comments from Member Organization leaders—from the four-stop national listening tour, followed by three leadership orientations at ACEC headquarters—our team has embarked on a new vision for the Council in response to what we have heard from our members.

We will work with and through our extensive network of Member Organization leaders to communicate and grow the ACEC value proposition for our members and build strength and prominence for ACEC and the engineering industry on the local level, in Washington, D.C. and on the national stage.

The new year will also see the Council update its strategic plan. To support that effort, we will query our members through a comprehensive survey to further assess where we are in terms of providing value and to get a better sense of members' priorities.

We have already reallocated resources within the national organization—specifically creating a new Membership and Member Organization Services Department—to strengthen our relationship with the Member Organizations and ensure they are well-resourced to grow.

We also plan to build out the ACEC Research and Management Foundation to create a research agenda in support of our public policy agenda.

As we launch these and other initiatives, we look forward to hearing continuous feedback from our members to ensure these and all further new plans are achieving their intended goals.

I was so happy to hear from so many of you at the Fall Conference where attendees applauded, the "bottom-line focused" business education programs, the great speakers, the Conference setup and staff and the Las Vegas backdrop *(see page 20)*.

But one attendee admitted the event also gave him "a better understanding of the wide reach and impact that ACEC has on the rest of the industry."

To all those comments we say thank you and rest assured, we have only just begun!

Manish D. Kothari
ACEC Chairman

Linda Bauer Darr
ACEC President & CEO

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While Economy Projected to Cool, Engineering Markets Still to Sizzle

By Gerry Donohue

When 2018 came to a close, the U.S. economy was in a sweet spot.

"I have a hard time imagining the economic stars aligning better than they have," says Chris Staloch, a managing director for Chartwell Financial Advisory, Inc.

Gross domestic product (GDP) grew at an estimated 3.1 percent annual pace, unemployment rates hit record lows, inflation remained under control and most sectors of the economy participated in the boom.

The A/E/C market has been no exception. Responding to ACEC's third-quarter "Engineering Business Index" survey in September 2018, one CEO said, "Business has never been better."

AT THE PEAK

All good things must come to an end, however, and many analysts say the economy hit its cyclical peak in 2018. On the other hand, the consensus is that the slowdown will be relatively mild and not enough to push the economy into recession.

"Last time, in 2007, there was a collapse all across the board," says Greg Powell, managing director at FMI Capital Advisors, Inc. "This time we expect the slowdown to be shallower and with some sectors slowing more than others."

"Tax reform and deregulation have been incredible drivers for a lot of the growth we have seen," says Colvin Matheson, managing director of Matheson Financial Advisors.

In its third-quarter economic forecast, Deloitte Touche estimates that the stimulus in the 2017 tax law and the 2018 budget agreement added more than 2 percentage points to GDP. The positive impact of that stimulus, however, will wane in 2019 and even reverse in 2020, weakening the economy and making it vulnerable to negative shocks.

The Federal Reserve forecasts the U.S. GDP growth will dip to 2.5 percent in 2019, with the strongest growth at the beginning of the year and the economy slowing in each successive quarter. In 2020, the Federal Reserve forecasts 2 percent GDP growth and 1.8 percent in 2021.

Other forecasters are not as optimistic. For 2020, the Congressional Budget Office forecasts 1.7 percent growth, and Deloitte Touche's baseline forecasts just 0.7 percent.

Unemployment will remain at record lows, 3.5 percent in 2019 and 2020, but much of the job growth will be in low-paying retail and food service industries. Continued low unemployment rates will likely push up wages, which could fuel inflation.

Inflation fears are the primary reason the Federal Reserve has historically raised interest rates, but after the 2007 crash, the Federal Reserve has kept rates low to stimulate moribund growth. As the economy picked up pace, the Federal Reserve began raising the federal funds rate, and in late 2018 it stood at 2.4 percent. The Federal Reserve forecasts that the rate will reach 3.4 percent in 2020.

"The Fed needs to get those rates up so it can use monetary policy to boost the economy in a slowdown," says Powell. "If the rates are not high enough, that tool will not be effective. However, it must proceed with caution so it does not prematurely cause such a slowdown."

Further complicating the issue, says Matheson, is that the Federal Reserve is unwinding the more than $4 trillion in bonds it acquired through its quantitative easing strategy following the 2007 recession. "They are operating in uncharted waters, attempting to do that at the same time that interest rates are rising," he says.

One other economic unknown is the potential impact of the Trump administration's aggressive trade policies. "Depending on what level the trade war and tariffs get taken to, it could slow us down or even push us into recession," says Staloch.

GUARDED OPTIMISM IN ENGINEERING

Many of the factors hitting the national economy could have an exaggerated impact on the A/E/C industry in the years ahead. Rising interest rates could stifle capital investment; tariffs have already led to higher construction material costs; and the tight labor market is wreaking havoc both on construction sites and in engineering firms.

The impact of a slowing economy will be buffered as engineering firms continue to ride the wave of the recent market prosperity into 2019 and even 2020.

Preparing for the Slowdown

While most analysts forecast that the A/E/C market still has some running room, they concur that a slowdown is coming. So even as firms take advantage of current market opportunities, it may be time to start planning for leaner days.

"You want to start integrating some defensive tactics—especially with balance sheets," says Colvin Matheson, managing director of Matheson Financial Advisors.

Here are five tactics Matheson recommends:

- Tighten up staffing and project efficiencies, keeping utilization rates high and balanced with projected workload
- Bleed the fat out of the system to control overhead expenses
- Put financial discipline at a heightened level and control debt levels
- Strengthen the balance sheet and cash flow with faster accounts receivable collections and reduced work-in-progress levels
- Retain equity. "Cash is no longer king," says Matheson. "It becomes a god."

In its third-quarter 2018 forecast, leading industry analyst FMI Corporation projects the A/E/C market will grow by 6 percent in 2019, 4 percent in 2020, 3 percent in 2021 and 4 percent in 2022. FMI uses construction put in place for its forecast.

Matheson says he is "cautiously optimistic that the market will stay strong in 2019 and 2020, given firm backlogs and opportunity pipelines, with a softening likely in 2021–2022." Meanwhile, Staloch says he is "very positive about 2019."

"Although we are anticipating a slowdown at some point, we do not see market conditions in the U.S. changing too much in the next couple of years," says Hisham Mahmoud, president and CEO of Golder. "All the drivers are still fairly intact."

The most pessimistic A/E/C market forecast comes from Dodge Data & Analytics, which expects a flat 2019. Dodge, which bases its forecast on construction starts, calls for the residential market to slip by 3 percent, the nonresidential building market to be flat and the nonbuilding construction market to climb by 3 percent.

The Dodge Momentum Index, which tracks the initial report for nonresidential building projects in planning, rose through the first half of 2018 but then fell for three consecutive months, from August to October, perhaps presaging a 2019 slowdown.

SECTOR BY SECTOR

"A long-term driver in the market is the condition of U.S. infrastructure," says Mahmoud. "Both political parties are pretty much aligned on the need to fix it although they have different approaches to funding it."

The current long-term federal transportation infrastructure program expires in September 2020, but analysts expect Congress and the administration to address transportation infrastructure in 2019.

In its forecast, FMI projects that federal funding will remain flat. With many states having already acted to increase their funding of transportation infrastructure, FMI expects the market to struggle, growing by 4 percent in 2019 and averaging only 2.3 percent growth in 2020–2022.

In contrast, most analysts expect the deteriorating condition of the nation's water and wastewater infrastructure system will lead to increased public investment.

"The infrastructure is aging, and we need to make sure we meet our population's needs and safety requirements," says Steve Lefton, president and CEO at Kimley-Horn & Associates, Inc. "In good times and bad times, you have to be able to flush your toilet."

Despite its generally dour forecast, Dodge projects 9 percent growth in the water supply market in 2019 and 5 percent growth in wastewater. FMI is not quite so bullish, forecasting 6 and 4 percent growth, respectively. Looking further into the future, FMI expects growth in the sectors to average between 3.5 and 4.0 percent in 2020–2022.

According to Mahmoud, one change that could "ignite the infrastructure sector" would be the increased use of public-private partnerships in the U.S. and an "embracing of private ownership of infrastructure."

In the vertical markets, transportation facilities such as airports, ports and train stations will be the strongest market, growing at a 7 percent annual pace through 2022, according to FMI.

Another strong market centers around everything e-commerce, including warehouses, data centers and some retail storefront.

"People talk about the death of brick-and-mortar retail, but the market is adapting," says Lefton. "You still need that last mile location to get the product to the consumer."

Office and public safety construction are other projected strong markets, while manufacturing and lodging are expected to lag.

The high-end lodging market is one to also watch, according to Matheson. "I have long considered this market to have the faster and smarter money chasing it. When you see that drop off, you want to become more cautious," he says. ■

Construction Put in Place Estimated for the United States

Third-quarter 2018 forecast (based on second-quarter 2018 actuals)

Change from Prior Year—Current Dollar Basis	2019	2020	2021	2022
Residential Buildings				
Single Family	5%	4%	5%	5%
Multifamily	3%	2%	2%	3%
Improvements	8%	5%	4%	5%
Total Residential Buildings	6%	4%	4%	5%
Nonresidential Buildings				
Lodging	6%	2%	0%	3%
Office	8%	3%	2%	3%
Commercial	6%	4%	1%	2%
Health Care	4%	3%	3%	4%
Education	6%	3%	2%	2%
Religious	-3%	1%	2%	2%
Public Safety	6%	4%	3%	5%
Amusement and Recreation	7%	3%	1%	3%
Transportation	8%	9%	6%	5%
Communication	4%	3%	3%	4%
Manufacturing	7%	1%	2%	2%
Total Nonresidential Buildings	6%	3%	2%	3%
Nonbuilding Structures				
Power	3%	4%	5%	5%
Highway and Street	4%	3%	2%	2%
Sewage and Waste Disposal	4%	5%	3%	4%
Water Supply	6%	4%	3%	3%
Conservation and Development	7%	4%	6%	5%
Total Nonbuilding Structures	4%	4%	4%	3%
Total Put in Place	6%	4%	3%	4%

Source: FMI Corporation

***Gerry Donohue** is ACEC's senior communications writer. He can be reached at gdonohue@acec.org.*

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Transportation Initiatives Fared Well in Midterm Elections

The defeat of Proposition 6 in California, which would have repealed $5.2 billion in annual transportation infrastructure improvements, was not only the biggest infrastructure win in the recent elections, but also one of several wins around the country.

At least 314 transportation-related measures appeared on state and local ballots during the midterm election, according to the Eno Center for Transportation. The measures accounted for more than $50 billion in transportation investments, including projects for roads and bridges, public transit, airports, ports, and cycling and pedestrian paths. Almost two-thirds of the ballot issues were in Michigan and Ohio, which require property tax increases for improvements to be approved by voters.

ACEC/Florida helped to secure major wins—with Minuteman Fund support—in four state counties to raise taxes to pay for infrastructure upgrades.

Other notable wins include:

- ACEC/Texas, particularly its Houston chapter, which used Minuteman Fund support to defeat an attempt to repeal major water infrastructure funding legislation previously approved by Houston voters.
- Arlington County, Virginia, which passed a $74.6 million bond issue.
- More than four of five Austin, Texas, voters (81 percent) approved a $160 million multimodal transportation bond measure.
- Four New Mexico counties renewed a tax that funds commuter rail and bus systems.
- Maine voters approved a $106 million bond for transportation improvements.
- Michigan passed a recreational marijuana measure, which includes a 10 percent excise tax, some of which goes into the state's transportation fund.

Transportation advocates suffered a couple of significant losses, however, such as in Missouri, where a proposal to increase the gas tax was defeated, and in Colorado, where voters turned down two transportation bond measures.

Fate of Tax Extenders Unclear

Tax legislation released by then-House Ways and Means Committee Chairman Kevin Brady, R-Texas, at the end of 2018 was still in play at the end of the year.

An earlier version of the bill would have extended through the end of 2018 nearly 30 expired tax provisions, including the Section 179D energy-efficient commercial buildings tax deduction. ACEC has actively advocated for a multi-year extension of Section 179D. The legislation also included a few technical corrections to the Tax Cuts and Jobs Act, retirement savings provisions and reforms to the IRS.

A revised version of the bill dropped the tax extenders and added a delay of several taxes in the Affordable Care Act, as well as tax relief for areas hit by recent natural disasters. As of the date of publication, Congress was still negotiating final legislative agenda items and it was unclear whether any tax provisions would be approved by the end of 2018.

ACEC has actively advocated for a multi-year extension of Section 179D

If Congress did not approve the tax extenders in year-end legislation, the tax-writing committees are expected to consider them early in 2019. ACEC and business allies will encourage Congress to extend the expired tax provisions before the end of tax filing season.

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Year-End Spending Deal Looming for Transportation and Water Infrastructure Funding

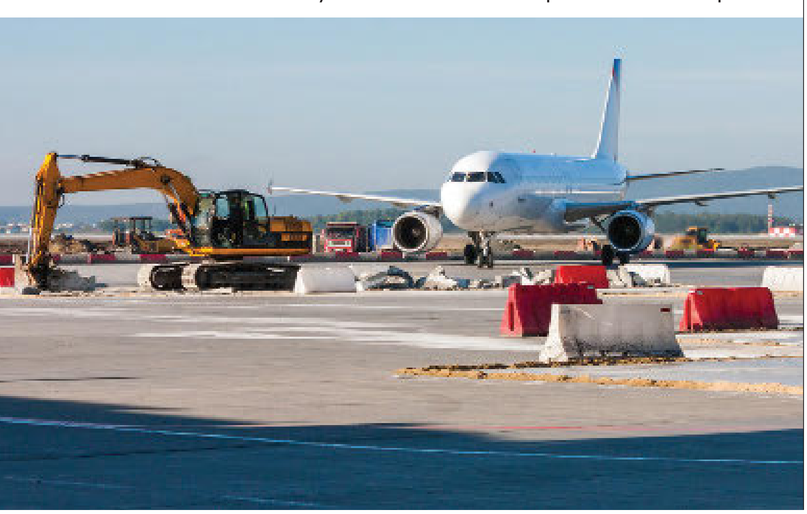
In the final days of the 2018 legislative session, House and Senate leaders were working to resolve a standoff with the administration over border security funding and avoid a partial government shutdown before the holidays.

As of this writing, passage of a compromise deal was looming. The final spending package would increase funding for several transportation and water infrastructure programs for FY 2019. The figures in the respective House and Senate versions of the bills reflect a commitment to increase federal infrastructure investment by $20 billion as part of a two-year budget agreement for FY 2018–2019.

The spending bills for transportation and environmental programs are part of a multi-bill package of unfinished appropriations still being negotiated in mid-December. The outcome of the measure was uncertain, caught up in disagreements between Republican and Democratic lawmakers and the President over funding for border security.

Among the potential outcomes were passage of six of the seven remaining bills for FY 2019, which enjoy bipartisan support, and a temporary extension of current funding for Department of Homeland Security programs. Other options under consideration were a short-term extension into early 2019, or a longer-term extension of existing funding levels for all programs for the remainder of the fiscal year, which would undercut some of the expected funding increases in the FY 2019 bills. President Trump had earlier threatened a partial government shutdown if Congress failed to include additional funding for construction of the border wall as part of the final package.

ACEC and many other industry stakeholders were seeking enactment of final bills for FY 2019, which would secure expected increases for numerous infrastructure programs, including highways, transit, rail, aviation, water and wastewater infrastructure, and Superfund cleanup.



ISSUES ON THE MOVE	WHAT'S NEXT
Tax Extenders	Final action expected before the end of the year
U.S./Canada/Mexico Trade Agreement	Congressional action in the new year

New Trade Agreements Continue Forward Progress

During last November's G-20 Summit in Argentina, the Trump administration took a step closer to rewriting the North American Free Trade Agreement (NAFTA), with the formal signing by the leaders of the U.S., Canada and Mexico of the United States-Mexico-Canada Agreement (USMCA). The agreement now heads to Congress for vote, where the power has changed hands in the House, but remains in Republican hands in the Senate.

ACEC Chairman Manish Kothari

ACEC Chairman Manish Kothari, president and CEO of Sheladia Associates, Inc., represents ACEC on the Industry Trade Advisory Committee on Services (ITAC-10), which reviewed the draft of the USMCA and commented on its impact. The ITACs are public-private partnerships with the Department of Commerce and the Office of United States Trade Representative that engage business leaders in formulating U.S. trade policy.

