Breaking Ground

THE MAGAZINE OF THE MASTER BUILDERS' ASSOCIATION OF WESTERN PENNSYLVANIA

JANUARY/FEBRUARY 2017

THE BIG PICTURE:
What Comes Next?

The Shell Cracker Site

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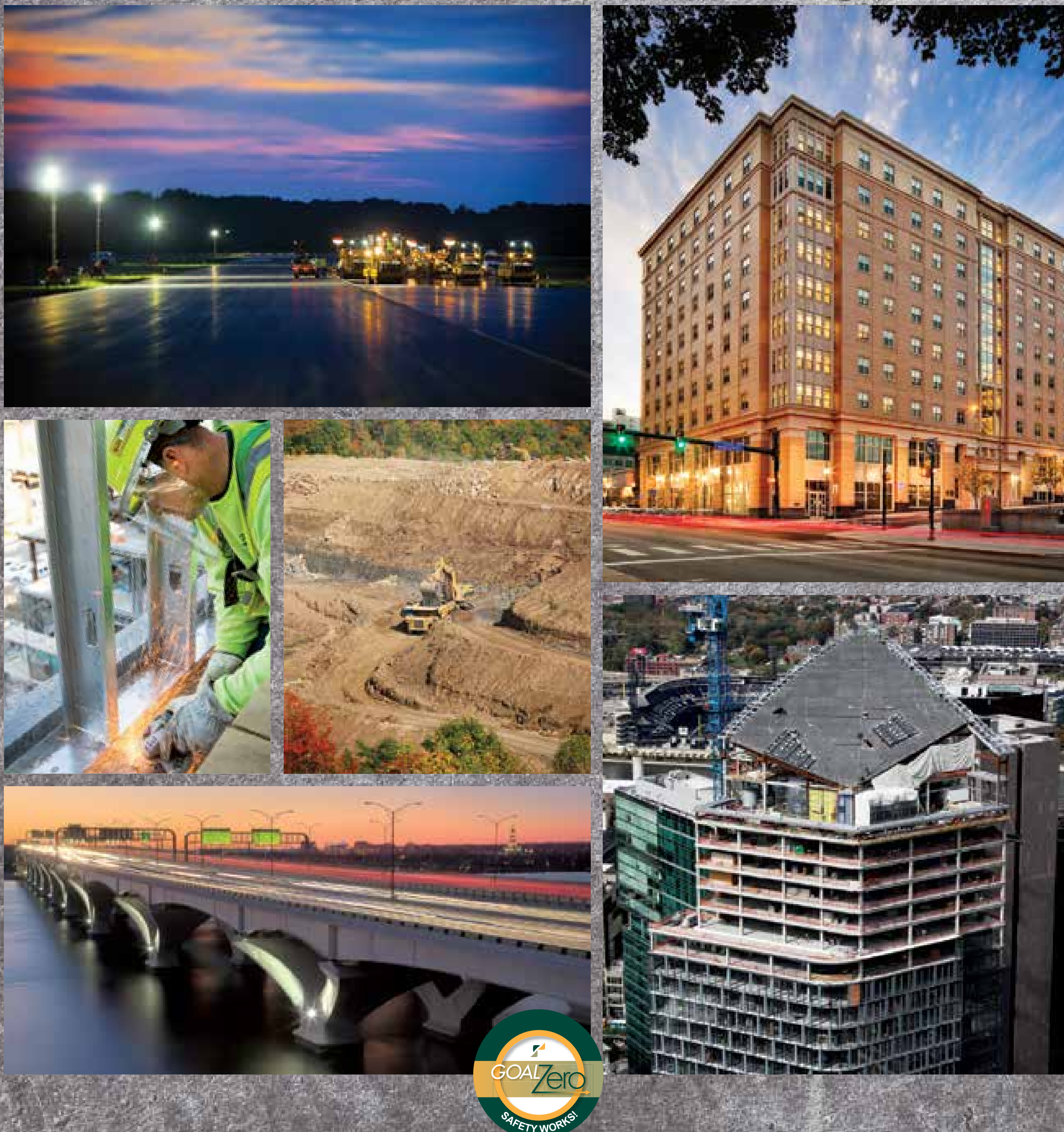
GOAL Zero
SAFETY WORKS!

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Cover image: *Shell's ethane cracker site. Image courtesy Mascaro Construction.*

PUBLISHER'S NOTE

You aren't going to read about the election here.

This edition of BreakingGround is always somewhat speculative. Titled "The Big Picture," we've always used the end of year as a prompt to go up to 30,000 feet and engage in a little crystal ball watching. It's fun for me and it's helped burnish our reputation as a smart magazine because we've occasionally been ahead of the curve. With that in mind, this edition is going to try to foretell what the Pittsburgh region's economy will look like post-cracker.

Since November 8, there have been countless experts weighing in on what a Trump Administration means to the economy or healthcare or international relations. I'd like to say I have my opinions on some or all of these topics but after this year's campaign and election results, there is nothing that could make me trust my instincts about what is to come. And if I don't believe my own opinions, I certainly don't want to inflict them upon you, the readers.

So instead I've chosen to engage in an examination of what might become of Pittsburgh's economy that is equally as speculative as politics but – I hope – much less divisive.

My introduction to the natural gas industry came in 2008, when I was introduced to Matt Pitzarella from Range Resources. Range was one of the early explorers of the Marcellus Shale formation and Matt's job was to explain the Marcellus play and the long-term impact of the gas industry to the public. Matt accepted a couple of invitations to speak to associations and small groups to which I belong and there was one overriding message that he imparted to the audiences before the speech ended: the payoff was downstream.

Back then we didn't fully understand what downstream meant. Hell, we didn't know what midstream meant at that point. But the point that Matt was making eventually became the tag line for Range's advertising. (You may recall "drilling is only the beginning.") When Shell selected the Horsehead plant as its preferred site for an ethane cracker, there was the sense that Pittsburgh was going to see the downstream impact from this new industry but the specifics were few and fuzzy. And few people outside the petrochemical industry knew how long the investment evaluation would take. Now, almost six months after the final investment decision was made public, most of the business community still feels uncertain about what the production of 1.6 trillion tons of polyethylene (PE) in Beaver County will mean to their businesses.

Part of the mystery is unavoidable. The primary actor in the development, Shell Chemicals, is part of a publicly-traded corporation. That means there are regulators and investors who would be ready to pounce upon any forward-looking speculation that doesn't occur later. While Shell may be quite well-acquainted with what the supply chain and customer base looks like nearby other PE plants, it will not engage in such a discussion about what will come to Western PA as a result of its plant.

You get an idea that this subject is a bit shrouded when the Pittsburgh Regional Alliance (PRA) is looking for the same answers you are. The PRA faces the same obstacles the rest of us do and since production in Monaca is probably five years away, the traffic from vendors and customers of the facility hasn't yet picked up.

So the approach we took is to dig into the industries that work on both sides of a steam cracker/PE production facility. These aren't industries I'm familiar with, nor do I have a career's worth of contacts willing to share information about the future. That said, it was possible to talk to people who serve and buy from facilities like Shell's. From that we got something of an outline of what would need to be constructed over the next decade to support a fully-functioning ethane-to-PE industry sector. (Don't forget that PTT is planning another cracker about 30 minutes from Downtown too.) There were even some good rumors about what Shell might do on all the adjoining property it has been acquiring (hint: another cracker).

We did an article in July that explored this subject somewhat, so for that I ask your patience with our redundancy. I certainly hope this treatment is more detailed and names a few names for you. To some degree, I am counting on the fact that memories fade and that your interest is higher now that there is some vertical construction visible from Frankfort Road and I-376.

Drilling is just the beginning, they said. We're about to find out what that meant.

Jeff Burd

REGIONAL MARKET UPDATE

Eight site selection consultants from around the country addressed a commercial real estate audience at a November 14 event held at the JLL Center at Tower 260. The program followed a day spent touring the city and new projects, and the consultants mostly offered glowing assessments of Pittsburgh. At the same time, selectors expressed concerns about the limited inventory of buildable sites and the availability of skilled labor. Site selectors offered some specific observations about Pittsburgh's current market status that bode well for the coming decade.

Consultants with a manufacturing specialty noted the presence of heavy industrial rail and power that is connected to other manufacturing cities, like Chicago, Philadelphia and Baltimore. They pointed to the advantage of having a cheap source of fuel, plus the wet gas of the Marcellus and Utica. The richness of the Marcellus was called out as being important to other aspects of the plastics, chemicals and rubber industries for future development. The access to big markets and cheap energy has shifted the focus of heavy industrial site selection from global locations to domestic locations in the U.S.

JLL's Mike Bennett noted a change in trend for the smaller relocation projects, where companies between 300 and 500 employees are now exploring options in cities like Cincinnati and Greenville, are being tasked with changing the perception of clients about cities like Pittsburgh, especially with the increase in foreign investment in the U.S.

The most common refrain was that with increasing frequency, selection of sites is less about the real estate and more about the sustainability of a relevant labor force five or ten years after the location of the facility.

These rosy observations about Pittsburgh's market were somewhat at odds with the outlook for the regional economy. A recovery in the energy sector, which seems to be underway, and the continued expansion of new technology research and development are upbeat factors for an economy that is expected to remain stagnant through 2017. The area of most concern is the slow pace of employment growth.

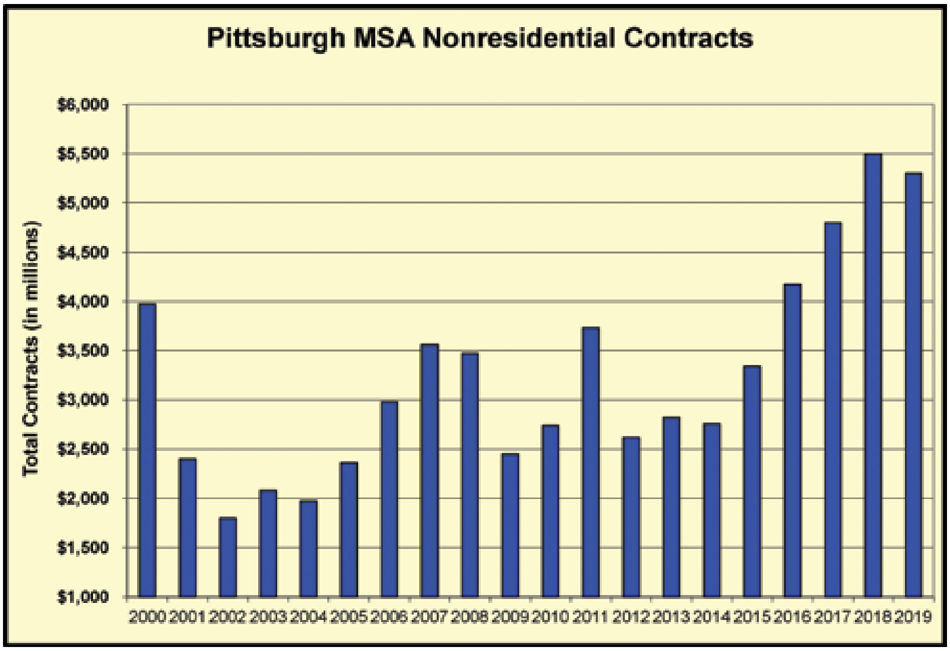
"It's going to be slow. Pittsburgh is a labor market without much to offer," observes Kurt Rankin, vice president and economist for PNC Financial Services Group. "Manufacturing keeps sliding. Transportation is down. Even financial services had a tough year."

Rankin reports that PNC's forecast for job growth in metropolitan Pittsburgh has been downgraded since mid-year, when the financial giant was predicting a jump in new jobs of just under one percent. After the slow middle of 2016, PNC is expecting job creation in Pittsburgh to add just over 3,000 jobs, or 0.3 percent, to payrolls in 2016. Its forecast for 2017 is for a flat performance again.

The strongest parts of the job market are the education and healthcare segments. Segments that were previously strong, like professional business services, have been held back by the lack of growth – or even decline – in the industries that they served.

"There are businesses in Pittsburgh and they continue to do business but nowhere near the levels of when expansion was going on," Rankin says.

Rankin does see opportunity for the Pittsburgh region if the Trump Administration does push an



The impact of the Shell project on the regional construction market boosted contracting above $4 billion in 2016 but the major investment will occur during the 2017-2020 period.

(Left-to-right) Collin Perciballi from Investment Consulting Associates, Gideon Gradman from Integrated Energy Advisors, Ashley Applegate with Ernst & Young, Mike Bennett from JLL, moderator Denise Brinley from DCED, Woody Hydrick of Global Location Strategies, Susan Arledge from E. Smith Realty Partners, Jim Winter of Cresa Partners, and Joe Vranich from Spectrum Location Specialists address the crowd at the November 14 "Perspectives and Possibilities" event hosted by the Pittsburgh Regional Alliance/NAIOP Pittsburgh.

infrastructure spending bill through in early 2017, especially if the investment includes research on cybersecurity. More federal funds would augment the increased state investment that will result from the fourth-year escalation of Act 89 and an emphasis on cybersecurity would tap into the expertise that is being developed at Carnegie Mellon University.

Setting aside considerations for the long-term economic health of Western PA, the near-term outlook has improved during the last few months.

Contracting and construction starts in the nonresidential and commercial sectors of the market were strong, with more than $850 million in activity in the fourth quarter. According to Tall Timber Group's research, $4.17 billion in contracting is forecasted for the full year of 2016. That forecast is based on 11 months of data and is likely to be slightly conservative. The upbeat fourth quarter was driven as much by the start of projects that had been under contract for an extended preconstruction period as by higher bidding volume, although an uptick in hospital projects helped push institutional construction up.

The stronger end to 2016 should boost backlogs for contractors and the supply chain coming into 2017. While that typically leads to higher bids in the market, a healthier market also tends to be incentive for pricing that values risk more accurately. That ultimately leads to more certainty for owners during construction.

Adding to the optimism that comes from strong year-end backlogs is a continued strong pipeline of projects in design. Local architects continue to report high volumes and tight staffing. Most firms remain in a hiring mode.

News from the hospital sector – historically one of the region's bellwether construction markets – is also encouraging. After several years of wrestling with reimbursement uncertainty and the fallout from the UPMC/Highmark dispute, all the major health systems are looking at higher spending in 2017. The region's largest system has restored its capital spending for construction to near $300 million, with plans to increase that budget in the few years that follow. UPMC announced a new $111 million patient tower at its Hamot campus in Erie and a decision about new facilities for the South Hills is forthcoming. Allegheny Health Network is planning to invest roughly $100 million, with an additional $60 million for its cancer initiative. St. Clair Memorial Hospital is about to launch its $100 million multi-phase expansion project in early 2017. The total of the spending for construction should be roughly double that of the investment made in 2015-2016.

The pipeline of projects in the industrial sector also points to a solid year in 2017. Expansion of the fulfillment center model now favors Pittsburgh, which has historically not been a good choice for large-scale distribution. The focus on "last mile" delivery and the advances in technology for both warehousing and delivery make Pittsburgh a desirable market for companies like Amazon, Zappos and Wayfair. Companies like FedEx Ground and UPS, which are already in the logistics business are developing their own plans to gain share in the fulfillment business. The rumored million square foot Amazon project at Chapman Westport is but one of several fulfillment center projects. Neyer Inc. reports that the end user in its new 300,000 square foot (after expansion) Clinton Commerce Park warehouse is in fulfillment and says that several other similar users are exploring space in its future development and the new space being completed by Ashley Capital at the Findlay Industrial Park.

It appears that 2016 has been the tipping point for the development of apartments in metropolitan Pittsburgh. After a slow start, there were 1,985 units of multi-family homes begun in 2016, just below the annual average of 2,084 units over the past five years. This past year marked the first year since 2012 that fewer than 2,100 units of apartments were started. While starts declined slightly, there were few projects added to the planning pipeline and a handful of projects – most notably Walnut Capital's Second Avenue project – were put on hold. Even an optimistic reading of the pipeline of projects leads to the conclusion that the new apartment construction in 2017 will fall below 1,400 units, and could dip below 1,000 if conditions worsen.

"That's concerning. Are we at an inflection point?" asks Loyd Johnson, chief investment officer for First Commonwealth Bank. "When we look at the occupancy rates of the medium-to-high priced buildings here in town, you wonder if we're not at a point where the supply has exceeded the demand. My worry is that we may have too much supply."

A recent study done by online search site ApartmentList looked at data from ten years of listings and published a report that helped explain who was renting all the new apartments in Pittsburgh. ApartmentList aggregated hundreds of thousands of listings to see where people in the 20- to 35-year-old age range were searching for apartments. Pittsburgh ranked 14th out of 50 for Millennial generation growth, with an increase of 7.1 percent. Like in other cities the Millennial population growth correlated well with growth in median income, which jumped 6.8 percent. The decline in home ownership among Millennials also fell at a slower rate than the rest of the U.S., declining 4.5 percent instead of 7.4 percent.

Overall the new construction housing market in Pittsburgh performed as expected in 2016, with the number of total units declining ten percent to 4,794, according to the Pittsburgh Homebuilding Report. Permits for single-family detached units fell slightly to 1,954 and 855 single-family attached units were started.

With the slowdown in the apartment market there should be pressure finally to push the single-family market higher. Sales of existing homes were strong again in 2016, although all the residential real estate companies noted that sales continue to be constrained by a lack of inventory. Home sales volume rose 4.7 percent in 2016, although prices only increased 2.12 percent. Consistent with recent years, new listings lagged sales, with only 0.58 percent more listings. This should be a recipe for a brisk uptick in new construction, especially with multi-family slowing; however, new land development has created only modest growth in lot inventory. Tight lot supply will limit the alternatives for buyers of new homes; moreover, the limited supply and more challenging land development conditions will keep new construction prices well above the reach of first-time buyers. With apartment vacancy rates climbing – especially in the suburbs – the slowdown in new apartment construction may boost the rental of existing apartments instead of sparking new construction in 2017.

The outlook for 2017 appears to have more continuity than change in store. It appears the buildup of multi-family projects has run its course. Industrial projects, in particular those in the chemicals and energy sector, should see an increase. Likely, the emerging industries that will create the jobs of the future will still be in the nascent stage during 2017, rather than driving unexpected job growth. The one factor that could push job creation at a faster rate would be some affirmative action by the new administration, although the odds on that are still unknown.

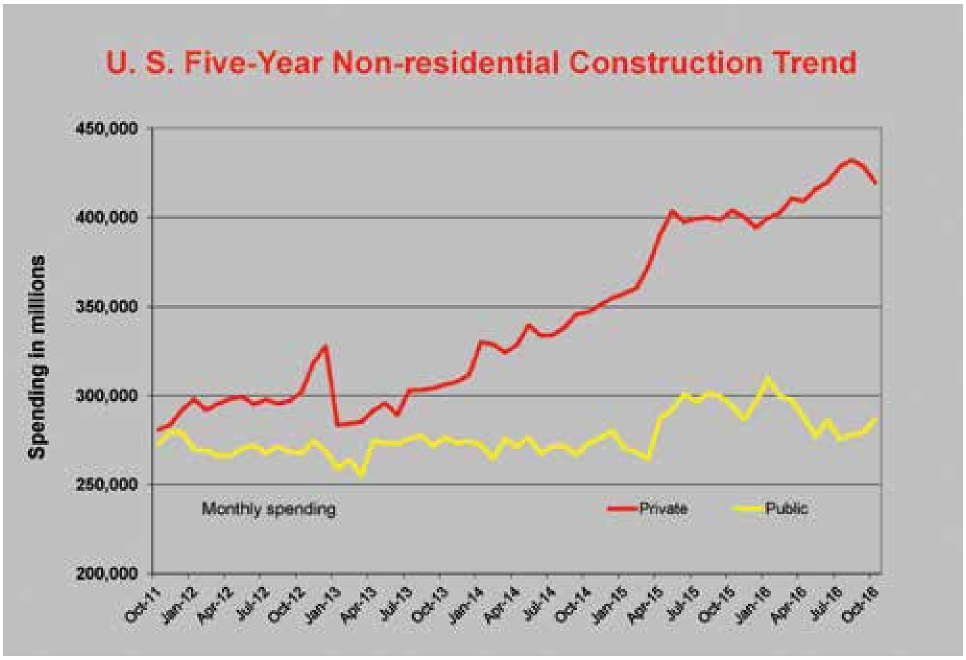
"A lot of good things have happened in our area. One of the negative things that had an impact on the big picture has been the energy impact, more specifically shale gas and coal," notes Johnson. "And so, to the extent that the Trump presidency could have a positive impact on that industry it would be a good thing. I think that's why you've seen those stocks rally since the election but to be sure, there's a big old bucket of 'remains to be seen' about that." BG

NATIONAL MARKET UPDATE

Data on the full year of construction will not be available until February but it's apparent from what we know of the first 11 months that some trends have slowed or reversed in 2016 and among economists, there are the first signs of recession on the horizon for 2018.

