Market Trends Report Q3 2021 | Skanska USA Building

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An Imperfect Storm

Hurricane Ida, a Category 4 storm that struck Louisiana on August 29, made an already challenging supply chain situation even worse. The Gulf Coast is a hub for petrochemical manufacturing, producing essential ingredients for products such as insulation, paint, roofing, and plastic and PVC materials. Already impacted earlier this year by Winter Storm Uri, Ida dashed hopes of some return to normalcy in supply chain lead times for petrochemical byproducts in 2021.

Even more complex is the logistical crisis. It is reported that at any given time there are between 50-75 container ships anchored and waiting two weeks or more to have between 250,000–400,000 containers offloaded in the Ports of Los Angeles or Long Beach. Most attribute the bottleneck to the massive consumer appetite in the U.S. since the onset of the pandemic and a shift in work and personal lives. Product destinations have exponentially increased, causing a huge shortage of transportation resources. As demand increases and supply issues contract, in this case logistics, prices increase. This month, the median cost of shipping a standard rectangular metal container from China to the West Coast of the United States hit a record \$20,586, almost twice what it cost in July, which was twice what it cost in January, according to the Freightos index.

The Supply Chain section of our Q3 report offers further insights on anticipated impacts from Ida as well as logistics and other factors.

Steve Stouthamer | Executive Vice President, Project Planning

Please note this report contains a snapshot of the market as we know it today. Due to the current volatility in pricing and supply it is necessary to monitor changes and share information amongst teams daily.

Construction and Material Pricing Trends Snapshot







Inde	ex, Commodity or Material	Current Figure	% Change from prior qtr	Past One Year Trend	% Change from prev year
	Construction Industries Index	12,465	+2.9%	7	+8.4%
ב	Building Cost Index	7,214	+4.9%	2	+14.5%
uctio	Material Price Index	4,933	+11.2%	7	+37.6%
Construction	Skilled Labor Index	10,881	+0.6%	2	+1.8%
Ŭ	Inputs to Construction (goods)	278	-0.4%	7	+18.9%
	Architecture Billings Index	56.6%	-0.9%	7	+20.4%
	Fuel (\$/gallon)	\$3.18	+0.5%	7	+45.4%
	Oil (\$/barrel)	\$75.03	+2.1%	7	+86.5%
	Freight (\$/ton)	\$1,883	+5.6%	7	+49.7%
	Portland Cement (\$/cy)	\$150	-0.3%	A	+1.5%
	Insulation - Unfaced (\$/sf)	\$7.25	+1.7%	A	+19.6%
	Stainless Steel (\$/cwt)	\$246.21	+13.1%	7	+31.9%
	Steel- Standard Plate (\$/net ton)	\$1,707	+15.3%	7	+178.9%
	Asphalt PG 58 (\$/ton)	\$453.61	+2%	7	+15.8%
	Plywood (\$/msf)	\$1,254	-5.1%	A	+64.5%
	2 X4 Common (\$/msf)	\$1,065	-15.2%	A	+49.1%
	Gypsum (\$/msf)	\$351	+10.7%	7	+14.8%
	4,000 PSI Concrete (\$/cy)	\$144	0.0%	7	+0.6%

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An Imperfect Storm (continued)

Top Considerations for the Up-Coming Quarter



Evaluate the lead times allowed for constrained products in all project schedules. Make adjustments to purchasing strategies.



Consider alternatives to specified products if lead time challenges are unavoidable



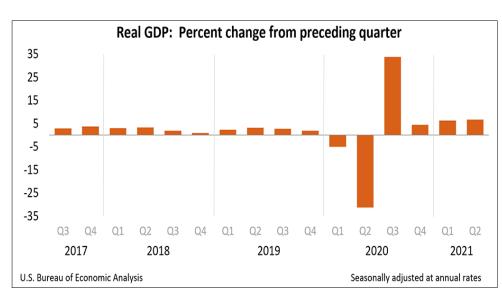
Consult with supply chain resources in the planning of projects. Stay connected!