Regarding engineering services, the ITAC-10 stated, "Building on the elements of the original NAFTA, which necessarily focused on important licensure standards, comity and reciprocity among other salient matters, the Trade Agreement offers provisions that support the ability of the U.S. engineering services sector to offer creative, innovative and cost-effective solutions to North America's infrastructure challenges and the built-environment's needs."

In addition to revising NAFTA, U.S. trade negotiators are in various stages of developing new trade agreements with Japan, the United Kingdom and the European Union (EU). Members of ITAC-10, including ACEC, have been given the opportunity to inform U.S. negotiators of priorities and areas of interest for their respective industries. Regarding the EU, ITAC-10 made negotiators aware of exclusions and limitations submitted by individual EU countries regarding engineering services. U.S. firms could be restricted from doing business in these countries. Business regulations often impact engineering services and need to be equitably and consistently applied within each participating country.

The U.S. currently maintains 12 bilateral free trade agreements and two regional free trade agreements. The USMCA now heads to Congress for approval while the other three agreements are in the early stages of negotiations between the U.S. and the participating countries.

For More News

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

New *Engineering Inc.* Column Highlights Private-Sector Markets

This is the inaugural Private Side column in *Engineering Inc.* The Private Side will be a regular department of the magazine, focusing on the private-sector markets listed to the right, as well as providing information and insights regarding public-private partnerships and economic data relevant to the industry.

For more on these topics, subscribe to ACEC's bimonthly *Private Industry Briefs*: **https://programs.acec.org/industrybrief/**.

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Economic Outlook

Public-Private Partnerships (P3s)

Cities Are Competing and Spending to Be 'Smarter'

By Erin McLaughlin

With the continuous evolution of information and communications technology, cities are becoming smarter, with some pulling ahead as smarter than others due to strategic investments. According to a recent report by International Data Corp. (IDC), smart city technology spending is expected to hit $81 billion in 2018 and grow to $158 billion by 2022. IDC forecasts the focus of smart initiatives and spending will be intelligent traffic and transit as well as fixed visual surveillance, followed by smart outdoor lighting and environmental monitoring.

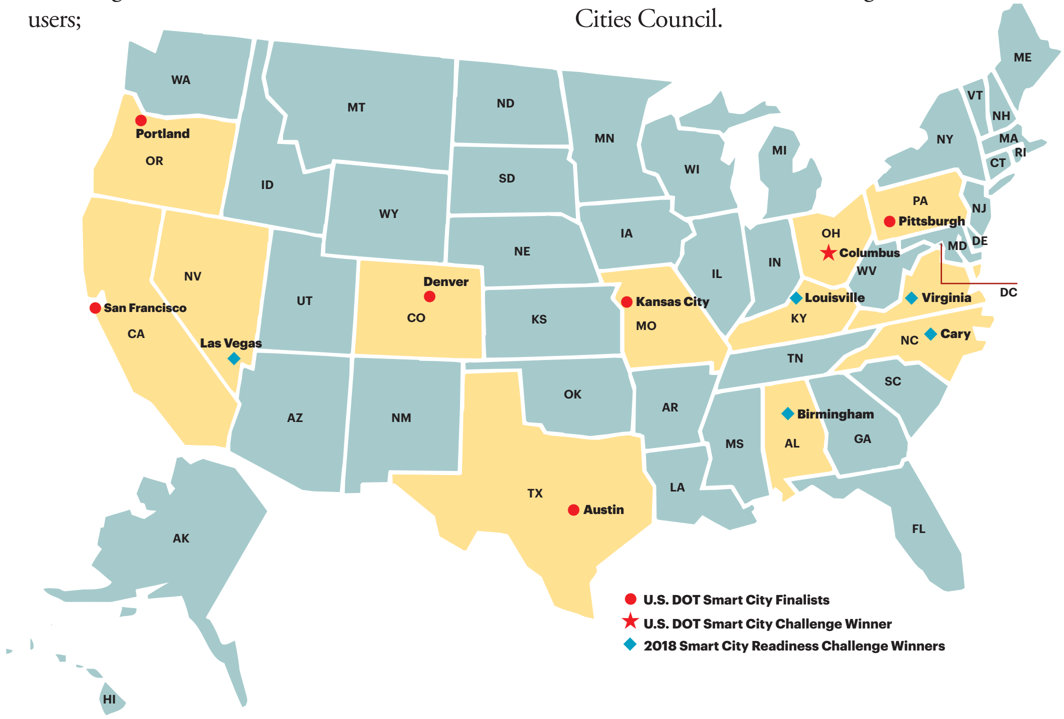
Smart city technology spending is expected to hit $81 billion in 2018 and grow to $158 billion by 2022

IDC's projection aligns with the solutions the U.S. Department of Transportation (U.S. DOT) identified as priorities for cities participating in its Smart City Challenge, which kicked off in December 2015. The emphasis for smart city solutions continues to be on urban mobility, including:

- Providing first-mile and last-mile service for transit users;
- Coordinating data collection and analysis across systems and sectors;
- Reducing carbon emissions, therefore limiting the impact of climate change;
- Facilitating the movement of urban freight; and
- Optimizing traffic flow on congested roadways.

With smart city-related projects, the line is often blurred between what is private versus public, and what is a traditional engineering service versus a technology service or product. The result in this new world of designing smart infrastructure often involves different kinds of public-private partnerships that align engineering firms with technology firms, and public needs with private investment. Questions around data collection and privacy have arisen; however, opportunities around smart city infrastructure will continue to increase.

Is your city a "smart city"? Below is a map of the winner in addition to the seven finalists of the U.S. DOT Smart City Challenge, as well as the 2018 winners of the annual Readiness Challenge Grants from the Smart Cities Council.



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Dallas-Fort Worth Reigns as Hottest Domestic Market

The Dallas-Fort Worth metropolitan area continues to garner attention as the hottest domestic commercial real estate market, according to the 2019 "Emerging Trends in Real Estate" by PwC and the Urban Land Institute (ULI). PwC/ULI ranked Dallas-Fort Worth No. 1 in the 2019 report for "Overall Real Estate Prospects."

The metropolitan area's success is attributed to strong population growth of those 44 and younger, which also correlates with strong labor market growth. According to Reonomy data, commercial real estate sales in Dallas-Fort Worth increased 119 percent between 2006 and 2016, with the largest property types being multifamily residential and office space; total sales of multifamily properties increased by 33.7 percent between 2012 and 2015. Although there is a technology-sector presence, Dallas-Fort Worth's growth and economic success is largely due to it being home to many established *Fortune* 500 firms, such as American Airlines, Kimberly-Clark and Tenet Healthcare.

MOBs on an Inevitable Rise

One market is facing inevitable growth—the health care sector, specifically the need for medical office buildings (MOBs). The U.S. population age 65 and older will rise to more than 56 million people by 2020—growing at a rate 14 times that of the younger population—comprising 17 percent of the total population, according to Census projections. This age group visits doctors well above the rate of any other age group.

The U.S. population age 65 and older will rise to more than 56 million people by 2020

As a result, the health care industry is expected to add 150,000 practitioners over the next two years, according to the National Center for Health Statistics, and those health care professionals need space to work and meet with patients. Per MedScape, the typical space needed for an individual health care professional per office ranges from 1,000 to 1,500 square feet. Commercial real estate firm Transwestern estimates that this translates into demand for between 150.5 and 225.8 million square feet by 2019, and only 110 million square feet is expected to be available in either existing or under-construction space.

The top five markets where demand well exceeds supply include:

1. New York
2. Dallas-Fort Worth
3. Atlanta
4. Chicago
5. Houston

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Erin McLaughlin *is ACEC's senior director of private market resources. She can be reached at emclaughlin@acec.org.*

Overcoming viability concerns and political partisanship, the progress of high-speed rail in the U.S. is picking up much-needed steam

RAIL

BRIGHTLINE HSR

BY GERRY DONOHUE

High-speed rail in the United States came of age in 2018. Over the past three decades, high-speed rail (HSR) made the painfully slow transformation from pipe dream to the next big thing. But is it more like the train to nowhere?

Even as late as 2017, with billions of dollars of infrastructure under construction in California's Central Valley, industry analysts continued to question the viability of HSR in the U.S. However, the private sector has embraced the concept.

In 2018, privately owned Brightline launched a 78-mph train in Florida between Fort Lauderdale and West Palm Beach. Phase 2 of the high-speed rail line will include service to Orlando International Airport. Future expansion could extend to both Tampa and Jacksonville.

LERATION

A Brightline train exiting the station in West Palm Beach, Florida.

In 2018, privately owned Brightline started operating higher-speed trains (78 mph) in Florida between Fort Lauderdale and West Palm Beach, eventually extending the line to Miami in May. Additionally, the U.S. investment firm Global Infrastructure Partners purchased private Italian HSR operator Italo – Nuovo Trasporto Viaggiatori S.p.A., in April, creating the possibility for an investor market in HSR projects.

Last summer, Microsoft helped to fund a feasibility study for the Cascadia HSR network in the Pacific Northwest, citing the potential positive economic impact for the region. In September 2018, Brightline again made news with its purchase of Xpress West, a proposed HSR line connecting Las Vegas to southern California. Also, Texas Central Partners secured a $300 million loan to move ahead with plans to connect Dallas and Houston and contracted with global firms to build and operate the HSR line.

Public HSR projects are also showing signs of progress. The California High Speed Rail Authority announced that it has enough funding to complete the first phase of its network; transportation leaders in Oregon, Washington and British Columbia are moving forward with the Cascadia network; and Illinois completed the initial feasibility study for a HSR line connecting Chicago to Springfield, Illinois.

"The past few months have been a game-changer," says Andy Kunz, president and CEO of the U.S. High Speed Rail Association (USHSRA). "We have arrived at a new day."

The Acela Express Train, operated by Amtrak, can reach 156 mph, but dated infrastructure and corridor congestion keeps the train's average speed to just 70 mph

GLOBAL EXPANSION

The first HSR line, which Japan introduced in 1964, connected Tokyo and Osaka with a train that operated at 130 mph. Today the line is the busiest in the world, transporting more than 150 million riders a year on trains traveling at up to 200 mph.

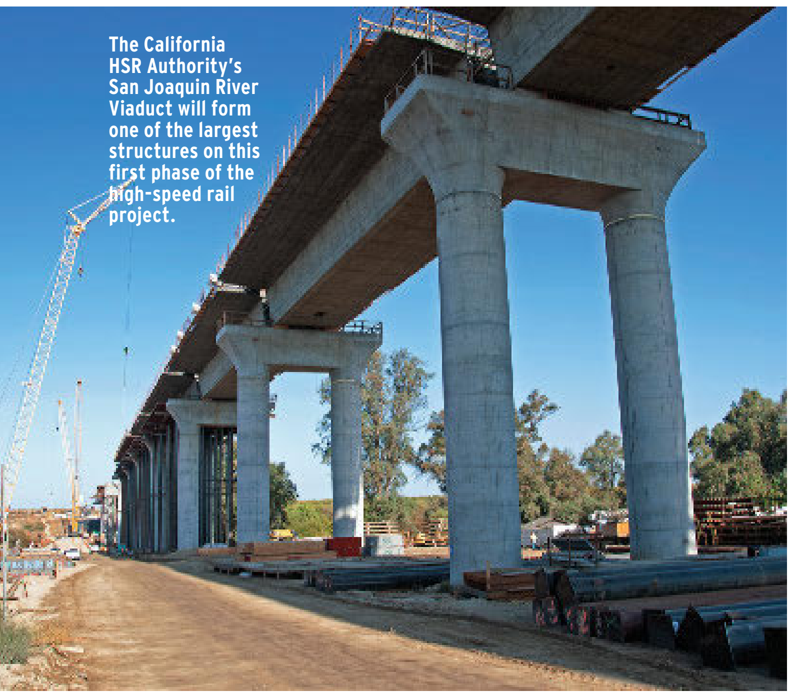
European countries soon followed suit, along with Russia in 1974, England in 1976 and France in 1981. The European HSR network connects 10 countries with trains operating at close to 200 mph, and currently, there are plans to expand the system from Turkey to Norway.

However, no country has taken to HSR quite like China. Since introducing its first HSR line in 2007, China has built more than 15,000 miles of HSR rail and is home to the world's only magnetic-levitation (maglev) train, which connects the Shanghai Pudong Airport to the Longyang Road Metro Station in the Pudong New Area located near the Shanghai city center, at speeds up to 268 mph. China recently announced that it is testing a new maglev train that could hit speeds of 370 mph, and the country is working on a train that could travel up to 621 mph.

During all this activity, the U.S. has lagged noticeably behind. The nation's fastest system is the Acela Express Train, which Amtrak operates between Boston and Washington, D.C. The Acela Express can reach 156 mph, but dated infrastructure and corridor congestion keep the train's average speed to just 70 mph over the 457-mile route.

The Shinkansen N700S, which will be used by Texas Central Railway for the upcoming high-speed train connecting North Texas to Houston.

HK STRATEGIES



The California HSR Authority's San Joaquin River Viaduct will form one of the largest structures on this first phase of the high-speed rail project.

CALIFORNIA HSR AUTHORITY

“We need to advance our program if we want to keep up with the global market,” says Julie D’Orazio, national market leader for transit and rail services at WSP USA, which is the program manager for the California HSR project.

After the 2007 financial crisis, the Obama administration made $8 billion available for HSR development. Almost immediately, however, publicly funded HSR projects became a litmus test for political affiliations, with the Republican governors of Florida and Ohio refusing to accept the funding.

“It became a wedge issue, defining Republican versus Democrat,” says Peter Gertler, senior vice president at HNTB, which is working on the California HSR and is the program manager for Brightline. “That has taken the focus away from the potential of these programs. California’s project is supported by a majority of residents, but it has become a political football in Washington, D.C.”

GOLDEN STATE MEGAPROJECT

Because of the huge size and ambition, the California HSR project has dominated conversation in the sector for the past 10 years.

“It has been a very aggressive project and a very complicated project, given the number of decision-makers, stakeholders and interested parties in California,” Gertler says.

As can be expected on unique megaprojects, cost overruns and delays have multiplied. Originally projected to cost $40 billion, the latest estimate tops $77 billion. The completion schedule keeps extending into the distant future. Trains will not start operating along the 119-mile first segment from Bakersfield to Madera until 2026; the connection to San Francisco will open in 2029; and it will be 2033 before trains make the trip from the Bay Area to Los Angeles.

“The timeline for getting the project built is longer than most political office timelines,” says USHSRA’s Kunz. California Gov. Jerry Brown was a strong HSR proponent, but he did not run for re-election. Gov.-elect Gavin Newsom offered lukewarm support for the project during the campaign. The Republican candidate, John Cox, opposed the HSR program, calling it “the train to nowhere.”

“Every project is vulnerable until the trains are running,” says Kunz.

The biggest engineering challenge for the California HSR line will be traversing three mountain ranges.

“We have to cross the Coastal Range in the Pacheco Pass area, the Tehachapi Mountains south of Bakersfield and the San Gabriel Mountains between Palmdale and Burbank,” says Scott Jarvis, chief engineer of the California High Speed Rail Authority.

Current alignments call for between 45 and 50 miles of tunnels, ranging in length from several thousand feet to more than 20 miles, some of which could be more than 2,000 feet underground.

Even more difficult is securing a steady source of project funding. In 2008, the California Legislature provided $9.5 billion

“We need to advance our program if we want to keep up with the global market.”

JULIE D’ORAZIO
NATIONAL MARKET LEADER FOR TRANSIT AND RAIL SERVICES
WSP USA

for the project, and in 2009 and 2010 the federal government provided $6.25 billion. Until now the project has been operating on a pay-as-you-go basis, but, according to Jarvis, the completion of the Bakersfield-Madera segment will exhaust those funds.

Beginning in 2015, the authority began receiving 25 percent of the revenue from the state's cap-and-trade program, around $1.2 billion to date. In 2017, the Legislature extended that allocation through 2030, which will provide an additional $7.1 billion to $18.4 billion, depending on the robustness of the cap-and-trade program. Those funds will not be enough to finish the project, so the authority has proposed financing its future cap-and-trade proceeds. However, to make the financing work, the state would have to extend the cap-and-trade program through 2050 and provide investor guarantees. The authority hopes to have the program in place by 2021.