The trend that seems to have reversed most clearly is the rate of multi-family development. This was not only expected but is, in some ways, overdue. Data on multi-family starts was choppy through the late summer and early fall but through November, the number of apartment units started was down 4.1 percent year-over-year. Moreover, the number of permits for multi-family units fell ten percent in November, suggesting that the pipeline of apartment projects has dwindled.

Most of the factors driving multi-family development are fading. Demographic support for apartments is weaker and home ownership among 25- to 35-year-olds is growing. Vacancy rates in apartments have been rising throughout the year and sales of apartment projects have slowed. New rules that will push borrowing costs for multi-family higher went into effect December 24, 2016 and higher interest rates in 2017 will also push valuations lower, further reducing the attraction of apartments as investment properties. That, in turn, will dampen demand for new construction in 2017. Perhaps the final nail in the coffin for multi-family (and a drag on single-family sales) was the fact that residential mobility declined to a record low in 2016, as only 11.2 percent of Americans moved during the year.



Although the decline in the apartment market hasn't sparked a resurgent single-family market yet, housing starts have increased. Construction of single-family homes was up 9.6 percent year-to-date.

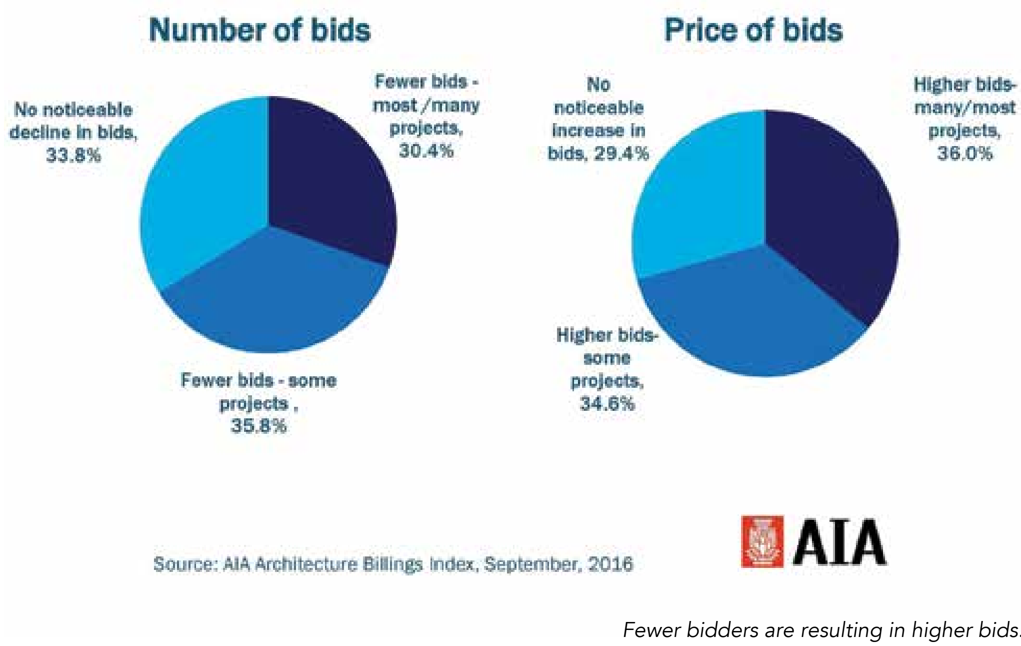
The Census Bureau reported on January 3 that construction spending totaled $1.18 trillion at a seasonally adjusted annual rate in November, an increase of 4.4 percent for the year-to-date. Public construction was off 1.5 percent year-to-date. Within the private construction categories, residential construction was up 5.2 percent and non-residential construction increased 7.7 percent, with commercial construction leading the way at nine percent.

The slight monthly decline that has occurred in private non-residential spending since the cyclical highs in July 2016 has coincided with a similarly slight upturn in public spending. The combination has narrowed that gap between public and private spending slightly – from $154 billion to $133 billion – for the first time since June 2015. Should the trend continue, there may finally be a reversal of what is a five-year spread between public and private spending.

Two of the more-experienced construction economists forecasted lower growth for the U.S. construction market in 2017. Speaking at the Post Election Outlook on November 17, Dr. Kermit Baker, senior resident fellow at Harvard University and chief economist for the American Institute of Architects (AIA), and Dr. Ken Simonson, chief economist for the Association of General Contractors, both predicted that construction spending would increase less than in 2016. The two were also in agreement that growth among the market sectors would be more balanced.

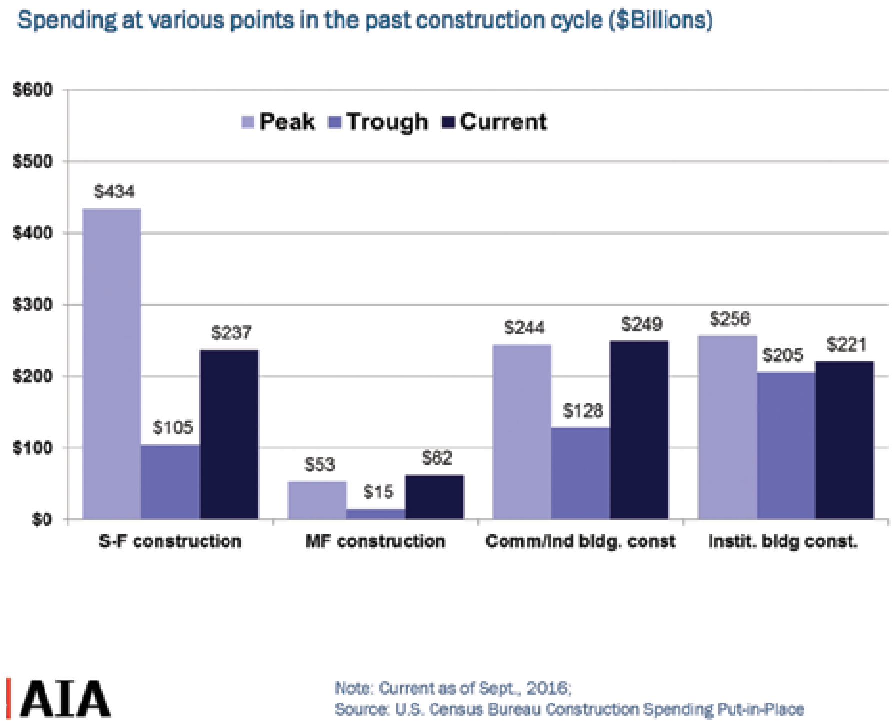
Simonson expressed concern that slowing job creation and stagnant business investment would weigh on manufacturing and infrastructure spending. He noted that absent an infrastructure stimulus package such as President-elect Trump has promised, there is little chance of an increase in federal highway spending.

On the non-residential building side, Simonson forecasts $431 billion in spending in 2017, roughly three percent higher than the expected level for 2016. Within the non-residential categories Simonson sees less disparity in growth. For example, his forecast for healthcare spending is 5.0 percent higher (compared to 2.3 percent in 2016), while he predicts office construction will grow 7.5 percent (compared to 14.7 percent). For overall spending, Simonson forecasts a range of two-to-seven percent, a few points lower than his forecast for the past few years.



Fewer bidders are resulting in higher bids.

The AIA's Kermit Baker sees little change from 2016 to 2017, forecasting construction spending that is 5.6 percent higher after a 5.8 gain in 2016. In his remarks, Baker compared the current spending levels to those during the trough of the recession and the pre-recession peak. Within major categories, spending has exceeded



The recovery in most major construction categories is or has approached pre-recession levels by the end of 2016.

the previous peak in multi-family and commercial/industrial buildings. For institutional spending, activity in 2016 is about 14 percent below the previous cycle's peak of $256 billion (and about eight percent above the trough). Only single-family housing is dramatically behind the pace prior to the 2009 recession. The $237 billion in single-family construction is only 55 percent of the 2006 peak; however, it's worth noting that peak was driven by demand for financial products during the housing bubble. There is little to suggest that single-family housing is going to rebound to those levels.

Both Baker and Simonson attribute the slower growth to slower overall demand for space but there is also evidence that tight labor is constraining growth as well. There is some evidence of that in the bidding market.

Architects surveyed by the AIA responded that they were having increasing difficulty in finding enough bidders for their projects and the bids were reflecting that phenomenon. As part of its monthly Architectural Billings Index the AIA queries bidding activity. In November, only 33.8 percent of the architects said they had seen no decline in the number of bids. More than 30 percent said they were getting fewer bids on most projects, while 35.8 percent saw fewer bids on some projects. Not surprisingly, almost the same ratios applied to the question of higher bids, with 36 percent saying they were getting higher bids on most of their projects.

Although the presentation's title alluded to the national election, there was little in any forecast that accounted for an impact from the change in leadership.

Those looking to gauge the impact of a Trump Administration would do well to wait to see what clears Congress. Judging from Trump's limited policy exposition during the campaign, it's difficult to infer what policies will be proposed, let alone implemented, but two that seem likely are increased spending on infrastructure and military, and decreases in income taxes. Either of these should stimulate economic activity and the effect of both should boost both business and consumer spending.

Of course, there are political hurdles for each of those initiatives. Democrats can hardly oppose an infrastructure stimulus, especially since a significant increase was part of their platform, but as the opposition party there is likely to be some push back. Republicans who are fiscal conservatives may also find little to like about a big infrastructure package that is not accompanied by spending cuts, especially those who fought hard to keep the debt ceiling from increasing in 2013. In combination with smaller revenues, a program of higher spending combined with tax cuts will make it harder for fiscal conservatives to support an economic stimulus.

Politics aside, any significant program that includes higher spending and lower taxes will have an economic impact that could offset the benefits of the stimulus. When President Obama pushed through the American Recovery and Reinvestment Act of 2009 (ARRA), unemployment was near ten percent. Today, the workforce is near full employment and such a boost would almost certainly create higher wages and accelerate inflation. Such an economic policy would also raise the federal deficit by several trillion dollars. Activity in the Treasury market since Donald Trump's election suggests that global sovereign debt investors have already priced in higher inflation by demanding higher yields to buy intermediate and long-term U.S. debt.

In its monthly interest rate commentary, Wells Fargo Securities Economics Group wrote, "Expectations of greater government spending and higher consumer spending, should tax cuts take place, would likely result in demand-pull inflation, especially given that the economy is close to full employment. Additionally, should barriers to trade increase, the result would likely be higher prices for imported goods which would eventually flow through to consumer and producer prices."

Most economists seem to be in agreement that the best bet of success for the Trump promises is an infrastructure spending program (even though the outcome of the election has made them gun shy about predicting what the new Congress will support or oppose). Rather than focusing on how politics may impact the economy, observers are seeing slower growth potential for jobs and gross domestic product in 2017. More than a few are forecasting a downturn in the business cycle in 2018. The good news in that prediction is that there are no indicators that we are in for a recession that would be either steep or lasting.

Compared to the previous two business cycles there should be no jarring reaction to an artificial asset bubble, as occurred after the dot com and housing booms. In fact, during the recovery from the financial crisis, new construction has lagged what would be considered a "normal" rebound in residential and commercial construction. Severely tight credit and a huge inventory of homes lengthened the recovery from the mortgage crisis, although those factors helped fuel growth in apartment development. Since financing normalized and the overhanging inventory was burned off, heightened lending regulations and tepid new residential development have left the housing market under-built rather than overbuilt.

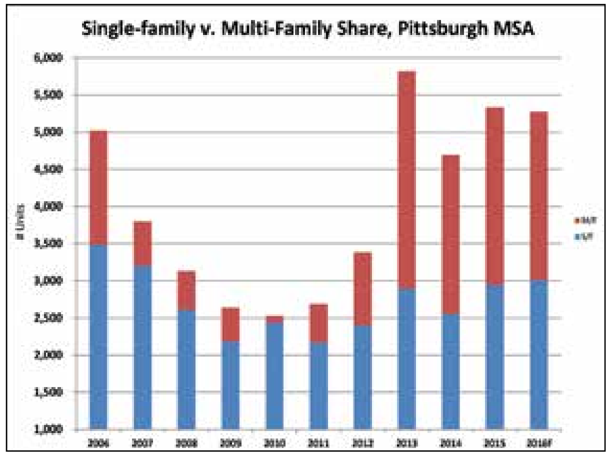
Commercial properties have seen more robust growth in the past few years but completions of new buildings lagged the construction of previous cycles. New completions of office, industrial and retail space as a share of the total inventory has been falling steadily since the 1984 recovery, when completions reached nearly five percent of the total. From the cyclical trough in 2009, completions have yet to rise to one percent of the total inventory. While some of this lower level of construction can be attributed to the hangover of the crisis, there are some structural issues – like the drop in office space per person or the shift in shopping from stores to online – that will keep new construction in check.

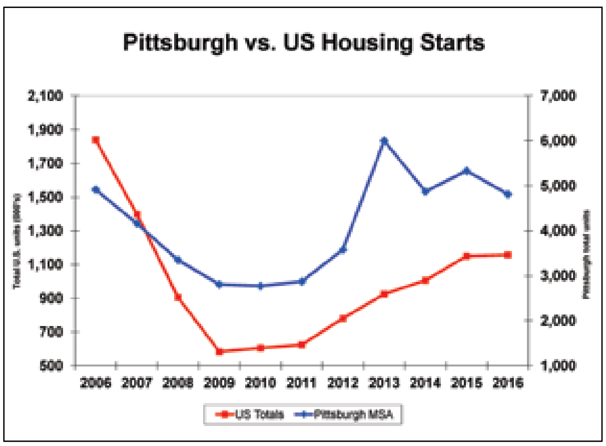
Demographic and tax revenue issues have kept the institutional sector of construction – education, healthcare and government buildings – from solid gains since the 2009 recession. If history is an indication, reinvestment in this sector will bounce back because of politics or demographic pressures; however, there is little chance that spending increases in public or hospital buildings will overheat the economy.

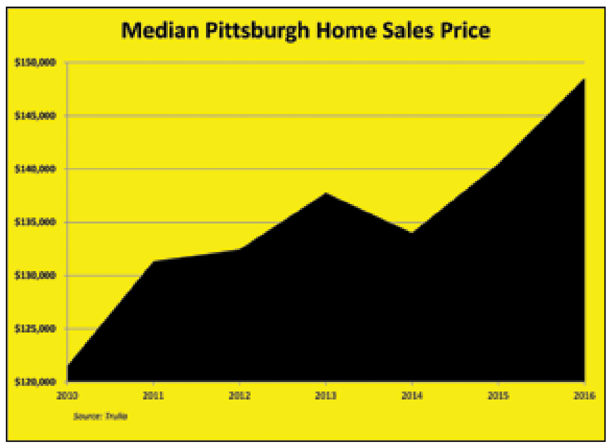
It is the absence of factors overheating the economy that are pointing to what should be a milder downturn in 2018, assuming the current modest growth cycle runs out of steam by then. Given the shocks that the construction industry absorbed in 2001 and 2009, such a gentle downturn would be welcome. BG

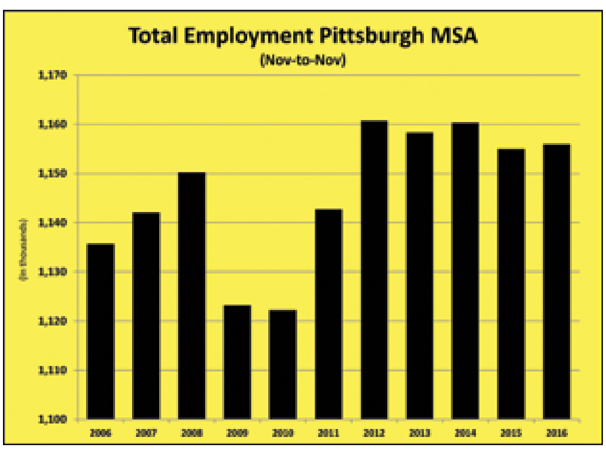
MARKET METRICS

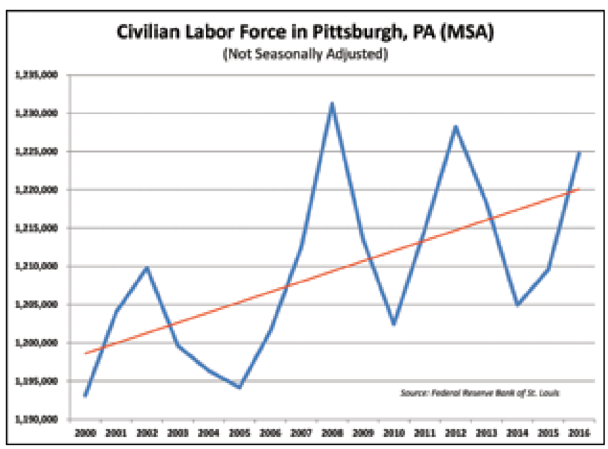
BENCHMARK	2015	2016 (f)
Total SFD units	1,995	1,974
Total SFA/Multi-unit	3,336	2,840
Total residential $$	$1.059 billion	$1.07 billion
Total non-residential $$	$3.31 billion	$4.07 billion
K-12 Additions/renovations	$181.1 million	$294.7 million
Healthcare construction	$145.6 million	$195.4 million
Hotel construction	$134 million	$142.5 million
Industrial construction	$724.9 million	$1.85 billion
Office construction	$309.6 million	$351.3 million
Higher education	$100.6 million	$272.6 million











WHAT'S IT **COST?**

Five years of steady expansion for the construction industry have yielded a labor market and supply and demand for building products that are pushing inflation higher. That's the conclusion that can be drawn by the recent months' readings on producer prices and completed costs of construction.

The Bureau of Labor Statistics (BLS) reported on December 14 that the producer price index (PPI) for final demand construction, not seasonally adjusted, rose 0.8 percent year-over-year in November. Prices for final demand nonresidential construction also rose 0.8 percent year-over-year. Final demand includes goods, services and five types of nonresidential buildings that BLS says make up 34 percent of total construction. Within the non-residential category, PPI increased slightly for healthcare (0.4 percent) and schools (0.1 percent) and was higher for office buildings (1.3 percent) and warehouses (1.4 percent).

