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TURNING BACK THE TIDES

Engineers Combat Threat of Rising Sea Levels

>> 2016 **Legislative** Outlook

>> Expanding Into **International** Markets

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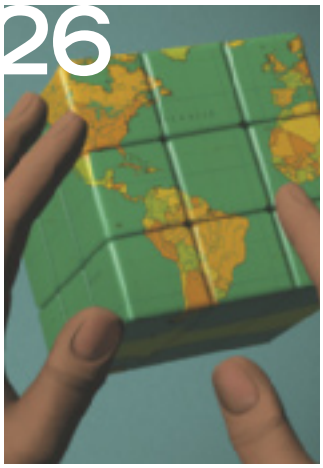

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Engineering Inc. promotes the advocacy and business interests of ACEC by offering news, legislative analysis and business practice information to member firms, clients, opinion leaders and policy makers.

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From ACEC to You

Advocacy Gains Set Stage for Further Progress

Our legislative victories in 2015 were capped by the recent five-year, $305 billion transportation reauthorization—the first such long-term funding bill in 10 years. We secured language in the new law to promote contracting out and defeated amendments that sought to abolish QBS and mandate in-sourcing of design services. We also achieved renewal of the Export-Import Bank, infrastructure permitting reform, and energy grid resilience measures.

Significant tax gains included extension of the R&D tax credit, bonus depreciation, higher expensing levels and energy tax credits.

Congress also passed an Omnibus Appropriations bill, funding defense, infrastructure, and facilities construction programs—avoiding the drama of a government shutdown.

Several states also achieved major advocacy wins, some with the financial support of ACEC's Minuteman Fund. Among those that won infrastructure funding increases were Arizona, Georgia, Idaho, Iowa, Louisiana, Maryland, Michigan, New York, North Carolina and Texas.

All these gains at the national and state level provide our members with a solid platform for the coming year and enhanced predictability and certainty in programming for members and clients alike.

As we look to the New Year—and the Presidential and Congressional races ahead—we intend to continue our aggressive pursuit of advocacy gains that matter most to our members, including multiyear funding for water and wastewater infrastructure, a comprehensive energy bill and greater outsourcing. Several of these issues are considered further beginning on page 14.

Also featured in this edition of *Engineering Inc.* is the role engineers are playing in the response to rising sea levels—a serious environmental challenge facing our nation. *(See page 8.)*

We wish you a happy and prosperous 2016!

Ralph W. Christie, Jr.
ACEC Chairman

David A. Raymond
ACEC President & CEO

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BY GERRY DONOHUE

Construction Projections Rise, Yet Industry Executives Remain Cautious

The U.S. economy has been steadily growing for several years, U.S. gross domestic product is forecast to top 3 percent in 2016, unemployment is hovering around 5 percent and interest rates are at historic lows.

That's welcome news for the construction sector. The value of construction starts has climbed from $435.3 billion in 2010 to a projected $674.3 billion in 2015, and market forecasters see continued—and even accelerated—growth through 2018.

Despite an overall, positive construction market outlook, the *ACEC Engineering Business Index (EBI)* showed a small but steady decline in optimism for five consecutive quarters. The latest survey, completed at the end of December 2015, showed a slight rebound in optimism.

"We're nowhere near the top of the construction cycle," says Kyle Camp of Dodge Data & Analytics, which tracks construction activity nationwide. "We should be feeling really good right now, but we're only feeling OK."

Strong Industry Forecasts

According to Dodge Data & Analytics, the value of construction will grow at an annual rate of 7.3 percent through 2018. But Dodge also expects that the overall economy will cool in 2019 and 2020, with the construction market falling by about 4 percent each year.

FMI, which bases its projections on the value of put-in-place construction rather than the value of construction starts, presents a similarly rosy picture through 2019, forecasting an average annual growth rate of 6.3 percent to $1.31 trillion. Within that forecast, nonresidential construction growth will average about 5.2 percent annually, and residential construction will grow about 8 percent.

In this positive market environment, why are engineering firm leaders feeling cautious?

One factor is timing. Engineering firms make most of their money in the project planning phase, but the market data only begins measuring when construction actually begins. Analysts estimate that the engineering cycle precedes nonresidential construction by as much as 24 months. So, while the construction market is expected to top out in 2018–2019, engineering firms could see their business peak as early as 2016.

Another factor, says HDR Engineering President Eric Keen, is unease about the public sector. "There is uncertainty on the federal budget and the election. As a result, we see 2016 and 2017 as being relatively slow growth."

Even though Congress passed a long-term transportation bill, funding levels are nowhere near what is required to meet needs, and the nation's water infrastructure remains sorely underfunded.

"There is huge pent-up demand across the entire infrastructure sector but a lack of political backbone—on the federal, state and local levels—when it comes to paying for it," says CDM Smith Chairman and CEO Stephen Hickox.

"Right now, the people who control the purse strings believe they will lose their jobs if they vote to spend money," says Gannett Fleming Chairman and CEO Bill Stout. "We need for them to believe they will lose their jobs if they don't."

Another factor taking its toll on CEO confidence is global instability, including the growing threat of regional conflicts and weakness in many major economies around the world—especially the apparent slowdown in China.

Finally, Dodge's Camp says the engineering industry has seen a significant decoupling of individual market sectors. In the past, the market as a whole tended to rise and fall

Put-in-Place Construction Forecast

Estimated Percentage Growth

	2016	2017	2018	2019
Total Residential	9%	7%	8%	8%
Total Non-residential Buildings*	7%	5%	5%	6%
Total Non-building Structures**	3%	3%	5%	5%
Total Put-in-Place	7%	5%	6%	7%

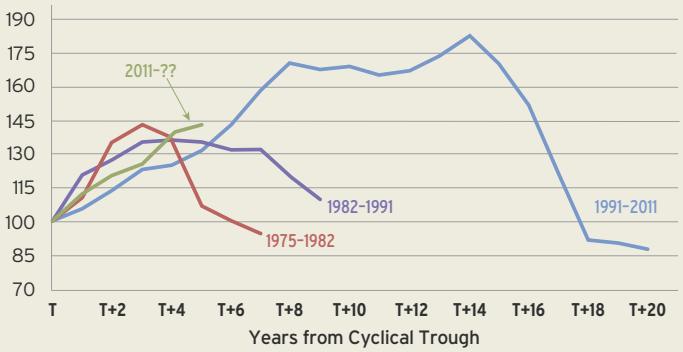
*Includes lodging, office, commercial, health care, educational, religious, public safety, amusement and recreation, transportation, communication and manufacturing

**Includes power, highway and street, sewage and waste disposal, water supply, and conservation and development

Source: FMI

Total Construction Activity by Cycle

Cyclical Trough (T)=100, Based on Constant Dollars



Source: Dodge Data & Analytics

RICHARD NEWSTEAD

at the same time, with a few outliers. Today, he says, the various sectors tend to rise and fall on their own, creating a jumbled picture that can be hard to decipher.

Standout Sectors

Several market sectors are forecast to perform well over the next three to four years.

The environmental field is expected to grow at better than 6 percent annually. "We see this sector as continuing to strengthen," says Hickox. "The EPA has cut back on its funding for cleaning up the large hazardous waste sites, but we're seeing an increasing amount of private activity."

Hickox is also bullish on water supply and wastewater, primarily because the situation in those sectors has become so critical that there is no alternative.

"We're facing aging infrastructure, climate change sustainability issues and water scarcity throughout the Southwest and West," Hickox says. "These are big issues that will have to be addressed."

Keen agrees, adding that he expects to see "an increasing focus on stormwater disposal."

Keen is also optimistic about the energy sector. Though it is in the doldrums right now—primarily due to the drop in the price of oil—he anticipates that it will come back strong, driven by a push for renewable energy and conversions to natural gas.

"We see that as being a huge market for us," Keen says. "More and more clients are looking for alternatives to coal. We also see upgrading our transmission and distribution systems as really strong going forward."

On the other hand, transportation will continue to lag, according to all indications.

"There has to be a shift. The federal government must continue to play a major role, but the growth in funding is going to have to come from the states and localities," says Stout.

He points to California, which now allows counties to impose taxes that are dedicated for transportation infrastructure. "I'd like to see more states step in and do that," he says.

Regional Differences

When looking for the best regional markets, CDM Smith's Hickox says, "Follow the people."

On a broad scale, the U.S. population is draining out of the Northeast toward the South and Southwest. As a result, engineering firm leaders expect those markets to grow.

"Our most active markets will continue to be Texas, California and Florida," says Hickox.

HDR's Keen concurs, adding Arizona to the mix—"They're putting a plan in place to attract business to the state"—and Oregon.

The Northeast bucks that trend in one critical market sector. "A lot of the infrastructure in the Northeast and Mid-Atlantic—whether it's transportation or water—is just worn out and has to be replaced," says Stout.

"The Northeast has been making some big investments in infrastructure, such as the Tappan Zee and Bayonne bridges," says Keen. "Despite the funding constraints, we expect to see a continued push to address our aging infrastructure."

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

Congress Passes, President Signs Five-Year, $305 Billion Transportation Bill Into Law

ACEC secured a key legislative priority with the enactment of the Fixing America's Surface Transportation Act, or the FAST Act, a five-year reauthorization of federal highway, transit and rail programs. The law features a 10 percent increase in funding over current levels and a number of important Council-backed policy reforms.

"This is a huge win for our industry," said ACEC President and CEO Dave Raymond. "After years of uncertainty and unpredictability, we finally have a stable federal program that will enable state and local agencies to move forward with critical projects all across the country."

The FAST Act provides $225 billion for highway programs over five years, an increase of more than $20 billion over current funding, including $207 billion in formula funds to the states, $4.5 billion for a new discretionary grant program aimed at improving freight mobility, and $1.4 billion for TIFIA loans and credit assistance to leverage additional investment. Annual state highway funding will increase from $39.7 billion in F.Y. 2016 to $43.4 billion in F.Y. 2020.

Transit programs will receive $61 billion over five years, an increase of nearly $6 billion above current levels, including $48.7 billion in formula funds to state and local governments and $11.5 billion for capital investment grants. Congress also included a separate reauthorization of passenger rail programs funded through the General Fund (not the Highway Trust Fund). The law authorizes $10.4 billion over five years, including $2.6 billion for Amtrak improvements in the Northeast Corridor and $2.2 billion for state rail grants.

The FAST Act includes a provision recognizing the value of private engineering and design services and urges the Secretary of Transportation to encourage state DOTs to partner with private firms "to strengthen project performance, improve domestic competitiveness, and create jobs." ACEC will coordinate closely with the U.S. DOT on implementing the measure.

During House committee debate on the bill, ACEC worked with committee leaders to defeat several threats to industry positions. Amendments were filed to mandate government insourcing of certain engineering services, to require flawed cost-benefit analysis of contracting decisions, and to repeal QBS requirements for federal-aid highway projects. ACEC voiced strong objections to these pernicious changes, and none of the amendments were approved.

The legislation also features project delivery streamlining reforms backed by ACEC, such as further integration of planning decisions into environmental reviews, accelerated decision making, programmatic mitigation plans, delegation of NEPA review authority to states and the expansion of categorical exclusions.

Congress transferred $70 billion from the General Fund into the Highway Trust Fund to supplement existing transportation revenues and support the five years of funding increases in the bill. Although the law does not raise federal gas or diesel taxes, it does include research and development grants for state pilot projects to test mileage-based user fees and other alternative revenue mechanisms.

"We still have some work to do convincing policymakers and the public on increasing transportation user fees," said Raymond, "but passage of this bill—the first long-term transportation bill in a decade—demonstrates what we can achieve with sustained advocacy and political engagement."

KEVIN BURKE/GLOW IMAGES

PAUL J. RICHARDS/GETTY IMAGES

Congress Clears Export-Import Bank Reauthorization

Congress approved ACEC-supported legislation to reauthorize the Export-Import Bank for four years as part of a larger transportation package.

During House debate, ACEC and its coalition allies were able to defeat 10 separate amendments to strip or weaken the reauthorization language in the transportation package.

The reauthorization language also includes ACEC-backed provisions to expand the scope of energy projects eligible for bank financing.

TIM GRAHAM/GETTY IMAGES

Transportation Package Includes ACEC-Backed Energy Policies

Energy and Commerce Committee Chairman Fred Upton added provisions to the five-year surface transportation program adopted by Congress that include significant portions of a comprehensive energy bill approved by his committee.