↓ Click to jump to each section

Overview and Economy (page 1 of 2)

U.S. Economic Indicators

Real gross domestic product (GDP) increased at an annual rate of 6.7 percent in the second quarter of 2021, according to the "third" estimate released by the Bureau of Economic Analysis. In the first quarter, real GDP increased 6.3 percent. Upward revisions to personal consumption expenditures (PCE), exports, and private inventory investment were partly offset by an upward revision to imports, which are a subtraction in the calculation of GDP.



Total nonfarm payroll employment rose by 194,000 in September, and the unemployment rate fell by 0.4 percentage point to 4.8 percent, the U.S. Bureau of Labor Statistics reported. Notable job gains occurred in leisure and hospitality, in professional and business services, in retail trade, and in transportation and warehousing.

Producer and Consumer Price Index

The Producer Price Index, which is a group of indexes that calculates and represents the average movement in selling prices from domestic production

over time, for final demand increased 0.5 percent in September, seasonally adjusted, the U.S. Bureau of Labor Statistics reported. Final demand prices moved up 0.7 percent in August and 1.0 percent in July. On an unadjusted basis, the final demand index rose 8.6 percent for the 12 months ended in September, the largest advance since 12-month data were first calculated in November 2010. The producer price index can often be correlated with construction price escalation.

Prices for final demand less foods, energy, and trade services moved up 0.1 percent in September after increasing 0.3 percent in August. For the 12 months ended in September, the index for final demand less foods, energy, and trade services rose 5.9 percent.

The Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. The Consumer Price Index for All Urban Consumers (CPI-U) increased 0.4 percent in September on a seasonally adjusted basis after rising 0.3 percent in August, the U.S. Bureau of Labor Statistics reported. Over the last 12 months, the all items index increased 5.4 percent before seasonal adjustment.

The all items index rose 5.4 percent for the 12 months ending September, compared to a 5.3-percent rise for the period ending August. The index for all items less food and energy rose 4.0 percent over the last 12 months, the same increase as the period ending August. The energy index rose 24.8 percent over the last 12 months, and the food index increased 4.6 percent over that period.

U.S. Manufacturing PMI

The Institute for Supply Management's (ISM) Manufacturing Purchasing Managers Index (PMI) in the United States increased to 61.1 in September 2021, up for a second straight month and above market expectations of 59.6. The latest reading signaled one of the strongest rates of expansion since 1983, boosted by

↓ Click to jump to each section

Overview and Economy (page 2 of 2)

solid increases in production (59.4 vs 60.0 in August) and new orders (66.7, the same as in August), as well as a slight rebound in employment levels (50.2 vs 49.0). At the same time, factories experienced longer delays getting raw materials delivered and paid higher prices for inputs.

Global Markets

The EUR dropped 1.8 percent against the U.S. dollar to \$1.16 in September 2021, from \$1.19 in June 2021. The CAD dropped 2.2 percent against the U.S. dollar at \$.79 in September 2021 from \$.81 in June 2021.

FedEx stock prices fell in September 2021 (\$219.29, down from \$298.33 June 2021). UPS stock prices fell in September 2021 (\$182.10, down from \$207.97 June 2021), indicative of a global demand for transport of consumer goods.

Trading Economics reports worldwide exports from South Korea rose by 16.7 year over year to USD 53.82 billion in September of 2021, slowing noticeably from a 34.8 percent jump in August and compared with market consensus of 16.3 percent, preliminary data showed. This was the eleventh straight month of expansion in sales, as foreign demand sustained in the wake of the COVID-19 pandemic.