Texas Central Partners secured a $300 million loan to move ahead with plans to connect Dallas and Houston and contracted with global firms to build and operate the HSR line

In the past, states could count on the federal government to provide a significant percentage of the project funding, but the Trump administration has shown little appetite for HSR. In its current calculations, the authority estimates that the federal share of the project will be only 12 percent although it holds out the possibility that future administrations could provide additional funding.

"The funding environment has changed," says Gertler. "We used to think of federal support as being the first dollars. Now, they are more likely to be the last dollars."

PRIVATE SECTOR EMBRACE

According to HSR advocates, the key to generating public funding and political support is getting a system up and running. Given the success of—and subsequent support for—HSR in other countries, they are confident the first operating U.S. line will open the floodgates. However, the long timeline of the California project and the nascent status of the Cascadia and the Midwest systems are problematic.

Therefore, the entry of the private sector may be a game-changer. Although these projects are far more limited in scope and have not yet been true high speed (150-plus mph), the projects may prove that HSR can be a winner in the U.S.

"We are all watching very eagerly to see how these services are received," says D'Orazio, whose company, WSP USA, is working in various capacities on several HSR projects. "Their success will demonstrate that high-speed rail provides tremendous economic benefits and offers a good rate of return."

"Now that the private sector is coming into the HSR market, Republicans can be in favor of it," Kunz adds.

Brightline took approximately 2.75 years and $1.7 billion to build the HSR line connecting Miami and West Palm Beach, Florida, but it had the advantage of already owning the right of way between the two cities. Fortress Investment Group, which owns Brightline, acquired the Florida East Coast Railway in 2007.

"We did not have to deal with the expense and time of acquiring the land," says Adrian Share, executive vice president of rail infrastructure at Brightline, "but we still had to go through the full environmental process, interfacing with every community along the route."

During construction, Brightline upgraded the existing track, added a second track, built several bridges, upgraded all 180

Creating an HSR Market

Global Infrastructure Partners' $1.9 billion purchase of the Italian high-speed rail (HSR) operator Italo – Nuovo Trasporto Viaggiatori S.p.A., could be a critical step forward for concept in the United States, according to Andy Kunz, president of the U.S. High Speed Rail Association.

"Global Infrastructure sees HSR as a good investment, and I am sure they would be happy to buy up more, but there have not been private companies they could acquire," he says. "There has been no pipeline of projects."

When Brightline, Xpress West and Texas Central are up and running, Global Infrastructure or other investment firms could be buyers, providing the incentive for developers to start new HSR projects.

While the potential of HSR is exciting, Julie D'Orazio, national market leader for transit and rail services at WSP USA, believes the national system needs to be looked at holistically.

D'Orazio points to the Northeast as an example, where existing infrastructure, population densities, environmental issues and topography make the development of true high-speed networks (150-plus mph) problematic and expensive.

"Rather than higher speed, we can look at higher performance," says D'Orazio. "We can work on dwell times within stations or how many stops we need. By working on the frequency and reliability of the system, we can improve the overall delivery of services."

SOURCE: U.S. HIGH SPEED RAIL ASSOCIATION

at-grade crossings and installed a new signal system. According to Share, the organization also negotiated a shared use agreement with the freight rail operator using the line, so most freight trains run at night while Brightline uses the corridor during the day.

Phase 2 of Brightline's HSR project will extend the service to Orlando International Airport's new Intermodal Terminal Facility utilizing the existing Florida East Coast Railway corridor and a portion of right of way along the State Road 528 corridor. According to Share, Brightline will operate at speeds up to 110 mph between Cocoa and West Palm Beach and up to 125 mph along the new 40-mile grade-separated railway between Cocoa and Orlando.

Future expansion of the system could extend to Tampa and farther north to Jacksonville.

It is still early, but Share says Brightline is hitting its ridership targets. According to projections, the system must capture just 2 percent of all trips between Miami and Orlando to be successful. In comparison, Amtrak commands about 12 percent of the traffic between New York City and Washington, D.C.

Integral to the Fortress Investment Group's business model is acquiring and developing the land around the Brightline stations. The company is building more than 800 apartments at the Miami station and close to 300 at the West Palm Beach station in addition to leasing commercial and retail space.

Even as it builds out its Florida network, Brightline has taken its blueprint on the road, purchasing Xpress West, which had gained approval for—but never moved forward with—a 185-mile HSR line between Las Vegas and Victorville, California. According to Share, Brightline will follow the approved plan, which uses the I-15 corridor. Construction is scheduled to start in 2019, and trains are expected to be running by 2022.

Since introducing its first HSR line in 2007, China has built more than 15,000 miles of HSR rail and is home to the world's only magnetic-levitation train

According to an article in the *Los Angeles Times*, Xpress West's system was estimated to cost $7 billion, but Brightline is aiming to cut that cost in half.

Share says the system—with a Victorville, California, terminus—will be economically viable. Additionally, industry analysts expect the line to eventually extend 60 miles to Palmdale, California, where it could connect to the California HSR system.

"Our vision does not stop here," Fortress Investment Group co-founder Wes Edens told *USA Today*. "Our goal is to look at other corridors with similar characteristics—too long to drive, too short to fly."

The California HSR Authority's San Joaquin River Viaduct is a 4,740-foot structure that will span the San Joaquin River in north Fresno and the Union Pacific tracks parallel to State Route 99.

CALIFORNIA HSR AUTHORITY

A rendering of a California HSR station.

WSP USA

Likely corridors could be Atlanta to Charlotte; Richmond, Virginia, to Washington, D.C.; or Chicago to Indianapolis.

One corridor where development is already underway is the 240 miles between Dallas-Fort Worth and Houston. The developer, Texas Central Partners, hopes to gain final environmental approvals and start construction before 2019. With trains traveling at 200 mph starting as early as 2024, Texas Central would be the nation's first true HSR line.

"The first system that is up and running will give the industry a huge boost of confidence. It will provide even more confidence for building the next system."

PETER GERTLER
SENIOR VICE PRESIDENT
HNTB

"The first system that is up and running will give the industry a huge boost of confidence," says Gertler. "It will provide even more confidence for building the next system."

PUBLIC AND PRIVATE MIX

The private HSR projects underway right now are using their own infrastructure or developing greenfield projects. These are rather unusual situations. In most instances, private developers will need to work with public agencies to connect large urban areas.

"Once you are into highly populated cities, there has to be coordination with the public agencies to determine how it impacts and links with the current transit and rail system," says D'Orazio.

Rick Harnish, executive director of the Midwest High Speed Rail Association, expects the U.S. model to develop along lines similar to other countries.

"It is going to be a mix of public and private," he says. "The public agencies will do the environmental work and purchase the land and then contract with a private company to build the line and operate it." ■

__Gerry Donohue__ is ACEC's senior communications writer. He can be reached at gdonohue@acec.org.

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2018 Vegas Fall Conference Deals Winning Hands

From eluding the threat of commoditization to making your firm a "Best Place to Work" to keys for becoming an effective leader, attendees at the ACEC 2018 Fall Conference gained a wide array of insight to boost Member Firm efficiency and success.

More than 900 members and guests attended the October Conference at the Bellagio in Las Vegas, which featured nationally renowned guest speakers, insightful CEO panels, more than 30 advanced business management sessions, CEO, CIO and CFO roundtables and the annual Awards Luncheon.

First-time Conference attendee Steve Burian, of AE2S in Grand Forks, North Dakota, called the event captivating. "I was very impressed with the entire conference setup, the staff were tremendous and friendly, and I also thought that the general session speakers were amazing and inspirational," he said.

Rick Baldocchi, of AVCON in Orlando, Florida, echoed that sentiment. "It also gave me a better understanding of the wide reach and impact that ACEC has on the rest of the industry," he said.

"I really enjoyed the Conference, and the speakers were great," said Michael Felker, of Strand Associates, Inc., in Madison, Wisconsin. "I also thought the education sessions were very informative."

ACEC Chairman Manish Kothari addresses the Board of Directors.

A packed Fall Conference audience listens as Presidential historian Jon Meacham discusses why current examples of absurdity on Capitol Hill are only a repeat of the past.

for Business Success

As part of her vision for the Council, new President/CEO Linda Bauer Darr vows to "work with and through our extensive network of grassroots Member Organizations to communicate and grow the ACEC value proposition for our members."

MEACHAM REMINDS ATTENDEES THAT AMERICAN POLITICS HAVE BEEN HERE BEFORE

Presidential historian and author Jon Meacham told Fall Conference attendees that despite the nation's despair about the current political climate, nothing that is happening today is new.

"There is no way we can say 'things have never been worse politically,'" he said, while pointing out that the phrase "fake news" was coined in the late 1700s, and in the early 1900s, the influx of Asian immigrants gave rise to a fervent nationalist movement.

Meacham said America will always contain a 50/50 split of people who like what is going on and people who do not. "It does not mean we are going off the cliff. It is called a democracy," he said. "Closing our minds strictly because of affiliation makes it difficult to discover those things that we may actually agree on."

WELCOMIA / ISTOCK / GETTY IMAGES

A packed Fall Conference exhibit hall featured more than 40 booths from vendors and service providers.

SHEAHAN URGES: LEAD YOUR CLIENT TO THE FUTURE; O'MALLEY PROVIDES SEVEN TENETS OF LEADERSHIP

Business strategist Peter Sheahan gave a fast-paced Conference presentation emphasizing how firms can grow and prosper in a changing market.

Addressing the commoditization threat in engineering, he said, "Do not complain that your core product is getting commoditized if you are solving the same problem in the same way as your competition."

Sheahan added that firms need to capitalize on today's strong economy to more differentiate themselves. "Move up the value chain, solve the more complex problem and put the customer at the center," he advised. "Lead your client to the future."

Sports/business pioneer Susan O'Malley—the first female president of a professional sports franchise—presented her rules for succeeding in a male-dominated environment.

"A lot about effective leadership is changing the culture," said O'Malley, who at age 29 became president of the NBA's Washington Bullets (now the Wizards). She also offered seven leadership tenets: make your bed every day; plan your work and work your plan; keep working on your craft; set clear expectations; when you mess up, make it right; have fun; and people make the difference.

Former ACEC Chairmen Peter Strub, left, and Dick Wells, right, and his wife, Melissa, are part of the annual Fellows Charity Fun Walk outside the Bellagio, which raised more than $3,000 for the Nevada Childhood Cancer Foundation.

Joseph Sczurko, right, of Wood, provides his insight on how to gain an edge in a competitive market, including side-stepping commoditization, as fellow panelists Hisham Mahmoud, left, of Golder, and Joachim Ebert, center, of Arcadis North America listen.

CEO PANEL ADVISES SIDE-STEPPING COMMODITIZATION THROUGH DIFFERENTIATION

Facing the increasing commoditization of engineering services, a panel of Council CEOs addressed how they distinguish their firms.

"You either compete on price or on differentiation," said Arcadis North America CEO/COO Joachim Ebert. "Given the choice between the two, I will take differentiation every day of the week."

Golder Global President & CEO Hisham Mahmoud said his firm's strategy has been to concentrate on its core geo-science practice. "We have chosen to be specialized as a company rather than generalized," he said. "Focus on areas where you can differentiate yourself."

Equally important, according to Joseph Sczurko, president, strategy & development at Wood, is to understand what the differentiators are for the competition. "We are shifting from being a project-centric firm to be more client-centric," said Sczurko. "Figure out your value proposition. Determine what value you bring to the customer."

CEOs OF 'TOP PLACES TO WORK' SHARE BEST PRACTICES

The leaders of Member Firms that have been nationally recognized as "Best Places to Work" shared their best insights in a CEO Panel.

Kimley-Horn President Steve Lefton emphasized employee development. "Younger staff have an insatiable thirst for knowledge, from technical skills to leadership coaching," he said. "In the past year, more than half of our staff has taken part in some form of training."

All three firms are employee-owned, which is not a coincidence, said Burns & McDonnell CEO Ray Kowalik. But, he added that it increases the complexity. "You have to wear two hats, employee and owner," he said. Using the example of employee benefits, Kowalik said that the firm is probably in the 50th to 60th percentile in the industry but focuses on "benefits that are used by the largest number of team members."

Garver President/CEO Dan Williams credits the culture of fellowship at his firm. "It is a huge incentive when everyone knows each other," he said. "The better they know each other, the better they work together."

Discussing their strategies for holding on to key employees were (left to right): Steve Lefton of Kimley-Horn, Ray Kowalik of Burns & McDonnell, and Dan Williams of Garver.

ACEC/PAC CONTINUES RECORD-BREAKING PACE

ACEC/PAC raised more than $197,685 at the Fall Conference, keeping the PAC on a record fundraising pace. Year to date, ACEC/PAC has raised more than $1 million.

More than 475 members participated in the 2018 ACEC/PAC Fall Sweepstakes. **Gary Etter** of Greenman-Pederson, Inc., Babylon, New York, won the grand prize of $10,000. **Camilo Rocha** of TRC Cos., Inc., Encinitas, California, and **John Atz** of Kimley-Horn & Associates, Inc., West Palm Beach, Florida, each won $5,000. The $2,500 winners were: **Matthew Natale** of Johnson, Mirmiran & Thompson, Inc., Philadelphia, and **Kumar Allady** of RADISE International, Riviera Beach, Florida. Ten members won $1,000: **Rick Baldocchi** of AVCON INC., Orlando, Florida; **Larry Swartz** of Notkin Engineering, Seattle; **David Wantman** of WGI, West Palm Beach, Florida; **Andrew Pennoni** of Pennoni Associates, Inc., King of Prussia, Pennsylvania; **Mark Prochak** of DRMP, Inc., Orlando; **Craig Hunter** of HDR, Omaha, Nebraska; **Peter Partlow** of E Sciences, Inc., Orlando, Florida; **David Scott** of ACEC/Iowa; **Bruce Stidworthy** of Bohannan Huston, Inc., Albuquerque, New Mexico; and **Joseph Hagerty** of Oates Associates, St. Louis.

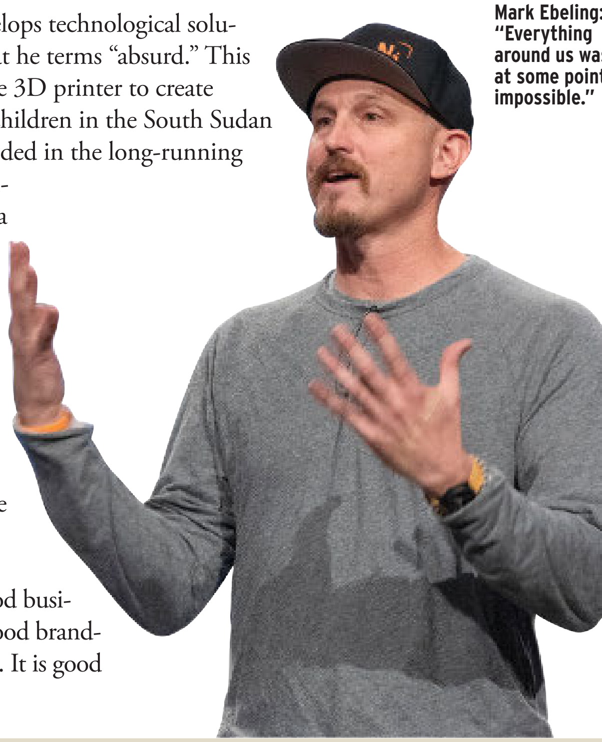
The ACEC/PAC TopGolf Tournament raised $11,300. In the Beat the Pro contest, **Stephanie Christensen** of EMCS, Inc., Wausau, Wisconsin, won for the women and **Jay Simson** of ACEC/New York won for the men.

ACEC/PAC also hosted a special Thank You reception for the ACEC/PAC Major Donors of $1,000 or more.

2018 Chairmen Emeritus Award winner Clint Robinson, of Black & Veatch, addressed the audience after receiving his award for outstanding service and support to the Council. From left to right: President/CEO Linda Bauer Darr, Robinson, 2016-2017 ACEC Chairman Peter Strub and ACEC Chairman Manish Kothari.