The energy title in the new law emphasizes provisions to bolster resilience and reliability in the nation's electric grid. Additional language directs the Department of Energy to outline the feasibility of creating a Strategic Transformer Reserve to quickly respond to natural and manmade threats to these critical components, and the law includes provisions to enhance the energy secretary's authority to respond to threats to the nation's critical energy infrastructure. The new law also includes provisions to resolve conflicts with environmental regulations to more effectively respond to emergencies affecting the nation's energy system.

TOM WILLIAMS/GETTY IMAGES

Rep. Fred Upton (R-Mich.)

The energy provisions were drawn from a larger energy package (H.R. 8) approved by the Energy and Commerce Committee over the summer, and they had strong bipartisan support. ACEC is working with Chairman Upton to advance other elements of his energy package in 2016.

ISSUES ON THE MOVE	WHAT'S NEXT
Transportation Package Signed Into Law	FHWA, states focus on implementation in 2016
Tax Extenders Package	Congress to revisit larger tax code changes in 2016

ACEC/Michigan Scores Transportation Funding Victory

On Nov. 10, Michigan Governor Rick Snyder signed into law a major road funding package that will generate up to an additional $1.2 billion per year through a gas and diesel tax increase, an increase in registration fees, and the reprioritizing of $600 million from the state's General Fund for transportation.

The new law represents a great victory for the advocacy efforts of ACEC/Michigan, which worked within a broad-based business coalition to build support for the legislation.

The ACEC Minuteman Fund provided a grant to ACEC/Michigan to help raise public awareness of the initiative.

Tax Extenders Signed Into Law

Prior to adjournment, congressional tax writers finalized legislation to extend a number of expired tax provisions important to the engineering industry. The package extended 52 tax provisions that expired at the end of December 2014.

The legislation makes several provisions permanent, including the R&D tax credit, higher Section 179 expensing levels, parity for transit benefits, and a measure to make it easier for firms that convert from C corporations to S corporations to access the firm's capital. Bonus depreciation and tax credits for wind and solar will be extended but phased out over five years. Most of the remaining provisions, including the Section 179D energy efficient commercial buildings tax deduction, will be extended for 2015, retroactive to Jan. 1, and 2016.

The permanent provisions are seen as a step toward comprehensive tax reform, which is not expected until 2017. In 2016, the Senate Finance Committee and House Ways and Means Committee are expected to continue developing tax reform legislation, with possible action on changes to international tax provisions.

For More News

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

Turn Back

By Samuel Greengard

TORSTEN JENSEN/GETTY IMAGES

ing the TIDES

Nation looks to engineering to address the threat of rising sea levels

It's difficult to open a newspaper or read social media without seeing a mention of how something is affecting the environment. Yet, beyond all the discussions, arguments and political viewpoints concerning the role humans play in this, one simple fact stands out: sea levels are on the rise and coastal areas are increasingly affected by tidal flooding, and engineers are being called upon to do something about it. >>

Storm surge from Superstorm Sandy destroyed scores of homes in Mantoloking, N.J.

MARIO TAMA/GETTY IMAGES

The entire east coast of the United States is particularly vulnerable as rising sea levels could impact—and perhaps even displace—between 20 to 30 million people spanning 20 cities with populations over 100,000, according to a report in the journal *Proceedings of the National Academy of Sciences*. Those cities include Boston, Miami, Virginia Beach, Sacramento, New Orleans, Jacksonville and New York.

Research shows that sea levels across the Northeast Coast rose nearly four inches between 2009 and 2010. Along the coast from Boston to North Carolina, sea levels are rising three to four times faster than the global average.

The evidence is irrefutable. "We have a very precise global view of sea level change based on nearly 23 years of satellite altimeter measurements," says R. Steven Nerem, a professor of aerospace engineering at the University of Colorado.

"It means that for many U.S. east coast cities there are only two options…. move the city further from the coast, or build enormous sea walls."

MICHAEL McMAHON
HDR ENGINEERING

He pointed to a 2014 study conducted by the National Oceanic and Atmospheric Administration (NOAA), which found that at 45 tide gauges around the Atlantic and Gulf of Mexico coasts, the frequency of flooding had increased at 41 locations. Moreover, the rate of increase was accelerating at 28 of the locations.

"The loss of ice from Greenland, Antarctica and mountain glaciers contributes to about one-third of the increase. We also are witnessing a thermal expansion of the oceans, which further contributes to sea level rise," Nerem says.

Taking Action

"The undisputed fact is that sea levels are not going down," says Michael McMahon, senior hydro-meteorologist at HDR Engineering. "It means that for many U.S. east coast cities there are only two options…move the city further from the coast, or build enormous sea walls."

HDR is working with New York City on its plan to make city buildings and infrastructure more resilient against the effects of rising tides and storm surges. Flooding after Superstorm Sandy left 43 dead and more than $19 billion in damage. New York City's $20-billion resiliency plan calls for a complex system of permanent levees, storm barriers and other defenses.

James Schlaman, director of water resources at Black & Veatch says the slow and incremental nature of the ice melt in the Polar Regions means that a rise in sea levels may not be entirely apparent in some areas until a major storm surge occurs. At that point, severe flooding could wreak havoc on infrastructure, including freshwater systems.

"The bottom line is that there are a lot

Hatch Mott MacDonald was retained to develop the Mantoloking Sea Wall, the largest and longest coastal resilience sheeting project ever constructed in New Jersey.

of different potential scenarios, but all of them lead to varying levels of problems." Schlaman said. "We must recognize and address the reality that rising sea levels will touch a lot of people's lives and have a major impact on infrastructure."

Schlaman says Black & Veatch is working with officials in California, Louisiana and elsewhere to develop plans and projects, including dual-feed pump stations, seawalls and emergency generation systems.

Hatch Mott MacDonald CEO Nick DeNichilo notes that coastal flooding can set off a chain reaction of disastrous events such as power failures; flooded tunnels, rail lines and subways; and an array of other problems, including an inability to obtain fuel or buy food during a major storm like Sandy or Katrina.

"We must recognize and address the reality that rising sea levels will touch a lot of people's lives and have a major impact on infrastructure."

JAMES SCHLAMAN
BLACK & VEATCH

To combat rising sea levels, he says, the emphasis must be on adaption and resilience. "There is a need for coastal communities to focus on greater resilience and better protections in order to ensure a more sustainable future. This means addressing wide-ranging issues, including erosion control and stabilizing shorelines, building natural barriers, protecting structures from flooding, preventing the leaching of salt water into fresh groundwater, guarding freshwater supplies, and aiding utilities that can be impacted by flooded coastlines."

Hatch Mott MacDonald is involved in several projects aimed at mitigating the effects of sea level rise. Among them: designing and constructing a new sea wall along three-and-a-half miles of oceanfront in Mantoloking, N.J. It's the largest and longest coastal resilience sheeting project ever constructed in New Jersey. The project, which will replenish the

This property in Ft. Lauderdale experiences periodic, non-storm-related flooding several days a year. By 2019, model projections show that this property will experience more than 14 flood days per year.

oceanfront with 200-foot-wide beaches and dunes with a crest elevation of 22 feet, will protect about 8,000 homes.

The company is also working with New York City to assess and possibly reinforce the Triborough Bridge and tunnels in the city.

McMahon noted how storm water discharge becomes a major issue as sea levels rise. "During a heavy rain, all the storm water is supposed to be dumped into the ocean, but when you have rising tides, getting storm water into the ocean becomes problematic," he says.

Addressing this unfolding problem is nothing short of daunting. At the heart of the issue is the historic federal struggle to adequately fund existing infrastructure improvements, let alone develop new infrastructure designed to protect high-risk coastal areas as sea levels rise.

Cities/States React

Several U.S. cities and states are realizing their vulnerability and beginning to take action. The major problem so far has been nuisance flooding occurring on a far more frequent basis—particularly in South Florida and low-lying areas such as the Chesapeake Bay. Flooding can overwhelm drainage systems; contaminate freshwater supplies, block roads, cause erosion, and damage buildings that aren't meant to be exposed to salt water.

"We are seeing water in the streets of Miami, Fort Lauderdale and other areas when there is no rain or no storm," says Albert Slap, founder and CEO of Coastal Risk Consulting, which provides detailed flood forecasts down to the parcel level for communities and other entities.

"We are seeing water in the streets of Miami, Fort Lauderdale and other areas when there is no rain or no storm."

ALBERT SLAP
COASTAL RISK CONSULTING

Slap notes that Fort Lauderdale is looking to develop a detailed model to better understand flood-prone areas, depth of flooding, frequency of flooding and when flooding is more likely to occur. Already, the city has identified 16 areas that require adaption and 38 capital projects aimed at flood management and resilience; while Miami has authorized a five-year, $300 million plan to install 60 pumps in Miami Beach.

Meanwhile, Boston Mayor Martin J. Walsh is focusing on a regional approach to rising sea levels by announcing a multi-city living-with-water summit. Among the key areas that will be affected by rising sea levels: the city's Logan Airport.

Kathleen White, who leads the U.S. Army Corps of Engineers' (USACE) Climate Preparedness and Resilience Community of

The city of Miami Beach is installing drainage pipes and storm water pumps meant to keep rising sea levels from inundating low-lying areas.

JOE RAEDLE/GETTY IMAGES

Practice, says that engineering solutions typically revolve around several approaches: constructing sea or flood walls; building or raising levees; installing pumping systems; developing secondary or backup power supplies; reinforcing bridges, tunnels and subway systems; and upgrading both freshwater and wastewater treatment sites.

Because most of these projects require large capital investments, White says that government officials and engineers must consider a variety of options, including adapting natural habitats, retrofitting existing infrastructure and building new systems.

"There is a need to prepare for rare and catastrophic events but also to address more frequent problems," she says. Among other things, USACE is working to quantify the benefits of various approaches, including natural defenses like protecting wetlands and building sand berms.

Pedestrians walk through Miami Beach's city streets, which flooded in September 2015 due to a combination of rising sea levels and seasonal high tides resulting from lunar orbit.

MARIO TAMA/GETTY IMAGES

White says that one of the challenges is simply the differences in geography and tidal conditions in different locations as there cannot be a one-size-fits-all approach. "From an engineering perspective, it's necessary to consider both the frequency and severity of events, including low-energy and high-energy-type events. It's important to make smart investments that take risk and potential damage into account when determining the types of solutions that can be put into place and how much they cost."

McMahon predicted that the U.S. would follow the lead of the Netherlands regarding future investment in resiliency against rising tides. With much of its land mass below sea level, the Netherlands has been battling the sea for centuries. Today, the country is protected by a sophisticated network of channels, locks and surge barriers that theoretically would only be breached by a one-in-10,000-year storm and is a world model for best defending against the sea.

"If we do not begin to address these needs and take a lifecycle approach, we are likely to face even steeper costs, along with loss of property and life, in the future."

NICK DENICHILO
HATCH MOTT MACDONALD

"The U.S. is slowly finding itself in a similar place as the Netherlands—when building barriers against the rising tide is the only recourse," McMahon said. "All it takes is that one monumental, game-changing event to generate the needed emphasis."

Rather than becoming bogged down by the politics, DeNichilo says: "If we do not begin to address these needs and take a lifecycle approach, we are likely to face even steeper costs, along with loss of property and life, in the future. The grand challenge is to recognize that we are subjecting our infrastructure to these events and that we're going to have to make major capital investments in order to deal with sea level rise."