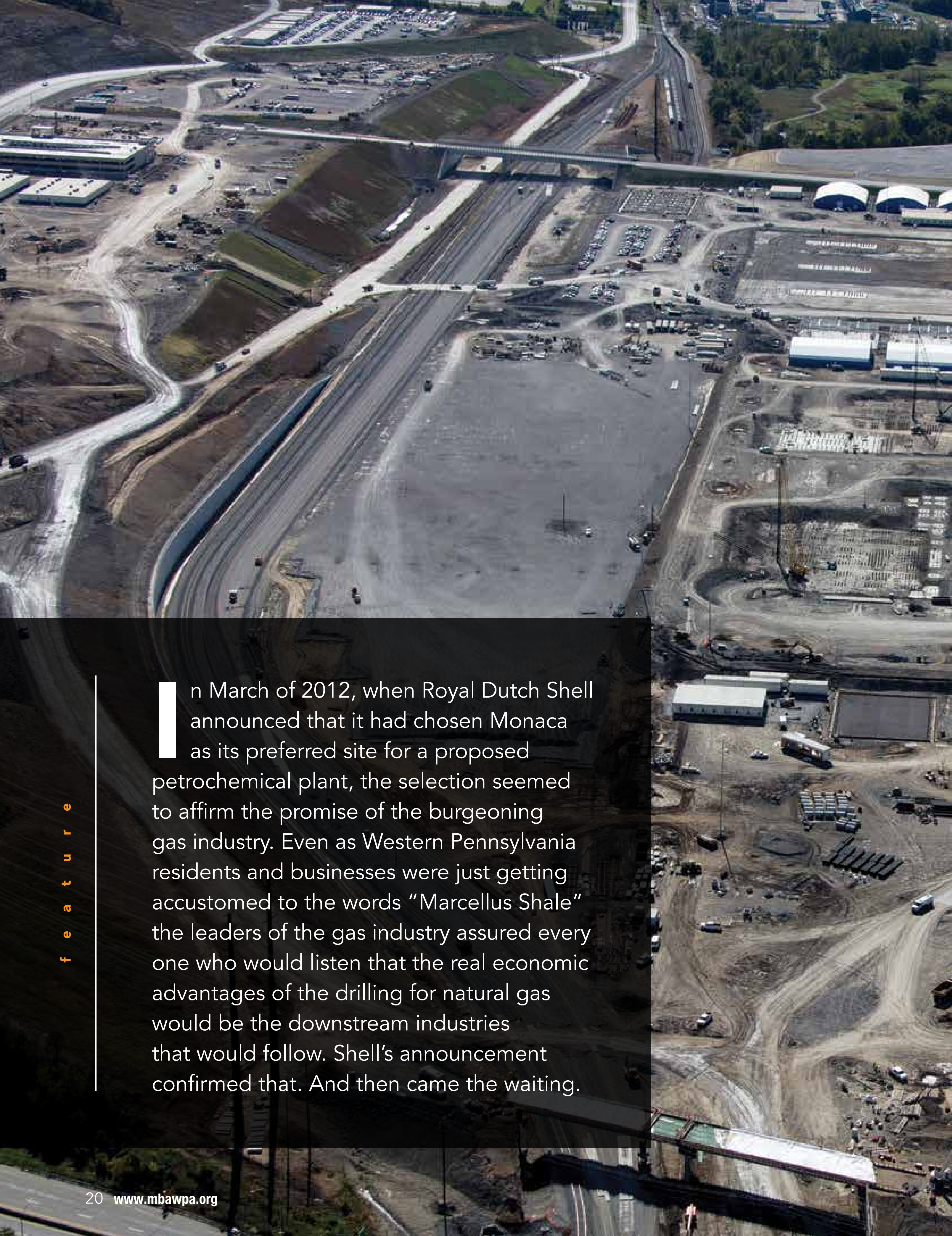
Inputs to construction also rose 0.8 percent from November 2015. Energy prices fell in November and for the full year-to-date (although that has likely reversed for the time being), which kept the PPI increase modest.

Materials that had notable price changes include diesel fuel, down 1.3 percent for the month and 6.3 percent for the year; asphalt, up 0.2 percent for the month but down 24.1 percent year-over-year; cement, up 6.2 percent for the year; and copper and brass mill shapes, up 9.2 percent since October and 8.6 percent year-over-year. Among the most volatile materials at the moment is steel. Prices for stainless and alloy steel scrap are up 12.8 percent for the year, while iron and steel scrap jumped 11.4 percent in November and 41.8 percent year-over-year. Steel prices seem to have jumped in small part due to supply issues and in larger part due to anticipation that the Trump election means higher demand for infrastructure projects and more trade protection. At the local level, contractors have received notices of increases and impending increases for January.

Ken Simonson, chief economist for the Associated General Contractors, forecasted on November 17, 2016 that labor costs would rise three to four percent in 2017 because of a widespread shortage of construction workers. This trend, which is in part due to demographics and partly caused by more construction, is a long-term issue but the prospect of increased infrastructure spending in 2017 is pushing expectations about wages much higher. BG

PERCENTAGE CHANGES IN COSTS	Nov 2016 compared to		
	1 mo.	3 mo.	1 yr.
Consumer, Producer & Construction Prices			
Consumer price index (CPI-U)	0.1	0.5	1.6
Producer price index (PPI) for final demand	0.1	0.3	1.3
PPI for final demand construction	0.1	0.9	0.8
Costs by Construction Types/Subcontractors			
New warehouse construction	0.0	1.3	1.4
New school construction	0.1	1.0	0.1
New office construction	0.0	0.7	1.3
New industrial building construction	(0.1)	1.3	0.3
New health care building construction	0.1	0.6	0.4
Concrete contractors, nonresidential	0.1	1.4	4.5
Roofing contractors, nonresidential	0.1	0.6	0.9
Electrical contractors, nonresidential	0.0	1.0	(1.0)
Plumbing contractors, nonresidential	(0.2)	(0.2)	(1.1)
Construction wages and benefits	N/A	0.2	2.0
Architectural services	(0.5)	(0.3)	1.5
Costs for Specific Construction Inputs			
#2 diesel fuel	(1.3)	5.0	(6.3)
Asphalt paving mixtures and blocks	0.8	(0.5)	(5.4)
Cement	0.5	0.6	6.2
Concrete products	0.7	0.5	3.4
Brick and structural clay tile	0.8	0.8	0.9
Plastic construction products	(0.1)	0.0	0.3
Flat glass	0.2	0.0	3.7
Gypsum products	0.4	0.0	3.2
Lumber and plywood	(0.9)	(2.1)	2.5
Architectural coatings	0.1	(0.1)	0.8
Steel mill products	(1.2)	(1.8)	4.9
Copper and brass mill shapes	9.2	7.8	8.6
Aluminum mill shapes	1.6	1.6	3.4
Fabricated structural metal	(2.6)	(2.3)	(0.6)
Iron and steel scrap	11.4	(4.1)	41.8

Source Bureau of Labor Statistics, Updated December 14, 2016
Compiled by Ken Simonson, AGC Chief Economist



feature

In March of 2012, when Royal Dutch Shell announced that it had chosen Monaca as its preferred site for a proposed petrochemical plant, the selection seemed to affirm the promise of the burgeoning gas industry. Even as Western Pennsylvania residents and businesses were just getting accustomed to the words "Marcellus Shale" the leaders of the gas industry assured every one who would listen that the real economic advantages of the drilling for natural gas would be the downstream industries that would follow. Shell's announcement confirmed that. And then came the waiting.

Photo by Mascaro Construction

THE CRACKER: NOW WHAT?

At the time Shell made the choice of the Horsehead Corporation site public, analysts of the industry predicted that it could take two years or more before a final investment decision was made. As it turned out, those forecasts were two years too optimistic.

To be fair, business conditions in the oil and gas industry began to deteriorate almost as soon as the Monaca site selection occurred. In part, the decline in the industry was because of the shale gas – and shale oil – that made the location of the plant feasible. Exploration of the shale formations here and elsewhere in the U.S. created a surge in supply at the same time that energy conservation was impacting demand growth. By mid-2014 a glut in oil and natural gas supply sent prices tumbling, eventually dropping over 70 percent. That stressed the profits of Shell and its competitors. The shifting dynamics of pricing in oil also weakened the business case for making polyethylene from gas instead of oil. Turmoil made Shell deliberate longer. The possibility that Shell could defer its decision to proceed or cancel the project altogether seemed more likely.

Of course, from the vantage point of early 2017, we know that Shell did make that final investment decision in June 2016. Hundreds of workers now swarm the site, which saw enormous transformation and development even before the green light was official. The question is no longer will Shell say yes but instead what will happen now that it has. Considering that nearly five years have passed since the press conference in March 2012, it's surprising how little has been said publicly or privately to explain with any specificity how the development of a world-class petrochemical facility – and probably a second – will trigger development of other industries.

The company that should have the most to say about what post-cracker Pittsburgh should look like isn't saying much on the subject. Shell is a publicly-traded company and, as such, is very careful about any comments that may be seen as speculating about future customers or suppliers. Local civic leaders – even those charged with attracting new industries – find little information is available to guide business attraction efforts. In the absence of a flow of commercial information, hundreds of businesses are spending lots of time and effort to ascertain what this new development will mean for their companies.

It appears the answer to that question is that the Shell project – and others that may follow – will mean lots of opportunities across lots of business categories in Western PA. The difficulty in understanding how the new industry will affect anyone's business is that the industry is likely to unfold and develop over decades not years.

START AT THE SOURCE

It is perfectly logical to focus the search for what will result from the development of a petrochemical manufacturing complex on what kinds of businesses sell to and buy from steam cracker plants. That focus point overlooks industrial opportunities that might occur in other industries that are dependent upon ethane as a primary feedstock. In other words, there are other industries that will find Western PA attractive for the same reason Shell did.

One industrial concept that comes into play because of the sheer size of the Marcellus and Utica plays is that of clustering. Often times when it makes sense for one player in an industrial category to locate somewhere for a specific strategic advantage – proximity to customers or abundant supply, for example – it makes even more sense for multiple players to locate there. The efficiencies in supply chain and logistics increase as more businesses in the same industry appear. Talent attraction is improved. A sort of self-fulfilling business attraction cycle occurs. The major downside of such a cluster

Target Industries	
Industry	**Rationale**
Petrochemical Manufacturing	Ethane is a key product, polyethylene resin supply chain, downstream industry purchases will stoke growth
Organic Chemical Manufacturing	Polyethylene resin supply chain, growth in key downstream markets, exports expected to rise, Midwestern strength
Plastic and Resin Manufacturing	Primary industry for polyethylene, growth in construction
Adhesive Manufacturing	Closely tied to plastic and resin manufacturing, automotive and aerospace industries are key drivers, Midwestern strength
Chemical Wholesaling	Key to polyethylene supply chain, supports manufacturing
Plastic Film, Sheet, and Bag Manufacturing	Polyethylene reliant industry, regional strength, heavily referenced in interviews
Plastic Pipe and Parts Manufacturing	Growth in construction industry will aid growth, regional strength, plastic resins are a key industry input
Laminated Plastic Manufacturing	Key to construction and automotive industries, ethylene reliant industry
Plastic Bottle Manufacturing	Plastic resin input, growth in downstream industries including household and automotive products
Miscellaneous Plastics Products	Largest sector within the plastics industry
Plastics Wholesaling	Key part of polyethylene supply chain, supports manufacturing

One potential opportunity is for the suppliers of industrial gases and chemicals to build capacity to serve the cracker(s) in the region. Photo courtesy Air Products Inc.

is that whatever cyclicality is involved in the industry is magnified (think steel industry circa 1981).

Of course if one or more of the clustering efficiencies can be spread across multiple industries, there is a counter cyclical dynamic that emerges. Volatility can be reduced if the business cycles of the complementary industries dovetail rather than overlap. This is why the prospect of having the pharmaceutical or agrichemical industries locate plants in Western PA, in addition to plastics, was so attractive. It's why business attraction leaders across the state are working so hard to see if multiple industries that are reliant upon ethane emerge in Western PA.

A look at petrochemical product pricing since November 1 is a good example of why the development of counter-cyclical industries is desirable. According to Platts Global Petrochemical Indexes, prices for ethylene, low-density polyethylene, toluene, benzene, and polypropylene – among other plastic chemicals – have fallen off a cliff since November. Declines for most of these chemical products have exceeded ten percent and reached as high as 26 percent over the past 45 days. More remarkable is the similarity in trajectory of the declines, the charts of which look almost identical.

It has been the nature of the plastics and industrial chemicals business to have boom-and-bust cycles. Finding other industries that are on different supply-and-demand cycles will prevent relying on one industry's fate.

For the first time in a generation, heavy industry is looking at Western PA again because of the same resources Shell likes.

Woody Hydrick is managing principal for Global Location Strategies, a site selection consultancy with a track record of finding locations for heavy manufacturing around the world. He was in Pittsburgh on November 14 as part of a tour that included seven other consultants. Like some of the other consultants, the November visit was the first Hydrick had made to Pittsburgh for professional reasons in many years. He was clear that the Shell project opened his eyes – and his clients' – to some of the advantages that the region has, including cheap energy and an excellent industrial infrastructure system.

Hydrick also pointed to the partnerships that were necessary for the investment decision to be made by Shell – bringing state and local government, PennDOT, the Corps of Engineers, labor, private sector investors and civic leaders to work together – as the kind of collaboration that gets the attention of other heavy industrial users.

"What the region is doing to literally move mountains to prepare for heavy industry is impressive," he says. "The simple fact that I was there looking at Pittsburgh instead of the Gulf says something."

The question is then, what other heavy industries might be attracted to Western PA because of the resources being discovered here?

One possibility is additional manufacturers that would be interested in the ethane for its ethylene potential. Experts in the ethane value chain see the abundant supply and low price for ethane in the U.S. as a boon to the industry. They also see an excellent export opportunity over the next decade, as the growing ethane processing capacity grows by nearly 80 percent by 2020. Excess capacity will assure low prices for U.S.-made ethylene and polyethylene, keeping U.S. exports competitive globally. These market dynamics also set the stage for foreign consumers of ethane and ethylene to relocate or expand capacity in the Appalachian Basin instead of the Gulf of Mexico.

"There are synergies and efficiencies to be gained by being close to one another," remarks Hydrick. "These can be kind of a base hub for the kinds of facilities for ancillary products and industries."

Ultimately, it is the natural gas that is the source that is important for the industries that will develop along the Ohio River in all three states in which the nearby shale gas is found. As recently as 2010, the plastics industry was forecasting that the U.S. would become a net importer of plastic resins. Because of the shale gas revolution in energy, the balance of production is shifting back to the U.S. In fact, the American Chemical Council is tracking 262 projects that would turn chemicals into raw plastic materials in the U.S.

It's useful to look at Shell Chemicals to get an inkling of what share of those 262 projects might land in Western PA. The energy giant had a number of reasons why it chose to locate in Western PA but the reality is that if Shell hadn't exited the polyethylene business in 2005, it would have been too costly to build new capacity here compared to adding capacity at existing crackers. Many of the chemical manufacturers that are part of that 262-project pipeline will be handcuffed by being in the Gulf already. The most likely candidates to attract to the Tri-state for new chemical manufacturing will be those with little or no presence in an existing petrochemical cluster.

One of the more intriguing possible downstream opportunities that could result from Shell's project is the construction of another cracker at an adjacent site – by Shell Chemicals. While this may be the kind of absurd rumor that pops up during a long, slow construction cycle, it's worth noting that the abundant supply of natural gas in the Appalachian region is more than sufficient to support three crackers – there have been optimistic estimates of as many as five – and Shell is among the leading energy companies moving from oil to gas. Having a separate second polyethylene plant would increase the supply security for customers while allowing Shell to grab market share.

When asked about the rumor, Shell's Michael Marr replied, "Shell is focused on the petrochemical facility being constructed. We will refrain from commenting on speculative future development."

In the Watergate era, that would be called a "non-denial" denial. Still, absent any solid plans for a second cracker, it's best to consider the rumor to be just a rumor.

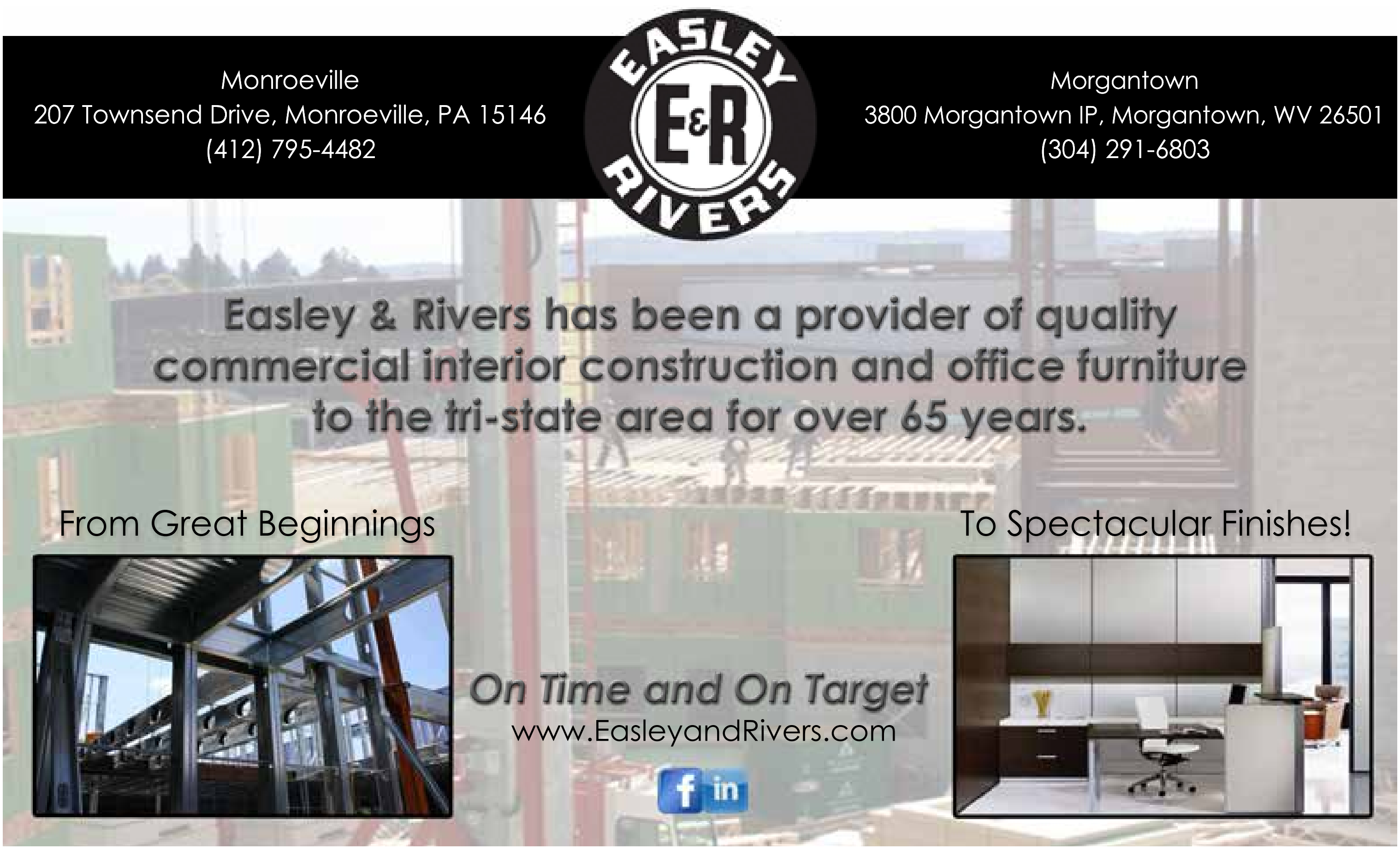
Another part of the chemical process that was thought to offer potential for downstream manufacturing may also be proving to be a rumor. As byproducts of the steam cracking process, nitrogen and sulfur are created. These two basic chemicals are not used in the manufacturing of plastics but do have application in other industries, one of which is fertilizers. Agrichemical was thought to be one of the unrelated industries that would follow the cracker to the Pittsburgh region but that development seems less likely.

While Shell has said that most of the byproducts from the Beaver County facility will be consumed within the Shell system, the company confirmed that nitrogen- and sulfur-based chemicals won't be among those byproducts. The fertilizer market, however, is oversaturated with supply and not growing significantly. A recent study for a Japanese firm assessing the feasibility of locating a fertilizer plant in the U.S. found the market to have 150 percent supply compared to demand. Not ideal conditions for adding capacity.