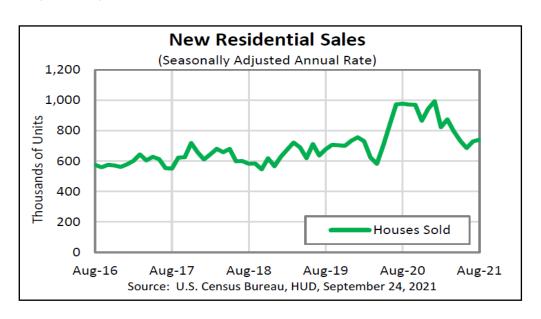
Exports of petrochemicals and petroleum surged 52 percent, and 79 percent, respectively. Also, shipments grew for steel products (42%), and semiconductor (28.2%). By contrast, exports fell for cars (-6.1%), ships (-40.5%) and rechargeable batteries (-2%). Shipments increased to China (16.3%), the US (14.5%), Japan (17.2%) and the ASEAN (17%).

U.S. Home Sales

Sales of new single-family houses in August 2021 were at a seasonally adjusted annual rate of 740,000, according to estimates released jointly by the U.S. Census Bureau and the Department of Housing and Urban Development. This is 1.5 percent (±15.1 percent) above the revised July rate of 729,000, but is 24.3 percent (±19.1 percent) below the August 2020 estimate of 977,000.

The median sales price of new houses sold in August 2021 was \$390,900. The average sales price was \$443,200.

Existing home sales dropped two percent on a seasonally adjusted annual rate from July to August 2021.

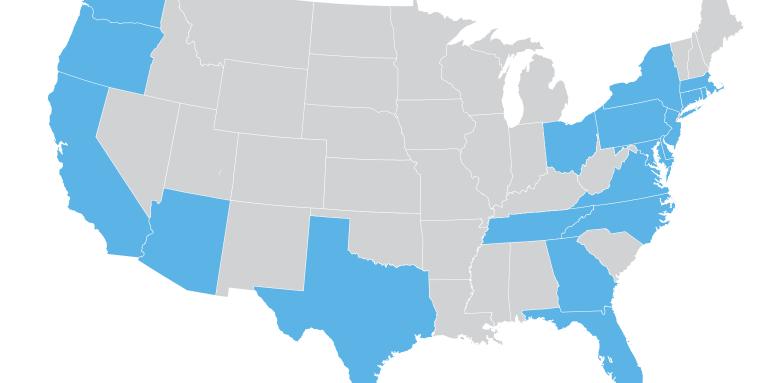


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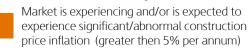
Forecasting Local Construction Costs Across the U.S.

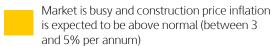
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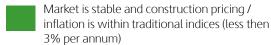
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Construction Cost Key







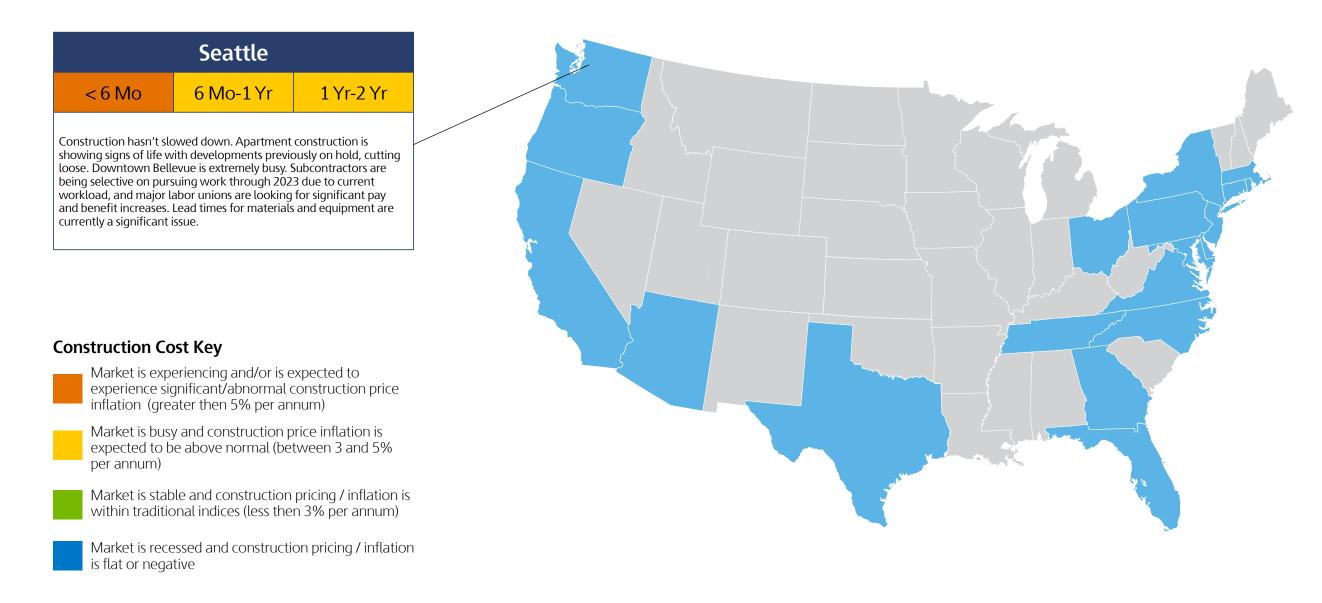
Market is recessed and construction pricing / inflation is flat or negative