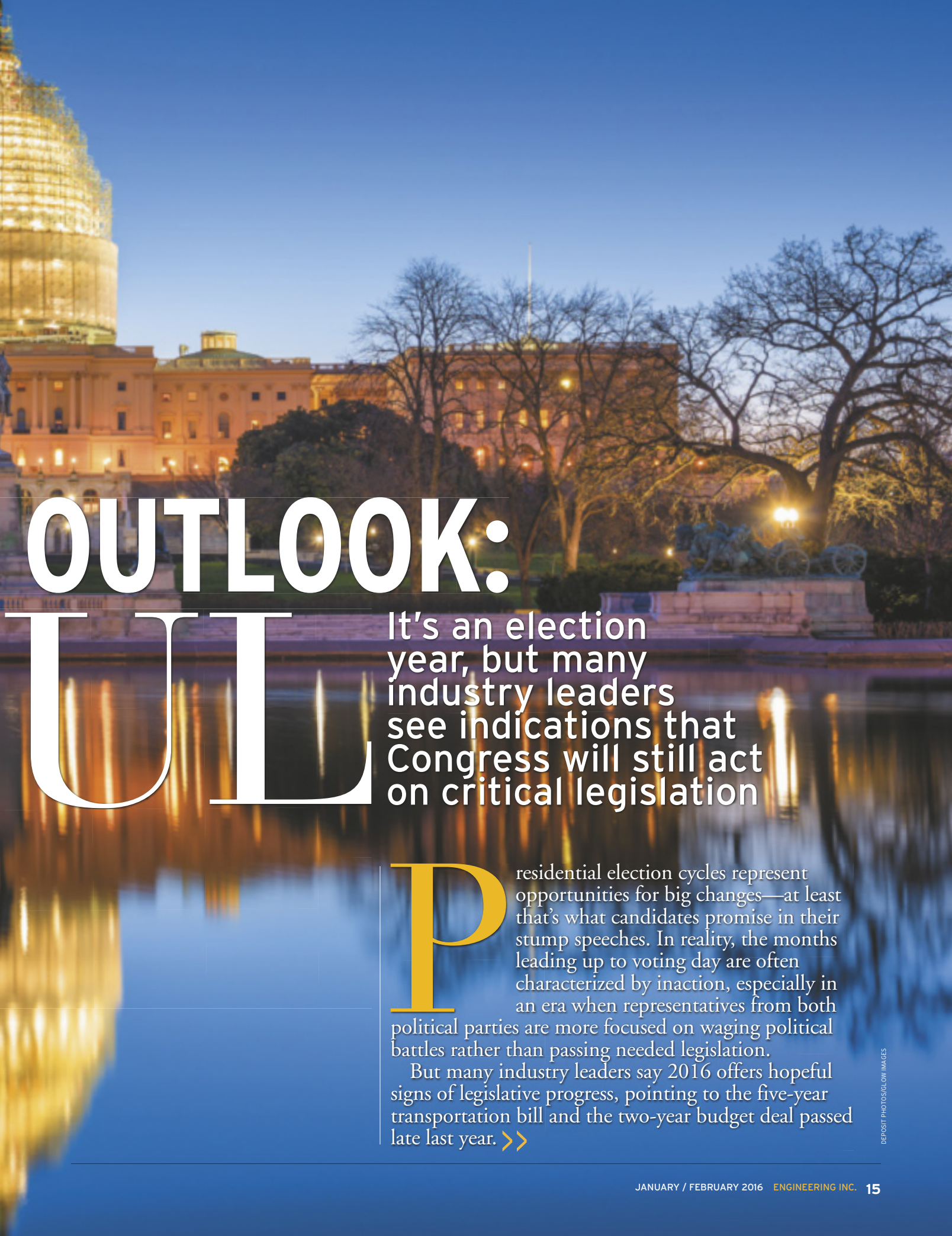
Schlaman believes efforts to combat rising sea levels must involve mitigation plans that cross traditional silos and boundaries. "Many of these potential problems and challenges transcend any one agency or government entity. A more holistic and comprehensive approach is essential," he says.

"There's also a need to move from reactive to proactive. Many communities are still in a state of complacency because this is a somewhat insidious issue. They are going to see sea level change sneak up on them because they haven't yet been impacted by an event." ■

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

By Alan Joch

2016 LEGISLATIVE HOPE SIGNS



OUTLOOK: UL

It's an election year, but many industry leaders see indications that Congress will still act on critical legislation

Presidential election cycles represent opportunities for big changes—at least that's what candidates promise in their stump speeches. In reality, the months leading up to voting day are often characterized by inaction, especially in an era when representatives from both political parties are more focused on waging political battles rather than passing needed legislation.

But many industry leaders say 2016 offers hopeful signs of legislative progress, pointing to the five-year transportation bill and the two-year budget deal passed late last year. >>

DEPOSIT PHOTOS/GLOW IMAGES

Are these agreements an indication that the second year of the 114th Congress will be more productive than its first, and that representatives and presidential candidates alike will be increasingly willing to champion legislative issues important to the engineering industry?

Member Firm leaders from throughout the nation, who are also part of ACEC's Government Advocacy or Federal Agencies and Procurement committees, weigh in on these prospects as they reflect on the industry's legislative outlook in the coming year.

Question #1: As we embark on a presidential election year, how productive do you expect Congress to be on legislative issues important to engineering and why?

"It's my belief that many elected officials now seem to realize they must show voters they're being productive doing the people's business," says Philios Angelides, president of Alpha Corporation. "As a result, I'm more optimistic that in the upcoming session we'll have a little more cooperation to produce tangible results."

Gary LaPaille, senior vice president of government affairs at MWH Global, agrees. "I'm very hopeful that under the speakership of Paul Ryan some of the tantrums that small factions caused in the House over the last several years are now behind us, and representatives can work together to address the needs of the U.S.," he says. "Many people have come to the realization that enough is enough, and I hope that will prevail in this upcoming year."

Other leaders see signs that important issues are being discussed in new and potentially more productive ways. "The infrastructure discussion used to focus on public safety—bridges are crumbling and roads are cracking up," says Robert Scaer, president and COO of Gannett Fleming. "Now I'm noticing an interesting change in Washington where the rhetoric is shifting to competitiveness. There's a growing sense that new investments are the American thing to do because everybody wins. We will grow our competiveness in the world and create many new jobs. That's something that resonates with people."

Memories of legislative gridlock and Washington infighting, however, are still fresh in the minds of many. "Politics could get even more contentious in an election year, so attempts to reach compromises on key issues—even those with bipartisan support—might be viewed as showing weakness or succumbing to the other side," says Jon Nishimura, president of Fukunaga & Associates. "So I don't anticipate a lot of compromise and deal-making."

John Woods Jr., principal at Woods Peacock Engineering Consultants, voices a similar theme. "I don't believe members of either party go home and tell their spouses, 'My way or the highway,' but that's the way members treat each other in Congress," he says. "Some representatives don't want to give the president a success, and he doesn't want to give representatives a success. It's depressing."

"We've spent $6 trillion in Iraq and Afghanistan, and I think the sentiment of the people in this coming year will be let's start taking care of our home base."

GARY LAPAILLE
MWH GLOBAL

Question #2: Which industry issues would you most want to receive significant legislative progress in 2016 and why?

"I can't imagine a bigger stimulus for the economy than infrastructure—it's the one proven area where when you invest the appropriate funds, then job growth and tangible public benefits come out of it," Angelides says.

Some closely pair infrastructure modernization with another important issue—resiliency. "We ought to rebuild our infrastructure in a more resilient manner as we continue to see the impact of climate change," says Don Armour, senior vice president at Stantec.

"We'll be able to lessen the damages and recover more quickly from natural disasters—whether it's wildfires in the West, floods in South Carolina, tornadoes in the Midwest or a superstorm in the Northeast—with an across-the-board effort by the federal government to address both our infrastructure needs and our resiliency needs," Armour says. "The engineering industry has to beat this drum so that congressional leaders and the executive branch really understand the importance and the linkage between these two issues. If we improve our infrastructure, I believe the additional dollars not only will have a huge positive economic impact but will help reduce the damages from future natural disasters. It's a double win."

Comprehensive tax reform is also a top-of-mind legislative need among some engineering executives. "It's important to the business of engineering for Congress to address comprehensive tax reform," says James Porter, corporate transportation manager at J-U-B Engineers. "We need a balanced approach that simplifies things and treats all business structures fairly. We also need to preserve cash accounting, where our companies pay taxes when we are actually paid for the services we deliver, versus accrual accounting, where we pay taxes when we provide the service."

A congressional committee has proposed forcing large firms to use the latter method. "Accrual accounting would be tough for us because we don't always fully collect on everything we have out for billing, which represents significant cash flow for the industry," Porter says.

Greater attention to water projects would also boost the industry in the months ahead, says LaPaille. "We'd love to see a *Water Resources Reform and Development Act* (WRRDA) for 2016," he says, referring to legislation enacted in 2014. "WRRDA is significant because our water infrastructure is disintegrating, and at the same time, we have a growing population that needs new delivery systems in targeted areas throughout the U.S."

LaPaille would also like further discussions about the *California Emergency Drought Relief Act*, which proposes water infrastructure funding worth $1.3 billion.

Scaer hopes to see Congress act on additional water-related imperatives. "The infrastructure in our inland waterways has to be addressed," he says. "The lock systems for moving barges on rivers are vitally important to the economy, but they're vulnerable to failure because

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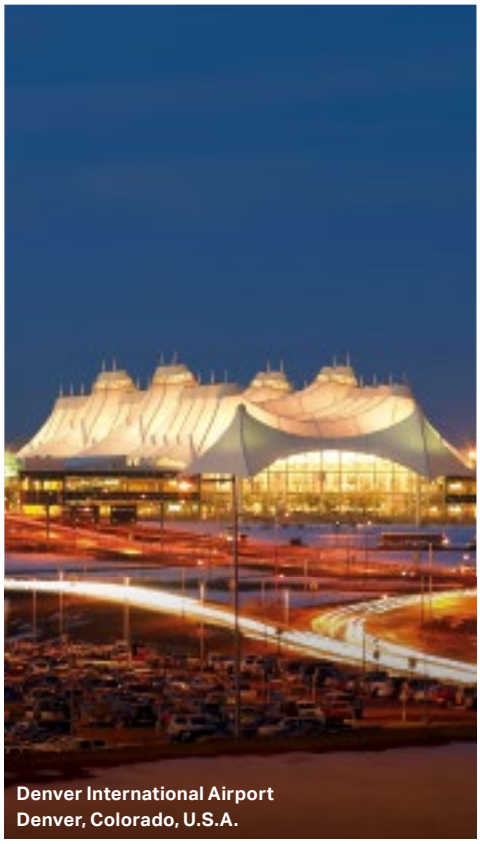
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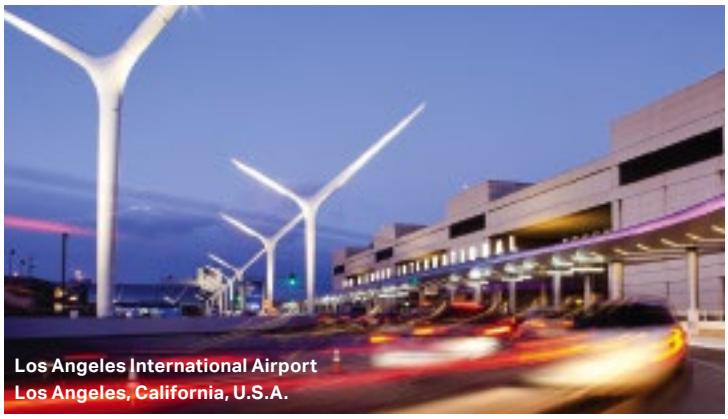
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John Woods Jr., of Woods Peacock Engineering Consultants, testifies in 2011 before the House Small Business Committee.

they're the original structures. We need to pay significant attention to this area in the near term."

Funding isn't the only challenge surrounding new water and infrastructure projects, according to Angelides. "There are problems with how the government grades water infrastructure and civil works projects, leaving a lot of great projects sitting idle," he says. "Unfortunately, the current grading and scoring system only looks at first-year metrics, without taking into consideration the multiyear funding mechanisms and delivery strategies for major projects."

Nishimura would like to see new rules for sharing risks when implementing new technologies, which he says are needed to help promote innovation. "Sharing risks and responsibilities could help us develop innovative designs and try new methodologies," he says. "The onus for trying something new should not be placed on any one party, whether it's the contractor, engineer, designer or owner. Of course, there must be a thorough analysis beforehand, but if everybody works together and no individual party will be held totally liable if a problem arises, it could foster a willingness to adopt new ideas."

Other Capitol Hill watchers are calling for changes in government procurement practices. The *Design-Build Efficiency and Jobs Act of 2015*, a bill that would limit single-step, design-build contracting to projects worth $750,000 or less, is one of several options. "In a two-step contracting process, the design-builder or construction teams submit their qualifications to the government, which then shortlists three to five of the most qualified teams," Woods says. "The shortlisted firms, if they so choose after seeing the final competitors, then devote resources to preparing price and design proposals. In a single-step process, there's no ability for government to know whether one team has better (or even any) qualifications compared to another. Lowest price becomes the qualifier. That's a killer for large, and in particular small, businesses that don't have large marketing staffs to prepare proposals to try and win contracts."

"I can't imagine a bigger stimulus for the economy than infrastructure—it's the one proven area where when you put in the money, job growth and tangible benefits come out of it."

PHILIOS ANGELIDES
ALPHA CORPORATION

Question 3: What engineering industry issues would you most like to see a presidential candidate address as part of his or her campaign platform to reach the White House?