THE FUTURE IS PLASTICS (JUST NOT THE NEAR FUTURE)

Since the earliest days of the Marcellus Shale play, the gas industry took pains to point to the future and beyond the gas itself to foreshadow the economic benefits to the region. The longevity of the reserves were extolled but mainly the industry supporters talked about how the rich wet gas would lead to the expansion of the chemicals and plastics industry in Western PA. As has happened with the gas industry, the plastics industry has been suffering from oversupply issues that have changed the playing field, but not the long-term prospects. Like with chemical manufacturing the plastics industry is tilting towards domestic investment.

There are aspects of the way plastic manufacturing works that make a large-scale shift in investment to the Ohio Valley unlikely. Makers of finished products – bottles, auto components or toys – want to be located near their customers because of the inefficiency of shipping light but bulky products. Moreover, although being close to the



source of supply is a site selection factor, the bulk of the existing supply for polyethylene is located 1,500 miles to the south of Pittsburgh.

"Remember that the cracker is one of many. Most of the cracking capacity in the U.S. is on the Gulf Coast," points out Gideon Gradman, managing director for Integrated Energy Advisors. "For this region, it's a huge economic opportunity. For the global plastics industry, it's important but it isn't going to keep anyone up at night."

Don't mistake Gradman's comments for pessimism. As director of business development for Braskem America from 2012 to 2015, he was the lead for Braskem/Odebrecht's ASCENT cracker that was proposed for Parkersburg, WV. In that capacity he led the research for Braskem to determine the viability of the project, including the supply chain and downstream opportunities. Because of that research, Gradman is bullish on the prospects for Western PA.

"One way to think about this is there are really two periods of economic opportunity," he explains. "First is the facility construction. There will be thousands of workers. That's literally like having a small town show up on a job site every day for four years, so you have all the services and suppliers needed to support that activity. The second phase is what will happen after there is a resin producer in the region."

Gradman thinks the economic multiplier for construction is being overlooked. He agrees with the comparison to the impact of the upstream development of the natural gas play, pointing out that the construction will be a boon to truck sales, food services, small equipment sales and rentals, repair shops of all types and even services like banking and healthcare.

Of course it is the second phase of the development of the polyethylene capacity that holds the most promise. Bill Carteaux, president and CEO of the Plastics Industry Association (PLASTICS), dispels the notion that the plastics industry won't be among the businesses attracted to the region.

"Yes, the plastics industry tends to locate close to customers but that is on a regional basis," Carteaux remarks. "Anecdotally at least, large companies that use a lot of resin are already saying that having a cracker in that area would make them look more closely at locating there."

Carteaux refers to his members as the companies that turn "pellets into products," pointing out that the majority are businesses that process pellets into material that finished product fabricators use.

These include the categories of converters and compounders, which add color or other properties and convert the pellets into forms like film or sheet that can be molded, formed or extruded. There are thousands of these businesses within a 400-mile radius of Monaca (and Dilles Bottom). Most are small but there are a number that are large enough volume producers that the location of their supply is important.

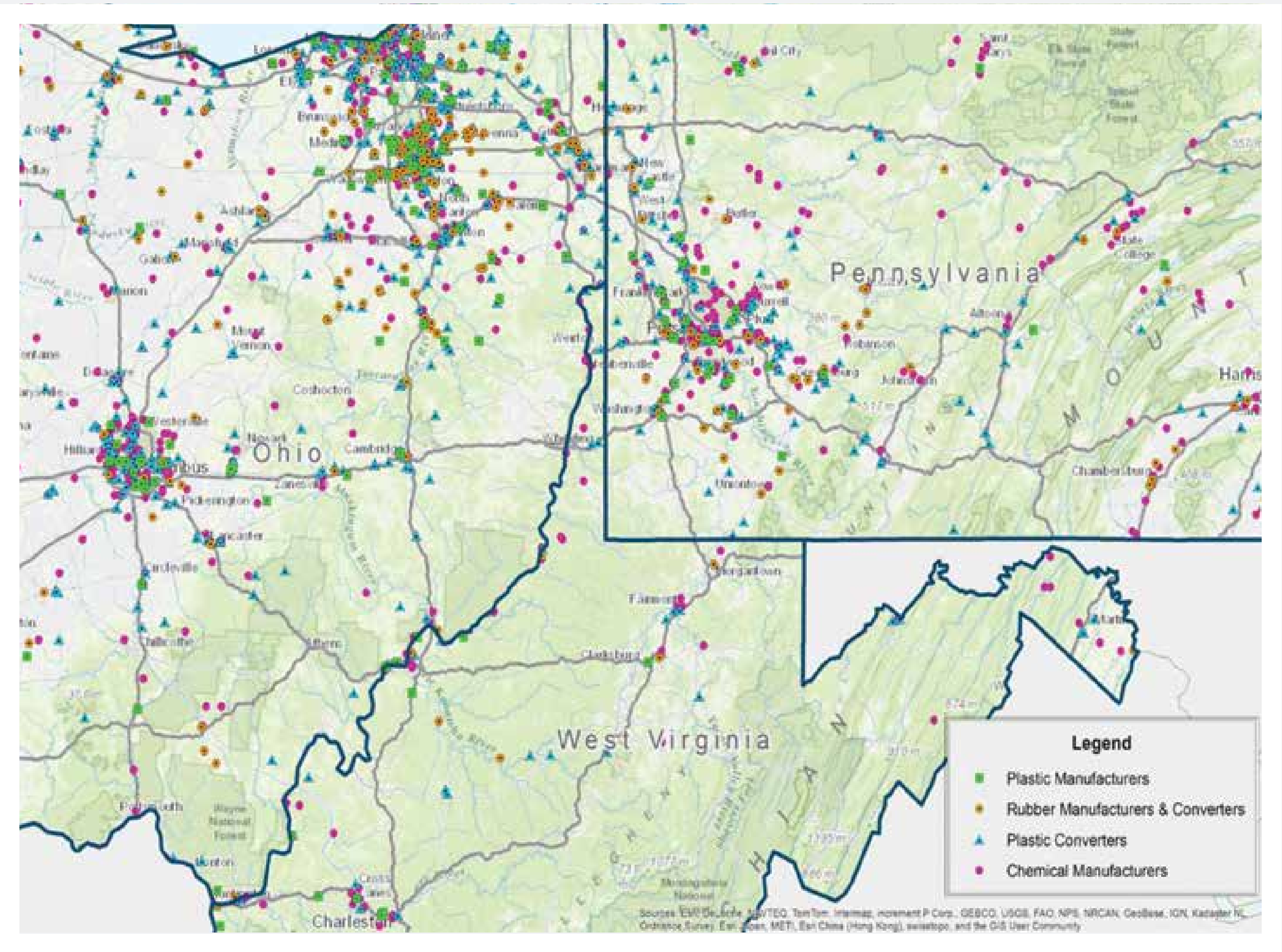
"I have one member that will use five billion pounds of resin in a year. You can imagine the shipping expense," Carteaux explains. "Large converters on the packaging side will look at locating near that [Shell] plant. Processors that make film and film-related products go through tons and tons of plastic resin."

PLASTICS is also tracking projects that have been announced and Carteaux's evidence is not entirely anecdotal. According to PLASTICS, more than 600 projects have been announced in 40 U.S. states by processors. More than 40 projects have been proposed in states with high concentrations of processors, like Michigan, Ohio and Indiana. Texas is the site of about 40 projects. Carteaux says the number of projects announced in Pennsylvania is approaching 20.

After the processing companies, attracting other large plastics companies will be a matter of being in the right place when they feel the need to build. This will include companies that are based overseas, where feedstock prices are higher.

Flemming Bjoernslev is the former CEO of Lanxess and now a senior advisor to the North American chemicals industry. He was a panelist at the Urban Land Institute's "Emerging Trends in Real Estate" event on December 7 and spoke for a few minutes about the impact of Shell's plant. Bjoernslev also pointed to the plastics industry as being the prime candidate for downstream development after Shell's polyethylene facility becomes operational. When asked further about the prediction, Bjoernslev clarified his comments.

"It's an intriguing question because that's what this region wants to know and what the chemical industry also wants to know. But the people who will be driving the activity and decisions won't be sitting in Pittsburgh," he notes. "If a plastics manufacturer that uses polyethylene as a raw material looks at where to put the next factory, the next capacity, it will look at where the supply is, where the cheap energy is, but also where its customers are. I have no proof of who that might be but my assumption is that the rationale will be the same as Shell's."



The map illustrates the size of the opportunity for Shell. Some 17,400 petrochemical manufacturers are located within 400 miles of the Monaca site. Photo by Pittsburgh Regional Alliance.

"The rule of thumb is if there is a company downstream using polyethylene pellets as a raw material and it's within 400 or 500 miles, it won't relocate unless it is looking to expand and it's landlocked," explains Jeff Logan, president of the Pennsylvania Chemical Industry Council. "Then it would look at moving close to Shell's plant."

There is no shortage of companies downstream from polyethylene manufacturing within the proximity Logan describes. According to data gathered by the Allegheny Conference on Community Development, there are 8,147 companies in the business of plastic converting or compounding within 400 miles of Beaver County. These kinds of plastics businesses, along with other plastics-related chemical companies, will be the end user of Shell's products (although Shell will not likely be shipping directly to any of them).

Likewise, there is an established supply chain for the plastics industry within 400 miles. Unlike with downstream polyethylene users, suppliers to Shell or other crackers can gain a significant advantage by being closer to the plants. Logan doesn't believe that alone will spark an influx of suppliers to the region.

"Since there is already so much existing industry around this region, the opportunity is really in strengthening the supply chain for expansion or optimization," he says.

Here again, however, Gradman disagrees with the focus on the last step of the supply chain. Drawing another parallel to the gas exploration, Gradman believes the foundation of a new industry here will draw companies to locate offices in Western PA in the same way that the supply chain for drilling was drawn to Southpointe or the I-70 corridor. That includes plastics research and development departments, testing companies, additive and catalyst manufacturers, industrial maintenance contractors, industrial parts companies, and businesses in the ethylene chain.

"Everybody from Houston in the gas industry now has a Pittsburgh office," he notes. "I expect the same thing will happen in this industry."

Gradman also sees potential for firms that aren't necessarily downstream from Shell or other polyethylene suppliers but are plastics companies with products that are in the supply chain for other industries that are thriving in Pittsburgh.

"There is an opportunity for smaller plastic component manufacturers that want to be close to other industries – like robotics or healthcare – that are growing in Pittsburgh," he says.

THE OBSTACLES THAT REMAIN

In 2014, the Southwest Pennsylvania Commission received a grant to study the site location and mobility needs of the emerging industries in the region so that areas of strength and weakness could be identified and improved. The site location study focused on finding properties with characteristics that met six priorities:

- A minimum site size of 50 available acres (with larger sites preferable depending on the intended downstream use)
- Interstate access within 15 minutes
- Rail access on site or within a quarter mile of active rail
- Direct site access to a river
- Prior use as heavy industrial and/or petrochemical site
- Existing zoning that allows or promotes industrial use

Filtering some 500 sites from Pittsburgh Prospector and PA Site Search systems, the task force found 26 that met some of the criteria above. Given that not all downstream or supply chain users would require all six characteristics to make a positive decision, this group of sites is an adequate inventory of options for at least some of the businesses that would be attracted to the opportunities that Shell and PTT plants represent; however, many of the sites would still require infrastructure investment to improve their competitiveness.

The bad news that fell out of the study was that only three sites emerged that met all of the criteria and one of those – the Horsehead site in Monaca – was already off the market. The

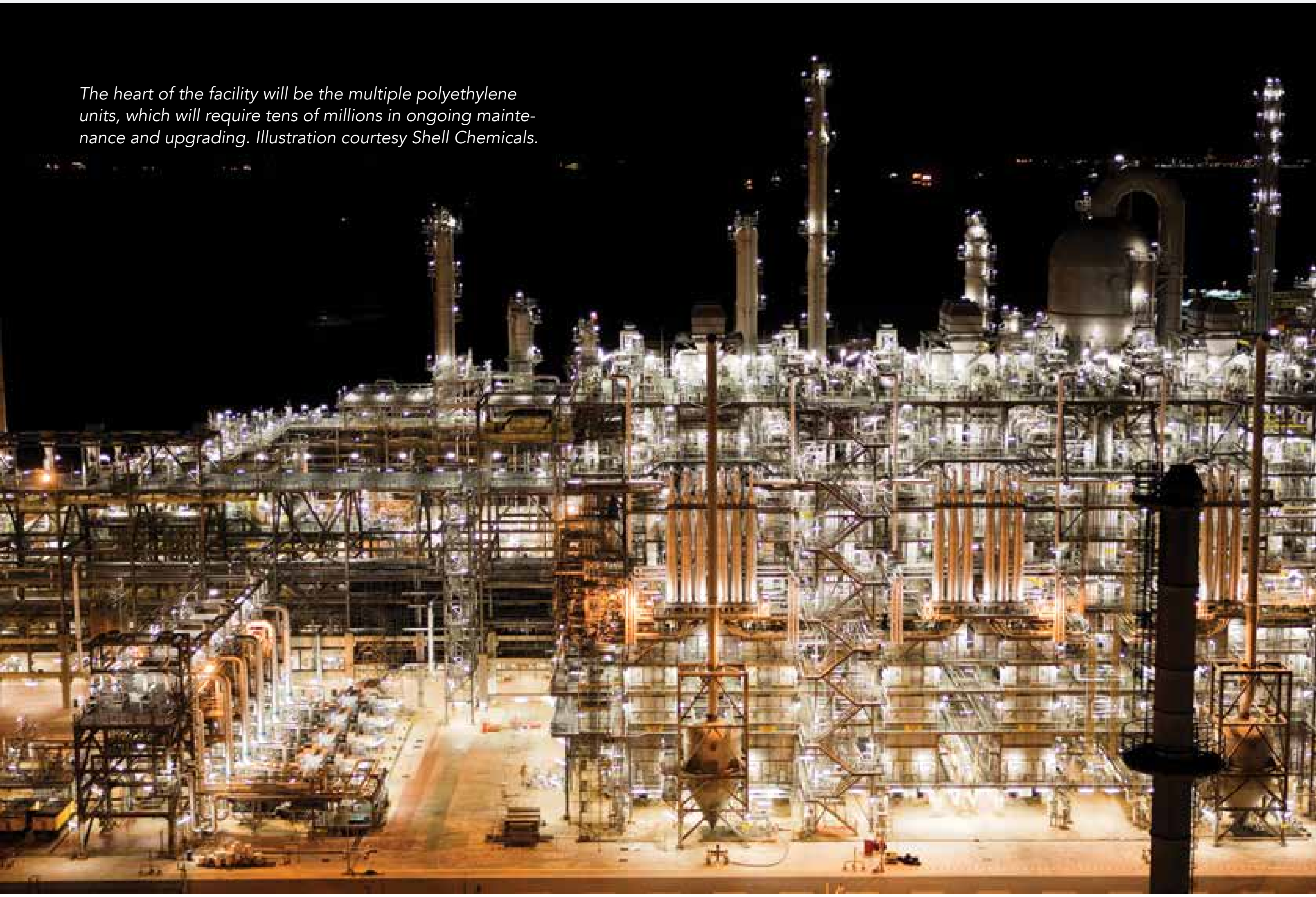
others were the sites owned by C. J. Betters in Aliquippa (Bet-Tech I and II, Aliquippa Industrial Park) and the Mon Valley Industrial Park.

There are efforts underway to identify other sites - perhaps sites that simply weren't on the market in 2014 and 2015 – and to make public and private investments to make the 26 sites more attractive. Little can be done to improve any site's proximity to infrastructure, however, and so other land opportunities must be found to expand the inventory. One category of industrial site offers promise as potential heavy manufacturing locations.

Former coal-fired power plants are located on rivers and nearly all have rail access on or near the plant. Current emission standards and environmental regulations have forced most of these plants to be shuttered and the emergence of smaller gas-fired combined cycle power plants means that the generating capacity of the coal-fired plants will be replaced. Roughly eight such coal-fired plants are within the 14-county Southwestern PA footprint, meaning that the inventory of heavy manufacturing sites could triple within the decade if an intentional program of repurposing these plants was undertaken. The proposed PTT project in Dilles Bottom is located on a former First Energy plant site. For several reasons, these sites are generally accepted as industrial sites by the communities that surround them. New industrial use could be made of an existing brownfield, much as Shell is doing with the toxic Horsehead Corp. zinc plant in Monaca.

For private developers looking for help to create new sites there are at least two significant options. One is the Power of 32 Site Development Fund, a patient low-interest loan source spearheaded by the Allegheny Conference on Community Development and managed by Callay Capital. The Power of 32 fund seeks developers with sites in a 32-county footprint in the Tri-state area. With about $49 million in funding commitments, Power of 32 has done one deal in West Virginia and is reviewing others that are proposed.

The Commonwealth of Pennsylvania created a $75 million fund that is generally intended to aid in the development of sites as a response to the petrochemical and energy industries expansion. One legitimate concern about such a fund is the criteria for



The heart of the facility will be the multiple polyethylene units, which will require tens of millions in ongoing maintenance and upgrading. Illustration courtesy Shell Chemicals.

distribution and selection of projects. Few, if any, public funds are administered without political considerations. And with 40 percent of the state's voters located in the metropolitan Philadelphia area, it would be naïve to expect that more of the funds would be directed to the western part of the state, even if the opportunity lies mainly in the west.

That political was one of the reasons Katie Klaber formed the Tri-State Infrastructure Council, a one-year, privately-sponsored project to identify gaps in the infrastructure and transportation systems and make recommendations for fixing them.

"I saw how quickly Philadelphia had mobilized its efforts to promote Philly as the best place for investment," Klaber recalls. She says after the gap analysis her group will make suggestions for how any infrastructure funding should be allocated. "In the spring, we'll set three to five priorities that but for improvements will mean that the Tri-state area won't get some of the downstream development."

Adequate workforce is the other major concern of the petrochemical industry that will be difficult to predict and control.

Some of the workforce problem is structural. Throughout the petrochemical industry, key positions in plants are staffed by workers with technical skills that are nearing the end of their careers. These positions monitor and maintain the plants themselves and the education needed is a two-year technical degree. But like with many careers, these kinds of technical jobs have not been adequately recruited for a generation, leaving the average age of process technicians and industrial machine mechanics at 58. Industry estimates are that 29,000 such workers will retire by 2025 and 5,000 new positions will be created. That offers a significant employment opportunity that the industry is trying to promote. The regional skills marketing being done by the Allegheny Conference to help meet the projected workforce gap in Pittsburgh during the same time period dovetails with the promotion efforts of the petrochemical industry.

Projects like the crackers in development are magnets for such recruiting. These positions pay $60,000 per year and up. Many of the 600 permanent jobs at the Shell facility will fall into this category, making that plant a catalyst for a larger wave of workers. Like with the inventory of sites, the ability to attract a larger wave of workers will be a key to the development of an industry in Western PA, not just the staffing of a plant. One optimistic conclusion that can be drawn from Shell's final investment decision (and PTT's should it be made soon) is that the petrochemical industry is confident that workforce attraction and plant site development will happen. That confidence may prove to be the most important long-term benefit of the Shell project.

PATIENT RETURNS

At this time next year roughly 1,000 workers will be reporting to the Shell jobsite daily as the construction of the plant heats up. Within two years that number will swell by five or six times. There will be significant commercial opportunities that arise just from the economic multiplier of that many well-paid construction workers. Restaurants and stores will see sales swell. Hotel rooms will fill up. Companies selling tools and construction consumables will have some great years. And the activity will have an immeasurable impact on other corners of the economy that will be less noticeable.