↓ Click to jump to each section

Forecasting Local Construction Costs Across the U.S.

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Click on the map to jump to another city or state.



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Click on the map to jump to another city or state.

Portland 6 Mo-1 Yr < 6 Mo 1 Yr-2 Yr Marquee projects are continuing to attract a large number of proposers and fees are still low. Data centers are in high demand and some projects are working 24x7 to deliver on tenant demands. A major healthcare project is likely restarting in November along with other projects in the market that have been on hold. There continues to be industry-wide concern about finding sufficient craft labor as a result of continuing pandemic challenges. Lead times for steel joists, switchgear and roofing insulation are prompting many owners to explore early, direct or other alternative delivery methods. The pipeline of future projects remains strong, and the past 18 months has created an uneasy optimism. **Construction Cost Key** Market is experiencing and/or is expected to experience significant/abnormal construction price inflation (greater then 5% per annum) Market is busy and construction price inflation is

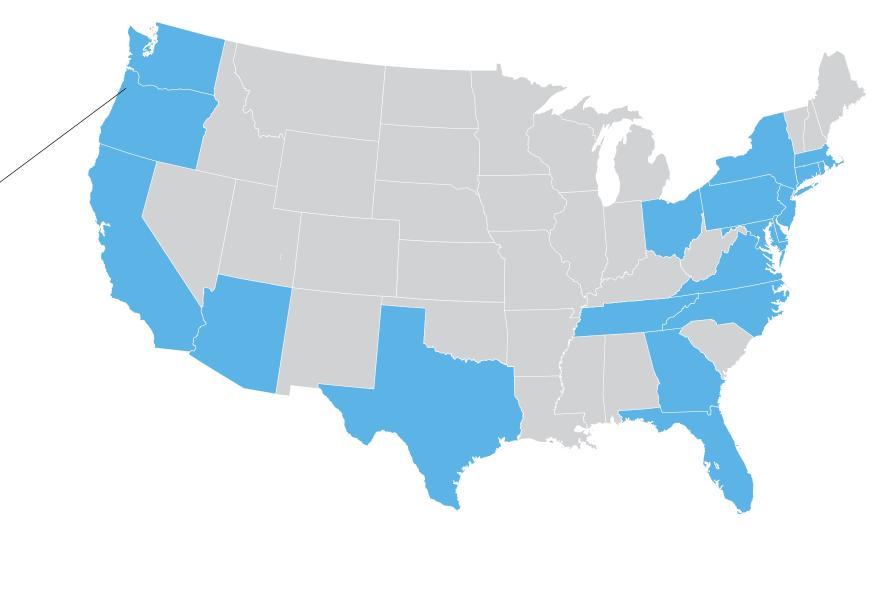
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per annum)

is flat or negative



Construction Cost Key

per annum)