"We've spent $6 trillion in Iraq and Afghanistan, and I think the sentiment of the people in this coming year will be let's start taking care of our home base," says LaPaille. "If the two presidential nominees—whoever they are—both talk about the U.S. economy and infrastructure, then the members in Congress from the respective parties will push the same agenda. So I hope everyone will be pushing in the same direction."

The engineering workforce is also an important issue. "Even if we had all the money needed for infrastructure modernizations, we don't have the human resources, both in numbers and required training, to deliver the program," notes Angelides. "We don't graduate enough engineers, so we need to continue to reinforce H-1B programs for trained foreign professionals and work for long-term education reform in this country. We must get young people excited about engineering and organically grow our future workforce to sustain infrastructure development programs."

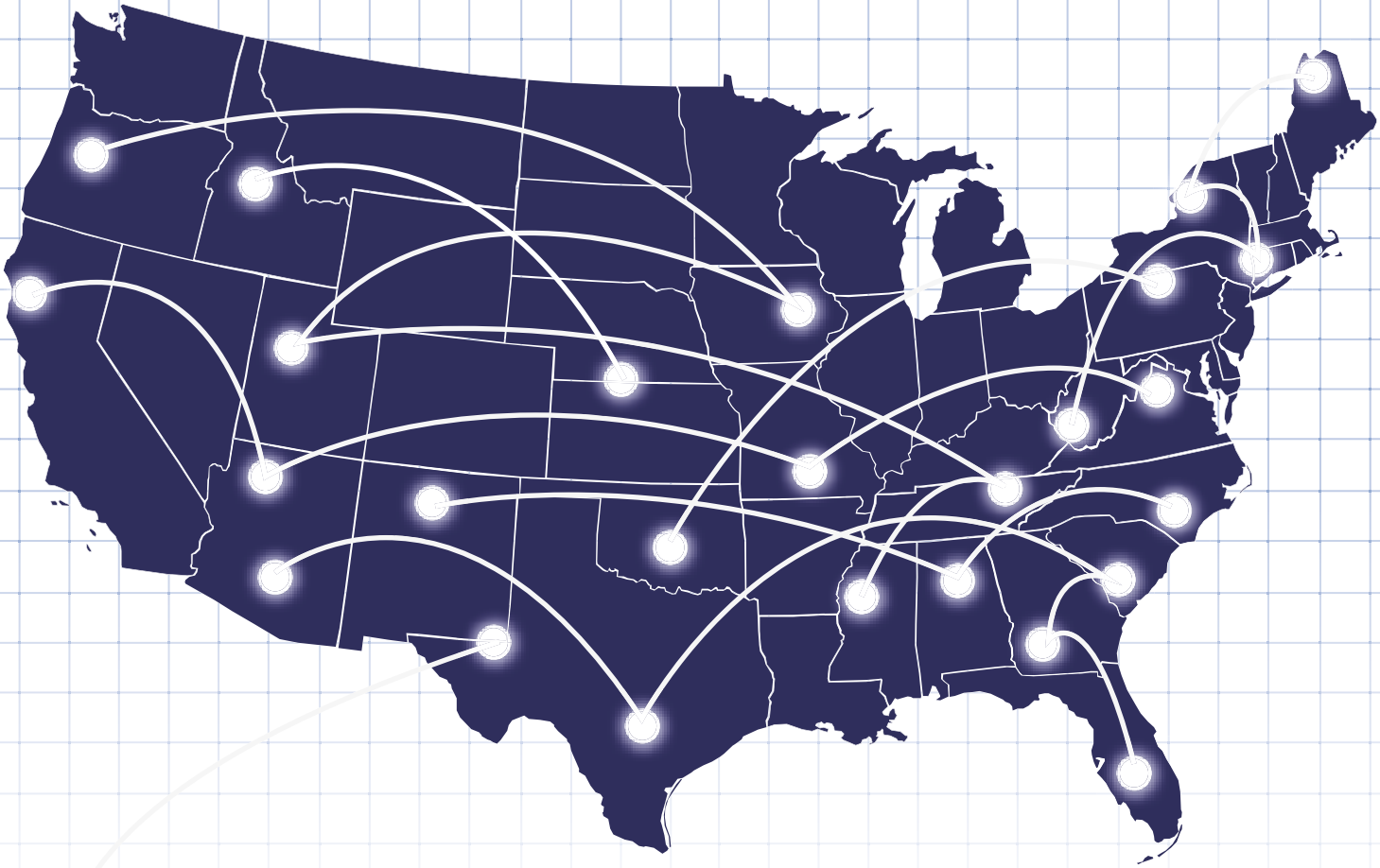
Nishimura agrees. "We must encourage the development of a future generation of problem solvers by giving students tools for moving society forward by making education of our young people a high priority. STEM—science, technology, engineering and math—is the key, which means we must create a strong foundation in this critical area."

A comprehensive energy plan also tops many wish lists. "We would benefit from a plan that encompasses everything from domestic oil production and exports to nuclear power and renewable energy, including hydropower, which is important in the West," says Porter.

He'd also like candidates to push the Federal Aviation Administration to issue guidelines for using unmanned aerial vehicles (UAVs), or drones, for business. "UAVs would benefit engineers in a number of ways," Porter says. "For example, I'd like to use them for bridge inspections. Today, we use climbers to photograph truss bridges in some cases. I'd rather look at a video screen than the pictures that a climber took, because I can control where I'm looking and what I'm looking at. I think drones have the ability to change our business as much as GPS has."

Finally, some engineers want to hear stump speeches devoted to public transportation. "Our increasing workforce of millennials wants to live in downtown areas to use transit systems rather than drive cars," Scaer says. "As a result, our company is moving offices into town centers near light rail lines, and the efforts are going over well. In Phoenix, for example, we just relocated to downtown. So now I'm able to fly into the airport, take a train to the light rail system, and use it to come right to the office. This is exactly what employees want." ■

Alan Joch is a business and technology writer based in Francestown, N.H.



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RACIN TO HEL

Left: Pro Mazda Series drivers Kenton Koch (left) and David Ostella (middle) and IndyCar driver Simona de Silvestro (right) visit a young patient at Ochsner Medical Center in New Orleans before the 2015 Indy Grand Prix of Louisiana.
Below: IndyCar driver Graham Rahal visits a patient at the University of Kansas Medical Center.

TranSystems employees team up with Racing For Kids to rev the spirits of sick children

By Calvin Hennick

When Michael Cuddy, a TranSystems employee volunteering with the Racing For Kids charity, visited sick children in the hospital this past August, he found the experience both difficult and rewarding.

Cuddy shadowed professional racecar driver Justin Wilson on a trip to Janet Weis Children's Hospital in Danville, Pa. They handed out hats and coloring books to kids battling cancer, recovering from car accidents and undergoing treatment for a number of other ailments. >>

Left: IndyCar driver Jack Hawksworth signs a hat for a patient at the Loma Linda University Medical Center Children's Hospital.
Above: TranSystems employees from the Columbus and Cleveland, Ohio, offices join Indy Lights driver Zach Veach (left) and Racing For Kids national spokesperson Robbie Buhl (second from right) to visit patients at Akron Children's Hospital.

"It took me a while to get used to it," says Cuddy, a senior vice president who works at the firm's Philadelphia office. "I walked in one room and the kid had a cast on from head to toe."

Some of the kids were shy, he says, but Wilson, who signed autographs and talked about video games, was good at getting them to open up. "Seeing a smile come to their face, you knew you were doing something good for them," Cuddy says. "The parents pulled me aside and were just saying how grateful they were for people coming out and trying to brighten the day up."

Following their visit, tragedy struck. Wilson, who had spent his Friday trying to lift the spirits of kids in hospital beds, was hit in the head by crash debris from another driver's car during the ABC Supply 500 at Pocono Raceway that Sunday. He died the next day.

"It was hard, just having been with the guy," Cuddy says. "Justin actually told a story [during the hospital visit] about another racer in New York who made a hospital visit and then got injured and taken to the same hospital that he had visited. All the kids wrote notes.

"He was definitely a very personable guy," Cuddy adds. "You could tell he really enjoyed what he was doing. There was one young boy, probably about six or seven, playing with Matchbox cars in bed. Justin ended up playing with him with the cars, and doing a mini-racing thing in his bed. The kid got a real kick out of that."

Cuddy says he plans on returning to the hospital for another Racing For Kids visit this summer if he has the opportunity—not only because of his positive experience seeing Wilson with the children, but for personal reasons, too. Cuddy's 19-year-old nephew has battled a chronic medical condition throughout his life, which is one reason Cuddy was inspired to volunteer with the charity.

"I've seen firsthand the heartbreak that families go through," he says. "So when this opportunity presented itself, it was something that I felt like I had to do. It just spoke to me."

Pit Stops

Racing For Kids partners with the following hospitals and health care institutions:

All Children's Hospital	St. Petersburg, Florida
Akron Children's Hospital	Akron, Ohio
Glenwood Autism and Behavioral Health Center	Birmingham, Alabama
Beaumont Children's Hospital	Grosse Pointe, Michigan
Blank Children's Hospital	Des Moines, Iowa
Children's Hospital of Wisconsin	Milwaukee, Wisconsin
Cook Children's Hospital	Dallas, Texas
Children's Hospital of Michigan	Detroit, Michigan
Children's National Health System	Washington, D.C.
Halifax Health Medical Center	Daytona, Florida
Henry Ford Medical Center – Cottage	Grosse Pointe Farms, Michigan
Loma Linda University Medical Center	Loma Linda, California
McLaren Northern Michigan	Petoskey, Michigan
Miller Children's & Women's Hospital	Long Beach, California
Ochsner Health System	New Orleans, Louisiana
Riley Hospital for Children at IU Health	Indianapolis, Indiana
Peyton Manning Children's Hospital at St. Vincent	Indianapolis, Indiana
Texas Children's Hospital	Houston, Texas
The Hospital for Sick Children	Toronto, Ontario

Seeing the Difference

More than a decade earlier, Brian Larson, TranSystems' CEO and chairman of the firm's board of directors, was introduced to Racing For Kids at an event in 2004.

"I was moved by what they were accomplishing," Larson says. "It was targeted toward the actual children in need, with that one-on-one element to it, where they're trying to change their day and you can see it firsthand. You can see it and

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touch it yourself and feel like you've made a difference in a number of lives."

Racing For Kids was founded in 1989 by Dr. Bill Pinsky and has focused on improving the morale of critically ill children through driver visits to hospitals and other health care facilities. The group also raises money for children's hospitals, with much of the money going toward playrooms and contributing to the cost of care for some patients. Since its inception, the organization has conducted more than 550 hospital visits in the U.S., Brazil, Canada, Japan, Australia and Mexico, reaching more than 28,000 children. Additionally, the group has raised and distributed nearly $6.5 million to hospitals and other health care organizations.

The racing tie-in makes the charity a natural fit for TranSystems, which specializes in transportation infrastructure, but Larson says it was the hospital visit program that drew him in.

"Kids get a kick out of interacting with the professional athletes," he says. "They go through the entire children's wing, stopping room to room if the kids are in private rooms. If they're in a larger room, [the drivers] just go bed to bed. For the kids that are ambulatory, they'll have a racecar down on the lawn of the hospital. The kids that are able to will come on down with their IVs and get a chance to sit in the car, see the car and have fun outside for a while."

During its partnership with Racing For Kids, TranSystems has raised more than $300,000 for the charity, and this year the goal is $50,000. Each year, the company holds an internal "FunDrive," with the firm matching all employee donations. Employees are also encouraged to participate in the charity's hospital visits, and the company even incorporates Racing For Kids into client events. For example, TranSystems is a sponsor of the Rahal Letterman Lanigan Racing team, and when the firm invites clients to the racetrack, Larson and other executives spread the word about Racing For Kids and hold silent auctions to benefit the charity.

"I don't think I've ever met a kid that isn't excited about racecars and racecar drivers. They're superheroes, maybe even more so than a football player or another professional athlete."

KANON COZAD
TRANSYSTEMS

Pat Wright, the executive director of Racing For Kids, says that Larson "quickly saw exactly what it was that we did." Wright praises TranSystems employees for their involvement—especially for their hospital visits, which he says have a concrete impact on children.

"These visits are an important part of recovery therapy for the kids we see," Wright says. "It takes their minds off their treatment, it gives them hope and it puts a smile on their faces. And the doctors that see these kids tell us that they get better faster. Kids with IVs and poles, they'll jump in the racecar like there's nothing wrong. It's amazing to see."

Wright tells the story of a visit by Robbie Buhl, a former IndyCar racer and the group's national spokesman. While Buhl was interacting with a child in a wheelchair, the boy gave a thumbs-up signal, and his mother burst into tears. It was the boy's first communication since his car accident.