White low-density polyethylene pellets similar to what will be produced by Shell Chemicals in Monaca.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"During the upstream [natural gas] development one of the frustrating things was seeing progress happening that never made the front page of the paper or moved a politician," recalls Klaber, who headed the Marcellus Shale Coalition at that time. "You didn't see the engineering company that hired more people instead of staying the same size or the law firm that added more lawyers who practiced oil and gas law."

It's what comes after these next four or five years that will make this seemingly endless dance with the petrochemical industry seem worth the wait. But it's worth noting that the waiting isn't going to end at that point. It's clear that there will be as much economic benefit from being home to a couple of steam crackers in the 2030s as will be derived in the 2020s. For those looking to find the dark cloud in the silver lining, contracts for work just let still include provisions for an agreement to build the scope of work and an agreement about what happens if Shell changes its mind about completing the project. This is a company that walked away from an $8 billion Alaskan capital investment when it was $7 billion into it.

The differences between an oil exploration project in the Arctic and an ethane-to-polyethylene manufacturing facility are night-and-day, however. What is being hatched along the Ohio River is the start of a new industry's investment in an old industry's graveyard. Underpinning this development is still the surprising abundance of natural gas that has several other compelling uses that aren't going away soon. For businesses in that footprint, the challenge is to make plans with the same patience and long horizon as the petrochemical industry.

It has been a long winter for the petrochemical industry that doesn't have a clear end in sight but the outlook for basic chemicals – one of which is ethylene – is improving. The American Chemical Council forecasts 3.5 percent growth in basic chemical sales in 2017, which should mark the beginning of a recovery. At least one observer sees Shell's investments as part of the next wave.

"Shell is coming with three polyethylene plants when it sold all of its polyethylene capital in 2005," notes Bjoernslev. "That shows they are confident of making a return on investment from this facility."

Pittsburgh's business community should also be confident about the return on the investments they will make to respond to the new industries coming to Western PA. But like with retirement investing, businesses should exercise patience in counting those returns. It's clear that the supply and demand dynamics of the chemicals industry at the moment don't favor manufacturers, so looking for a headlong rush of industrial capacity relocation to the Tri-state area is foolish. At the same time, history shows that the decisions in the petrochemical industry have a long horizon. The experience with Shell's due diligence at the Horsehead site (which isn't completely done yet) should provide guidance about how others in the industry will evaluate and respond to the existence of petrochemical capacity located on the Ohio.

In one of its public communications about the decision to defer plans for its cracker in Parkersburg, Braskem noted that "We're not building a plant; we're building an industry." The former takes years. The latter takes decades. It took 30 years to transform Pittsburgh's economy from depending on one industry to being a hotbed for many. Landing Shell's cracker was an important win for Western PA. It's going to take time to see how that win plays out. BG

CMU Scott Hall

Rivers Casino

AHN Jefferson Regional Medical Center

3 PNC

Children's Hospital

UPMC East

Industrial Scientific

UPMC Magee-Womens Hospital

Photo by Roy Engelbrecht

HOWARD HANNA
SEWICKLEY OFFICE BUILDING

The story of Howard Hanna Real Estate Services' new Sewickley office has a "Back to the Future" feel to it, in more ways than one. Hanna's real estate agents moved into the new offices in July 2016, just over two years after a fire destroyed its long-time Sewickley location. Like in the movie, lightning played a key role, striking the Sewickley United Methodist Church clock tower (and stopping the time at 1:20 PM) before sending an electrical surge through underground pipes to start a smoldering fire across Thorn Street.

Photo by Roy Engelbrecht

Howard Hanna had been in Sewickley for more than 40 years when the fire occurred in 2014. The office served the suburbs northwest of Pittsburgh and sales in the Sewickley office were high. Within 90 days of the fire, the real estate company decided its future would be in the same location as its past, buying the property and planning to rebuild. Purchasing the property was something that Howard Hanna Real Estate wanted to do for years, and probably would not have accomplished were it not for the fire.

Howard "Hoddy" Hanna III, the company's CEO, explains that the building's owner was a tailor from Ambridge and that the building was the tailor's first real estate investment.

"When my dad signed the original lease, he gave the [owner] a dollar to have right of first refusal if he ever wanted to sell the building," Hanna says. "Every time we renewed the lease we asked about buying the building but the owner kept raising the price!"

With agents now displaced but still needing to serve one of Howard Hanna's critical community markets, there was urgency to the decision-making process. The sense of urgency pervaded the design and entitlement phases and influenced the project delivery. The Sewickley project wasn't going to work well as a design-bid-build. Instead, a more creative approach was taken.

"We were working on a job with Steve Casey and he called up to ask if we were interested in taking a look at this and, of course, we said yes," recalls Alex Dick, owner of Dick Building Co. "Our family's relationship with the Hanna's goes way back but we'd never really done work with them. We had been lobbying them, knowing that this job was coming up, so when Steve called we thought this was our shot."

The project presented several significant challenges, perhaps the greatest of which was weaving a new building into the context of Sewickley's downtown village. The property sits at 401 Broad Street, on the corner of Thorn, in the center of the village. On a site that was only two-tenths of an acre, Stephen Casey Architects was tasked with designing a structure that would fit into Sewickley's Colonial elevations and bring modern office functionality to roughly 40 sales people.

"Our goal was to create something that looked like it had been there a century, to fit in with the church across the street and the retail stores on Broad Street," says Terry Corbett, director of property management for Howard Hanna. "That was the architect's challenge."

According to Steve Casey, designing a new building that fit into the context of Sewickley's village was hardly the only challenge.

"The footprint of the site is 32 feet by 90 feet. Hanna's standard formula is about 4,500 square feet and we couldn't get that there," Casey explains. "To do two stories would require two enclosed stairways and an elevator and that didn't work. We figured out that we could get their entire program built without a full second floor. This building has a partial second floor and a mezzanine. And we have equal facilities for people with disabilities on the first floor so that it complies with ADA standards."

Casey's design put the entrance to the building on the corner, at a 45 degree angle from either street. A clock is integrated into the façade above the entrance system. The red brick façade is accented by a storefront system surrounded by metal panels coated in the iconic Howard Hanna green. On the Broad Street elevation, an interactive screen in the storefront window allows shoppers to search for houses via touch screen before entering the office. The finished product accomplishes the potentially exclusive goals of both integrating the building and differentiating the Hanna brand.

"That corner is the first thing you see as you come up Broad Street and it is the visual difference between the residential part [of Broad] and the village's commercial street," notes Casey. "We felt that maintaining the sidewalk on both Broad and Thorn would finish off the block. On Broad Street you have the storefront. On Thorn Street you have the more institutional elevation, more like the church or bank down the street."

Attention to architectural detail was something that helped gain cooperation from the Borough of Sewickley and gaining cooperation from the borough was critical to all aspects of the

Large windows flood the interior and mezzanine with light.
Photo by Roy Engelbrecht

project. Sewickley's zoning has an archaic exclusion for businesses considered to be agencies, which included real estate agents. That language helped dictate the choice of the existing site, but beyond that code issue all parties to the project expressed the sentiment that the borough and its representatives were more than accommodating. Corbett notes that the borough helped ensure that the planning and approval process was done as quickly as possible. Casey says any concerns about nitpicking were quickly allayed.

"Sewickley has one of the most liberal sign ordinances of any community I've worked with over the years," Casey asserts. "They were very positive about getting this done to keep the office there."

Alex Dick says that the same attitude prevailed during construction, which took place during a time when four other new buildings were underway in the village, an unprecedented boom of sorts for Sewickley. The tight village site meant that the Hanna project would be supplied on a just-in-time basis, but the borough also took four street parking spaces and meters off line during the duration of the construction to allow for staging. Still, the tight site meant no real lay down area and no dumpsters.

"Our goal was to create something that looked like it had been there a century, to fit in with the church across the street and the retail stores on Broad Street," says Terry Corbett, director of property management for Howard Hanna. "That was the architect's challenge."

"Sewickley was great to work with. Brian Jeffe, Sewickley's mayor, works with Seubert and understands the business," notes Dick. "We had a leg up because we had a superintendent named Sean Maust on site who was very proactive, always in constant communication with the building department and the police over there. I think that helped things along with the borough. We had almost no problems except for maybe a couple parking tickets."

Dan Martin, Dick's president, laughs at the mention of tickets. "I had one of those," he chuckles.

As construction got underway, the small site and what was underneath it became the first – and ultimately biggest – challenge of the project. The adjoining building was shown to have a basement in it and the fire-damaged building had a basement on foundations that could be verified. After demolition, however, when excavation started it was discovered that the neighboring building did not have a basement. That brought progress to a halt for two months while a solution to the problem of excavating on the Hanna site was created.

Continued on page 64.

PROJECT TEAM

Dick Building Company LLC	General Contractor
Howard Hanna Real Estate Services	Owner
Stephen Casey Architects	Architect
T. D. Patrinos Painting & Contracting	Interiors/Misc. Metals/Painting
Forest Steel	Steel Fabrication
Butler Flooring	Flooring Contractor
Welte Roofing	Roofing Contractor
Canova Electric	Electrical Contractor
Pioneer Mechanical Services	Mechanical Contractor

HANLON
ELECTRIC COMPANY
QUALITY SERVICE SINCE 1930
THE POWER OF FORWARD THINKING

(From left) Mike, Tom III, Terry and Kevin Hanlon pose in front of portraits of Tom Hanlon Sr. (left) and Regis Hanlon.

Like many multi-generational businesses, Hanlon Electric Company finds itself both blessed and cursed with a loyal crew of workers. Hanlon's president, Mike Hanlon, says that the continuity that comes from having a good team in place can also lead to complacency and reluctance to change, two circumstances he works to avoid. Hanlon says it can also lead to the realization that the next generation will need a place to work.

"I have a lot of gray hair in the office here," he laughs. "We are looking at bringing younger talent in. We've talked about succession but we haven't made any firm decisions yet. We want to bring some new blood into the office but part of the problem is when you have a really good team that clicks, and business is sluggish, you say let's stick with this team for another year and then another year. Then pretty soon your average age is 57."

Resistance to change is not limited to companies with third- and fourth-generation management. Mike Hanlon has been a catalyst for change during his tenure at Hanlon Electric and sees more adjustments to the marketplace in the future for the company he and his two brothers own.

Hanlon estimates that the company does about 25 percent of its work in hospitals and 20 percent in the office buildings Downtown. Colleges and other institutions – like the museums in the city – fill in the balance of its portfolio. Hanlon Electric has a number of public schools in its portfolio but, like many specialty contractors, the company hasn't actively bid in that market much in recent years. Hanlon Electric also runs a fleet of service trucks and technicians.

"We stick to that commercial electrical market. A lot of institutional work, hospital work, buildings downtown," he says. "Some new construction but there's not a lot of new construction we get involved in. Our market is mostly renovation and retrofit. It seems like that's just what we end up looking at. New construction attracts so much attention that we kind of step back and say here's some things that aren't attracting so much attention; let's see what we can do with them. We try to make the best use of our estimating resources."

"Probably right now we're doing 25 to 30 percent of our jobs with some prefabrication on them but we're really moving that number up. Last summer we built a fab shop here, so we jumped in a little bit further," explains Mike Hanlon. "Our goal is by the end of 2017 to be doing prefabrication on all of our jobs in some fashion."

The company was founded in 1930 by Mike Hanlon's grandfather, Thomas P. Hanlon Sr. The elder Tom Hanlon was partners in an appliance store in Squirrel Hill and managed the installation of appliances whenever that service was needed.

"As the story goes he'd sell the appliances during the day and a lot of them were to wealthy folks in the Oakland and North Oakland area, Squirrel Hill area who needed somebody to put the electric in to power the new appliances they bought," Hanlon recounts. "So, he started working at night wiring the appliances. When the Great Depression hit, the business started sliding. There were three partners in there and he made the decision that his partners should buy him out and he would do his own thing. He could see the handwriting on the wall that three families weren't going to be able to continue eating off that business as it was. He started Thomas P Hanlon Electrical Contractor down on Forbes Avenue above the old Baskin & Robbins."

Tom Hanlon was able to grow the business during the next decade, adding five or six electricians during the 1930s and 1940s. Mike Hanlon's father, Tom Jr., joined his father in 1950 after a couple years working for General Electric. That proved to be a formula for success that would repeat itself. Father and son prospered during the post-World War II era, developing more commercial business. They incorporated as Hanlon Electric Company in 1956 at roughly the same time they signed an agreement with IBEW Local 5.

Regis Hanlon, Tom Jr.'s brother, joined the business in 1968. He managed the estimating for Hanlon Electric while Tom Hanlon ran the field operations. The company had moved to offices on Rodi Road in 1963 as business grew, ultimately moving to its current location on Old Frankstown Road in 1978, which was the same year that Tom Hanlon Sr. passed away. By that time, Tom Hanlon III had joined the company, followed by his brother Terry in the early 1980s.

Mike Hanlon followed a recipe similar to his father's, working at first in switchgear sales for General Electric after his graduation from the University of Dayton in 1986, and then working for Hubbell Inc., first in outside sales and eventually in corporate marketing. Mike views the eight years outside the company as extremely valuable to his growth as a business person and influential to his leadership at Hanlon Electric.

"When I came back to the business [in 1994] everyone was kind of doing their own thing, working separately. I guess it was 1997, we did a job at Ligonier High School and it didn't go real well for us. My dad was complaining about it one day and I told him that the problem was that we had no processes. Everybody did everything the way they wanted to. There was no repetition. There was no process to lead it from Point A to Point B to Point C as the project was built."

Hanlon Electric hired a local consultant who had worked in the nuclear energy industry. For three years he worked with Hanlon to develop processes and systems that covered how a project would be handled from the time it entered estimating until construction was completed. Mike Hanlon recalls that the company's estimators and project managers were all involved in the process, which eliminated much of the resistance to change and made the processes that resulted from the effort that much more efficient. The process also gave the estimators and project managers a better understanding of their counterparts' roles and how their own work impacted them. Hanlon gave an example from estimating that illustrated how the process changed their work habits.

"There are certain things you need to identify when you're estimating the project that need to be taken care of right away because of lead times," he explains. "You need to call those out. You don't bury those in the estimate or in the paperwork somewhere. That way the guy who is handed the folder has a place to start to keep us out of trouble six months down the road. The individual estimator can have his own way of estimating the project but what is produced has to be the same at the end of the day."

The processes and systems put in place were almost all aimed at improving the communication and flow of information between Hanlon Electric staffers as the project progressed. As the architect of the changes, Mike was named president and CEO effective January 1, 2000. Tom Hanlon Jr. retired but still came to work until 2006. Before he stepped away completely, Tom Jr.

Hanlon Electric Company

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got to see Hanlon Electric hit its peak employment in the 2005 to 2010 period. Its work at the hospitals and at Carnegie Mellon on the Purnell Center and Gates/Hillman projects pushed Hanlon Electric's payroll to around 100.

During the downturn, Hanlon Electric's leadership made the conscious decision to pull back. Now the company employs roughly 50 in and out of the office. The fourth generation of the family, Tom's son Kevin, has started with the company. Tom manages estimating. Terry runs the project management and all the prefabrication. The latter is a project delivery method that Hanlon Electric is adopting to a greater degree.

"Probably right now we're doing 25 to 30 percent of our jobs with some prefabrication on them but we're really moving that number up. Last summer we built a fab shop here, so we jumped in a little bit further," explains Mike Hanlon. "Our goal is by the end of 2017 to be doing prefabrication on all of our jobs in some fashion. We've always done some prefabrication and began to look at it more closely after 2010. It was really in 2013 that we began to get more involved prefabbing things, pre-packaging things in the shop, trying to increase the efficiency of the field."

Projects with metal-clad (MC) cable are the best fit for the prefabrication. Hanlon Electric makes up the boxes, cutting the whips and tails to length so that electricians in the field can assemble and install them without skinning and cutting the cable and making the connections on the jobsite. Lighting fixtures and devices can be similarly pre-wired with the connecting cable cut to length. The prefabrication obviously saves time but also gives contractors better control over the schedule for the project.

"It moves the schedule along, especially in these buildings Downtown. They have very tight schedules to bring tenants in," Hanlon notes.

Mike Hanlon sees several other trends emerging to which he believes Hanlon Electric needs to respond. One of the significant changes Hanlon has seen occur over the past decade is the increased emphasis on safety that owners and general contractors are placing on the workplace. He says that safety training is a time-consuming and ongoing practice, one that takes regular supervision to ensure safe workplace habits become ingrained in his field staff. It's part of a culture of training.

"We spend a lot of time trying to cross train, making sure our apprentices are moving around to different types of work to get them exposure to it," Hanlon notes. "And then we move our young journeymen around to different work so they don't get pigeonholed, so that we have somebody to grow into more responsibility in a number of years. We're a relatively small organization. We can do that. We can keep track of where they have been and what they are good at doing."

He also wants to take advantage of some of that gray hair in the office to move back to adding Hanlon Electric's expertise to projects while the design is being done.

"We as a company need to do more design-assist, more design-build. That's a part of our business that we need to grow more. From 1997 until 2012 we had a CAD department in-house. We had the volume for them. We have become better known for being in the bid market but we need to do more of our work with clients who are looking for that kind of capability. I think we're going to see more of that, especially if there are two crackers going on." BG

A Cautionary Tale: No Leniency in DBE Fraud Sentencing

BY MAUREEN SWEENEY, ESQ.

On November 30, 2016, the Third Circuit Court of Appeals affirmed the 84 month and 41 month prison term sentences against Joseph Nagle, age 55, and Ernest Fink, age 71, two Pennsylvania businessmen who had previously been convicted in what prosecutors called "the largest reported DBE fraud in the nation's history."

The scheme, as portrayed by federal prosecutors, evolved between Marikina Engineers and Construction Corp., a Pennsylvania certified Disadvantaged Business Enterprise contractor, and Schuylkill Products, Inc., which manufactured concrete beams, from 1993 through 2008. Fink and Nagle were the owners of Schuylkill Products, the concrete manufacturer, which in turn had a construction contractor subsidiary known as CDS Engineers, Inc. Marikina had been certified as a "DBE" in Pennsylvania and other states due to its ownership by a Romeo Cruz, who was of Filipino descent.

Federal regulations require states that receive federal transportation funds to set annual "goals" for participation in transportation construction projects by disadvantaged business enterprises, or DBEs. 49 C.F.R. § 26.21. A DBE is a for-profit small business that is at least 51% owned by an individual or individuals who are both "socially and economically disadvantaged," and whose management and daily operations are actually controlled by one or more of the disadvantaged individuals who own it. § 26.5. Government agencies will announce a DBE-participation "goal" when soliciting bids for a contract, and all bids must show how the contractor will meet the goal. If the prime contractor is not a DBE, then the contractor must show that certain subcontractors that will work on a contract are DBEs to demonstrate its efforts in meeting the "goal." A business must be certified as a DBE before it or a prime contractor can rely on its DBE status in bidding for a contract. § 26.81(c).

Critically, in order for it to count towards a contract's DBE participation goal, a DBE must "perform[] a commercially useful function on [the] contract." § 26.55(c). Therefore, a certified DBE whose "role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation," cannot be counted towards DBE participation. § 26.55(c)(2).

Here, the parties had concocted a scheme in which Marikina, as the DBE entity, would bid as a subcontractor for various PennDOT and other government transportation contracts with DBE participation requirements; if selected, Marikina would in turn subcontract all of the work to Schuylkill and its subsidiary CDS Engineers. Marikina was paid a fixed fee by Schuylkill and the subsidiary, which in turn pocketed all of the profits from the contracts. The scheme, over the course of 15 years, involved over 336 contracts totaling close to $136 million.