MICK EBELING CALLS FOR 'ENLIGHTENED CAPITALISM'

"Everything around us was at some point impossible," said Mick Ebeling, CEO of Not Impossible Labs, to a general session audience. "Impossible is a total fallacy."



Mark Ebeling: "Everything around us was at some point impossible."

Ebeling's firm develops technological solutions to problems that he terms "absurd." This includes an affordable 3D printer to create prosthetic limbs for children in the South Sudan who have been wounded in the long-running conflict, and an open-source eye writer for a paralyzed artist.

Ebeling combines technology and storytelling when finding a problem to solve for a single person, and then uses video and social media to demonstrate how the solution can help many people.

"Doing good is good business," he said. "It is good branding. It is good growth. It is good for recruiting."

CONFERENCE AWARD RECIPIENTS

The Council honored several members and students during the Conference Awards Luncheon for exceptional achievement and service.

Five Member Firm employees were recognized as Young Professionals of the Year for their significant contributions to the industry early in their careers: **Raine Gardner**, MSA Professional Services, Inc., Baraboo, Wisconsin; **Aaron Grote**, Lamp Rynearson, Omaha, Nebraska; **Kurt Lysne**, Moore Engineering, Inc., West Fargo, North Dakota; **Eddy Roberts**, LERA Consulting Structural Engineers, New York, New York; and **Andrew Woodroof**, Digital Engineering, Kenner, Louisiana.

The College of Fellows awarded scholarships to eight outstanding engineering students: **Sarah Drummey**, $10,000 ACEC Scholar of the Year Scholarship; **Jacob Moyer**, $10,000 Rina Lee Scholarship; **Michael Tormey**, $5,000 ACEC Life/Health Trust Scholarship; **Leah Bectel**, $5,000 a/e ProNet Scholarship; **Austin Eck**, $5,000 Professional Liability Agents Network Scholarship; **Kristine Obenour**, $4,000 Council of American Structural Engineers Scholarship; **Erin Dillman**, $3,000 Small Firm Council Scholarship and **Tyler Kleinsasser**, $3,000 College of Fellows Scholarship.

The 2018 Community Service Award—recognizing a Council member for their extraordinary contribution to their community—was presented to **Kunal Gangopadhyay**, of EBA Engineering, Inc., Nottingham, Maryland.

The Coalitions Distinguished Service Award was presented to **Mark Borushko**, of David Evans & Associates, Inc., Phoenix.

Black & Veatch's **Clint Robinson** received the 2018 ACEC Chairmen Emeritus Award for his "outstanding service and support to the Council." ■

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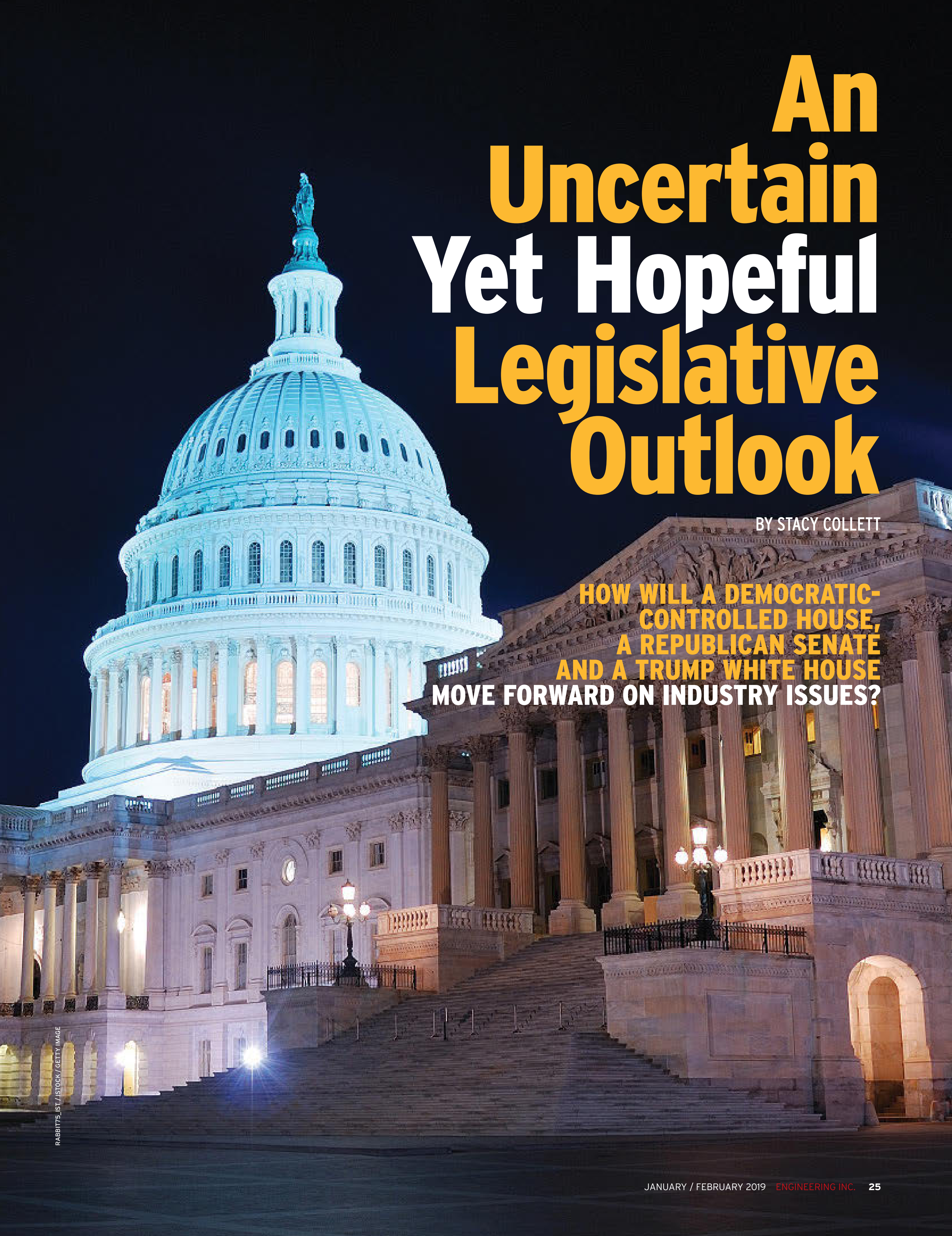


An Uncertain Yet Hopeful Legislative Outlook

BY STACY COLLETT

HOW WILL A DEMOCRATIC-CONTROLLED HOUSE, A REPUBLICAN SENATE AND A TRUMP WHITE HOUSE MOVE FORWARD ON INDUSTRY ISSUES?

RABBIT75_IST / ISTOCK / GETTY IMAGE

November's midterm elections ushered in a Democratic-controlled House, a Republican Senate and a White House embroiled in controversy for 2019. It also brought another round of uncertainty over what Congress can accomplish on major industry issues over the next two years.

Will Democrats and Republicans work together as promised? What will become of the Fixing America's Surface Transportation (FAST) Act, and what funding options have the best chance of passing both chambers of Congress?

Some Member Firms remain optimistic that industry goals can be achieved given the bipartisan support for national infrastructure that is in desperate need of repair. Many newly elected lawmakers are also eager to make their mark. With any administration, however, priorities can change quickly.

President Donald Trump planned to spend $200 billion in federal funds to invest in the country's infrastructure, part of a $1.5 trillion infrastructure proposal announced in February 2018, but the plan stalled by summer, with no progress made before the midterm elections.

Congress did manage to pass several key pieces of infrastructure legislation this year. The five-year FAA Reauthorization Act of 2018, signed in October 2018, provides $3.35 billion annually for the Airport Improvement Program and creates a new $1 billion grant program for small and medium-sized airports. The legislation keeps programs such as the $36 billion NextGen air transportation system modernization program afloat and pays the FAA's 14,000 air traffic controllers. It also tweaks airline regulations, sets additional guidelines for drone aircraft, provides funding for the Transportation Security Administration, and even expands requirements for the use of Qualifications-Based Selection at the request of ACEC. America's Water Infrastructure Act of 2018, also signed in October 2018, authorizes water resource projects and policies nationwide to be administered by the U.S. Army Corps of Engineers and authorizes over $6 billion in federal spending on ports, harbors and waterways. The bipartisan bill passed the Senate 99-1.

Transportation and other infrastructure program funding for 2018 got a big boost in 2016 when Republicans and Democrats agreed to increase the budget caps for both defense spending and domestic spending. However that ends in 2019, leaving future transportation and infrastructure funding at the forefront of debate. The FAST Act, which passed by large majorities in both the House and Senate and was signed by President Barack Obama in December 2015, aims to provide federal funding for roads, bridges, transit and rail infrastructure. But the Highway Trust Fund, which funds FAST, is running out and needs funding sources.

KIRKIKIS / ISTOCK / GETTY IMAGE

Can the new Congress work together to move industry projects forward? *Engineering Inc.* spoke with government affairs leaders at ACEC Member Firms to gather some perspective.

"Everyone agrees on the magnitude of the needs, maybe not the priority of the needs, but the magnitude."

CATHY CONNOR
SENIOR VICE PRESIDENT
AND DIRECTOR OF FEDERAL
GOVERNMENT AFFAIRS
WSP USA

BIPARTISANSHIP IS KEY

"If there is an effort on bipartisanship, then infrastructure comes to the forefront. It is a bipartisan issue to begin with," says Cathy Connor, senior vice president and director of federal government affairs at WSP USA. "Everyone agrees on the magnitude of the needs, maybe not the priority of the needs, but the magnitude," she says.

The newly elected lawmakers are younger and more gender and ethnically diverse than the typical freshman class, Connor adds. "It seems to be a pretty energetic group of people who are going to want to come in and make some moves fairly quickly and show results."

According to Connor, transportation funding and the future of the FAST Act could play out in several different ways. "Will it be essentially an advanced FAST Act or doing the FAST Act early and pumping more money into the existing program with some level of tweaks?" says Connor. "Or are we talking about resurrecting the Trump administration's infrastructure proposal, which was a very different approach favoring state and local matching funds and limiting federal funds?"

If the reauthorization of surface transportation programs under the FAST Act does move forward, House and Senate members must agree on how to fund it, a perennial sticking point. There is a lot of renewed interest among some key Democrats to pass infrastructure funding, according to Connor. These include Rep. Earl Blumenauer, D-Ore., a member of the House Ways and Means

Committee, and Rep. Peter DeFazio, D-Ore., incoming chairman of the House Transportation and Infrastructure Committee.

"These two key players have been talking about how they want to kick off a major effort to identify additional dedicated revenue for the Highway Trust Fund," says Connor. "However, history tells us that the Democratic leadership in Congress has not been any more willing to vote for a federal gas tax increase than Republicans."

FEELING OPTIMISTIC

"We are getting a pretty consistent, optimistic view on at least a start on an infrastructure package from Congress," says Brian Tynan, corporate vice president of government relations at AECOM. "The signals that we are getting from Republicans, President Trump and the incoming Democratic leaders in the House is that nearly everybody wants to do a big infrastructure package, but it may not look like the trillion-dollar package that was originally proposed because the FAA Reauthorization and Water Infrastructure bills were already passed," he says.

"The fundamental challenge is to have a long-term, sustainable, user-oriented solution to the Highway Trust Fund, whether it is a gas tax or vehicle miles-traveled tax," Tynan says. "Most folks in the transportation field recognize that there should be a user nexus or connection to the revenue stream coming in and not a revenue stream that has nothing to do with transportation," he says.

If Congress reauthorizes the FAST Act, Tynan expects a focus on innovation. "We need to address issues such as connected and autonomous vehicles. It is an ever-changing issue that is almost impossible for legislation to stay ahead of, but where legislation can help foster it and allow it to grow and provide things like the spectrum that is necessary. That leads into other issues like safety."

Is the new divided Congress, with many young freshman members, up to the challenge? "That remains to be seen," Tynan says. "Some of that is dependent upon the industry getting out there and educating the new members of Congress and letting them know about the needs that exist, the challenges and the solutions. I am an eternal optimist, and I believe that the engineering and infrastructure community at large need to be optimistic and enthusiastic about moving the ball forward. If not us, then who?"

FUNDING WILL COME FROM SEVERAL SOURCES

Advocating for funding of the Highway Trust Fund is a top priority for Jacobs Engineering Group, according to Matthew Chiller, vice president of federal government relations. "We have to protect it and shore it up for the long run," he says. Chiller hopes that there is a robust conversation that includes engineers and others to talk about the impact some of these different revenue-raising solutions would have and what they would mean for America's transportation network.

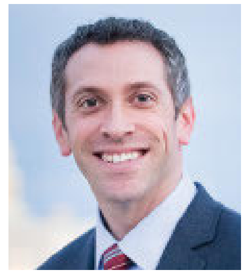
Chiller believes that funding for the trust fund will come from several sources and not just one.

"It has to be a combination because there are so many critical stakeholders who have their own opinions and are going to push a wide variety of bond-related options and road-usage charge options, combined with folks who are looking to expand opportunities for public-private partnerships, infrastructure accelerators—I think you are going to see everything."

Chiller says he supports a gas tax increase at a reasonable amount, for solvency. "It is too early to speak to whether or not we are going to see a gas tax increase in 2019 based on the conversations we are having with policymakers," he says. "But a truly transformative infrastructure package is going to be funded through some sort of combination."

He also supports the idea of a distance-based road usage charge. "We believe in ensuring that the state pilots are enabled and that states are given the money and freedom to pursue additional pilots," says Chiller. "It is a viable option that is working all across the country, and many in Congress are working to push that forward." ■

Stacy Collett *is a business and technology writer based in Chicago.*



"It is too early to speak to whether or not we are going to see a gas tax increase in 2019 based on the conversations we are having with policymakers."

MATTHEW CHILLER
VICE PRESIDENT OF FEDERAL GOVERNMENT RELATIONS
JACOBS ENGINEERING GROUP

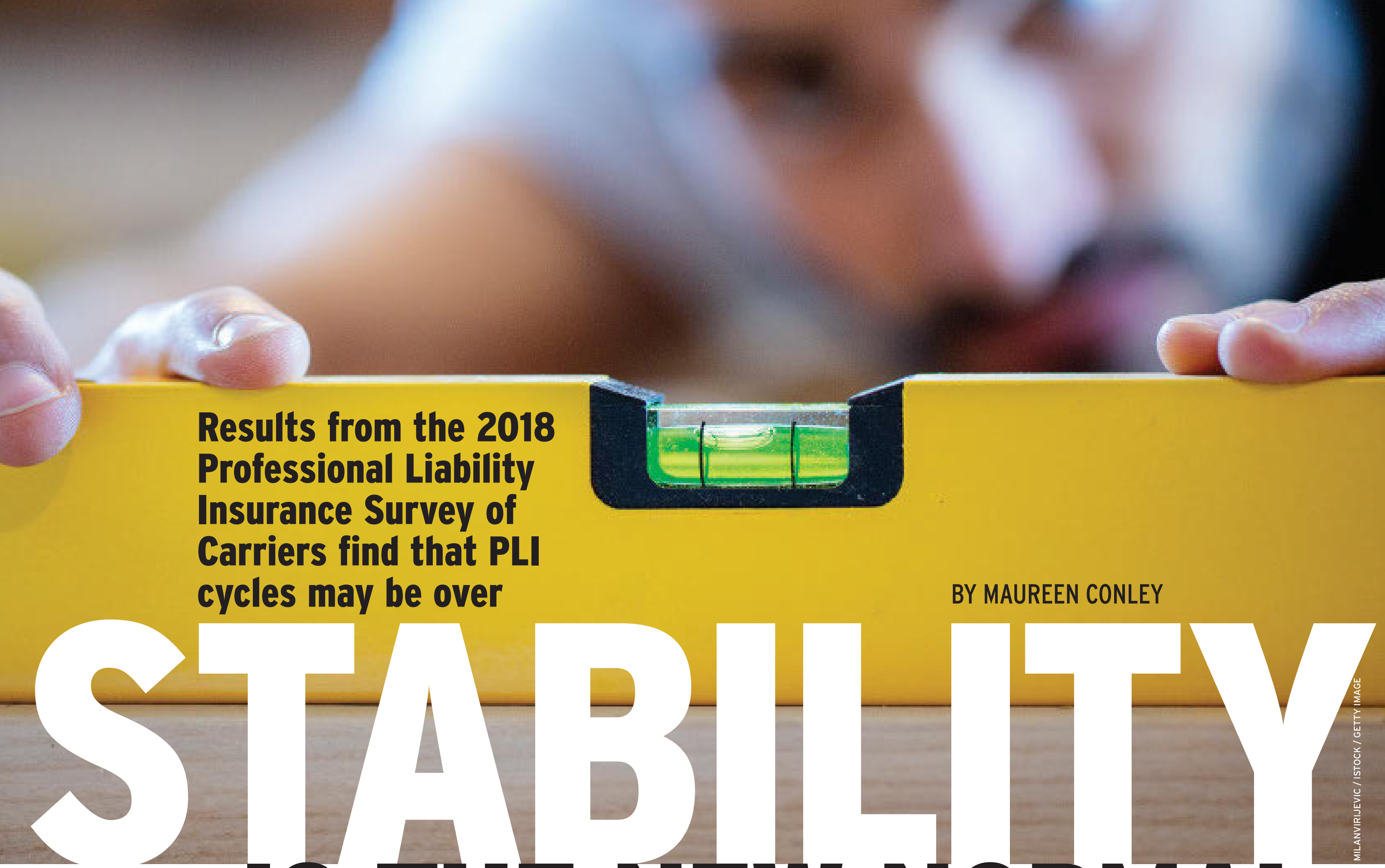
"We are getting a pretty consistent, optimistic view on at least a start on an infrastructure package from Congress."