"We know we're doing the right thing when we see something like that," Wright says.

Superheroes

For many TranSystems employees (no small number of whom are race fans), it is immediately apparent why visits from racecar drivers provide special moments for kids going through a tough time, and they leap at the opportunity to help.

"I'm a very passionate fan and participant when it comes to motor sports," says Kanon Cozad, chief information officer for TranSystems. "I know how exciting that can be to kids. I don't think I've ever met a kid that isn't excited about racecars and racecar drivers. They're superheroes, maybe even more so than a football player or another professional athlete. There's something intrinsically cool about racecars and racecar drivers."

IndyCar Series racing star Sebastian Bourdais meets with a patient at Detroit Medical Center's Children's Hospital of Michigan.

"I was moved by what they were accomplishing. It was targeted toward the actual children in need, with that one-on-one element to it, where they're trying to change their day and you can see it firsthand."

BRIAN LARSON
TRANSYSTEMS

Chuck Stenzel, a TranSystems principal based in Chicago, says some of the kids are too young to recognize the racing pros, but that doesn't diminish their enjoyment. "I don't think they know them by name, but they know that they drive racecars," he says. "I think they make the connection that it's a famous person, and they drive a car more than 200 miles per hour. It's pretty cool to have someone like that come in to see them.

"I think it's very valuable when you can help children like that and put a smile on their face for a little while," Stenzel adds. "We're going to continue to be a part of this." ■

Calvin Hennick is a business, technology and travel writer based in Milton, Mass.

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Going Global

By Bob Violino

Guidance and resources for firms seeking opportunities in the international marketplace

This is the first in a three-part series offering advice for engineering firms seeking to expand services into the international market.

For many U.S.-based engineering firms, achieving true business growth means moving beyond the nation's borders to find customers overseas. But doing business internationally requires a specific outlook and skill set—and firms that master these traits stand a much greater chance of success.

"There is a growing trend of A/E firms expanding into international markets that is being driven by an increase in market opportunities abroad," says Carol Bell, director of international project development at Stanley Consultants and chair of ACEC's International Committee. >>

RANDY LYHUS

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"We see many foreign governments working diligently to improve the quality of life for their citizens, which leads to the development of infrastructure projects such as sanitation, water, wastewater, roads and bridges, and power generation and transmission," Bell says.

Bell—whose firm, Stanley Consultants, has an extensive international portfolio—cautions that international work isn't without significant challenges. "It has a lot of risks, from unfamiliar contract terms to payment," she says. "Once a firm decides it wants to pursue international work, it should endeavor to know the local market and the culture of the country it wants to work in."

When seeking international opportunities, firms should be cautious of local agents who claim they're well connected and can provide jobs for a fee. "These individuals usually claim to have brothers and cousins or family members connected at the highest level," she says. "There's nothing wrong with this; just don't believe everything you hear."

Also, don't accept fees in local currency unless you understand exactly what the risks are, how stable the currency is and how easy it is to move or exchange to U.S. dollars.

"Most importantly, avoid countries where corruption is rampant or is a way of business," Bell says. "This is perhaps the greatest risk of working overseas—it is like maneuvering through a minefield. Paying under the table to win a job, even if done by a local contractor, places you at additional risk of breaking the law."

Bell recommends looking for opportunities on projects funded by U.S. government agencies or leveraging the resources offered by these organizations. "They all have projects that U.S. firms can compete [for] and win based on professional qualifications without price competition," Bell says.

Following are profiles of three agencies that can help engineering firms launch or expand their international business efforts.

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CAROL BELL
STANLEY CONSULTANTS

United States Agency for International Development (USAID)

Created in 1961, USAID is the lead government agency working to end global poverty. With staff in more than 100 countries and a mission to speed international development, it offers engineering projects in a variety of sectors, including health, education, environment, economic growth, and agriculture.

Engineering and related projects are crucial elements of USAID's international programs, according to John Pasch, a senior engineer at USAID. "Infrastructure cuts across just about every part of USAID's portfolio," he says.

A recent assessment of USAID's global development portfolio from June 2011 to July 2013 identified engineering and infrastructure activities in 100 percent of the 69 operating units surveyed, including an active construction portfolio of more than $5.6 billion.

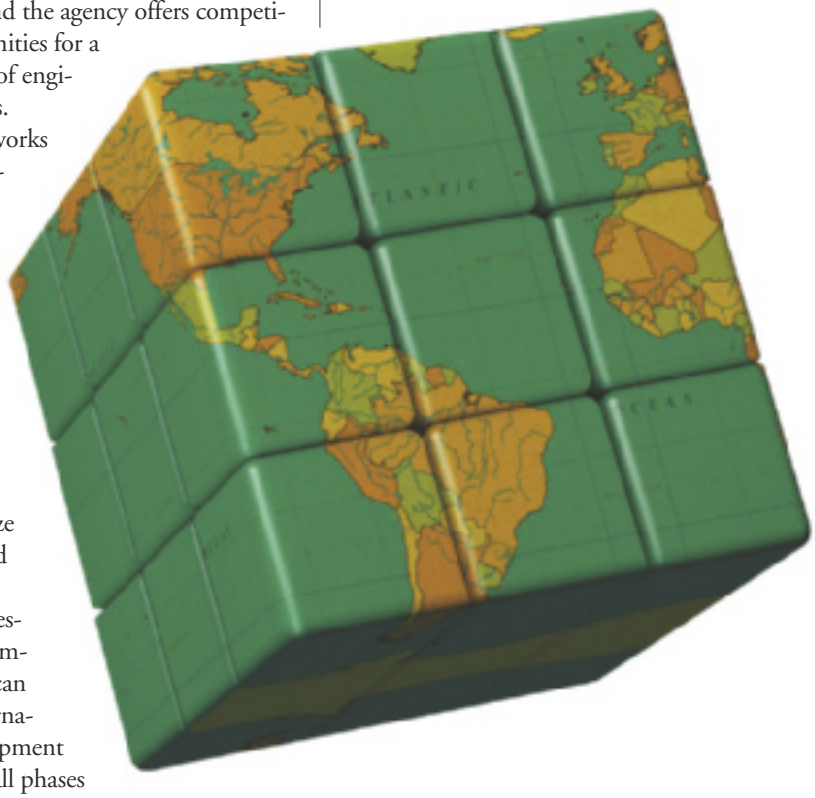
Projects range in size from very small to very large, and the agency offers competitive opportunities for a broad range of engineering firms.

"USAID works to build partnerships and provide assistance to solve some of the world's most complex problems," Pasch says. "We recognize engineers and engineering firms as professional problem-solvers who can support international development throughout all phases of a project or program lifecycle, from planning to implementation to monitoring and evaluation."

U.S. engineering firms often struggle with the application of codes, standards and processes that may not be appropriate in a developing country context. "The challenge is how to be flexible with the engineering practice without sacrificing quality, integrity or sustainability," Pasch says. "Similarly, cost structures vary tremendously across and within the countries where USAID works."

A contract with USAID can provide valuable international experience for firms while reducing risk typically associated with foreign transactions. The agency supports small business through its Office of Small and Disadvantaged Business Utilization (OSDBU). "Many of our new partners first gain USAID experience as a subcontractor," Pasch says. "OSDBU can provide advice to small businesses seeking subcontracting opportunities."

For more information, go to www.usaid.gov.



Millennium Challenge Corporation (MCC)

MCC, created by Congress in 2004, is an independent U.S. foreign aid agency that fights global poverty through economic growth. The agency awards large, five-year grants called compacts for projects in a variety of sectors, including agriculture, education, land administration, water and sanitation.

"A bulk of our funds—70 percent of the more than $10 billion committed to date—go toward engineering and construction of infrastructure projects in a variety of sectors," says Jonathan Nash, the managing director of MCC's Infrastructure, Environment and Private Sector Division.

The agency provides opportunities for engineering firms already established in the international market as well as those interested in expanding overseas. "Firms are hired for sector studies, due diligence, project assessments, feasibility studies, detailed engineering designs, project management and construction supervision for a range of both large- and medium-scale infrastructure projects in the energy, water/wastewater, irrigation, transportation and vertical structures sectors," Nash says.

MCC's compacts are prepared within a short period of time. "Typically, this means that sector studies, environmental assessments, feasibility studies, right-of-way studies and resettlement implementation, detailed engineering designs, and construction bid documents are completed within two years," Nash says. "And full implementation of MCC's grant—including delivery of the final product—has to be completed within five years."

MCC also has fixed compact budgets that cannot be increased if there are cost overruns. "For these reasons, all project preparatory work has to be done within a short time and with high precision upfront," Nash says. "This is unique to MCC, and to achieve this MCC has a pool of highly qualified engineers and infrastructure and environmental specialists who work very closely with engineering consultants throughout an assignment."

For engineering firms considering global work, MCC provides information on project opportunities in partner countries via procurement notices with global coverage and one-to-one meetings. The agency offers conferences and public events to educate firms on its project development and project delivery systems, and it connects interested firms with project teams in its compact countries.

For more information, go to www.mcc.gov.

"Knowing your market before you get there is the key to success. Look at key market factors of a few prospective markets, and compare the opportunities with your core competencies to see if there is a fit."

MATT BAKER
INTERNATIONAL TRADE ADMINISTRATION

International Trade Administration (ITA)

Established in the U.S. Department of Commerce in 1980, ITA provides a worldwide network of trade professionals to strengthen the international competitiveness of U.S. industry. Its U.S. Commercial Service counsels companies on overall marketability of products or services, market trends or sizes, customary distribution and promotion practices, and market entry requirements.

In-country experts working at U.S. embassies and consulates can help engineering firms understand local market conditions.

"In each of the embassies and consulates around the world there is a dedicated person to assist design firms in the market," says Matt Baker, an international trade specialist at the Commerce Department. "For instance, in China we have five A/E/C specialists who work with engineering firms to answer market entry questions, find partnerships and counsel firms on doing business in the market."

All types of engineering firms would benefit from this guidance, Baker says. "Our office does an assessment of each firm to determine needs, understand competency and evaluate market viability. Smaller firms need to have niche expertise to compete globally."

Baker says firms looking for international work should consider two keys things: market knowledge and market access.

"Knowing your market before you get there is the key to success," Baker says. "Look at key market factors of a few prospective markets and compare the opportunities with your core competencies to see if there is a fit."

To be successful, firms must make a long-term commitment to that market. "The important thing to remember," Baker says, "is you are not alone when it comes to researching and selecting markets."

ITA's website provides considerable information, including "Doing Business in (Country)" documents.

For more information, go to www.trade.gov. ■

Bob Violino is a business and technology writer based in Massapequa Park, N.Y.

Coming Soon

Additional organizations that can assist engineering firms with expansion into international markets will be highlighted in future issues of *Engineering Inc.* Agencies to be profiled include: United States Trade and Development Agency (USTDA); Overseas Private Investment Corporation (OPIC); Export-Import Bank (Ex-Im Bank); Office of the United States Trade Representative (USTR); Multilateral Development Bank (MDB); World Bank; and InterAmerican Development Bank (IDB).