Upon close examination, the scheme could not be more blatant, with Marikina literally serving only as a "front" or "pass through" for these companies: Schuylkill identified which subcontracts for Marikina to bid, prepared the bid paperwork, and then submitted the information to prime contractors in Marikina's name. Schuylkill employees used stationery and email addresses bearing Marikina's name for such communications, and also used Marikina's log-in information to access PennDOT's electronic contract management system. Then, CDS employees who performed construction work onsite used vehicles which had magnetic placards of Marikina's logo covering Schuylkill's and CDS's logos. Schuylkill and CDS employees used Marikina business cards and separate cell phones to disguise whom they worked for. They also used a stamp of Cruz's signature to endorse checks from the prime contractors for deposit into Schuylkill's bank accounts. Although Marikina's payroll account paid CDS's employees, CDS reimbursed Marikina for the labor costs.

Charged with various federal crimes, Fink pled guilty to a count of conspiracy to defraud the federal government in 2010. Nagle was later convicted after a trial on conspiracy, fraud, mail fraud, wire fraud, and money laundering charges in 2012. (Cruz, Marikana's owner, and several other Schuylkill/CDS executives were indicted separately, pled guilty and agreed to cooperate against Nagle and Fink.)

In sentencing, the District Court had to consider evidence of the amount of loss which the Defendants were responsible for, as part of the calculation to determine the appropriate Sentencing Guidelines range. Here, it concluded Nagle was responsible for a loss of $54 million, and Fink for approximately $135 million, and sentenced them to 84 months and 51 months respectively.

During an initial appeal, the Third Circuit had ruled the lower court erred, and the appropriate measure of loss was the face value of the fraudulently procured contracts, minus the fair market value of the goods and services provided, and expenses incurred, under the contracts. In essence, this allowed for a "credit" of the fair market value of the services actually rendered against the face value of the contracts. The initial sentences were vacated, and the matter was remanded for resentencing.

On remand, the District Court held Nagle and Fink responsible for $850,931 and $1,037,828, respectively, which were the net profits earned from the fraudulent contracts; however Fink was resentenced to 41 months imprisonment.

The Third Circuit affirmed this decision on the second appeal, noting that the profits received by the Defendants should not be part of any "credit" for services or benefits provided.

The Third Circuit also rejected Fink's attempt to seek leniency in sentencing due to his age. The lower court had likewise rejected this argument, noting it was reluctant "to give a sentence that would encourage elderly people to commit crimes and then get the benefit of their age as an excuse."

The Third Circuit agreed: "To the extent Fink argues that his sentence is substantively unreasonable based on his age and the nonviolent nature of the offense, we agree with the government that a 41-month sentence for a 70 year old first time offender who, for at least 15 years, presided over the largest reported DBE fraud in the history of the U.S. Department of Transportation is not unreasonable."

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Should an ESOP be Part of Your Succession Plan?

BY RICHARD E. SPENCE, JASON H. WINTER AND DANIEL M. ZUGELL

If you've spent most (or all) of your professional career building a small- to mid-size business, and you've reached the point where you need to consider the "exit," then you'd be doing yourself a disservice if you failed to consider an Employee Stock Ownership Plan, or "ESOP." There are pros and cons to any plan, but an ESOP (1) has considerable income tax benefits (earnings may even become income tax free); (2) significant succession and estate planning advantages; and (3) can address concerns regarding a retiring owner's legacy. It is very common for contractors to use ESOPs to accomplish goals such as the ones mentioned above – only manufacturers use it more often. Studies have also shown that ESOPs can lead to greater employee productivity and retention, along with enhanced retirement benefits to all eligible employees. For contractors, it may also have a beneficial effect on surety relationships, as long as the lines of communication remain open; it's extremely important that all stakeholders (especially sureties) are involved in the process from the very beginning. In this article, we will address the nature of an ESOP, and the various benefits of using the plan as a succession planning tool.

Many owners want their children and/or key management to eventually operate and own the business, but they cannot afford to purchase the business (or cannot obtain adequate financing). ESOPs can increase the gradual direct ownership by the next generation without the need for personal financing, or the potentially conflicting goals or interference of outside, unrelated interests.

Most contractors wish to avoid potential business disruptions, not to mention the disruption to the lives of valued employees, which can result from an outright corporate sale. Whether it's a strategic acquisition by another business, or a financial acquisition by investors, your business may ultimately be moved out of the community where you've spent years building ties or your employees may be terminated by new owners in an effort to cut costs. If your family's next generation had any interest in continuing to build your business, an outside acquisition could derail their plans. It's worthwhile to consider selling your shares to your company's new ESOP instead.

HOW THE PLAN WORKS

The ESOP succession planning / exit strategy begins with the sale of the owner's corporate stock to an ESOP trust. The ESOP is technically a "defined contribution" plan, which is a tax-favored account under the Internal Revenue Code (IRC) and the Employee Retirement Income Security Act (ERISA). In effect, the ESOP borrows the funds for the purchase price (at full fair market value) from either an outside lender, or directly from the owner/seller who takes back a note; it's usually a combination of both. The company makes quarterly or annual tax-deductible contributions to the ESOP that the ESOP then uses to repay the debt incurred to purchase seller stock. Once the stock is purchased by the plan, it is held in a suspense account, and released and allocated to employee-participants based upon a non-discriminatory formula (usually based upon employee pay) over a period of years. This creates a significant long-term employee benefit plan that helps recruit, reward, and retain valuable employees.

If an employee leaves the company, the IRS mandates that he/she be granted a "put option" that is exercisable against the company. This means that the employee can sell accumulated vested shares back to the company, or the plan, for the fair market value at the time of retirement or other termination event. The value of the shares is determined on at least an annual basis. As employees leave the company, the company purchases shares on the participants' put options, and retires the shares to treasury or re-contributes the shares to the ESOP (taking another fair market value deduction). Retiring the shares reduces the overall outstanding shares and increases the percentage of ownership that is held outside the ESOP by the owner's children and/or key management. Practically speaking, it is possible that when the last share is repurchased and retired, the shares held outside the ESOP represents 100 percent of the value of the company (i.e., the next generation / key management holds all outstanding shares).

It's important to remember that employees who accumulate stock in the plan DO NOT run the company or own the shares on an individual basis. The employees are "beneficial owners" of the shares through the trust, which is the legal owner of the shares. Aside from a few exceptions, the plan participants do not vote on the stock allocated to their accounts. The ESOP has a trustee who can be "directed" by management. A "directed" trustee may only vote the shares as directed by the board, leaving the employees with no voting rights or access to sensitive corporate information. Corporate governance and control (always an important consideration of business owners) can be maintained or designated by sellers, even in a 100 percent ESOP-owned company – at least until the debt is completely repaid (and all of the stock has been released from the suspense account). In short, day-to-day control of the company doesn't change, and control can remain with the selling owners until they receive the entire selling price.

FINANCIAL / BUSINESS / TAX EFFECTS OF AN ESOP

The contributions made by the company to the plan to repay the debt incurred to purchase shares are tax-deductible payments of profit-sharing contribution expense, dollar for dollar. It is important to note that there are balance sheet items that can affect the net-worth or working capital ratios that are important to banks and bonding companies, so it's essential that companies communicate with these partners at the outset. You may be surprised to learn that in spite of the balance sheet effects of the plan, lenders and sureties will appreciate an orderly and gradual transfer of ownership that minimizes the disruption to company operations.

One of the most compelling benefits arising out of the establishment of an ESOP is the deferral (or possible elimination) of capital gains tax on the sale of the owner's "C" corporation stock, regardless of the owner's basis. Capital gains tax rates for individuals can normally be as high as 15 to 20 percent, depending upon the level of income; in addition, the 3.8 percent healthcare tax (called the "net investment income tax") can result in up to 23.8 percent in federal capital gains tax (which doesn't include possible state capital gain taxes). However, under an IRC § 1042 exchange, as long as the proceeds from the sale of the C-corporation's stock is then used by the business owner to purchase "qualified replacement property" (generally securities issued by a domestic operating corporation, with certain limitations), then capital gain taxes can be deferred. If the seller of the company's stock never sells the replacement property and holds it until death, the deceased security holder's heirs will inherit the replacement property with a "stepped-up" basis, and the capital gain will have been eliminated.

If the company is an "S" corporation (meaning you've been receiving a Schedule K-1 every year after the company's tax returns have been prepared), then when you sell your stock to the ESOP, the annual Schedule K-1 will be issued to the ESOP instead of to you. The plan, as a tax-favored arrangement, is considered a tax-exempt trust (similar to a 401(k) plan), and is not subject to federal or state income tax. In essence, the company becomes a "tax free" entity. This is obviously a most beneficial situation, making the arrangement a very competitive succession planning option. No taxes mean MORE CASH available for operations, and usually more than enough cash to cover repayments on the original purchase loan. With proper planning, sellers and companies may be able to enjoy the distinct tax advantages afforded to both "C" and "S" Corporations.

Finally, ESOPs have been studied in depth for decades, ever since they were first created in 1956. These studies have proven that ESOPs can dramatically increase company performance in many areas. They foster an "ownership culture" in the company, which can make employees feel and act more like owners, and less like employees.

To summarize, here are some of the advantages of establishing an ESOP as an essential part of a succession plan / exit strategy:

SELLER ADVANTAGES

- The selling shareholder may indefinitely defer or eliminate all capital gains on the proceeds of sale under IRC § 1042;
- The seller can enjoy an immediate buyer of the seller's stock at fair market value;
- The seller can retain personal salary, perks, benefits and control without the interference of outside interests until the seller is ready to hand over the reins; and
- The seller retains personal and corporate legacy in the locality in which the company resides.

CORPORATE ADVANTAGES

- The company receives a dollar-for-dollar income tax deduction on the entire stock sale price, and enjoys an income tax deduction for the interest paid on external loans;
- An "ESOP company," as a tax-favored entity, can be 100 percent federal and state income tax exempt; and
- ESOP companies outperform their peers with increased productivity and higher return-on-investment.

EMPLOYEE AND COMMUNITY ADVANTAGES

- The employees of an ESOP company enjoy enhanced retirement benefits of company stock with no out-of-pocket costs;
- An ESOP's orderly internal transfer of the company creates a more stable and reliable community employer, without the need to rely on the intentions of an outside buyer/investor; and
- The company remains an important contributor to the community's social and economic fabric.

Given the extraordinary benefits involved in the use of ESOPs as a succession planning tool, and its common use within the industry, it would certainly be worthwhile to consider making an ESOP part of your exit strategy. BG

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U.S. Drilling Productivity and a View from Appalachia

BY CHARLES MAZUR

On September 12th, the U.S. Energy Information Administration (EIA) released its monthly Drilling Productivity Report (DPR). In its report, the EIA forecasts oil and gas production from the seven major shale plays in the U.S. The EIA also added new data for Drilled but Uncompleted well inventory (DUCs). This estimate of DUCs inventory illustrates the EIA's estimate of the number of wells that have not been completed and turned in line, making them not yet available to produce oil and gas for sale. We believe that production will remain healthy in the Marcellus and Utica, even though this scenario is not solely dependent on rig count growth.

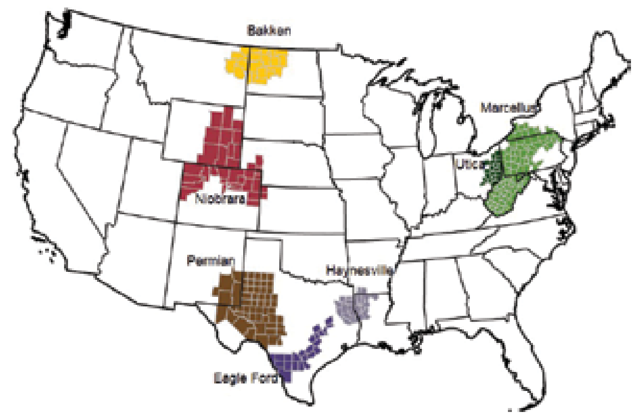
In fact, the aggregate Marcellus and Utica natural gas production forecast for October 2016 will account for more than 47 percent of the total natural gas production across the EIA's seven largest plays. Five years ago, that figure was under 20 percent for the combined Marcellus and Utica. In terms of actual production, that's nearly a four-fold increase in daily natural gas volumes while rig counts have fallen approximately 75 percent over the same timeframe.

RIG COUNTS AND HORSEPOWER

Rig count activity and direction serve as a good indicator of future oil and natural gas production. Rotary rig counts are reported on a monthly basis but averaged over four-to-five-week reporting periods, not calendar months. In the past rig counts were a key component when forecasting future production. Although they are still important, there are several additional factors that are driving production, particularly in unconventional shale plays.

In July, Jeff Miller, the president of Halliburton, stated that he believed it would only take a maximum of 900 rigs to consume all of the horsepower available in the market, down from the historical rig count maximum of 2,000, of which about 1,300 were used across the seven major shale plays. At the start of the last downturn, there was more than 20 million horsepower projected for land based rigs. Mr. Miller estimates that four million of the 20 million horsepower has been permanently removed from the market, or a reduction of approximately 20 percent.

In addition, the intensity of frac jobs continues to rise in unconventional plays. Efficiency is measured by a number of factors including footage drilled, drilling days, wells drilled, success rates, production, costs per foot, and many other operational and economic statistics. As efficiency increases, there are fewer rigs needed to drill the same number of wells. The president of Halliburton also estimated that current day rigs have gotten almost 30 percent faster, meaning more wells per rig per year. Reconciling these moving parts, means fewer rigs and crews are needed to maintain or increase oil and gas production.

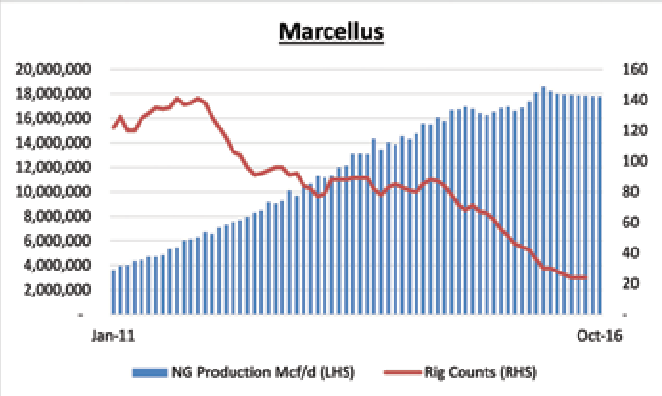


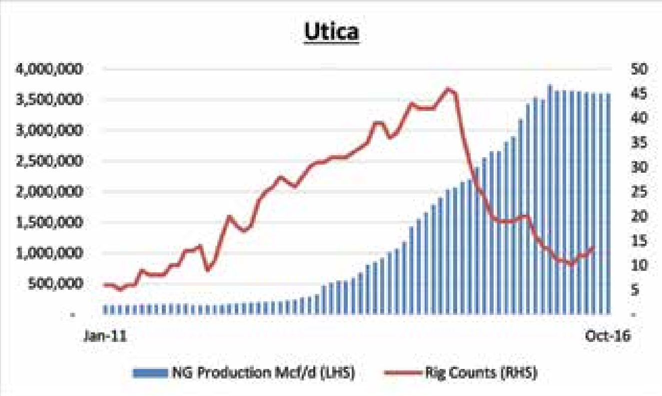
DRILLING EFFICIENCY AND ITS IMPACT ON NATURAL GAS PRODUCTION IN THE MARCELLUS AND UTICA

The combined Marcellus and Utica account for more than 47 percent of the daily natural gas production among the top seven plays in the U.S. In the Marcellus alone, production peaked in February 2016 while rigs peaked in October 2011. Since October 2011, rigs are down 83 percent while production is forecast to be up 226 percent this year compared to the production at rig peak.

Pivoting to the Utica, rig counts peaked in December 2014 while the highs in production were reached in February 2016. Rig counts in the Utica are down 70 percent from their peak, while production is forecast to be up 77 percent in October 2016 over the same timeframe.

More efficient use of rigs is one of many variables that is allowing upstream producers to get more natural gas production with fewer rigs. Additional factors include longer lateral lengths, more stages of fracturing, more fracs per stage, and increased proppant (frac sand) per stage. For instance, about five years ago, lateral lengths were about 2,000 feet. Currently, lateral lengths in the Marcellus and Utica range from 6,000 to 8,000 feet, with instances of laterals exceeding 10,000 feet. In many cases, stage lengths have been cut from 300 feet to 150 feet or less, with more clusters of fracs inside those shorter stages. This leads to more proppant being used to ensure better distribution and more direct contact of rock with the wellbore. This has a multiplicative effect on the gas reservoir being accessed and leads to growing production with permanently lower rig counts.





OUR VIEW OF APPALACHIA

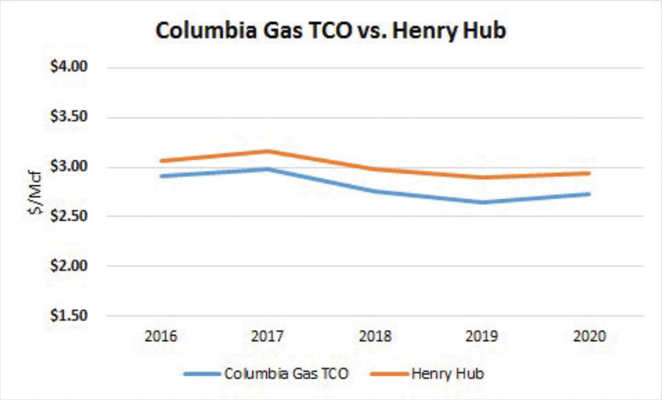
There are dozens of different natural gas pricing zones across the U.S. The following four graphs are a selection of price curves for areas that are commonly referred to in investor reports from companies with operations in the Marcellus/Utica. To calculate the forward curve for the four zones, we averaged basis differential settlement prices from those four products in the given year and added or subtracted that from the Henry Hub benchmark natural gas price in Erath, Louisiana.

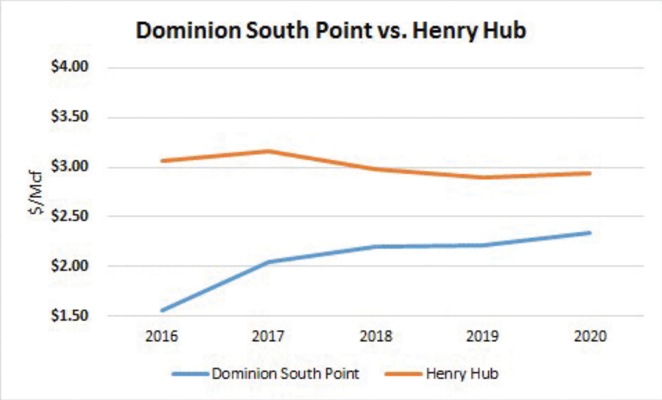
There are many variables that impact pricing in different locations, including seasonal factors where physical pricing can occasionally trade at a premium to Henry Hub. However, infrastructure bottlenecks (pipeline and processing capacity) are a major reason why natural gas pricing in the region has traded at a discount in prior years.

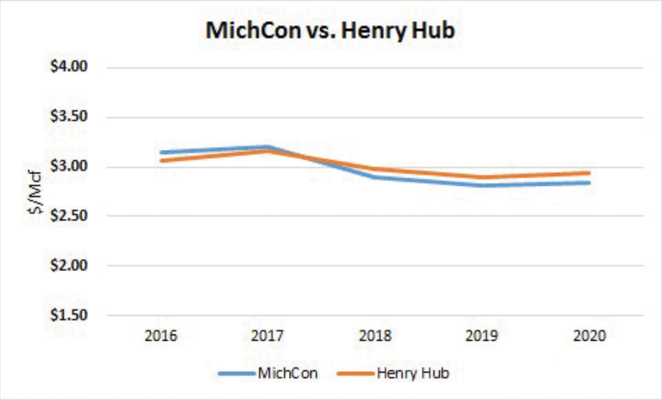
In our latest analysis, we have more than 30 million Dekatherms of pipeline capacity scheduled to come online in the next five years across Ohio, Pennsylvania and West Virginia. That's over 3,500 miles of pipe at a cost of nearly $30 billion. One Dekatherm (1 Dth) is the heating value equivalent to one million British Thermal Units (1 MMBtu) or volume equivalent of one thousand cubic feet of natural gas (1 Mcf).