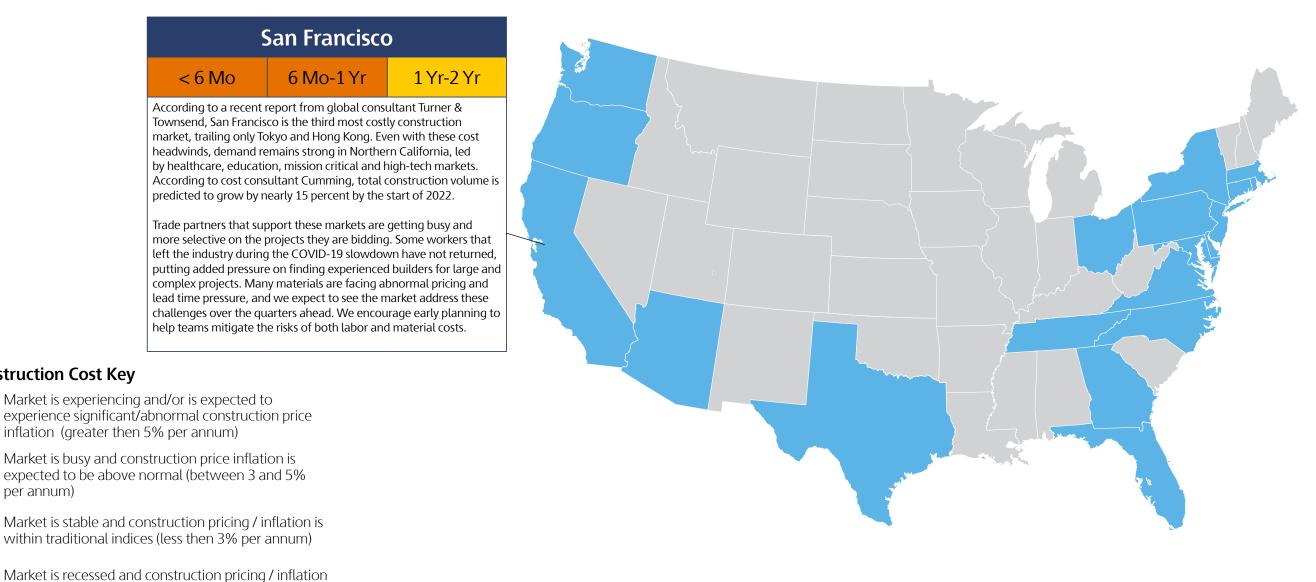
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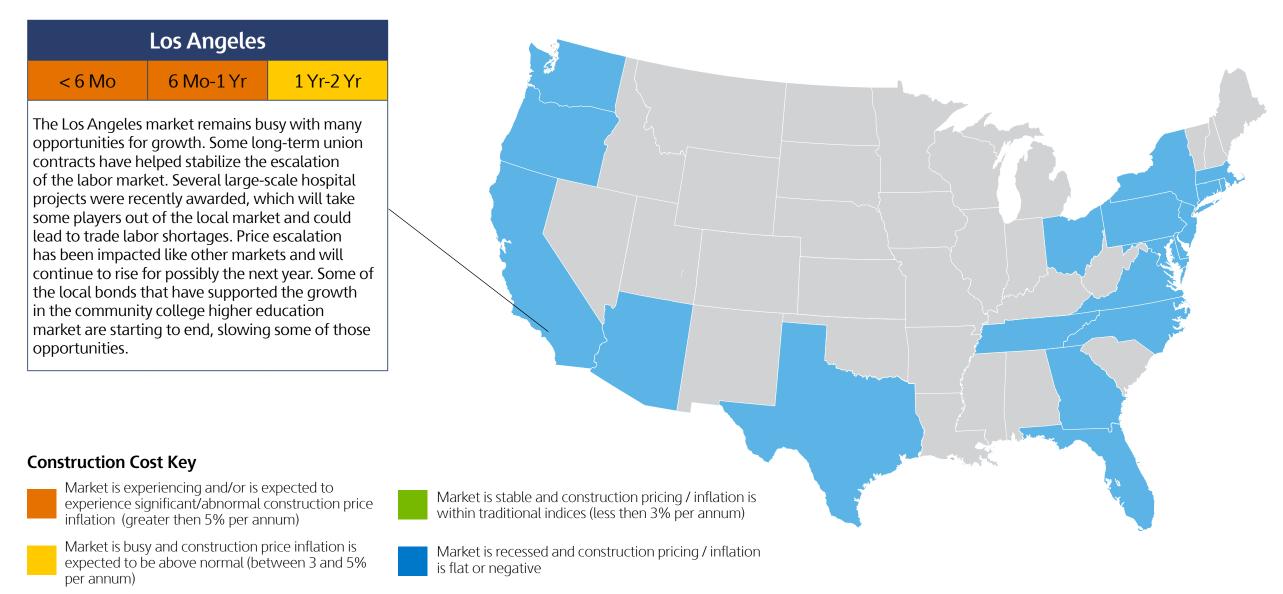