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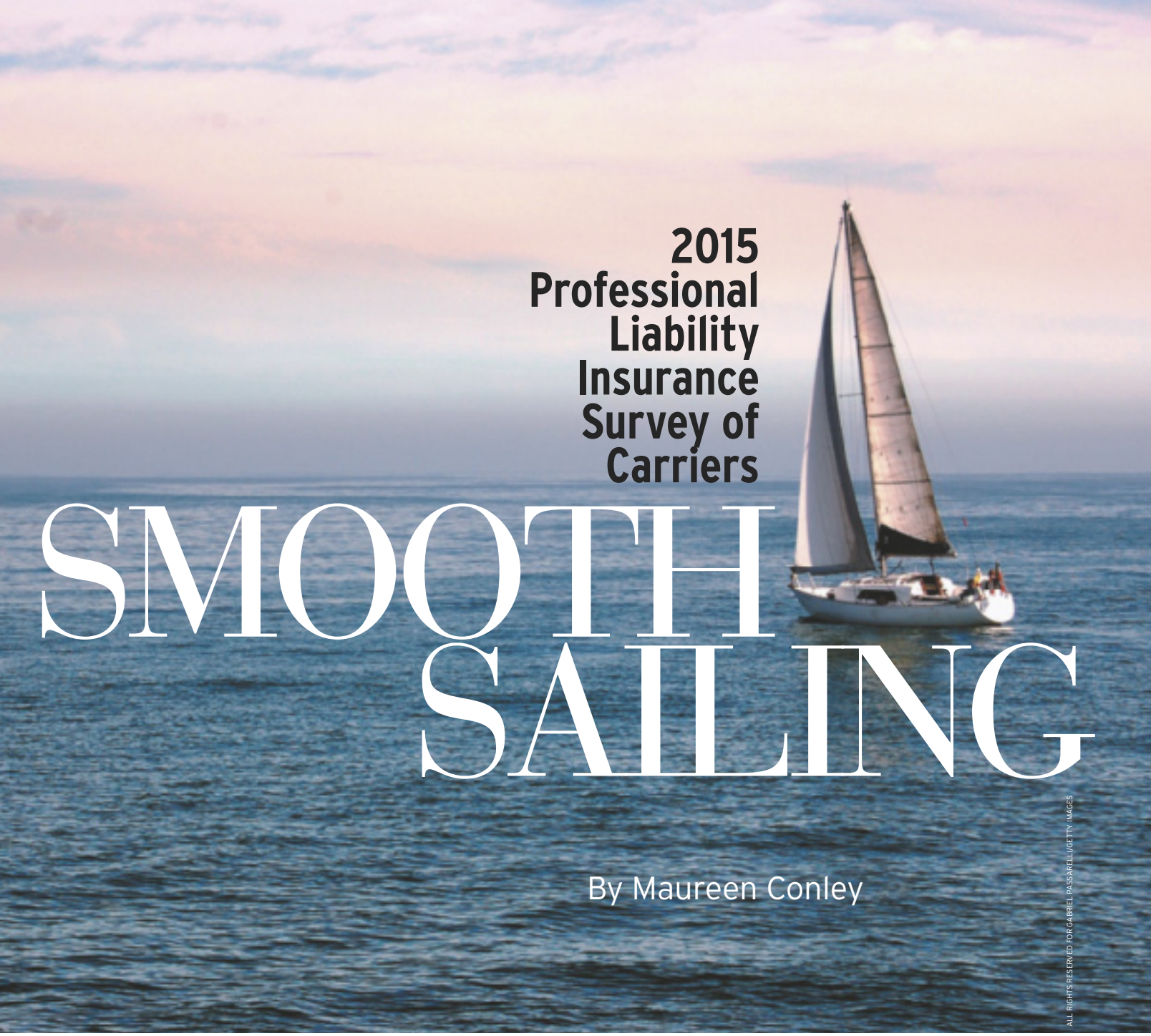

2015 Professional Liability Insurance Survey of Carriers

SMOOTH SAILING

By Maureen Conley

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Professional liability insurance (PLI) remains relatively inexpensive and widely available, according to ACEC's latest survey of insurance carriers conducted jointly with industry partners. Eric Moore, vice president of Moore Insurance Services and president of a/e ProNet, calls it a "Goldilocks" market. "You've got insurance capacity out there, a lot of new carriers, construction spending is at its highest level since 2008 and you've got stability in rates," he says. >>

Characteristics in the Premium Determination Process

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

	ACE USA	AIG/Lexington Insurance Company	Aspen Insurance	AXIS Insurance	Beazley	Berkley Design Professional Underwriters	Hanover Insurance Company	Euclid Managers - Euclid A/E	HCC Speciality	Allied World Insurance Company	Ironshore	Liberty Insurance Underwriters	Markel	Navigators Management Company, Inc.	RLI	Travelers Insurance	XL Group
Location of firm	3	7	7	4	6	3	1	6	6	6	8	8	7	4	5	4	7
Location of projects	4	6	8	7	5	6	1	7	7	7	7	7	8	7	7	7	8
Type of practice	2	4	2	1	2	5	1	2	3	3	3	3	2	3	1	3	2
Type of projects	1	5	4	5	4	4	1	4	4	5	4	4	4	5	3	5	3
Annual billings	6	1	1	2	1	1	1	1	1	2	6	1	1	1	2	1	1
Claims history	5	2	3	3	3	2	1	3	2	1	1	2	3	2	4	2	4
Firm experience	7	3	5	6	7	7	1	5	5	4	2	6	5	6	6	6	6
Other	*	*	6	8	8	*	*	*	*	*	5	5	6	*	*	8	5

*Did not answer

Source: 2015 ACEC Professional Liability Insurance Survey of Carriers

The results of the 2015 PLI Survey of Carriers are consistent with the past few years, says Tim Corbett, founder and president of SmartRisk and a member of the ACEC Risk Management Committee. This year the committee worked with the American Institute of Architects, the AIA Trust and the National Society of Professional Engineers to survey 18 carriers. Committee member John Farrar, vice president of Clark Dietz, notes that these carriers together insure about 95 percent of ACEC Member Firms.

"Everybody continues to chase after the same dollars."

TIM CORBETT
SMARTRISK

Rate Trends

Of the carriers surveyed, 12 offered predictions about where rates are headed. Most expect rates to rise, with five anticipating increases of 1 to 2 percent and four expecting higher increases. "Everybody continues to chase after the same dollars," says Corbett, observing that all carriers but one are looking to increase their share of the $1 billion engineering PLI market.

Moore says new entrants to the market are keeping rates stable, as they tend to price aggressively to pick up market share. Professional Liability Agents Network (PLAN) President and BancorpSouth Insurance Services Senior Vice President Ken Estes says some carriers that underpriced when they first entered the market are raising rates to cover losses. Meanwhile, Moore says some established carriers have aggressive pricing he hasn't seen in a while.

Travelers expects the market to remain stable. "We're not seeing any major changes in exposure coming," says Managing Director John Rapp. "The analytics are so good these days, we aren't really surprised by anything."

Jim Schwartz, Beazley's U.S. A&E focus group leader and underwriter, attributes the soft market to historically low losses from major disasters combined with large capacity. Claims have been substantial, however.

Carriers may be more selective about the firms they underwrite. Type of practice, annual billings and claims history are the most important factors that contribute to rate, Farrar says, and certain projects and companies with a poor claims history may experience rate hikes. Structural and geotechnical engineers cost more to insure, as do condos, residential developments and wastewater treatment projects. Small design firms tend to pay a higher rate for PLI: 3.5 percent of billings versus 1.5 percent for mid- to large-sized firms, Corbett observes.

"You've got insurance capacity out there, a lot of new carriers, construction spending is at its highest level since 2008 and you've got stability in rates."

ERIC MOORE
MOORE INSURANCE SERVICES, A/E PRONET

Growing firms may see premiums increase even if rates are stable. Rapp says it's a good market for Travelers' insureds, with the three-year weighted average of billings up 7 percent. "At the low point of the recession, the question was 'How do you get your clients to keep the lights on?' Now, it's 'How do you manage growth?'" Rapp says.

Choosing a Carrier

Carriers may have important differences in their coverages, approach and style. Kevin Collins, senior vice president for professional lines at Victor O. Schinnerer & Company, urges firms to pay close attention to claims handling, risk management services and overall policy coverage.

"Firms should know who's running the program," Moore says. In some cases, a new entrant may actually be an established carrier or may be managed by experienced people who know the industry.

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PLAN AGENCIES BY TERRITORY

UNITED STATES	
AL	Crow Friedman Group, A Risk Strategies Company
AK	USI Northwest/Kibble & Prentice
AZ	Stuckey Insurance
AR	BancorpSouth Insurance Services
CA	Dealey, Renton & Associates
CA, San Diego Area	Cavignac & Associates Insurance Brokers
CO	USI Colorado
CT	Camilleri & Clarke/Smith Brothers
DE	KT&D, Inc.
FL	Suncoast Insurance Associates/USI Florida
GA	Crow Friedman Group, A Risk Strategies Company
HI	Finance Insurance, Ltd.
ID	The Hartwell Corporation
IL North	Holmes Murphy & Associates
	(PCIA) Professional Concepts Insurance Agency
IL Central	Holmes Murphy & Associates
IL South	The Crane Agency
IN	Old National Insurance
IA	Holmes Murphy & Associates
KS	Holmes Murphy & Associates
KY	The Underwriters Group, Inc.
LA	Alexander & Sanders Insurance Agency
ME	Clark Insurance
MD/DC/Northern VA	CBIZ
MA	Poole Professional Ltd.
MI	(PCIA) Professional Concepts Insurance Agency
MN	H. Robert Anderson & Associates
MS	HUB International Gulf South
MO	The Crane Agency
MT	The Hartwell Corporation
NE	The Harry A. Koch Company
NV	American Insurance & Investment
NH	Poole Professional Ltd.
NJ North	Singer Nelson Charlmers, A Risk Strategies Company
NJ South	Wortley/Poole Professional Ltd.
NM	R. J. Dean & Associates
NY North	Poole Professional – NY Inc.
NY South	Singer Nelson Charlmers, A Risk Strategies Company
NC	BB&T Insurance Services
ND	TRJ Professional Group
OH	Oswald Companies
OK	McLaughlin Brunson Insurance Agency
OR	USI Northwest/Kibble & Prentice
PA East	Wortley/Poole Professional Ltd.
PA West	Oswald Companies
RI	Camilleri & Clarke/Smith Brothers
SC	BB&T Insurance Services
SD	TRJ Professional Group
TN	Crow Friedman Group, A Risk Strategies Company
TX North	McLaughlin Brunson Insurance Agency
TX South	USI Southwest
UT	American Insurance & Investment
	Benchmark Insurance
VT	Poole Professional Ltd.
VA	BB&T Insurance Services
WA	USI Northwest/Kibble & Prentice
WV	Oswald Companies
WI	Holmes Murphy & Associates
WY	USI Colorado
PUERTO RICO	Fulcro Insurance
CANADA	
AB	Quadrant Insurance Services
BC	Metrix Professional Insurance Brokers
MB	Oldfield Kirby Esau, Inc.
NB	HUB International Atlantic
NL	HUB International Atlantic
NT	Quadrant Insurance Services
NS	HUB International Atlantic
ON	Pro-Form Sinclair Professional
PE	HUB International Atlantic
QC	Claude Barry RC Professionnelle
SK	Quadrant Insurance Services
YT	Quadrant Insurance Services

For contact information, see the "Find a PLAN Agent" map at www.plan.org.

Claims remain a leading reason carriers won't renew a policy, and nonrenewal is about the only reason Moore would suggest changing carriers. If you do see a claim, a carrier you've been with a few years is less likely to drop you, he says.

A firm that uses loss prevention services may prove it is "able to handle a certain kind of work—they're doing business right and come to us when they need to," Estes says. Unless a firm has had a poor claims-handling experience or wants a higher level of risk management services, the brokers agree that stability and building the relationship are important.

Pat Mulligan, vice president at Marsh and a broker for the ACEC Business Insurance Trust, says it's a great time to make sure a design firm is matched up with an appropriate insurance carrier. With rates steady and business strong, firms can pay more attention to what insurance program provisions they need to reduce business risk and make their project opportunities stronger. "These policy updates can make a difference in the performance of their overall program," Mulligan says. Matching designers with the right carrier allows proper, sustainable relationships to develop over the long term.

It may make sense to move to a carrier with aggressive pricing, as long as the forms and coverage stack up, Estes says. But if price is the only consideration and the firm does not carefully compare policies and risk management services, transitioning may mean gaps in coverage.

"Make sure you're doing business with someone with experience that will be around—you don't want them to fold up shop in three years so that when a claim hits you're the only one left standing."

JOHN RAPP
TRAVELERS

ALISTAIR BERG/GETTY IMAGES

Highest-Risk Projects

Committee member Dan Cecchi, executive vice president of Collins Engineers Inc., says projects are growing in size thanks in part to public-private partnerships, and he expects claims to grow too.

Residential projects, particularly condos, lead the pack of problem projects. Carriers also report significant claims on public projects such as schools, bridges, reservoirs and wastewater treatment plants.

Collins says, "Although they may be the largest source of claims, when you overlay the amount of revenue generated on these projects, most compare to $1 of loss for $1 of exposure." He also calls them an easy point of entry for design firms. Mixed-use residential and commercial projects tend to have owners that stay with the project, with more interest in selecting good products and maintenance over time, Collins adds, which can positively affect risk. But he says regardless of the project type, nothing beats good risk management and contract negotiations.

Risk management committee chair Jim Messmore, senior vice president at Hanson Professional Services, says some owners and contractors use technology better than designers when it comes to documentation, giving them a leg up on claims. Firms can use technology "to monitor construction if it's part of their service, and to protect themselves against potential claims," he says.

"We're all subject to data breaches and the compromising of personal information."