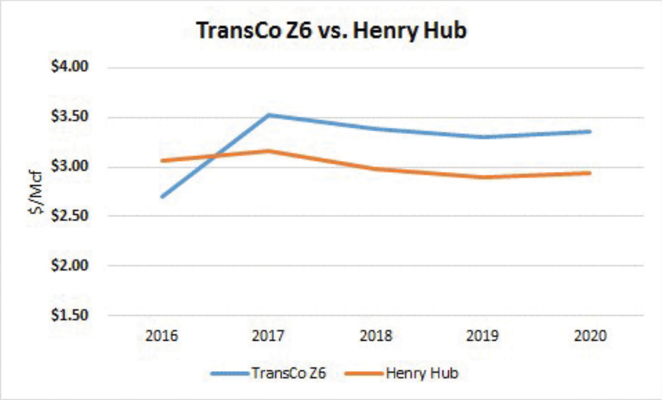
This means that as production continues to grow in the Marcellus/Utica Tri-state region, gas producers and midstream companies have options to move the gas to various industrial, commercial and residential customers. We see this having a positive impact on the price discounts/basis differentials in the region over the next three-to-five years and expect locational pricing to converge with Henry Hub pricing, in general. BG

Charles Mazur is senior managing consultant for Berkeley Research Group in Pittsburgh. He can be reached at 412-235-4083 or cmazur@thinkbrg.com.









MBE / WBE COMPANY SPOTLIGHT

REED
BUILDING SUPPLY
MCKEES ROCKS, PA

There's a photo of Aaron Reed at age five seated in the cab of a backhoe that is hanging in his father's office. When Reed says that he's been in the construction industry for his whole life, it turns out he has the pictures to prove it.

Aaron Reed founded Reed Building Supply (RBS) in 2014, while still an underclassman at Duquesne University at the encouragement of his father, John "JR" Reed. JR is well-known in the circle of Pittsburgh general contractors and took Aaron on jobsite sales calls from the time he was a youngster (which were the circumstances under which Aaron found himself in the cab of a backhoe). Reed played football at Duquesne, earning all-star honors until injuries forced an end to his playing days. As he began thinking about his future career plans, Aaron says his father expressed the opinion that he should start his business while finishing his studies.

"My dad has been in it 35 years and I grew up working around him. I had been in it for a while. I knew the products," explains Reed. "Knowing the opportunities coming up as a minority and having him around for his expertise, I felt that if I could learn the business there aren't many MBE companies around here. That opportunity was what made me start the company."

Aaron Reed

Reed says that the commercial construction market is its bread and butter. RBS sells and stocks lumber, drywall, metal studs, insulation, ceiling tile, and other interiors products, as well as supplying concrete wire and mesh, vapor barriers, and expansion joints to the concrete construction segment. In 2016, RBS expanded the operation physically and added equipment needed to form and bend metal to fabricate composite panels. During the year Reed Building Supply fabricated and supplied the exterior wall panels for the Lofts on Fifth and the Skyvue Apartments projects in Oakland.

"That could be pretty big for us," says Reed.

RBS has three employees in the office to handle estimating, project management and administration. Two employees are involved in product and material delivery. Two machine operators work in the metal fabrication shop. Reed spends the bulk of his time marketing RBS and selling to his repeat customers. A big part of that effort involves old fashioned face-to-face contact. Reed says it's been very effective to regularly be in contact with the project managers and estimators he works with, finding more often than not that they have some new project for him to price.

"I'll also go out to the jobsite and visit the superintendents. Sometimes I make an appointment or I may just stop up and make a cold call. They like that, seeing people drive up to find out what they need," Reed notes. "I also go to networking events, trying to meet new people all the time. That's how I do business development. When you first call on someone I understand how you can be nervous but once you do it regularly I think people respect that you'll come see them face-to-face."

Reed admits that working email is quicker and easier but he tries to make time to take customers to lunch or a sporting event. He arranges his day so that after planning for the day's deliveries, he makes a visit to a jobsite by 9:30 and has a sales call that involves lunch. Reed believes it is important that he make at least two personal calls daily.

"It's more personal that way and I like to do that personal selling," he says. "My dad's pretty good at that. He pretty much taught me to put myself out there, to develop personal relationships.

"My goal is to be one of the biggest suppliers around Pittsburgh. I plan to be the biggest minority-owned supplier but I don't want to just hang my hat on that. I want people to do business with me because I have good pricing and good service."

Reed looks back at his time as a Division 1 student athlete and realizes that the heavy schedule created habits that have helped him in the early years of business. He sees that time as a blessing that his classmates who weren't athletes didn't receive.

"You get up at 6:00 every morning to lift weights. You go to class until noon and then you're in meetings until 2:00. Then there's practice until 6:00 and after that you're doing homework until 10 at night," Reed recounts. "You get no time off. It teaches you discipline and hard work but also how to manage your time. It carries over easily into the business world."

Reed also credits his experience playing sports throughout his life with a competitive drive that is a strong motivating force.

"I hate losing the order as much as I like getting an order," Reed laughs. "I try not to let it show, of course. It's my job to work that much harder next time. I see the opportunity. I'm thankful for the opportunity. I just try to work as hard as I can every day to seize it, to make sure it doesn't fail." BG

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A New Fire Safety Ordinance Will Impact Owners

Pittsburgh's City Council enacted an expanded ordinance for fire safety in non-residential buildings on July 26, 2016. The ordinance requires inspections of ductwork to ensure that there are fire and smoke dampers installed properly and that the dampers are working. Under the regulations, building owners will have three years to comply. Compliance will mean completing inspections by contractors certified to do the work and remedying any non-compliant systems.

The ordinance was sponsored by Theresa Kail-Smith, Dan Gilman and Darlene Harris. Gilman's chief of staff, Erika Strassburger, says that the growing vibrancy in neighborhoods like Downtown and East Liberty raised concerns that the older buildings that were now being occupied more heavily weren't as safe as possible. She notes that several restaurant kitchen fires, for example, resulted in damage to adjacent spaces and buildings.

"The impetus for the bill was learning that the majority of the older buildings didn't have fire dampers or fire equipment in place," Strassburger explains. Once we learned that, Councilman Gilman was concerned that – especially with more restaurants occupying multi-story buildings with apartments – the residents and occupants would not be safe."

"As a former fireman, I understand the logic of the ordinance but I'm not happy about the financial impact on our larger buildings," Clarke says. "Take a building like 600 Grant Street and this will be very costly. The logistics of inspecting and repairing 61 floors will be very disruptive."

Such an ordinance may seem an innocuous – and logical – step to ensure that the HVAC system of a building doesn't contribute to spreading fire or smoke; however, in a city with the building stock like Pittsburgh's, there could be some unintended problems.

First and foremost is the age of the existing stock of buildings. Even with the boom in building during the mid-2000s and the recent resurgence of projects in the city, construction in Pittsburgh is predominantly not new construction. Many buildings in the city have been occupied for decades without renovation to the heating and cooling distribution systems. On the upside, more of Pittsburgh's buildings will not be heated and cooled by ducted systems, eliminating them from the new regulations. But the down side is that many buildings are likely to be found wanting.

"It all depends on the design and the building itself," explains John Raught, president of Northstar Environmental Ltd., when asked what to expect from inspections. "Anywhere the ductwork penetrates a fire wall, you're required to have fire dampers; if the building has a smoke containment system then it has to have smoke dampers."

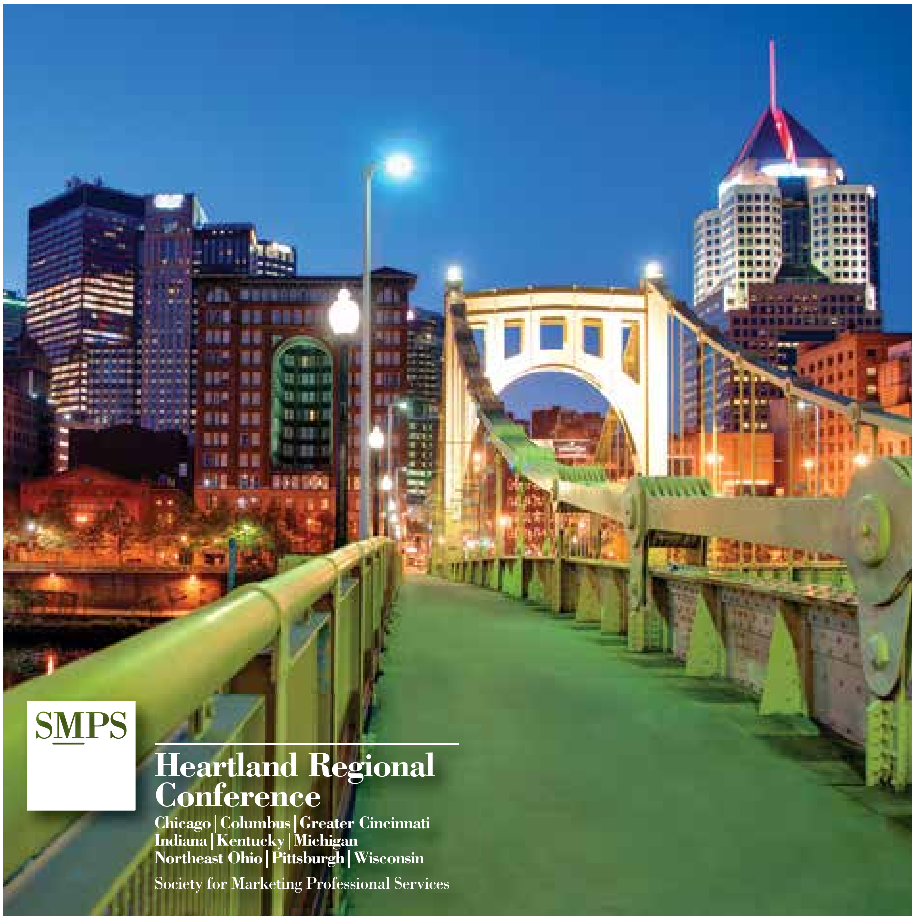
Smoke dampers are designed to close the ductwork, preventing smoke from traveling through the air distribution system throughout the building. The dampers are tied to the smoke detection system, which closes dampers electrically or pneumatically when the smoke alarm is triggered. Fire dampers are intended to prevent fire from jumping from one room to another through the duct penetrations in the walls. Fire dampers are activated when a fusible link melts (at 165 degrees), closing the damper mechanically.

As written, Pittsburgh's code enhancement requires an International Certifications Board (ICB)-certified HVAC Fire Life Safety technician do the inspections to certify that dampers are operating properly or to cite those that do not. A licensed mechanical contractor will then be required to remedy the non-compliant dampers. Currently, any testing and balancing contractor or consultant will have technicians that are ICB-certified to Level Two of the certification for HVAC Fire Life Safety. Technicians certified to Level One will be authorized to do the inspections and many mechanical contractors are in the process of getting some portion of their crews ICB-certified. For contractors, the business opportunity is in the repairs rather than the inspections. Until inspections are regularly done, however, the size of the business opportunity is unknown.

"This is going to require building owners to insure their mechanical systems are maintained in a way that operates safely in a fire," James Strother summarizes. Strother is executive director of the Sheet Metal and Air-Conditioning Contractors National Association (SMACNA) of Western PA. "When the City of Houston enacted a similar measure the failure rate was about 60 percent. That indicates a lot of problems with construction. Pittsburgh certainly has older buildings than Houston."

Raught, who is also president of SMACNA, was reluctant to predict the percentage of noncompliant systems or the cost of compliance with the ordinance but didn't shy away from making one prediction. "Can I estimate the number of buildings? It will be as many as Houston," he says.

One reason that professionals from the contracting community are concerned about the volume of problems is that tenant improvement construction rarely includes a program of maintenance


SMPS
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Indiana | Kentucky | Michigan
Northeast Ohio | Pittsburgh | Wisconsin
Society for Marketing Professional Services

or inspection of existing dampers. Most tenant work is from the ceilings down and the dampers are an out-of-sight/out-of-mind thing. Moreover, unlike components of the HVAC system that affect occupant comfort, there is little that will indicate a failed damper until a fire occurs. Another related problem is that there are often enough other renovations in existing buildings that will make accessing the ductwork difficult. It's common for electrical conduit or IT wiring to be placed below the ductwork or for piping added after first construction to be obstructing access. That will add time and money to whatever repairs are needed.

The good news for property owners is that there is time. As enacted, the ordinance requires owners to complete inspections (and any remedies) on high-rise buildings – those that are 75 feet or higher – within four years of the August 3, 2016 effective date. Inspections for mid-rise buildings – between 45 and 75 feet – must be done within six years. The same holds true for restaurants and hospitals, although the latter seems a redundant inclusion.

"Hospitals have been doing this for years," remarks Strother. "This is going to affect commercial buildings and some of the university buildings more."

According to Lisa Epps, director of code compliance and education for Pittsburgh's Bureau of Fire, Chief Daryl Jones has not yet worked out how the enforcement of the self-inspections will be done – the Bureau of Fire has a year to develop a plan – but the mayor's office expects that it will be handled much like other

Image courtesy Ruskin®.

self-inspections. Property owners are required to do elevator inspections periodically, which are enforced during routine inspections by the city. This ordinance will come under Title Eight for enforcement, meaning the Bureau of Fire will probably include the fire and smoke damper inspections among the others for which property owners are required to maintain records.

The fire and smoke damper legislation comes on the heels of another Pittsburgh ordinance, which requires owners of buildings of at least 50,000 square feet to share energy and water usage data for those buildings. The data is meant to help with benchmarking usage, with an eye on enabling the city to see what buildings are reducing energy and water consumption. Owners will use a portfolio manager tool developed by EnergyStar to report the usage information. The ordinance mandates sharing data for publicly-owned buildings in June 2017 and for privately-owned buildings by June 2018.

Both new ordinances seem to have caught property owners somewhat off guard and most property managers have yet to work through what will be required of them.

"It was on my radar when I was chair of BOMA's Codes/Legislative Committee but I didn't know where it went since then," admits Rick McClure, vice president and director of property management for Pennsylvania Commercial Real Estate. McClure says his main concern is that the ordinance could create conditions that are impractical to address.

Other property managers have varied but similar concerns about new regulations. Highwoods' Gary Bonn reports that the city has been working with them to address fire and smoke dampers as they renovate tenant spaces in PPG Place. Oxford Development's vice president of property management, Joe Piccini, says that Oxford is at the earliest stages of looking at the ordinance. The current BOMA chair for Codes/Legislative Committee, Avison Young's Kevin Clarke, notes that practical and meaningful enforcement of the ordinance will be difficult and would like to see City Council and groups like BOMA work together in crafting such ordinances.

"As a former fireman, I understand the logic of the ordinance but I'm not happy about the financial impact on our larger buildings," Clarke says. "Take a building like 600 Grant Street and this will be very costly. The logistics of inspecting and repairing 61 floors will be very disruptive."

All of the property managers were in agreement that the property owners were almost completely unaware of the ordinance.

For the fire and smoke damper additions to the code, the process starts with inspections that must be done during the next few years. For the inspecting contractors, there is also a scramble to have an adequate number of staff properly certified and available. That's something that SMACNA is working to support now. The contractors association wants to see that its members understand the needs of the market but there is also concern that the market understands what is needed.

"We're really trying to get our arms around it as an association to help our members decide if they are going to participate and get prepared," notes Strother. "We have contractors getting ready to be certified. Owners have three years to comply. Our hope is that they don't wait until two years and nine months to look for a contractor." BG

INDUSTRY & COMMUNITY NEWS

Drew Parish from the Mario Lemieux Foundation (left) accepts a check and toys from the MBA's Young Constructors. Representing the YC are (from left) Rycon's Jason Sigal, Wyatt's Adam Ramsey, the MBA's Eric Starkowicz and Angelo Barbaro.

Turner Construction's Drew Kerr (left), Jess Jadue and Chris DiLorenzo with Wyatt's Adam Ramsey.

Dick Building Co. was represented by (from left) Brittany Coscia, Brandon Rupert, Jeff Stoner, Jessie Johnson and Alex Dick.

Landau's Bethany Sidun (left), Chet Beres and Selma Voljevica.

Burchick's Dave Meuschke and Kate Schuster, president of V. O. George Group.

Rycon's Allie Ansoni (left), with Reed Building Supply's Aaron Reed and Joe Gizoni from A. C. Dellovade.

Ryan Reed from Clark Dietrich Building Systems and Brooke Waterkotte from Easley & Rivers.

Zach Huth from Huth Technologies (left) with Liberty Mutual Surety's Chris Pavone and Matt Schmitt.

Nicole Shook from CliftonLarsonAllen and Seubert's Frank Rozyczka.

(From left) CEC's Greg Quatchak, Gregg Broujos from Colliers International, John Mascaro and Bridget Johnson from Mascaro Construction at the Allegheny Conference's Annual Meeting.

Gunning's Dawn Kaelin-Gunning with BDO's Alex Paul. Photo by Allegheny Conference on Community Development. http://www.alleghenyconference.org

Mascaro held its ninth annual "Get together for a cause" to benefit Cystic Fibrosis, with John Mascaro, Jr., and Nate Martin as the celebrity bartenders and over $8,000 was raised. (Pictured) Maryann and Nate Martin's daughter, Sofia, was diagnosed with Cystic Fibrosis before her birth in 2007. Since that time, Mascaro employees have overwhelmingly supported CF and the Martins in their quest to find a cure.

(From left) Burchick's Joe Wardman, Phoenix Roofing's Brian Alston and Bruce Bartholomew, and John Paul Busse.

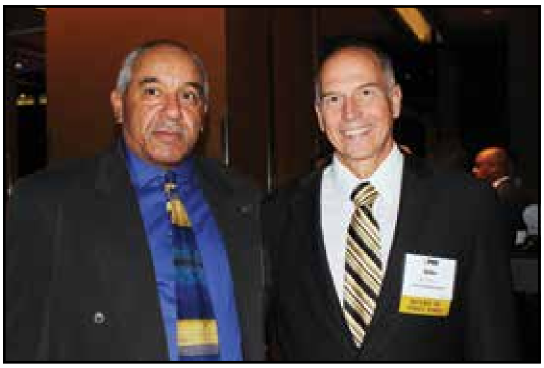
(From left) Elizabeth and Jay Black from Seubert with Babst Calland's Marc Felezzola and wife Kathy at the Clear Thoughts Foundation's Roll For a Reason fundraising gala.

Mosites Construction's John Wattick and Tony Malanos (right) at the annual PA Builders Exchange party.

Representing A. Martini & Co. at the Builders Exchange event were (from left) Angelo Martini Jr., Mike Yohe, Zak Roberts and Brian Swain.

Meaghan Moore from Hanna Langholz Wilson Ellis (left) with Cohen Seglias' Lori Azzara and Lisa Wampler at CREW Pittsburgh's annual wine tasting event.

Paul Martin from McCrossin Foundations and McCrossin Inc. CEO Bob Leahy (right).



Alliance Drywall's Gene Brown and Landau's Mike Nehnevajsa (right).

Duquesne University's Rod Dobish (left) and BOMA Executive Director Mike Embrescia.

Michelle Allerton from Integra Realty Resources with Houston Harbaugh's Tammy Ribar.

Continued from page 40.

"There's a condition in Sewickley called 'Sewickley sand' which, being originally from Chicago, I didn't know how bad it could be," says Martin. "It's pretty flow-able. It's a difficult material to deal with so that was an education for all of us."

The soils were difficult enough that the building was built upon auger-cast piles, an unusual solution for a building that small. Extraordinary and unplanned measures had to be taken to account for the structural integrity of the adjoining building as well.