BRIAN TYNAN
CORPORATE VICE PRESIDENT
OF GOVERNMENT RELATIONS
AECOM

ACEC/PAC Raises Over $1 million For Third Year in a Row

At the time of this printing, more than $1 million in 2018 donations has been received by ACEC/PAC for the third consecutive year.

The March/April 2019 issue of *Engineering Inc.* will present its annual ACEC/PAC review, which will include final 2018 fundraising totals, innovative fundraising strategies used by state ACEC/PAC Champions, and a complete list of all 2018 ACEC/PAC contributors.



MILANVIRIJEVIC / ISTOCK / GETTY IMAGE

Results from the 2018 Professional Liability Insurance Survey of Carriers find that PLI cycles may be over

BY MAUREEN CONLEY

STABILITY IS THE NEW NORMAL

After years of thinking the soft market in professional liability insurance (PLI) for design firms could not last forever, some experts are ready to acknowledge a new normal. The experts say that as carriers continue to enter the marketplace, PLI is readily available at competitive prices, and the severity of claims, while increasing, is keeping pace with inflation.

"The PLI market for designers used to be cyclical, but we have not really had a market cycle since 2004," says Michael Welbel, vice president of Risk Strategies Co. and president of a/e ProNet.

The "ACEC/AIA-AIA Trust/NSPE" Fall 2018 PLI Survey of Carriers found that rates are expected to once again remain relatively flat.

Morgan West, president of Dealey Renton & Associates and current president of the Professional Liability Agents Network (PLAN), referred to ACEC's Fall 2017 PLI Survey of Carriers in which 17 carriers wrote about 95 percent of designer PLI while the other 43 carriers covered the remaining 5 percent.

That makes for a continuing buyer's market, with low rates and carriers offering more risk management services than ever before, according to John Farrar, vice president of Clark Dietz, Inc., and a member of the ACEC Risk Management Committee.

"The market is as soft as I can remember in 25 years in the industry, with some carriers driving down premiums to gain market share," says Sandip Chandarana, director of Professional Underwriters Agency, Inc. "I do not see any end in sight to current conditions." He noted that One Beacon Insurance Group's exit from the market in 2017 left a sizable book of business—perhaps $35 million in premiums—which the rest of the market just swallowed up.

While capacity remains high, the largest firms may find fewer carriers able to service their business, according to Jim Messmore, senior vice president for Hanson Professional Services, Inc., and past chairman of the ACEC Risk Management Committee.

Claims frequency is also stable, adds Farrar, though claims are developing more quickly, on the order of 18-20 months following project completion.

Characteristics in the Premium Determination Process

(1 is the highest level of influence; 8 is the lowest)

	Allied World Insurance	Aspen Insurance	AXIS Insurance	Berkley Design Professional	Liberty Mutual	Navigators Management Co.	PUA	RLI	TMHCC	Travelers	Victor O. Schin-nerer & Co., Inc.	XL Catlin
Location of firm	7	7	4	4	8	4	7	5	7	4	1	7
Location of projects	8	8	8	6	7	7	6	7	4	7	3	8
Type of practice	4	2	2	2	3	3	3	1	2	3	1	2
Type of projects	3	4	6	5	4	5	4	3	1	5	2	3
Annual billings	1	1	1	1	1	1	1	2	5	1	1	1
Claims history	2	3	3	3	2	2	2	4	3	2	1	4
Firm experience	5	5	7	7	6	6	5	6	6	6	2	6
Other	6	6	8	8	5	8	8	*	*	*	*	5

* Did not answer
Source: 2018 ACEC/NSPE/AIA/AIA Trust Professional Liability Insurance Survey of Carriers

Farrar, Messmore and Tim Corbett, founder and president of SmartRisk, interviewed PLI carriers in October 2018, in cooperation with the National Society of Professional Engineers Professional Liability Committee, the American Institute of Architects Risk Management Committee, and the AIA Trust.

COMPETITIVE MARKET

After years of trying to right-size rates, even legacy carriers have become more competitive, according to Jeff Connelly, program manager for the ACEC Business Insurance Trust and a broker at Greyling Insurance Brokerage & Risk Consulting, a division of EPIC.

"I do not see the domestic market changing unless something very unusual happens," says Connelly. He recalls a time when there were not enough players in the market; they were very selective; and structural engineers had a tough time finding coverage. "Today, everybody insures them," says Connelly.

Project coverage is more readily available for an entire design team or just select members, according to Welbel. Before the recession, project insurance was seen mostly on big infrastructure projects, or stadia, but following a series of large claims, it became harder to find at an attractive price, he says.

"Since 2008, the number of carriers serious about project policies has doubled to eight," says Welbel. A firm can isolate the risk using a project policy and protect its practice policy from claims and potential rate increases at renewal time, according to Welbel.

"Firms are growing, business is good, so we would expect to see premium increases," says Connelly. Additionally, revenue is a primary factor in calculating insurance premiums. When rates appear higher, Connelly may counsel a firm to look at other options with a client's approval but will often give the incumbent carrier another look. "I cannot recall an incumbent not wanting to meet a competitor's price," says Connelly.

STATE OF PLAY

A significant number of claims against design firms continue to be driven by technical errors, poor contracts and poor communication, according to the survey. Professional Underwriters Agency, Inc., has seen a lot of mechanical, electrical and plumbing claims related to schools and HVAC work, particularly from moisture, according to Chandarana. He also noted that some of these issues could have been avoided with better contract terms.

"Claims severity has risen over the past year," says Al Rabasca, director of industry relations at AXA XL. "Condos, multifamily dwellings, schools and hospitals are among the riskiest projects."

According to Farrar, rates could rise for firms with a poor claims history and those that do a lot of structural, geotechnical, condo and residential design. "Some carriers are taking more time to examine condo exposures and how insureds handle those projects," he says.

Additionally, Corbett adds that some carriers are using data to sharpen and enhance their underwriting processes and pick their insureds.

"The severity increase tracks with the robust construction market, and claims could

"A/E liability is a very nuanced, specialized line of insurance, and the leading carriers offer more than just a policy. Most firms need a business partner that can help with loss prevention."

AL RABASCA
DIRECTOR OF INDUSTRY RELATIONS
AXA XL

become more frequent if the economy keeps growing," says Kevin Collins, senior vice president, professional liability at Victor O. Schinnerer & Co., Inc. The most severe claims Schinnerer has seen involved civil engineers on infrastructure projects, particularly bridges.

"Our largest losses over the past year come down to project size and complexity rather than a specific project type or engineering discipline," says John Rapp, second vice president at Travelers PLI. He adds that although schools and retail projects have had large claims, they tend to be good projects for Travelers.

"The market is as soft as I can remember in 25 years in the industry, with some carriers driving down premiums to gain market share."

SANDIP CHANDARANA
DIRECTOR
PROFESSIONAL UNDERWRITERS AGENCY, INC.

"Cyber risk is significant," says Rabasca, which is why AXA XL enhanced the cyber coverage on its A/E standard policy form and began offering a separate, more comprehensive cyber coverage endorsement.

17 carriers are writing about 95 percent of designer PLI while the other 43 carriers cover the remaining 5 percent

According to Farrar, cyber coverage is increasingly required in contracts, and most carriers cover computer network security and privacy liability as well as broad cyber coverage either as part of the standard policy or as an endorsement. "A/E firms have increasingly fallen victim to hacking and ransomware, with some hackers making design changes, then demanding payment to fix them," says Farrar. Technology may be at the root of an increasing number of claims, he adds, with errors resulting from data input problems or an automated program using flawed assumptions.

Messmore points to an emerging risk related to automated machine guidance. The practice of putting electronic modeling information into a grading machine can provide efficiencies and minimize operator error, he explains, but some state departments of transportation lack contract language and procedures to address the inherent risks associated with this technology. "Unless there is appropriate contract language to protect the engineer, there is potential for liability if the owner or contractor alters the model, assumes a higher level of accuracy, or the file becomes corrupted," says Messmore.

Farrar adds that personal injury claims are increasing and may not be within a firm's control.

Furthermore, Vince Costello, A/E program director for RLI, says by way of example that a claim on a highway project may emerge 10-15 years after project completion. The claim could have causes completely unrelated to the engineer's professional services, such as poor signage or maintenance issues.

While first-dollar defense is a common add-on, meaning the insured does not pay its deductible toward defense costs on any claim, Rapp adds that Travelers PLI also excludes any indemnity payment for a bodily injury claim.

GROWTH BRINGS CHALLENGES, OPPORTUNITIES

Rapp sees a bright side to growth as long as design firms can manage it. "When times are tough, firms are more likely to agree to contracts with adverse terms," he says. "Whereas in good times, they can negotiate better terms or even have the ability to say no more often."

Many risk experts think the biggest challenge facing designers today is having enough qualified staff to do the work and implement full quality controls.

"With business growing 10 to 20 percent, 87 percent of design firms are having difficulty finding qualified staff," says Corbett.

Chandarana agrees that designers may have difficulty developing a pipeline of new staff adequately trained to complete complex tasks and continuing to implement quality assurance/quality control procedures.

"The broker business is seeing an uptick in the numbers and engagement of younger staff and hopes that will carry over to the design industry," says West. Dealey Renton & Associates recently saw about 20 percent of senior staff move on, taking with them decades of experience. Before their departure, the brokerage paired seasoned and entry-level staff for immersion that included meeting with clients, insurance carriers and industry professionals.

"The importance of good risk management has not changed."

JEFF CONNELLY
BROKER
GREYLING INSURANCE BROKERAGE & RISK CONSULTING
ACEC BUSINESS INSURANCE TRUST

"Leadership is about making sure young people are cared for, nurtured, and have opportunities," says West. "If you can clearly articulate a path for them, that may help mitigate an early departure."

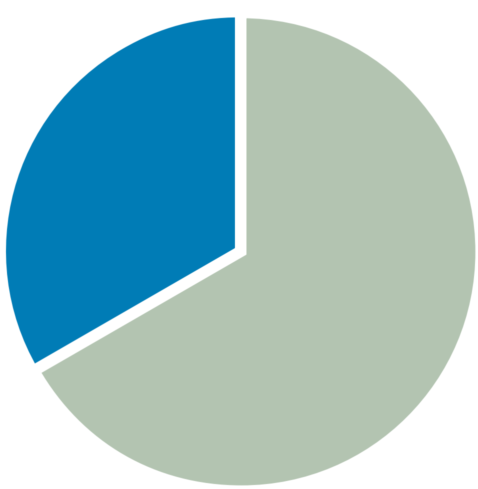
RISK MANAGEMENT, CLAIMS

West urges engineers to foster a culture of risk management within the firm. "To me, that includes running at the issues or reporting potential problems as they arise so that specialist brokers and carriers can get involved and help out," says West. He counsels designers to find specialists that can help the firm develop a risk management culture to match its own risk profile.

The key to defending a claim is proving the standard of care has not been violated. "RLI analyzes the situation to identify the right individuals to process and defend a claim, and what method of dispute resolution makes the most sense," says Costello. RLI provides its insureds two risk management webinars per month, plus more as requested by individual firms or local chapters of professional societies.

"Most carriers offer similar risk management services," says Connelly. "But preclaims assistance is something some carriers just do better than others." He advises designers to let the carrier know early about a potential claim so they can protect the firm as soon as possible and control any future loss activity.

Have Your Rates Increased, Decreased or Remained Flat Over the Past Three Years?



"A/E liability is a very nuanced, specialized line of insurance, and the leading carriers offer more than just a policy," says Rabasca. "Most firms need a business partner that can help with loss prevention." He adds that AXA XL is ready to open a file and even hire counsel during the pre-claims process. "If you are focused only or primarily on premium cost, there is a pretty good chance you are going to pay in another fashion," says Rabasca.

"RLI provides its insureds with a go/no-go matrix, which is a tool that helps a design firm understand the risks involved in a particular project," says Costello. The matrix scores the project on such factors as a firm's familiarity with the project type and owner. "Having a lower score does not mean you should not do the project, but it helps you identify what the pitfalls may be," says Costello. Then a firm can implement practices such as weekly email updates to ensure communication remains strong.

The top three reasons Welbel would consider changing carriers are a bad claims experience, a carrier with deteriorating finances, and significant price differences. "But when considering a switch, firms need to be cautious not to create a gap in coverage and should weigh premium savings against giving up the cache of money that builds up over time that can help to offset future claims," he says.

RISK MANAGEMENT ADVICE

"The importance of good risk management has not changed," says Connelly, who reviews contracts on behalf of clients every day. "The question should always be, 'Am I signing something that can put the firm in danger?'" he says.

"Engineering firms need to understand what their policy will and will not respond to. Then they can make an informed business decision," says Welbel. Contract terms such as limitation of liability can keep firms from going out of business, he adds.

"It is important to find an insurance carrier the engineering firm can establish a relationship with, someone who knows your business and can work with you when there's a claim," says Costello. "Always going for the lowest price policy may not be the best strategy."

"Schinnerer has seen about 20 claims for every 100 insureds over the past 10 years, and that data indicates firms tend to be more successful if they specialize," says Collins. He adds that these firms often work with repeat clients, so communication may be better, and the repetitive nature of the work can increase the knowledge and awareness about potential issues among staff. ■

__Maureen Conley__ is based in Washington, D.C., and has more than 25 years of experience writing about science, engineering, and government policy.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STRATEGIES TO BOOST A FIRM'S VALUATION

THINKING ABOUT SELLING YOUR ENGINEERING BUSINESS?

BY BOB VIOLINO

It looks to be a buyer's market for the engineering industry over the next decade, as the baby boomers who dominate the ownership ranks in the industry begin to reach retirement age in record numbers.

With so many sellers in the market, competition for the attention of qualified buyers is likely to be fierce. In order to make a deal and maximize their firm valuation, sellers need to start preparing their companies for sale several years before they are put on the market.

Merger and acquisition experts and Member Firm owners point to many things firms can do to increase valuation and become more attractive targets.

SAM EDWARDS / GETTY IMAGES

HERE ARE SOME WAYS TO INCREASE VALUE

GIVING UP CONTROL

One thing owners can personally do is make themselves redundant. Businesses that are highly dependent on the owner will be less valuable to a buyer.

"The risk profile of a business is a significant factor influencing its valuation, and oftentimes smaller firms are perceived as more risky and therefore less valuable relative to larger firms in the same industry," says Matt Fultz, vice president of Matheson Financial Advisors, Inc.

"One way to mitigate risk is to continuously develop the next tier of firm leaders in order to reduce the dependence on any one person," says Fultz.

For example, when McClure Engineering Co., Inc., acquired engineering firm Shafer Kline and Warren (SKW), a key factor in the acquisition was the desire of its senior management to transition out of the firm fairly soon, which allowed McClure Engineering to bring in management expertise, according to Terry Lutz, CEO of McClure Engineering.