AL RABASCA
XL CATLIN

In a recent study of mid-sized design firms, residential projects represent about 15 percent of Beazley's exposure based on fees and 40 percent of losses. Schwartz says condos are the biggest culprit, with less than 2 percent of exposure but about 20 percent of claims dollars. Also, claims can come in as much as 10 years after the project is finished. Firms need to know what they're getting into with these projects and should document all decisions made by owners and developers so there is a written record when the homeowners association brings a claim. Annotated photos can also help.

While there is no magic

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Paul Hirst
Caldwell Richards Sorensen
SEI Class I

bullet for condos, Rapp says it is important to scrutinize contracts, and some firms have lowered their risk by including a "supermajority" provision requiring 75 percent of condo owners to agree before a claim can be brought. Otherwise, condo projects require the same risk management practices that designers should apply to all projects—just more so. "Make sure you're doing business with someone with experience that will be around—you don't want them to fold up shop in three years so that when a claim hits you're the only one left standing," says Rapp.

"The best firms are those where the senior leadership is involved in all the details."
JIM SCHWARTZ
BEAZLEY

Managing Risk

Schwartz says it's important for firms to make risk awareness part of their culture, starting at the top. "The best firms are those where the senior leadership is involved in all the details," from looking at contracts to investing in quality assurance and quality control. He says firms should have written QA/QC policies and make sure they are followed.

Beazley offers risk management webinars and premium credits for participating in them, Schwartz says. Some carriers offer a mediation deductible credit, and Moore says one offers an early resolution credit that halves the deductible if a claim is resolved in fewer than 180 days. He adds that by taking advantage of the carriers' webinars, "not only can you get the premium credit, but it offsets the cost" of meeting continuing education requirements.

As design-build projects become more widespread, Estes advises firms to get a clear understanding of what design-build means for a project, and talk with their broker about whether they could be taking on risks that may not be covered. He recommends firms confirm that the scope of services is clearly defined.

Al Rabasca, director of industry relations at XL Catlin, says he's seeing a trend in product liability cases against A/Es. In some cases, owners have "dragged in the A/E on the theory that they're supposed to do some kind of independent evaluation and testing of the product," he says. Manufacturers have strict liability—meaning a claimant really does not have anything to prove if the product used in a project fails. But the owner would have to prove the designer was negligent in not meeting the standard of care, he says. While carriers have defended these claims successfully, Rabasca says they can be costly.

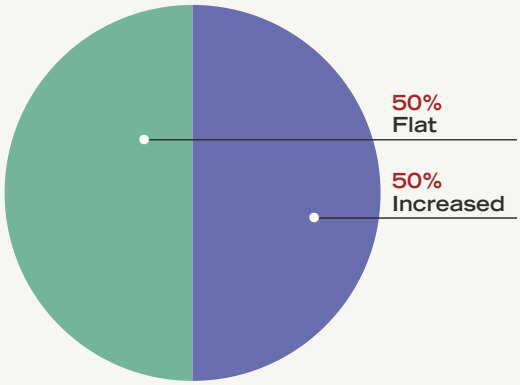
Cecchi says carriers are also placing more emphasis on cyberthreats, with many adding coverage to existing policies. Design firms control client data and portals between their clients' systems and their own, which means firms may need to be protected from the threat of a breach, he says.

"We're all subject to data breaches and the compromising of personal information," Rabasca says.

Drones are also on the risk management radar, Rabasca says, particularly since the Federal Aviation Administration intends to require all nonrecreational drones to be registered. Many experts believe drones are another tool that should not increase liabilities for design firms. But, as Rabasca cautions, firms that use them need to follow registration requirements and continue to meet the professional standard of care so they don't open themselves up to liability. ■

GLOW IMAGES

How Have Rates Increased (or Decreased) Compared With the Previous Year?



Source: 2015 ACEC Professional Liability Insurance Survey of Carriers (12 of 18 firms responding)

Maureen Conley is a business and technology writer based outside Washington, D.C.

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* ATRI, Cost of Congestion to the Trucking Industry, 2014 • † TRIP, Bumpy Roads Ahead, 2012 • ‡ TTI, Urban Mobility Report, 2012

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For more information, visit **www.acec.org/calendar/calendar-seminar/business-of-design-consulting-denver-2016/**.

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Design and construction law is complicated and replete with traps for the unwary. Staying abreast of recent developments in this field of law is important for managing risk and increasing profitability.

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For more information, visit **www.acec.org/calendar/calendar-webinars/recent-developments-in-design-and-construction-case-law/**.

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BY NEIL CHURMAN

Maximize Potential for a Successful Firm Sale

With industry M&A tracking at record levels, many engineering firm owners are likely wondering if they should sell their firm.

One of the most important decisions an owner will make is what to do when it's finally time to leave the business. Some firms will be able to transition ownership smoothly from one generation to the next, but many more will not. While baby boomers head for retirement and seek to be rewarded for the businesses they've built, millennials are often reluctant to "buy in" to firm ownership. This disconnect often makes a sale the most viable transition option.

If you're considering selling your firm, preparation is the key to success. Here are a few suggestions:

1. **Get a head start in years, not months.** The earlier you can understand your options and choose a path for transition, the higher the likelihood of success. An internal transition may not be in your firm's cultural DNA. If you choose to pursue a sale, you should start planning at least two years before you go to market.
2. **It takes a village, so build one.** Embarking on a firm sale is a major undertaking. Establishing a team of trusted advisers can help you through the process. This team often includes key internal staff, legal counsel, M&A advisers, tax advisers and other consultants.
3. **Create a dashboard of vital gauges.** Keeping a keen and consistent eye on all the important industry metrics, such as multiplier, utilization and revenue factor, will not only help you keep your finger on the pulse of your

2015 REPORTED M&A ACTIVITY

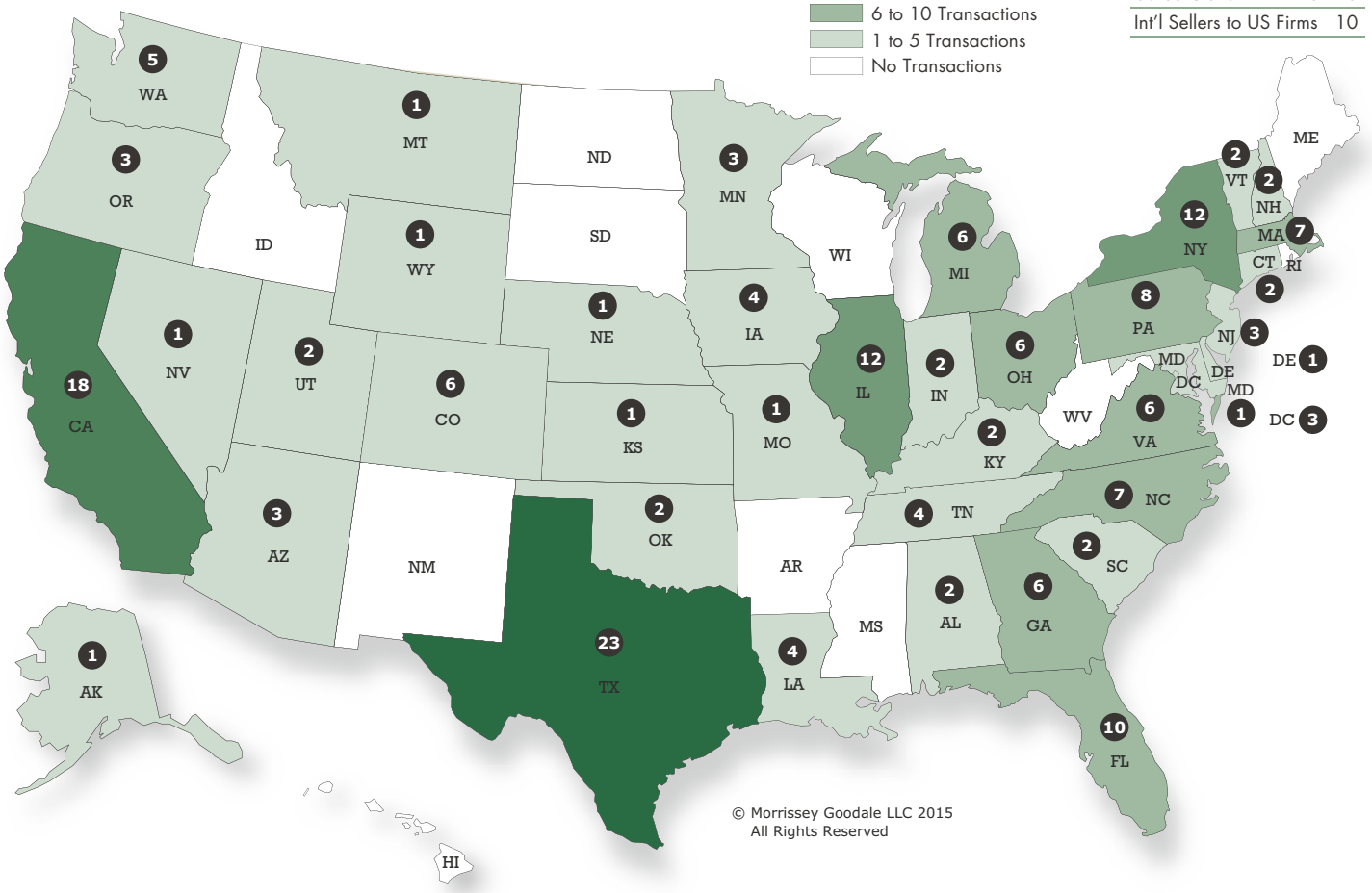
Firm Sales by State through December 1, 2015

States by Total Activity:

- 21 or more Transactions
- 16 to 20 Transactions
- 11 to 15 Transactions
- 6 to 10 Transactions
- 1 to 5 Transactions
- No Transactions

US vs Int'l Sellers:

Total US Sellers	213
Total Int'l Sellers	91
US Sellers to Int'l Firms	16
Int'l Sellers to US Firms	10



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business, but it will also give potential buyers confidence that you're running a tight ship.

4. **Button up.** Before embarking on a sale, it's critical to have all aspects of your business in good order. All financial and legal records need to be accurate and organized, and you should have regular controls, systems and reporting in place that help facilitate business activities. The higher the level of assurance on your financial statements, the more confidence a potential buyer will have in your results, which can help ease the due diligence process.
5. **Get used to the thought of sticking around for a while.** Many sellers envision being on a golf course or a fishing boat shortly after a firm sale, but the majority of buyers will expect key principals to stay on for some period of time. Employment agreements of two to three years are common for key staff and are often a condition to closing a deal.

Recent ACEC Deal-Makers

NOVEMBER 2015

ACEC Member **Parametrix** (Seattle) has merged with transportation planning and traffic engineering firm **Inter-Plan** (Midvale, Utah).

ACEC Member **Stantec** (Edmonton, Canada) acquired KBR's Infrastructure Americas division (Houston). **KBR's Infrastructure Americas division** adds 180 professionals to Stantec's infrastructure design capabilities in the Gulf Region.

ACEC Member **Terracon** (Olathe, Kansas) acquired **NORCAL Geophysical Consultants** (Cotati, Calif.). NORCAL offers geophysical technologies in support of geologic, groundwater, environmental and engineering investigations.

OCTOBER 2015

ACEC Member **Lochner** (Chicago) acquired **Crossland Acquisition** (Houston), which specializes in right-of-way acquisitions and services.

ACEC Member **Fehr Graham** (Freeport, Ill.) acquired landscape architecture and planning firm **Thomas Graceffa and Associates** (Rockford, Ill.).

ACEC Member **Ellis & Associates (E&A)** (Jacksonville, Fla.) merged with **Engineering Consulting Services (ECS)** (Chantilly, Va.). E&A specializes in geotechnical engineering, construction materials testing, environmental engineering, construction engineering and inspection, and special inspection services.

ACEC Member **CLD Consulting Engineers** (Manchester, N.H.) acquired **Lake Sunapee Survey** (Newbury, N.H.), a provider of land surveying and septic design services.

ACEC Member **Enercon Services** (Kennesaw, Ga.) acquired **Terra Environmental Services** (Tampa, Fla.), an advanced remediation and environmental services company.

ACEC Member **Tetra Tech** (Pasadena, Calif.) agreed to acquire **Coffey International** (Chatswood, Australia), a 3,300-person international development, geo-services and project management firm.

ACEC Member **Professional Service Industries** (Oakbrook Terrace, Ill.), a provider of testing and assurance services to commercial and civil construction markets has agreed to be acquired by **Intertek Group** (London), a leading quality and safety solutions provider.