"We ended up with piling, shoring and retaining walls. That slowed the process up while we figured out exactly what to do," explains Martin. "It had to be an alternate foundation system. We were able to make that ground back up because we had everyone pulling on the same end of the rope."

Dick Building performed much of the early work in summer of 2015, which allowed it to push the schedule towards Hanna's aggressive July 2016 move-in. There were challenges in working with PPG Coatings to formulate the Hanna green color that would be applied at the factory making the windows and storefront system. You could make the argument that a company in Howard Hanna's line of work builds a building so it has a place to hang its sign and that created an opportunity for a creative solution on the façade.

"The signage company came up with the solution for the wall panel," says Casey with a laugh. Because the exterior wall panel was an accent of less than 200 feet of material, it was difficult to find a manufacturer that would spend time on it. The signage vendor instead came up with a solution for surrounding the Howard Hanna signs on the exterior with segmented panels and trim.

"[Sign Stat's] was pretty much what we wanted. It has a really sophisticated coating," Casey acknowledges. "We detailed it but his idea is what you see."

Casey's design for the interior brings the Colonial period a couple centuries forward. The layout is modern, with an open floor plan and lots of daylight. There is plenty of millwork to give a nod to the traditional design but the office is clearly meant to function in a way that supports the methods and technology of today's real estate industry. Casey believes the design and the decisions about the building's construction reflected the Hanna's attitude about their Sewickley office.

"It was important to build something that fit on that corner and looked like it belonged there. Part of that is we tried to build a well-constructed building," he notes. "Throwing up a wood-frame building and slapping on a brick veneer doesn't promote longevity. We didn't build a monument but it is something that will serve Howard Hanna well for as long as they are in Sewickley."

For its part, Howard Hanna Real Estate echoes the sentiment that the building matches their commitment to the market.

"I'm happy we created a landmark. Twenty years from now we can look back and say we did what was right for that corner," Corbett says with pride. "That corner – to us – is the gateway to Sewickley and we were committed to staying in Sewickley for the long haul." BG

AWARDS & CONTRACTS

AIM Construction was awarded the construction management contract for the $6 million renovation of the Hill Building by UPMC. Radelet McCarthy Polletta Architects is the architect.

Allegheny Health Network selected **Turner Construction** as construction manager for the $3.5 million acute rehabilitation/orthopedics unit at Allegheny Valley Hospital in Natrona Heights. The architect is VEBH Architects.

Turner Construction was selected for the $30 million administrative buildings package for the Shell Franklin project in Monaca, Potter Township. The work includes construction of five buildings, approximately 250,000 total square feet. Work is not scheduled to start until 2018.

Allegheny Health Network selected **Mascaro** as construction manager for its $3 million Esophageal Lung Institute at West Penn Hospital.

Mascaro is renovating four concession stands at PNC Park, which will be finished before the home opener in April.

Mascaro received a limited notice to proceed from NRG for the design-build construction of the $61 million NRG Uptown District Energy Center. CJL is the lead design firm.

Mascaro's Client Services Group received a contract from JMC Holdings to convert office space into a new fitness center at The Pennsylvanian in Downtown Pittsburgh.

The University of Pittsburgh awarded **Mascaro** a contract for the program and infrastructure study of Crawford Hall.

Landau Building Company was selected for the Allegheny Health Network Outpatient Services Clinic at the Waterworks Mall. GBBN Architects is the architect for the 15,000 square foot build-out of the former Old Navy space.

Landau Building Company was awarded the UPMC Magee Women's Hospital Pharmacy Renovation project. The existing lab space will be converted into the main hospital pharmacy. Additional work will be performed to the sixth floor mechanical penthouse to remove and replace three existing exhaust fans. The architect is GBBN.

Landau Building Company began renovations to UPMC Passavant Orthopedic Research Lab, located in McCandless Township, PA. The 1,600 square foot project includes converting half of an existing medical records room into a new Orthopedic Research Lab. DRS Architects designed the project.

Landau Building Company was awarded the UPMC Hillman Cancer Center Lemieux and Magee Expansions. The Lemieux fourth floor is a 950 square foot partial renovation, replacing the existing conference room and patient lounge with additional treatment bays. The 4,000 square foot first floor renovations will create an expansion of Magee Women's Health Center, including exam/diagnostic treatment rooms and support spaces. Radelet McCarthy Polletta Architects is the architect. The project is expected to be completed by February 2017.

Landau Building Company will complete phase two of the Point Park University Lawrence Dining Renovations, which is remodeling the second and third floors for new kitchen equipment. Landau finished phase one during the summer and phase two will be completed before students return from Christmas vacation in January 2017.

Mosites Construction was the successful contractor on Carnegie Mellon's Sorrels Library, a renovation of 16,000 square feet in Wean Hall. The project architect is GBBN Architecture.

Mosites Construction was awarded the general construction portion of the new Involta Data Center being developed at the Northpointe Business Park in North Buffalo Township, Armstrong County. Solum Lang Architects designed the 39,800 square foot building.

First National Bank awarded a contract to **Dick Building Company LLC** for construction of its new 4,800 square foot McKnight Road branch in Ross Township. The architect is DPH Architects.

The University of Pittsburgh selected **Massaro Corporation** to renovate the 14th floor of the Cathedral of Learning. Strada Architecture LLC is the architect for the $3 million project.

UPMC selected **Massaro Corp.** as construction manager for the off-campus relocations of users in the Hamot Professional Building, the first phase of the new $111 million patient tower at UPMC Hamot in Erie, PA. The architect is Bostwick Design Partnership.

Allegheny Construction Group was awarded a contract by The Elmhurst Group for the renovations to its Doubletree by Hilton hotel in Bigelow Square. Desmone Architects designed the project, which involves 5,300 square feet of meeting rooms and retail space.

Butler Area Sewer Authority awarded a $2.3 million contract to **McCrossin Inc.** for its sewage treatment plant headworks improvements. The engineer for the project is Chester Engineers.

McCrossin Inc. was the successful general construction bidder on the Petersburg Borough Sewer Authority wastewater treatment plant facilities improvements in Petersburg, Huntingdon County. Gwin Dobson & Foreman Inc. designed the $2 million project.

University of Pittsburgh awarded a contract to **Volpatt Construction** for the renovations to Salk Hall CCGS. IKM Inc. is the architect.

AWARDS & CON

Volpatt Construction was awarded a $600,000 contract for the Cath Lab #2 renovations at St. Clair Memorial Hospital in Mt. Lebanon. The architect is VEBH Architects.

A. Martini & Company was awarded the contract for the tenant fit-out for attorneys Frost Brown Todd LLC. NEXT Architecture designed the 18,000 square foot space.

Rycon's Building Group started a $6.5 million renovation of Shroyer Hall at West Virginia University's Institute for Technology in Beckley. Strada designed the 22,600 square foot laboratory project.

Rycon's Building Group completed phase 3 core and shell work of LRC Realty's The Block at Northway, which included a space for J. Crew and other retailers. Additional core and shell work is now underway for restaurant and food vendors.

Rycon continues work at the $45 million Shoppes at Parma redevelopment in Parma, OH. Anchor store entryway renovations are underway as well as exterior façade work on the strip center. Total completion of this multi-phased project is projected for early-mid 2017.

Rycon's Building Group recently completed a new Dick's Sporting Goods and Five Below for DDR Corp. at Sycamore Plaza in Cincinnati, OH. A new HomeGoods and Marshalls, front façade/storefront improvements, and mall flooring upgrades were added to the scope of work and are currently underway.

Carnegie Mellon University awarded **Rycon's Special Projects Group** a construction management contract to renovate restrooms within Morewood Gardens student housing. This phased project will be completed over three summers starting in 2017.

Rycon recently completed a new $7 million Main Event Entertainment complex in Suwanee, GA, while another new location is currently underway in Knoxville, TN. In addition, Main Event also selected the Special Projects Group to renovate the former Latitude 360 in Robinson Township, PA into a new Main Event facility. This 65,000 square foot project is scheduled for completion late spring.

A $4.4 million renovation to the seventh floor at Western Psychiatric Institute and Clinic is underway by **Rycon's Special Projects Group**. The 15,000 square foot project, designed by Image Associates, is scheduled for completion within six months.

Rycon's Special Projects Group is responsible for renovating various areas of UPMC Passavant Hospital. The scope includes remodeling old office spaces, corridors, and upgrading Café Mocha.

Grady Memorial Hospital recently selected **Rycon** to complete a $1.2 million medical expansion to the Lindbergh Health Center in Atlanta, GA.

Rycon was awarded construction management contracts to renovate four former Sports Authority stores into new Dick's Sporting Goods locations. Totaling nearly $5 million, the projects are located in southern Florida and range in size from 34,000 to 50,000 square feet each.

TRACTS

Forest City Enterprises awarded a contract to **F. J. Busse Company** for renovations to the offices of ERT in Station Square. NEXT Architecture designed the $800,000 project, which involves major renovations to 13,000 square feet and replacement of flooring and painting in 22,000 square feet.

PJ Dick was awarded a contract for construction management of eight concurrent renovations at the University of Pittsburgh Wesley W. Posvar Hall. Architects for the separate renovations are Strada Architecture LLC and Rothschild Doyno Collaborative

PJ Dick was selected to build the Erie Insurance New Office Building in Erie, PA. Albert Kahn Associates is the architect for the $100 million project.

UPMC awarded a contract to **AIM Construction** for the renovations to the Cranberry Place skilled nursing facility in Cranberry Township. The architect for the $1 million project is Radelet McCarthy Polletta Architects.

University of Pittsburgh awarded a $3.4 million contract to **TEDCO Construction** for the Barco Law Library first and second floor renovations. Strada Architecture LLC is the architect.

TEDCO Construction was awarded contracts for renovations to two tenants at One BNY Mellon Center. The $1 million projects are for refreshing the offices of UBS and a renovation for KPMG. The architect for KPMG is The M Group.

FACES & NEW PLACES

Steven M. Massaro has been promoted to president of **Massaro Corporation** and Massaro CM Services. Steve joined Massaro Corporation in 1988 upon graduation from Catholic University and has held various business development and management positions with the company. He was most recently senior vice president of Massaro CM Services.

AIM Construction announced the hiring of **Michael Tarle** as vice president of operations for its Pittsburgh office.

Landau Building Company welcomed **John Kamer** as project manager. Kamer is from the Saxonburg area and has 30 years of experience in the industry. He is a graduate of Penn State with a bachelor of architectural engineering.

Gus Lauro joined **Landau Building Company** as project engineer. Lauro was born and raised in the Latrobe area and attended West Virginia University for both his undergraduate and graduate degrees, recently receiving his master's in business administration and finance.

Amy (Hummel) Amon has accepted an offer to work for **Volpatt Construction**. Amy is a recent graduate of the University of Pittsburgh's Civil Engineering program with a concentration in construction management. She is the only student to win the MBA/CAP Scholarship twice, having received the honor in both 2015 and 2016. Amy will be an integral member of the estimating department and will work with management as a project engineer.

Jo Aubry, graduate of Kennesaw State University, joined **Rycon's** Atlanta office as project coordinator. She brings nearly 20 years relevant experience to the team.

Rycon Fort Lauderdale recently added **Jesus Camaraza** as project manager. He received a degree in Construction Management from Florida International University and has 25 years experience.

James Lee has been hired at **Rycon's** Fort Lauderdale office as an estimator. He has 25 years experience and attended New York Institute of Technology for Architecture as well as New York University for mechanical engineering.

In **Rycon's Building Group, Pat Stone** and **Mike Figgins** both transitioned from senior project managers to project executives.

Cono Passione transitioned from project engineer to project manager in **Rycon's Special Projects Group**.

On Friday, November 11, 2016, **Goettle Inc.** celebrated its 60th anniversary at The Renaissance Hotel in downtown Cincinnati. Goettle operates a Pittsburgh office in McCandless, managed by its regional vice president, Ralph Pagone.

Daniel Stachnick joined **PJ Dick** as a site safety manager.

Terri O'Mahony was hired as an information systems analyst for the Information Technology Group of **PJ Dick Inc.**

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Massaro Corporation

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Rycon Construction, Inc.

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Volpatt Construction Corporation

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Jack W. Ramage

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BY GOVERNOR THOMAS W. WOLF

Shell Chemical building a cracker plant in Southwestern Pennsylvania is a game-changer - both for the region and the commonwealth as a whole. This announcement marks the first major U.S. project of its type outside the Gulf Coast Region, with projections of employment of up to 6,000 during peak construction periods and a commitment of 600 full-time positions in the future.

This is profound as it relates to an estimated economic impact of $6 billion or the thousands of jobs that accompany a project of this magnitude, but it is also when placed in context of what this means for all of Pennsylvania's industry sectors.

This may be the biggest project that has come to Pennsylvania since World War II and we may look back on it as we do the beginning of the steel industry in the 19th century.

The new cracker plant in Beaver County will make plastics from gas extracted in Pennsylvania and help attract industries that use these natural gas byproducts for the goods they produce. This means that the facility will serve as the centerpiece in the region for the creation of new markets for polyethylene with added potential of attracting additional manufacturing investments that will lead to even more business attraction and job creation for generations to come.

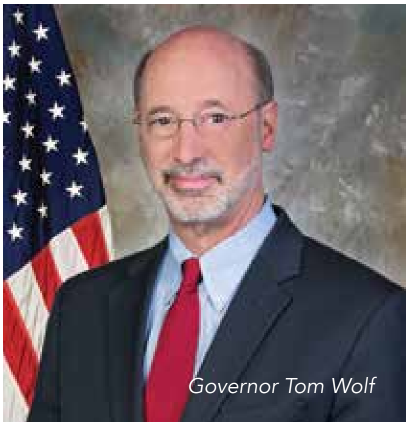
It's important to recognize what this project will do for the revitalization of Pennsylvania's manufacturing industry. Derivatives of ethane can be used in the manufacturing of countless items including windows, siding, insulation, food packaging, diapers, adhesives, coatings, and many more.

The reason Pennsylvania is so well-positioned to host a plant of this magnitude is a result of our Trifecta: our location in proximity to major markets, our abundant raw materials that can be turned into goods to make products for sale, and our highly-skilled workforce, unmatched in the country. These elements are truly a huge differentiator that separates Pennsylvania from other states, especially those in the south.

All of this will translate to countless job creators establishing new facilities or relocating to the Southwestern Pennsylvania region, meaning more high-wage manufacturing jobs for Pennsylvanians. More businesses and more jobs will lead to the long-term stability Pennsylvania residents and communities need and deserve.

While this monumental announcement may appear to be isolated regionally in terms of importance, I assure you it's not. Beaver County, Pennsylvania was chosen by Shell because it boasts what the Gulf Coast does not: a prime location. Shell has stated that Pennsylvania's location was an important factor in the company's final investment decision. Our location was attractive to Shell because more than 70 percent of North American polyethylene customers are within a 700-mile radius of Pittsburgh.

Along with location, another key factor in securing this project was the many years of consistent and well-coordinated statewide collaboration. Over the past four years, the Commonwealth of Pennsylvania worked with Shell to finalize plans to construct this facility. Beginning in 2012 with the last administration, this project was seamlessly transitioned to my administration. Since first taking office, I have worked in close collaboration with my Secretary of Community and Economic Development Dennis Davin and the Governor's Action Team, the Pittsburgh Regional Alliance, local officials in Southwestern Pennsylvania to propel this project across the finish line.

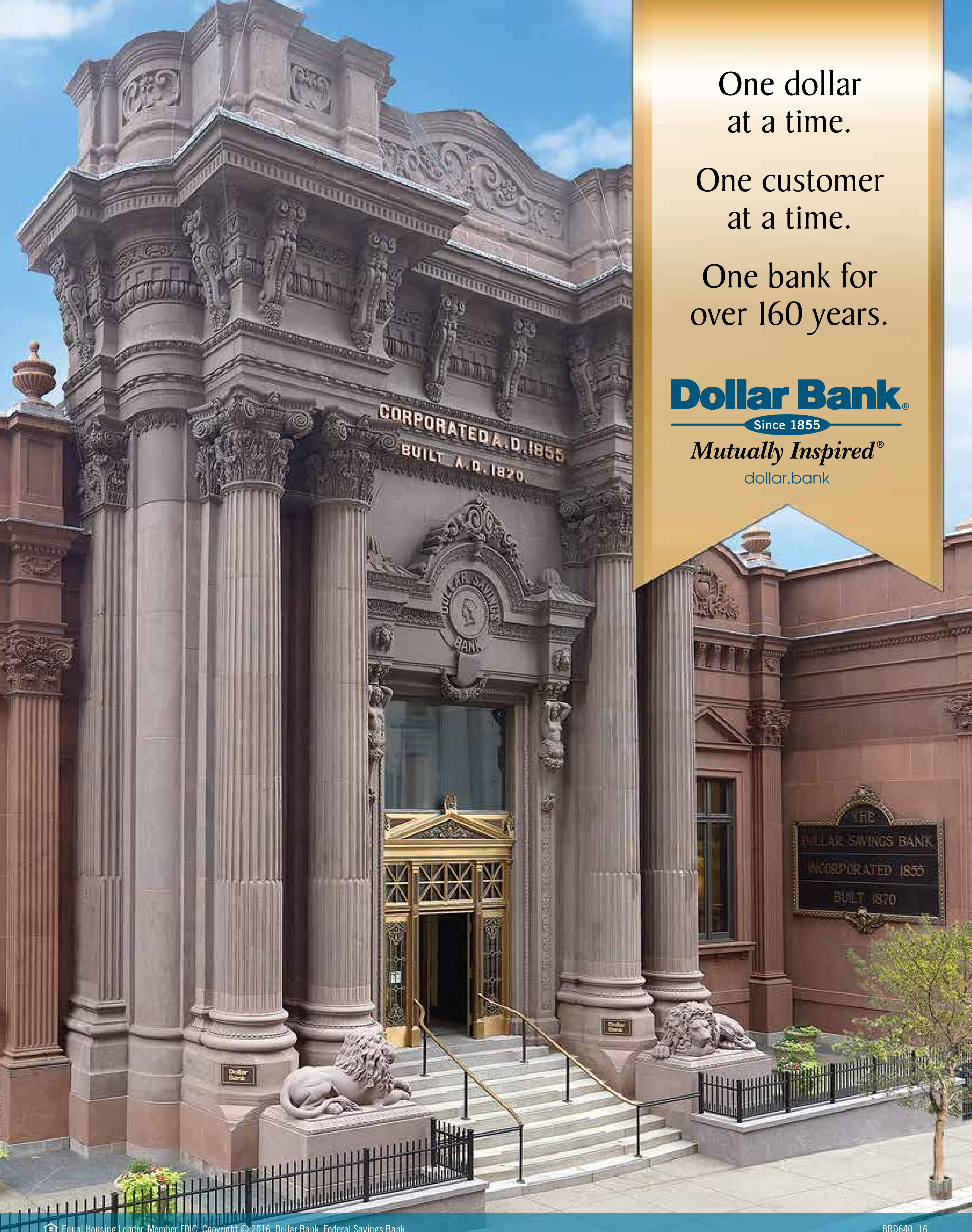

Governor Tom Wolf

Shell's decision to invest in Southwestern Pennsylvania is a testament to the commonwealth's dedication to ensuring that we have a government that works. I commend the work of the legislature, the Beaver County Commissioners, the Beaver County Corporation for Economic Development, and officials from Potter Township, Centre Township, and the local school district, who fought tirelessly to make this project a reality. Our success in securing this project has happened thanks to the leadership and hard work on all levels.

This high-level coordination is a testament to what companies will experience when working with the commonwealth. On every level, we are committed to the same end goals: jobs for middle-class Pennsylvanians and the economic prosperity of our businesses.

This project promises positive economic ripple effects for years to come. With a spotlight on Pennsylvania, the commonwealth will skyrocket to the top of the list of potential locations for additional industries. BG

Tom Wolf was elected 47th governor of Pennsylvania and inaugurated January 20, 2015.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