Meanwhile, if the owners or management team are young and committed to growing the business, the value of the business can increase significantly in the eyes of the buyer, according to Mick Morrissey, managing principal of management consulting and research firm Morrissey Goodale LLC.

"Buyers are proactively seeking entrepreneurial leaders, who can strengthen their leadership depth," says Morrissey. "However, like most sellers, if the owner is over the age of 60, the owner should develop leadership and management capabilities in younger managers—essentially translating the future value of the firm to these folks." If the owner does not share the proceeds of the sale in a manner that these younger leaders and managers see as fair, the younger managers may choose to leave, he says. "This happens more than occasionally, thereby either killing a firm sale or seriously impacting it negatively," Morrissey says.

OATAWA / ISTOCK / GETTY IMAGES

Another good practice is to get all the firm paperwork in order. That includes financials, job responsibilities and human resources documents to name a few.

"Most buyers have limited bandwidth to process or screen deals, so it is in a seller's interest to show up to any sale discussions in a way that makes it easy for the buyer to analyze the firm," Morrissey says. "Otherwise if they are not prepared, a buyer may move on to another deal. Too many small firms show up with 'boxes of receipts' and expect a buyer to wade their way through them. This turns a buyer off. Sellers should have all documentation in place, accountant-prepared current and historical financial statements, backlog reports, sales pipeline, etc."

The process of selling a business will involve a significant amount of due diligence by the buyer related to the selling company, according to Fultz. "It is important for the seller to properly prepare for this ahead of time in order to pre-empt potential issues that may otherwise delay the transaction," he says.

This includes having an independent accounting firm compile and review or audit the firm's financial statements to ensure that the financial statements are in accordance with generally accepted accounting principles.

"We analyzed our backlog, hard and soft, every which way we could. Most importantly, we turned to our employees to determine what they thought of the way we do business."

JILL HEATH
PRESIDENT
CALYX ENGINEERS AND CONSULTANTS

"Most buyers have limited bandwidth to process or screen deals, so it is in a seller's interest to show up to any sale discussions in a way that makes it easy for the buyer to analyze the firm."

MICK MORRISSEY
MANAGING PRINCIPAL
MORRISSEY GOODALE LLC

BUILD PROFITABILITY

Even as they are preparing to be acquired, firms should continue to build profitability. Stagnant revenues make a company unattractive to suitors. Firms that have higher and demonstrable earnings at the time of a sale have greater leverage and power at the negotiation table. To boost profitability, owners should invest in sales and marketing programs.

"Most buyers do not want to buy an underperforming firm," Morrissey says. "It is the seller's responsibility to make the investments necessary in advance of a sale in marketing, business development and project systems in order to demonstrate consistent, above-average profitability. If a seller goes into negotiations with poor or erratic profit performance, they have minimal leverage at the table."

Fultz agrees. "A company's value is fundamentally based on its ability to generate a return for its owners—and the higher the return, the higher the value," he says. "For this reason, valuations are expressed as a multiple to a company's earnings and are typically defined as earnings before interest, taxes, depreciation and amortization."

Firm owners who are interested in boosting their value should be focused on growing their earnings, according to Fultz. This is typically done in three ways: selling new work, improving project management disciplines and effectively managing overhead expenses.

Another good way to be more appealing to a buyer is to broaden the customer base. Firms that have high client concentration—relying on too few clients for too large a share of revenues—are not as attractive to buyers.

"High levels of revenue concentration, either by client, geography or market sector, represent a significant risk factor for many industry firms," Fultz says. Firms need to take steps to diversify their sources of revenue to build higher valuations.

It is also important for firms to have a realistic and supportable forecast in order to ensure a consistent future cash flow. For example, providing a road map of possible expansion opportunities that the firm owner was unable to exploit for whatever reason can increase valuations.

"Buyers will review a seller's past financial performance in order to understand trends and explain any changes," Fultz says. "However, valuation is a forward-looking exercise." For this reason, a seller must be able to provide a comprehensive financial forecast for the next one to three years, which may include multiple scenarios that demonstrate the seller's financial outlook on a stand-alone basis as well as financial performance with the resources a buyer may bring to the table, he says.

"In general, having a realistic forecast falls into the category of completely understanding the business and the valuation of the business," says Morrissey. "If a seller has unrealistic expectations about the future or about valuation, they will find quickly that most serious buyers will walk away."

Firms also need to maintain a reasonable level of working capital.

"The role that debt plays in a company's valuation is a generally understood concept. That is, the more debt a company has, the lower the value of its owners' equity," says Fultz. "The concept of working capital is more complicated and is often misunderstood. Working capital is the amount of current assets in excess of current liabilities and represents the financial resources that a company has to operate its business in the near-term."

Generally, the more efficient a company is in terms of sending and collecting invoices, the less working capital it will need.

"Savvy buyers will evaluate a company's historical working capital and require that a certain amount be delivered at closing to support the going forward operations," Fultz says. "Sellers who are effective at managing working capital will recognize a larger financial gain when it comes time to negotiate transaction terms."

When looking to boost valuation in advance of a possible sale, it is a good idea to seek professional advice. Consultants can give an owner an idea of what the firm is worth and steps to take to make it more valuable.

"The seller will generally be a good engineer and likely does not have experience with selling a firm," Morrissey says. "To maximize value, a seller should seek advice from professionals who have done this before successfully."

CULTURAL FIT

In some cases, making a firm more appealing has as much to do with company culture and how the firm conducts business as it does with finances.

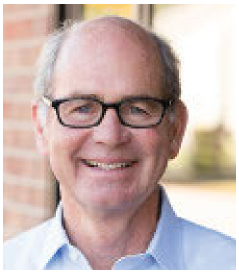
A key reason why McClure Engineering acquired SKW? The companies made a good cultural fit, Lutz says.

"We learned quickly their core group of highly skilled people fit our culture, and they approach work in our industry the same as

3 Ways to Grow Your Firm's Earnings

According to Matt Fultz, vice president of Matheson Financial Advisors, there are three ways firm owners can grow their earnings in order to boost the value of their firm prior to a sale.

1. Selling new work
2. Improving project management discipline
3. Effectively managing overhead expenses



"We learned quickly their core group of highly skilled people fit our culture, and they approach work in our industry the same as we do."

TERRY LUTZ
CEO
McCLURE ENGINEERING CO., INC.

we do," Lutz says. "The acquisition also allows us to enter the oil and gas pipeline market with similar expertise. This allows us to cross-sell many of the core civil engineering services at McClure Engineering to the oil and gas markets, such as pipeline investigation and design, rail and site development."

Sometimes preparing to put a firm on the market requires a significant makeover, and employee input can help in this process.

"Our decision to see what market interest might be in CALYX prompted us to get our house in order and to take a holistic approach to business," says Jill Heath, president of CALYX Engineers and Consultants, which was sold to NV5 in August 2018.

"With our clients' needs as the benchmark, we analyzed our service offerings and decided to invest in new equipment, hired top-notch talent across the board ranging from marketing to engineering and ensured that our accounting and tracking systems were in order," Heath says. "We analyzed our backlog, hard and soft, every which way we could. Most importantly, we turned to our employees to determine what they thought of the way we do business."

CALYX hired an independent agency to conduct an employee satisfaction study, "and we were thrilled to learn that our employees gave CALYX a 91 percent overall satisfaction rating, which is practically unheard of in our industry," Heath says. "Our people are everything, and we wanted to be sure that we were doing things not only right, but right by them. Who knows our story better than they do?"

Aside from all of the due diligence and financial and market preparations, there may be one simple step to raising a firm's valuation.

"Be really good at what you do, which means you must employ good, happy people," Heath says. "Our team was incredible because everyone respects the work and each other, which results in success for the firm and the clients." ■

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

GIVING ON A GLOBAL SCALE

AECOM revamped its corporate social responsibility program, launching a travel grant to help employees make a positive impact around the world

BY CALVIN HENNICK

In August 2018, Michael Ottensmann and a team of volunteers worked to develop and implement innovative water treatment systems in five remote villages in Uganda. In one location, they needed an anaerobic incubator to test for pathogens. A commercial product might have cost thousands of dollars, and the team was only in the country for two weeks. To mitigate the problem, a junior engineer and a graduate student, together with the team, devised a solution using a 50-liter water barrel, plastic foam, fiberglass insulation, a mayonnaise jar and a candle.

"It widens your perspective," says Ottensmann, head of the environmental department at AECOM in the Kaiserslautern, Germany, office. "We are so used to our Western mindset of how things are done. We have solutions in a box. Having done things in a different way in a different culture, the volunteers look at their own jobs in a different way. They are not quite so comfortable saying, 'This is the only solution to this problem, this is the only way to do it.'"

The trip was Ottensmann's fourth to Uganda, but the first sponsored by AECOM's new Blueprint Travel Grant program, which provided 25 grants to employees for service trips to 15 countries. The travel grant is the centerpiece of the company's Blueprint for a Better World corporate responsibility platform, unveiled in 2017 to unite employees' charitable giving and volunteering under a single umbrella.

"Our leadership has a tremendous amount of respect for the craft and technical knowledge that the talent we have here at AECOM has to offer," says Brendan Ranson-Walsh, vice president of global communications and corporate responsibility at AECOM. "We wanted to look at ways we could make a difference, while leveraging the employees' skills and expertise."

Chris Shipper, a project engineer at AECOM, helped lead the design, engineering, planning and construction of a vehicular and pedestrian bridge in partnership with Engineers Without Borders in Chimaltenango, Guatemala.

GLOBE: PAUL TEARLE / GETTY IMAGES

Grace Chung, director of corporate responsibility at AECOM, says she was floored by employees' passion for giving back when she joined the company in 2017. According to Chung, the travel grant

Kyle Denny of AECOM worked in concert with Building Humanity to build a bakery and a basketball court for an orphanage in Thailand.

Thirty employees across 11 offices in four countries traveled to Surat Thani, Thailand, for the Building Humanity project.

Michael Ottensmann, head of the environmental department at AECOM in the Kaiserslautern, Germany, office, partnered with the Society of American Military Engineers Kaiserslautern, Germany, Chapter to improve water quality in rural Uganda.

Jess Kersey joined Engineers Without Borders USA to build a community center in Hato Rincón, Panama.

is a way to support the types of activities that employees like Ottensmann were already engaged in, while also providing a sense that their volunteer work is part of a global, unified effort.

"The shared vision is critical," Chung says. "It is amazing how tangible the impact feels when employees know their company is supporting them and their colleagues are cheering them on."

AMPLIFYING EMPLOYEE IMPACT

Before AECOM revamped its corporate responsibility program, the company's 90,000 employees were already contributing in several ways, including volunteering, fundraising and pro bono work. Ranson-Walsh says the Blueprint for a Better World platform is an attempt to honor and further those efforts. The new platform is organized under three pillars:

- Opening Doors—Delivering safe and secure infrastructure to those in need.
- Creating Opportunity—Developing the next generation of problem solvers, with a focus on diversity.
- Protecting Tomorrow—Reducing humans' impact on the planet and helping communities prepare for the future.

Under this framework, the company is focused on the three key initiatives of field-based volunteering, financial giving and disaster relief. Ranson-Walsh calls the travel grant the cornerstone of the new platform.

Already, AECOM has expanded the program, giving more grants than company leaders initially anticipated.

"We were blown away by the caliber of the applications we received and the engagement of our employees," says Ranson-Walsh.

The travel grant has resulted in new connections not only between employees and nonprofit groups around the world but also between different AECOM branches. One service trip to an orphanage in Surat Thani, Thailand, brought together 30 employees from the U.S., the U.K., Saudi Arabia and the firm's Bangkok office to support a project with nonprofit partner Building Humanity. The group worked together to build a basketball court for the children, as well as a bakery to provide income for the orphanage.

"The Bangkok office was so inspired by the experience that they have committed to giving and additionally volunteering on their own," says Ranson-Walsh. "It is a great example of how this program can have a ripple effect, both throughout our company and the communities in which we operate."

In past years, Ottensmann had to privately raise funds for the Uganda trips, giving presentations to church groups and soliciting donations. With the travel grant, he was able to bring more people, resulting in a larger impact—not only for the villages where the volunteers did their work, Ottensmann says, but for AECOM and its employees, as well.

"It changed what we were able to do," says Ottensmann. "Typically, in a year, we would go to two sites with two young engineers, a student and myself. We would touch one or two villages. In 2018, we were able to do seven projects in five sites. It really expanded what we could do, and it challenged the team to go beyond, 'The senior engineer says you should do this.' These young engineers, when they come back, they are ready to take on much greater challenges within the company."

DEEPENING PARTNERSHIPS

One reason the travel grant program is such a natural fit for AECOM is that the company has long-standing partnerships with organizations that perform development and relief work

"Having done things in a different way in a different culture, the volunteers look at their own jobs in a different way."

MICHAEL OTTENSMANN
HEAD OF THE ENVIRONMENTAL DEPARTMENT
AECOM

"We are working on projects all over the world, and AECOM has been one of our largest supporters."

JACLYN WILMOT
VOLUNTEER ENGAGEMENT AND EDUCATION DIRECTOR
ENGINEERS WITHOUT BORDERS USA

around the world, including Water for People and Engineers Without Borders USA.

In total, AECOM employees have donated over $1 million to both organizations, and for the past year the company has matched employee donations to the nonprofits, up to $100,000 per year. Thirteen of the 25 inaugural travel grant trips were made in partnership with Engineers Without Borders USA.

"This partnership has been vital for us," says Jaclyn Wilmot, volunteer engagement and education director at Engineers Without Borders USA. "Their investment in the belief that engineers have the power to change the world has helped us move regions around the planet from poverty to prosperity. We are working on projects all over the world, and AECOM has been one of our largest supporters."

"The travel grant program gives employees the opportunity to go to the communities that need this type of engineering expertise but do not have access to it," says Cathy Leslie, executive director at Engineers Without Borders USA. "AECOM, by providing the travel grants, is allowing us to access the people in the most need of these services. It is making a huge impact."

Jess Kersey, an energy engineer in AECOM's Germantown, Maryland, office, has volunteered with Engineers Without Borders USA in the past and was already planning a trip to Panama when the travel grant program was announced. "It happened to be perfect timing," says Kersey.

Kersey and a group of three other volunteers flew to Panama City, Panama, took a six-hour bus ride to a rural town and then spent another two hours in the back of a small covered truck before finally arriving at the remote mountain community of Hato Rincón. There, Kersey and her team performed masonry work on a building that will eventually house a library and computer lab.

The main purpose of the library and computer lab is for higher education. It will also be used for documenting indigenous language and culture. Some computers have already been donated to the village, and Kersey and the other volunteers taught basic computer literacy classes to children and adults during their trip.

"The kids were really into it, and for some of the adults, that was the first time they had seen and touched and used a laptop," says Kersey.

Kersey says she hopes the travel grant leads even more AECOM employees to volunteer with Engineers Without Borders USA. "It is a way to develop your skills, and it is a way to give back," she says. "There are so many good things about it. There was already a strong relationship between AECOM and EWB-USA, and I think it is going to be even closer as a result of the travel grant program."

"It was a nice feeling to know that this is something I am passionate about, and now the company is getting behind it, and they are going to support me," Kersey adds. "It was energizing." ■

AECOM's new Blueprint Travel Grant Program provided 25 grants to employees for service trips to 15 countries

AECOM employees have donated over $1 million to Engineers Without Borders USA and Water for People

Giving Around the World in 30 Days

In June 2018, AECOM encouraged its employees around the globe to volunteer in their communities for the company's inaugural Blueprint Service Month. During the month, AECOM held 34 events with more than 800 volunteers supporting 29 nonprofit organizations, and the company plans to continue the effort in 2019.

"The variety and the range of events we saw across our teams was really astounding," says Corporate Responsibility Director Chung. "That showed us that there is demand for more opportunities."

A few examples of AECOM's philanthropic efforts during Blueprint Service Month included:

- **Australia:** AECOM employees conducted mock job interview training.
- **Bahrain:** Volunteers collected food for the elderly during Ramadan.
- **Detroit:** Employees cleaned up and repaired a facility for the Downtown Boxing Gym Youth Program, preparing the building for energy-efficiency upgrades. The program provides mentoring, tutoring and basic needs support for kids in the city.
- **Hong Kong:** Volunteers helped survey and measure the nutrition absorption of underprivileged children for the nongovernmental organization People Service Centre, helping to inform assistance efforts.
- **Los Angeles:** Employees packed hygiene kits for the homeless.
- **Maryland:** AECOM employees mentored youth in business skills.