ACEC Member **TRC Companies** (Lowell, Mass.) agreed to acquire the **Professional Services business segment of Willbros Group** (Tulsa, Okla.). The business segment offers innovative engineering, EPC/EPCM, field solutions and integrity services to the oil and gas transmission market as well as government facilities.

SEPTEMBER 2015

ACEC member **Braun Intertec** (Minneapolis) acquired **Apex Geoscience** (Tyler, Texas), a provider of subsurface soil investigations, environmental studies, water resources, geotechnical engineering, and construction materials testing and inspection.

ACEC Member **RESPEC** (Rapid City, S.D.) acquired **Flat Rock Geographics** (St. Paul, Minn.), a geospatial software company specializing in web-based mapping applications. RESPEC also acquired **AQUA TERRA Consultants** (Mountain View, Calif.), a specialist in environmental modeling applications and software development.

- **To view the most up-to-date and "live" versions of the M&A heat maps, and to see the buyers and sellers in each state, go to www.morrisseygoodale.com.**
- **Watch the M&A Takeaway video that accompanies this article, presented by Mick Morrissey, at www.morrisseygoodale.com/ACECMergers/JanFeb2016.**

Neil Churman is principal consultant of Morrissey Goodale LLC—a strategy, M&A and human capital solutions firm serving the A/E/C industry. Churman, who is based in the firm's Houston office, can be reached at nchurman@morrisseygoodale.com.

Members in the News

On The Move

Stephen H. Lucy was named CEO of **JQ**, a Dallas-based structural and civil engineering firm. **Gary Jaster**, founding partner and principal, will continue to serve in an advisory capacity during the leadership transition period. Lucy joined JQ in 1994 as a co-founder of the firm's Dallas office.

Following the retirement of President and COO **Bill Rizzo**, Acton, Mass.-based **Geocomp Corporation** formed a three-person executive committee that will manage firm operations: **Gary T. Torosian**, director of testing services; **Cynthia Carleo**, manager of consulting services in Boston and Chicago; and **Jack Salerno**, manager of consulting services in New York and Atlanta. All three were promoted from vice president to executive vice president and will report to founder and CEO **W. Allen Marr**.

Paul VanDuyne was appointed CEO and **Zareh Astourian** was named chairman of a new holding company, IMEG Corporation, that will manage Rock Island, Ill.-based **KJWW Engineering** and Pasadena, Calif.-based **TTG Engineers** following the merger of the two firms. VanDuyne and Astourian were former presidents of the firms. Both companies will continue to operate independently as subsidiaries of IMEG and will integrate their operational infrastructure during the coming year.

Anthony B. Bouchard joined Boston-based **CDM Smith** as North American unit president. He is based in the firm's Chicago office. Formerly, he served as executive vice president of AECOM's Americas water business.

Gary LaPaille was promoted to senior vice president of government affairs of Broomfield, Colo.-based **MWH Global**. He formerly served as vice president and is based in the firm's Washington, D.C., office.

New York City-based **AKRF** appointed **Jeffrey Vladyka** senior vice president. He will lead the firm's construction management/resident engineering and inspection practice. He previously served as vice president and deputy director of construction management services at URS Corp. (acquired by AECOM in 2014). **Gill Mosseri** also joined AKRF as a senior vice president and will be part of the firm's traffic and transportation practice. He also came from URS/AECOM, where he served as a vice president for business development, operations manager and a principal-in-charge/project manager. Both are based in the firm's New York City office.

Ed Wiegele was appointed senior vice president & pipeline services sector director of Lowell, Mass.-based **TRC Companies** following its acquisition of the Professional Services business segment of Willbros Group. Willbros Professional Services becomes the fourth operating segment in the TRC portfolio and will be called "Pipeline Services." Wiegele will be based in TRC's Tulsa, Okla., office.

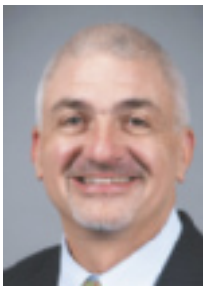
Amanda Schumacher joined Philadelphia-based **Urban Engineers** as vice president and director of corporate development. She previously served as associate vice president and marketing and business development manager at T.Y. Lin International.

Stephen Lucy

From left to right: Jack Salerno, Gary Torosian, W. Allen Marr, Bill Rizzo and Cynthia Carleo

Paul VanDuyne

Zareh Astouian



Anthony B. Bouchard

Gary LaPaille

Jeffrey Vladyka

Gill Mosseri

Ed Wiegele

Amanda Schumacher

Welcome New Member Firms

ACEC/Alabama
Geo Solutions, LLC, Huntsville

ACEC/California
BuroHappold Consulting Engineers, P.C., Los Angeles

ACEC/Colorado
Ambient Energy, Denver
Goff Engineering and Surveying, Inc., Durango
Klok Group, LLC, Golden
Russell Planning & Engineering, Inc., Durango

ACEC/Greater Pittsburgh
T3 Global Strategies, Bridgeville

ACEC/Hawaii
Hollingsworth Engineering, LLC, Aiea

ACEC/Massachusetts
FS Engineers, Inc., Maynard

ACEC/Metro Washington
CV, Inc., Rockville, Md.
Dulles Geotechnical and Materials Testing Services, Inc., Chantilly, Va.
Funkhouser Associates, North Potomac, Md.
JDos Internationalé, Inc., Washington, D.C.
North Arrow, Washington, D.C.

ACEC/Minnesota
TEKTON Engineers, Northfield

ACEC/Mississippi
Trilogy Engineering Services, LLC, Jackson

ACEC/New Jersey
M-Tec Construction Services, LLC, Phillipsburg
RAD Engineers and Consultants PC, North Bergen

ACEC/New York
Cuono Engineering, PLLC, Port Chester
Goldman Copeland Associates, New York, N.Y.
Jade Stone Engineering, PLLC, Watertown
JHK Engineering, P.C., New York, N.Y.

ACEC/North Carolina
Duncklee & Dunham, P.C., Cary
Energy Vision, Inc., Indian Trail
Falcon Engineering, Inc., Raleigh
Kennerly Engineering & Design, Inc., Lexington
Pyramid Environmental & Engineering, P.C., Greensboro

ACEC/Ohio
DHDC Engineering Consulting Services, Inc., Columbus

ACEC/Oregon
Parkin Engineering, Vancouver, Wash.

ACEC/South Carolina
The Sheridan Corporation, Charleston

ACEC/Texas
Century Engineering, Inc., Houston
DECON, LLC, Houston
Kuo & Associates, Inc., Houston
M. Vassigh & Associates, Inc., Dallas
MDP Technical Services, Inc., Anahuac
Precision Flow Engineering, Mansfield
Rio Engineering, Inc., Austin
Stewart Consulting Services, Humble
Ward, Getz & Associates, LLP, Houston
WGAnderson, LLC, Richmond

Hatch Mott MacDonald to Split

Hatch Mott MacDonald (HMM), which has operated as a joint venture for 20 years—Canadian-based Hatch and British-based Mott MacDonald—will formally resume operating as two distinct businesses. HMM's Canadian business will become part of Hatch, while HMM's U.S. business will become part of Mott MacDonald.

Nick DeNichilo, who is CEO of Hatch Mott MacDonald, will continue to lead the joint venture until the company separation is finalized in early 2016. He will then become president and CEO of Mott MacDonald in North America, while **John Bianchini** remains CEO of Hatch.

New Member Spotlight: Ambient Energy, Colo.

Ambient Energy, headquartered in Denver, provides innovative, cost-effective strategies that improve the social and environmental impact of buildings. As third-party consultants, the firm provides sustainable design, building performance engineering, commissioning and occupant engagement.

Established in 2004, Ambient Energy's projects include Denver Union Station; Cesar Chavez Memorial Building; Denver Museum of Nature & Science; San Francisco Air Traffic Control Tower; Aspen Valley Regional Hospital; and 1800 Larimer, Xcel Energy Consolidation.

For more information about Ambient Energy, visit the firm's website at **www.ambient-e.com**.

Calendar of Events

JANUARY 2016

19 Managing Project Risks: Quantifying and Pricing Delays and Inefficiencies (webinar)

20 Condos—Why Do They Continue to Be the Most Litigious Project Type? (webinar)

21 World Bank Procurement Reforms Benefit Engineers (webinar)

26 Do This: It Works. Your Step-by-Step Guide to Authentic and Effective Presentation Skills (webinar)

27 Recent Developments in Design and Construction Case Law (webinar)

28 Get Noticed and Get Promoted (webinar)

FEBRUARY

2 How to Win a Pitch: The Fundamentals That Will Distinguish You From Your Competition on the Short-List (webinar)

4 Successful Teams: Analyzing Your Organization Structure for Strategic Success (webinar)

11 Grid Stability, Reliability and Resiliency: Technical, Economic and Political Reality (webinar)

12-13 2016 Small Firm Council Winter Seminar—Next Stage Financials: Valuation and Exit Strategy Essentials for Small Firms, Phoenix

16 Are You Playing Your Competitor's Game? (webinar)

24 Mergers & Acquisitions 2.0 (webinar)

MARCH

23-26 Business of Design Consulting, Denver

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

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

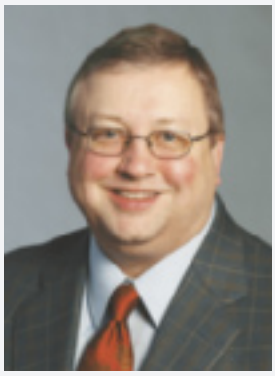
BY GLEN R. MANGOLD AND CHARLES W. KOPPLIN

Making a List and Checking It Twice: Managing Risk Through Awareness

If you want to be a high-performing firm, you need to develop a risk management culture. Start by deploying tools the entire firm can use.

A firm's risks come from services performed, projects worked on, clients and third parties. By making everyone aware of the various types of risks and where they come from, design firms can mitigate their exposure and improve their bottom line.

Any repetitive task that a design professional performs is a candidate for a checklist. Some of these tasks include the evaluation of prospective clients, the go/no-go decision for pursuing a project and a list of the services that will be performed for an engagement.



Glen R. Mangold

Charles W. Kopplin

Checklists help ensure that consistent criteria are used throughout the entire firm. Checklists also help identify potential risks. A detailed checklist of services is an excellent tool to show services required and performed by the firm as well as services required but declined by the client. This detailed list helps prevent disputes over the services that are provided.

Limited Services

Be aware, however, of a client that wants to limit the firm's services. The extent of required services performed by the firm is inversely proportional to the amount of risk a firm takes on for the project. A review of past professional liability claims shows a correlation between a low amount of required services provided and an increase in the number of claims.

Another valuable checklist covers contract reviews. This list will help identify missing or onerous clauses. It is especially helpful to identify clauses that may be uninsurable under your professional liability policy, so the firm has the opportunity to mitigate its risks by negotiating appropriate contract changes. A client that is unwilling to make changes may have unrealistic expectations. If so, the best risk management response may be to walk away from the project.

When developing checklists, there is no need to re-create the wheel. Numerous business and technical societies, including ACEC, have developed checklist samples. The professional liability insurance industry also offers checklists. Using these samples, a firm can tailor checklists appropriate for their firm and type of practice.

At the beginning of a project, it is important to discuss the potential risks with the client, including using client-supplied information and data. The contract should state that the firm can rely on the accuracy of the information. If the client is not willing to let the firm rely on the information, then data verification needs to be included in the scope of services and the fee.

A well-vetted strategic plan can help a firm manage its risks because it provides guidance on not pursuing clients, services or projects where the firm has limited or no experience and expertise. If the firm is venturing into a new area, the strategic plan should contain guidance on how to manage those risks. When taking on riskier engagements, the firm should charge an appropriate risk premium.

Role of PLI

A firm can transfer some of its risk by purchasing insurance. This will not protect the firm from the risk, but it will, after paying deductibles, cover the costs up to the policy limits. However, it will not cover the cost of lost staff time spent defending a claim.

By developing a firm-wide risk awareness and management culture, firms can greatly mitigate their risks. Every employee needs to be a risk manager. Utilizing tools like checklists makes it easier to engage all employees as well as provide consistency across the firm. Firms that engage their entire staff in risk management are among the top performers in the A/E industry.

Glen R. Mangold, CPCU, is managing director of the architects/engineers program for Markel Corporation, a leading provider of professional liability insurance. He has more than 25 years' experience in the insurance industry. He can be reached at gmangold@markelcorp.com.

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[2]Renewal rate based on average year-over-year ACEC Life/Health Trust persistency metrics.

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