__Calvin Hennick__ is a business, technology and travel writer based in Milton, Massachusetts.

On the Move

Stuart Markussen was named president and CEO of Dallas-based **RLG Consulting Engineers.** He succeeds the current president and CEO, **David Goodson**, who will remain chairman. **Jared Bratz** will assume the role of COO, from Markussen, as well as the title of senior vice president of the civil engineering and surveying departments. **Andy Ayers** will serve as senior vice president of the structural engineering department, **David Cumming** as senior vice president of the forensics department and **Michael McLaren** as senior vice president of RLG's Peoria, Illinois, office.

Pasadena, California-based **Parsons** combined its federal and infrastructure business units and announced the following appointments: **Carey Smith** was named COO for the company's federal and infrastructure business unit. She recently served as president of Parsons' federal business unit. **Mike Johnson** was named vice chairman and chief development officer and will expand strategic customer, partner and supplier relationships across the company. He previously served as president of infrastructure. Corporate Executive Vice President and Chief of Staff **Virginia Grebbien** has been named chief marketing officer. She previously served as president of the company's commercial technology and water business lines.

Enda Fahey was promoted to CFO of Norwood, Massachusetts-based **GZA**. He recently served as acting CFO, following the retirement of GZA's previous CFO, **Dan Breuer**. Fahey is based in the headquarters office.

New York City-based **STV** appointed **Martin Boyle** executive vice president of its Transportation & Infrastructure Division (T&I). He succeeds **William Matts**, who is retiring following 40 years with the company. Boyle previously served as T&I's deputy division manager. He is based in Charlotte, North Carolina.

San Antonio, Texas-based **Pape-Dawson Engineers, Inc.,** announced the following promotions: **James Lutz** was named senior vice president, leading the firm's transportation services throughout Texas. Lutz also serves as president of ACEC/Texas' San Antonio Chapter. **Jason Diamond** was named vice president and will lead the San Antonio Water Resources team. **Curtis Lee** was promoted to vice president, leading the company's large commercial, industrial, residential, multifamily and public infrastructure projects. **Nathan Billiot** was appointed vice president and will manage the firm's civil teams involved with commercial, industrial, residential and multifamily developments.

New York City-based **WSP USA** announced the following appointments: **Ashur Yoseph** joined the company as a senior vice president in the firm's San Francisco office where he will oversee business development in support of WSP's property and buildings and trans-


Stuart Markussen


Jared Bratz


Andy Ayers

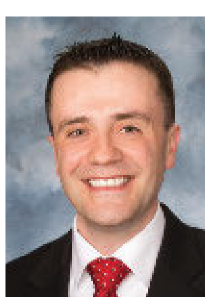

David Cumming


Michael McLaren


Carey Smith


Mike Johnson


Virginia Grebbien


Enda Fahey


Martin Boyle


James Lutz


Jason Diamond

portation and infrastructure businesses. He recently served as infrastructure development manager in San Francisco's Office of Economic and Workforce Development. **Robert Turton** joined the company as vice president and complex bridge manager for the firm's West region. Turton, who is based in the firm's Tempe, Arizona, office, is responsible for the pursuit and delivery of complex bridges.

Wil Schulze joined Lowell, Massachusetts-based **TRC Companies** as a senior vice president following TRC's acquisition of IJUS, a power and utility engineering firm based in Gahanna, Ohio, which Schulze founded and where he also served as president. Schulze is based in Columbus, Ohio.

Gilberto Ordonez was appointed senior vice president of brownfield solutions at Alpharetta, Georgia-based **Wood.** The appointment is part of a new team in its Asset Solutions Americas business unit. Ordonez, a former Wood employee of 19 years, returned to the company to assume this new role. He is based in Houston.

Christopher Haney has joined Detroit-based **Wade Trim** as a vice president. He will lead the company's Southeast region, which includes Georgia, North Carolina, South Carolina, Tennessee and Virginia. Haney recently served as the water and environment market senior vice president for Gresham, Smith and Partners. He is based in Atlanta.

Welcome New National Affiliate Members

Accounting/Tax/Financial Services
Aldrich CPAs & Advisors LLP
Parachor Consulting LLC

Consulting Services
BRAYN Consulting LLC
KLT Group

Information Technology
Trimble, Inc.

For further information on one of the national affiliate members, go to: http://bit.do/ACEC-natl-affiliate-memb or contact Rachael Ng at 202-682-4337 or rng@acec.org.

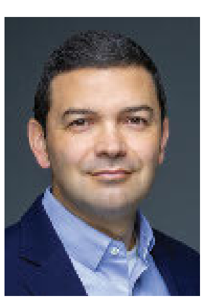

Curtis Lee


Nathan Billiot


Ashur Yoseph


Robert Turton


Wil Schulze


Gilberto Ordonez


Christopher Haney

Welcome New Member

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Scotts Valley
Freyer & Laureta, Inc.
San Francisco
General Technologies and Solutions
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Howard Carter Associates, Inc.
Monterey
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Pacifica
Knight CM Group
Sacramento
Owens Design
Fremont
PPM Group, Inc.
Fontana
Slate Geotechnical Consultants
Oakland
Virginkar & Associates, Inc.
Fullerton

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Maser Consulting, P.A.
Tampa
Q. Grady Minor and Associates, P.A.
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Sun City Center
Wekiva Engineering, LLC
Winter Park

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Maser Consulting, P.A.
Duluth
Travis Pruitt & Associates, Inc.
Norcross

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Vision Engineering, LLC
Lexington

ACEC/Louisiana
ADG Baton Rouge, LLC
Baton Rouge
Duhon and Pleasant Consulting Engineers, LLC
Lake Charles
Fourrier & de Abreu Engineers, LLC
Baton Rouge
M & E Consulting, Inc.
Lafayette

ACEC/Maryland
CBRE|Heery
Landover
ESD Associates
Baltimore
Traffic Planning & Design, Inc.
Elkton

ACEC/Metro Washington
iDesign Engineering, Inc.
Calverton, Maryland
Rava Engineering, Inc.
Bethesda, Maryland

ACEC/Missouri
Etegra, Inc.
Olivette
MECO Engineering, Inc.
Hannibal
Texas Design Concepts, Inc. (dba TDC Structural Engineers)
Columbia

ACEC/New Hampshire
2S-Squared, LLC
Exeter
Wilcox & Barton, Inc.
Londonderry

ACEC/New Jersey
Enica Engineering
New York, New York

ACEC/New York
Hatch Associates Consultants, Inc.
New York, New York

ACEC/North Carolina
Adams and Hodge Engineering P.C.
Clayton
GAR Engineering, Inc.
Concord
Gradient, PLLC
Fayetteville
Medlock & Associates Engineering
Asheville
PHC Engineering PLLC
Colfax
Soil & Environmental Consultants P.A.
Raleigh

ACEC/Ohio
7NT Engineering, LLC
Dayton
PEDCO E&A Services, Inc.
Cincinnati

ACEC/Pennsylvania
Carroll Engineering Corp.
Warrington
Elmore Engineering Services, Inc.
Boyertown
ExecuPOWER, LLC
King of Prussia

ACEC/South Carolina
ABS Engineering, Inc., d/b/a/ Applied Building Sciences
Charleston
Applied Control Technologies, Inc.
Columbia
Cox and Dinkins, Inc.
Columbia
Insight Group, A Christopher Co.
North Charleston

ACEC/Texas
Allison Engineering Group
Denton
Atlas Technical Consultants
Austin
Burke Engineering, LLC
Houston
CONVEYANCE Civil Engineering
Austin
DOTomation Consulting
Cedar Park
Gauge Engineering, LLC
Houston
Givler Engineering, Inc.
San Antonio
Harry Jewett Associates
San Antonio
S&B Engineers Infrastructure, Ltd.
Houston
Sawyer Engineering LLC
Houston
Turner, Mason & Co.
Dallas

ACEC/Utah
Outlaw Engineering Inc.
Roosevelt

ACEC/Virginia
Tela Vuota, PLLC
Henrico

CALENDAR OF EVENTS

JANUARY 2019

29 Proposals and Presentations that Close the Deal (online class)

31 What You Need to Know Before Pursuing International Work (online class)

FEBRUARY

5 Identify When, Where and How to Increase Profit With Value-Based Pricing (online class)

6 Insurance Requirements (online class)

7 The Simplest Ways to Make the Best of Proposal Writing (online class)

7-9 2019 Small Firm Council Winter Seminar, Tampa, Florida

13 Are You Building the Right Website? (online class)

21 Exit Planning: When and How—A Case Study (online class)

26 Turning Around an Underperforming Team (online class)

MARCH

5 Presentation Skills: Speak With Confidence (online class)

6 A Seven-Step Prescription for Breakthrough, 21st-Century Business Success (online class)

7 How to Be an Effective Project Manager (online class)

19 The Essential Elements of Effective Coaching (online class)

APRIL

3-6 Business of Design Consulting—2019, Phoenix, Arizona

9 Brand-Based Culture: Your Real Competitive Advantage (online class)

17 How to Maximize Profits Using the R&D Tax Credit (online class)

MAY

5-8 ACEC Annual Convention and Legislative Summit, Washington, D.C.

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.

Faith, Trust and the Standard of Care

HOW TO AVOID ACCIDENTAL FIDUCIARY DUTY

BY KAREN ERGER

Karen Erger

If you review client-drafted professional services agreements, this scenario may have happened to you. A client proposes contract language requiring you to perform in accordance with "the highest standard of care" rather than the legal standard of care that would normally apply to engineering services—namely, the duty to perform with the degree of skill and care ordinarily exercised by one's peers under similar circumstances at the same time and locality.

The standard of perfection that applies to mass-produced goods is not appropriate for professional services, which are one-of-a-kind solutions to unique design problems. Furthermore, professional liability insurers, never willing to insure against a sure thing, will not cover engineers' promises of faultless performance, potentially creating a coverage gap to the detriment of the client as well as the design professional.

The fight over contracts calling for an elevated standard of care is an old one, but the battle may be opening up on a new front. One group is advocating for the imposition of a fiduciary duty—the very highest standard of care—on design professionals. The source of this duty, the group contends, is the design professional's license to practice rather than contract language or the design professional's conduct.

It remains to be seen whether the "fiduciary duties for all design professionals" theory will gain traction. It does not seem to be the current state of the law or even a trend. But design professionals should understand what is at stake.

FAITH AND TRUST

Let's review what it means to have a fiduciary duty, why it is inappropriate for design professionals and how you can avoid inadvertently assuming a fiduciary duty to your clients.

FIZKES / ISTOCK / GETTY IMAGES

The word "fiduciary" comes from the Latin words for "faith" and "trust." A fiduciary typically possesses superior knowledge and authority, which is exercised on behalf of another party, who, in turn, places complete faith and trust in the fiduciary. It often arises in a context where one party is entrusted with the property of another.

For example, a trustee owes a fiduciary duty to the beneficiary of a trust. As a fiduciary, the trustee must act for the benefit of the beneficiary and is not allowed to have competing interests. This relationship is in stark contrast to the "arm's-length" relationship in ordinary business transactions.

Although design professionals have professional expertise and are trusted by their clients, the law does not normally classify them as fiduciaries. That is because the design professional rarely, if ever, exerts complete control over a project—the client has decisions to make as well. Furthermore, design professional's ethical duty to "hold paramount the safety, health and welfare of the public" (see, for example, Fundamental Canon 1.1 of the ACEC Professional and Ethical Conduct Guidelines) can preclude the design professional from following a client directive.

Although the law does not impose a fiduciary duty on design professionals generally, a court may find that a design professional's conduct in a specific situation gave rise to a fiduciary duty.

For example, in 2010, a California city won a $52.1 million verdict against an engineering firm. The jury found that the firm misrepresented key facts on which the city relied in deciding to construct a new power plant. The city held the firm liable for breach of fiduciary duty, as well as professional negligence and breach of contract, among other things. A key driver of the jury's decision seems to have been that the engineer held a dual—and conflicting—role, serving not only as the design engineer but also as the city's engineer and representative, with a duty to place the city's best interests above its own.

Another way that design professionals can assume a fiduciary duty is by contract. Contracts that impose a "relationship of trust and confidence" and require the design professional to "further the best interests of the owner" can set the stage for the client to argue that the design professional owed it a fiduciary duty.

Is there professional liability insurance coverage for a breach of fiduciary duty? The unsatisfying—but true—answer to this question depends on the terms of your firm's professional liability policy. If the policy affords coverage only for damages caused by negligence, a higher duty may not be covered. Furthermore, if the fiduciary duty arises from language in a professional services agreement, the typical policy exclusion for "liability assumed by contract" may be triggered.

There may also be coverage problems with the legal damages that can be awarded for breach of fiduciary duty. These may include disgorgement of fees (typically not covered), punitive damages and other equitable remedies that may not find coverage under the "standard" (to the extent there is such a thing) professional liability policy.

Here are some steps that may help you avoid inadvertently assuming a fiduciary duty, either by conduct or contract:

- **Give the client the information needed to make decisions about the project.** It is natural to want to be the client's trusted adviser, but the client must make its own decisions about the project. Provide the client with the information needed to do so, including a full array of options and the risks and benefits of each. Be sure your reports and opinions disclose the basis and limitations of your information.
- **Avoid conflicts and "blurred lines" roles.** The $52.1 million jury verdict described earlier was fueled in part by the finding that the engineering firm was serving in the dual—and conflicting—roles of design engineer and owner's engineer. Be mindful of similar conflicts of interest—or the appearance of a conflict—in the services provided to a client. Use your contract to clearly define your role and its limitations.
- **Reject "fiduciary-ish" contract language.** In addition to the contract terms noted above, watch out for contracts that require you to acknowledge the client's reliance on the design professional. Also reject language that calls for you to serve as the client's "agent." Consider proposing proactive contract language expressly stating that nothing in the agreement or otherwise is intended to create a fiduciary duty between the parties.

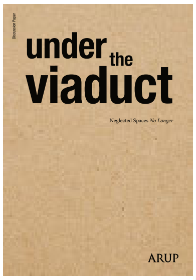
For design professionals, pushing back against an elevated standard of care—whether it is fiduciary duty language or contract language calling for the "highest" level of performance—does not imply any shirking of responsibilities or an intention to provide substandard services. The legal standard of care is an honest reflection of the realities of design practice, including the fact that the design professional does not have complete control over the project or its outcome. Assuming a higher duty obscures that reality and exposes the design professional—and its client—to risks that the design professional cannot control or (likely) insure, to the detriment of both parties. ■

***Karen Erger** is senior vice president and director of practice risk management at Lockton Companies. She can be reached at kerger@lockton.com.*

Building Under the Bridge

Growing urbanization is putting pressure on cities to improve land use and create higher-density infrastructure.

"The need to squeeze much greater levels of land use efficiency out of existing urban areas is becoming more acutely felt—with attention turning to spaces that have hitherto been considered of a marginal nature," according to a report from Arup titled "Under the Viaduct: Neglected Spaces No Longer," which examines the current status and potential opportunities for developing areas under bridges.



The report studies recent under-bridge projects around the world and creates several hypothetical case studies of potential projects to look at the design challenges and to draw out opportunities.

Three key lessons from the report are to establish the vision for infrastructure in relation to delivering community benefits; design in features that promote flexibility in the use of viaduct spaces; and demonstrate public value early through the business case processes.

One area of investigation is including under-bridge development into infrastructure projects from the start, which would help to boost overall project viability and investment return.

To view the report, visit **http://bit.do/arup-under-the-viaduct**.

If your firm has an item to submit to In the News, **please contact Gerry Donohue at gdonohue@acec.org.**

ALLIANT ENERGY

Solar Project Earns Envision Platinum Rating

The $14 million Dubuque Solar Project includes 20,000 solar panels that generate nearly 6.2 megawatts of power, equal to the needs of about 850 homes.

The Alliant Energy Dubuque Solar Project in Iowa is the first solar energy project to earn the Envision Platinum rating for sustainable infrastructure—the highest Envision award level.

The Institute for Sustainable Infrastructure (ISI) developed the Envision program to provide a framework for the planning, design and delivery of resilient infrastructure. ACEC is a co-founder of ISI along with the American Public Works Association and the American Society of Civil Engineers.

HDR led the Envision process at the Dubuque Solar Project, incorporating a wide variety of features to achieve Platinum status.

- Repurposed a 5.9-acre brownfield site
- Planted more than 25 acres of native prairie grasses
- Power generation requires zero operational water use
- Half-mile walking/bike path connects to regional trail system
- Cooperated with local beekeepers to co-locate beehives
- Sustainable procurement program covered 97 percent of the total project spend

Trusted Adviser to the U.S. Conference of Mayors

Black & Veatch (B&V), which, for the past decade, has been a business council member of the U.S. Conference of Mayors, offered up ideas on what utilities can do to maintain their reputation in the wake of a crisis at a recent meeting.

"Our business depends a lot of times on decisions made by elected officials, but most mayors do not have an engineering background," says Clint Robinson, director of state and local government affairs at Black & Veatch. "We believe providing education on issues related to energy, water, communication and smart cities is to our advantage."

B&V Global Practice and Technology Leader Robert Hulsey's presentation during a meeting of the Mayors' Water Council in Flint, Michigan, focused on managing utilities' reputation in a crisis, such as a natural disaster or emerging contaminants.

Hulsey suggested two resources from the Centers for Disease Control and Prevention: the Drinking Water Advisory Communication Toolbox (**http://bit.do/cdc-dwa-comm-toolbox**) and the Crisis Emergency Risk Communication Checklist (**http://bit.do/cdc-cerc-checklist**). He also used an example of how one of the firm's clients addressed its perfluoroalkyl substances contamination.

"There was a lot of interest in the documents," says Hulsey. "This was another instance in which we are helping the mayors solve their problems."

Robinson emphasizes that the firm never sells its services at these meetings. "We focus on how we can provide resources to elected officials to help them make better decisions," he says.

ENR 500 Analysis Yields Shared Traits of Outperforming Firms

In their continuing analysis of firms that have been on the *ENR* 500 over the past 40 years, Rod Hoffman and Paul Chinowsky analyzed firms that performed well amid the Great Recession.

"We found 16 firms that did well going into, during and coming out of the recession," says Hoffman, CEO of S&H Consulting. "And we also looked at firms that did not fare so well."

High-performing firms shared two overarching traits, they found.

"The water and wastewater segment was over-represented," says Hoffman. "That makes sense. It is a stable industry, with user-based fees, and not much fluctuation in volatile economic times."

The successful firms avoided jumping sectors, says Chinowsky, professor of civil, environmental and architectural engineering and director of the Program in Environmental Design at the University of Colorado. "They stuck to what they know," Chinowsky says. "The more firms jumped, the worse they performed."

Going into the recession, high-performing firms shared six characteristics:

- Financially conservative
- Created a reserve of resources
- Resisted chasing "shiny things"
- Focused on core business
- Invested in adjacencies that complemented core business
- Had high repeat business based on relationships

In the downturn, the firms:

- Made immediate workforce adjustments (once)
- Stepped up investment in staff development
- Made counterintuitive moves, such as M&A or key hires
- Continued to use long-term strategic planning

Coming out of the recession, the firms:

- Continued fiscal discipline, using profit as a growth governor
- Focused on key clients
- Developed emerging leaders
- Kept social contract with staff: "You work hard to help the firm, and we will share results with you."

PESHKOV / ISTOCK / GETTY IMAGE

Buyer Dynamics Drive Record Year in M&A

BY NICK BELITZ

While the final tally is not yet in, all signs indicate 2018 will be a record year for M&A activity in the A/E industry. With broad-based and robust growth expectations in multiple regions of the United States drawing buyer interest and a strong economy encouraging buyers and sellers to meet at negotiating tables around the country, 2018 saw 256 A/E deals in the U.S. as of late November.

Furthermore, global transaction volume in the industry during the 12 months before December 2018 was up 15 percent over the prior 12-month period, and the number of U.S.-based deals rose 26 percent. With a month's worth of deals still pending in 2018 as of this writing, Morrissey Goodale projects the volume of M&A activity in the A/E industry for the full year to reach nearly 300 deals in the U.S., representing a 34 percent increase over 2017.

While the last 10 years have shown a consistently robust level of M&A activity in the industry—even considering the recessionary years of 2008 and 2009—the flurry of deal-making in 2018 prompts the question: What made this year so special?

We acknowledge the corporate tax cuts that went into effect in 2018 likely freed significant capital for investment in deals, but our experience with buyers and sellers in the marketplace in 2018 suggests other, perhaps more fundamental trends at work. Simply put, the market dynamics facing A/E firm executives in 2018 drove large and midsize firms to seek and close more deals.

The following is a short summary of what we see in the A/E market:

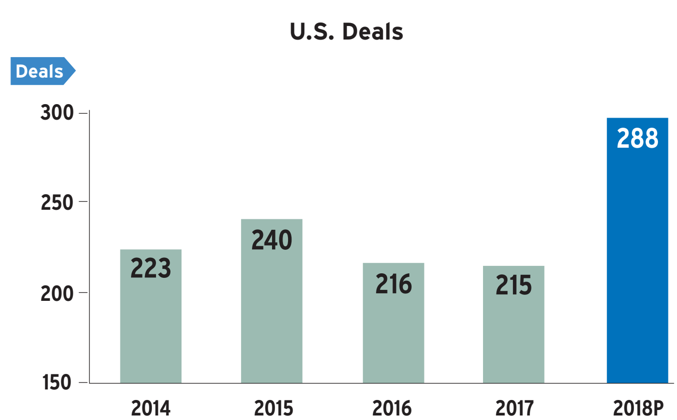
1. **Strategic buyers need talent to enter new markets and support growth opportunities.** Industry leaders know acquisitions are a tried-and-true method of jumping into new services or geographies. It is also true that firms of any size need to grow to provide opportunities for staff and keep the best and brightest talent motivated with new challenges. But as any knowledgeable recruiter or human resources manager will tell you, the engineering industry suffers from a widespread dearth of engineering and management talent, particularly among professionals with 10 to 20 years of experience. Because quality project managers and up-and-coming leaders do not appear out of thin air, acquisitions have become an effective means of "mass hiring" to add staff in order to execute projects and put boots on the ground to support expansion in a new region.
2. **Financial buyers are now entrenched in the industry.** Private equity firms, also termed financial buyers, have entered the A/E space en masse with 550-plus deals completed during the past 4.5 years. These buyers, facilitated by access to an accommodating capital market, perceive a fragmented industry moving toward consolidation and have become increasingly active acquirers of A/E firms. Over the previous 12 months, the number of private equity-backed industry deals grew an astonishing 53 percent. Examples of active private equity players include **Keystone Capital** (Chicago), which acquired three transportation and infrastructure engineering firms that now make up **CONSOR Engineers** (Coral Gables, Fla.), **New Mountain Capital's** (New York) takeover of **TRC Companies, Inc.** (Lowell, Mass.), and **Wind Point Partners'** (Chicago) acquisition of **Kleinfelder** (San Diego).
3. **Buyers, like the rest of us, want green(er) pastures.** Interest in environmental firms has been a mainstay of the M&A market over the last 12 months. Consistent with our observations from the first half of 2018, the latter part of the year also posted a sizable number of transactions of environmental consulting firms. Environmental deals accounted for about 20 percent of M&A in 2018 as chief executives used deal-making to expand their service offerings and resource capacity. Notable M&A deals involving ACEC members include **Braun Intertec's** (Bloomington, Minn.) acquisition of **W&M Environmental Group** (Plano, Texas), **BETA Group, Inc.'s** (Lincoln, R.I.) acquisition of **Nover-Armstrong Associates** (Carver, Mass.) and **Raba Kistner's** (San Antonio, Texas) acquisition of **Timber Creek Environmental** (Conroe, Texas). It is not hard to see why the environmental sector is popular—one of the most compelling aspects of the environmental market is its sheer size not to mention the accompanying expectations for long-term growth. Orbis Research projects the global environmental consulting services market will reach $43.8 billion by 2025, up from $29.7 billion in 2016.

With the drivers of M&A activity remaining strong in 2019 and buyers eager to fill their M&A pipelines, we expect the number of transactions across the industry to remain robust well into 2019.

ACEC DEAL-MAKERS

NOVEMBER 2018

ACEC member **NV5** (Hollywood, Fla.) acquired **CHI Engineering Services** (Portsmouth, N.H.), a provider of engineering, procurement and construction management services for the liquefied natural gas, petroleum gas and natural gas industries.



The $55 million acquisition was made with a combination of cash and stock and is evaluated at approximately six times trailing earnings before interest, tax, depreciation and amortization (EBITDA).

ACEC member **CivilCorp** (Victoria, Texas) acquired fellow ACEC member **Excelsis, Inc.** (Houston), an engineering firm specializing in infrastructure, transportation, site development and land surveying. The acquisition brings CivilCorp to more than 100 employees.

OCTOBER 2018

Ross & Baruzzini (St. Louis) acquired **EDI, Ltd.** (Atlanta), a consulting firm specializing in the design and program management of information technology, audio/visual, security and other technology systems to the health care, corporate, education and commercial markets. Both firms are ACEC members.

GeoDecisions (Harrisburg, Pa.), the geospatial technology division of ACEC member **Gannett Fleming** (Camp Hill, Pa.), acquired **WorldView Solutions** (Richmond, Va.), a GIS consulting firm. GeoDecisions' 45 employees have been retained in the acquisition.

ACEC member **Stantec** (Edmonton) sold its construction services division, **MWH Constructors** (Broomfield, Colo.), to **Oaktree Capital Management** (Los Angeles) for CAD $102.6 million. MWH Constructors joined Stantec through the 2016 acquisition of MWH Global.

The employees of **Beaupré & Associés Experts Conseils, Inc.** (Laval, Canada), a landscape architecture firm, joined ACEC member **Stantec** (Edmonton). Stantec's Quebec team has more than 1,500 employees across 20 offices.

ACEC members **DOWL** (Anchorage, Alaska) and **OBEC Consulting Engineers** (Eugene, Ore.) have agreed to merge. The combined entity will employ approximately 450 people across 27 offices in Alaska and the Western U.S.

Water resources firm **Woidt Engineering and Consulting** (Binghamton, N.Y.) joined ACEC member **Shumaker Consulting Engineering & Land Surveying** (Binghamton, N.Y.). The deal expands Shumaker's new water resources division.

ACEC member **Braun Intertec** (Bloomington, Minn.) acquired **W&M Environmental Group** (Plano, Texas), an environmental consulting firm, which adds 50 team members to Braun Intertec's staff.

ACEC member **BETA Group, Inc.** (Lincoln, R.I.), acquired **Nover-Armstrong Associates** (Carver, Mass.), an environmental services firm that serves municipal, private and state government clients.

Wilson Architects (Boston), a leader in the design of science and technology facilities for higher education and corporate clients, joined ACEC member **HGA** (Minneapolis). Wilson Architects will be known as Wilson HGA.

ACEC member **Stantec** (Edmonton) signed a letter of intent to acquire **Wood & Grieve Engineers** (Perth, Australia), a buildings engineering consulting services company. The acquisition, subject to due diligence, is expected to close in January 2019 and will add more than 600 employees to Stantec's team.

Timber Creek Environmental (TCE) (Conroe, Texas), an environmental compliance, geosciences and natural resource management firm, joined ACEC member **Raba Kistner** (San Antonio, Texas). TCE is now part of Raba Kistner's environmental division.

Architecture firm **10 Nine Design Group** (Las Vegas) and **studioCAT** (Las Vegas), an interior design firm, joined **PGAL** (Houston). The acquired firms will continue to serve the Nevada region as PGAL, LLC.

ACEC member **GHD** (Sydney), an engineering, environmental and construction services firm, acquired fire engineering company **Olsson Fire & Risk (OFR)** (Christchurch, New Zealand). OFR's 45 employees in Australia and New Zealand will join GHD's Property and Buildings team. OFR's U.K.-based operations are not included in the acquisition.

Structural engineering firm and ACEC member **Degenkolb Engineers** (San Francisco) acquired structural engineering firm **Barrish Pelham** (Sacramento). Barrish Pelham's 22 employees will join Degenkolb, which will now have 180 employees in seven offices.

GEI Consultants, Inc. (Woburn, Mass.), acquired **Hayden Consultants, Inc.** (Dallas), a civil engineering firm that serves the transportation, infrastructure and water resources markets. Both firms are ACEC members.

ACEC member **Dewberry** (Fairfax, Va.) acquired **J3 Engineering Consultants** (Greenwood Village, Colo.), a 28-person civil engineering firm that serves local communities. J3 will continue to operate in its current locations and under its current management.

ACEC member **TRC Companies, Inc.** (Lowell, Mass.), acquired power and utility engineering firm **IJUS** (Columbus, Ohio). The acquisition brings TRC more than 700 employees delivering power and transmission services to clients in 30 states.

Mechanical, electrical, plumbing and fire protection firm **LKPB Engineers** (Minneapolis) joined **IMEG Corp.** (Rock Island, Ill.). Both firms are ACEC members. ■

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

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

Document Retention On-Demand Class; SFC Winter Seminar

ACEC FEATURES ON-DEMAND CLASS "DOCUMENT RETENTION: WHAT TO KEEP AND FOR HOW LONG"

Every A/E firm knows the cost and burden of trying to store and maintain the overwhelming number of documents generated from projects. Yet compliance and legal issues have firms hesitating to move those files to the trash.

ACEC's latest on-demand online class, "Document Retention: What to Keep and for How Long," explores how long firms must keep business records and reviews key objectives in developing a written document retention protocol. This 90-minute program also focuses on exemptions to automatic destruction of documents and explores the benefits of the business records exception to the hearsay rule.

Learn more about how to determine the period for keeping records in the normal course of business at: **http://bit.do/doc-retention.**

SFC WINTER SEMINAR: FEB. 7-9, TAMPA, FLORIDA

As small firms begin to take on more clients, leaders are forced to grapple with new challenges that come with growth. Mark Goodale, principal and co-founder of Morrissey Goodale LLC, is an expert on business for the A/E industry and presented at the 2018 Small Firm Council Winter Seminar on how to successfully grow your firm and project load.

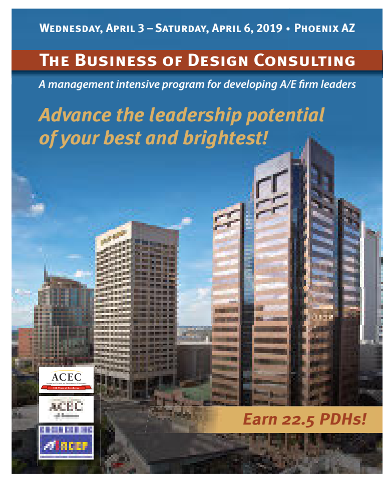
This year, Goodale gets "granular on growth" with his featured program, "What You Need to Know When You Grow," where he will cover the practical changes firms can and should make to thrive. The program also includes knowing when to hire administrative and HR staff, effectively communicating with staff about corporate changes and how to maintain a positive company culture during periods of growth. He will also explore how to retain talented, high-quality staff and maintain a goal-driven culture when significant growth is not a current company objective.

The 2019 Small Firm Council Winter Seminar will also feature a special session on properly protecting your small firm against new liabilities, an open roundtable discussion and networking opportunities.

For agenda and registration information, visit: **http://bit.do/acec-SFC-2019-winter-seminar.**

BUSINESS OF DESIGN CONSULTING: APRIL 3-6, PHOENIX

Managing a thriving A/E business requires a strong management team with technical know-how and a broad working understanding of today's best multidisciplinary business practices. New firm managers, in particular, must know the rules of finance and how they work in the real world as well as the ins and outs of managing people, risk and resources.



Offered annually and taught by ACEC's expert faculty of experienced A/E business practitioners, "Business of Design Consulting" details current strategies on a wide variety of critical management and operational topics that your up-and-coming firm managers must know to be successful and to keep your firm thriving. Topics include how to manage change and build success in performance management, strategic planning and growth, finance, leadership, ownership transition, contracts and risk management, marketing and more. Attendees of "Business of Design Consulting" will earn 22.5 PDHs.

For agenda, hotel and registration information, visit: **https://www.acec.org/education/bdc/.**

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Go to: www.acec.org/education/webinars/

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