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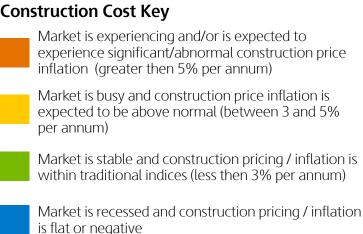
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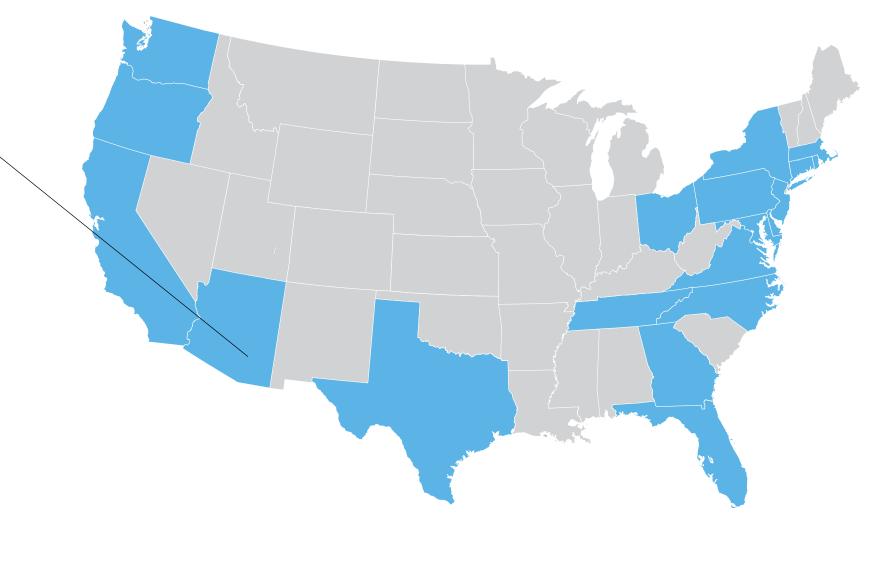
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Click on the man to jump to another city or state.

Phoenix						
< 6 Mo 6 Mo-1 Yr 1 Yr-2 Yr						
Construction starts continue at a record pace in Arizona, with the two largest microelectronics companies in the world anchoring the boom. Labor and materials continue to increase on a weekly basis, with travel, per diem and bonus pay becoming a normal course of business to retain labor for projects. Early onboarding of key subcontractors in the life cycle of a project and early procurement of materials present the best path forward for new construction starts to ensure these strong escalation headwinds are mitigated.						



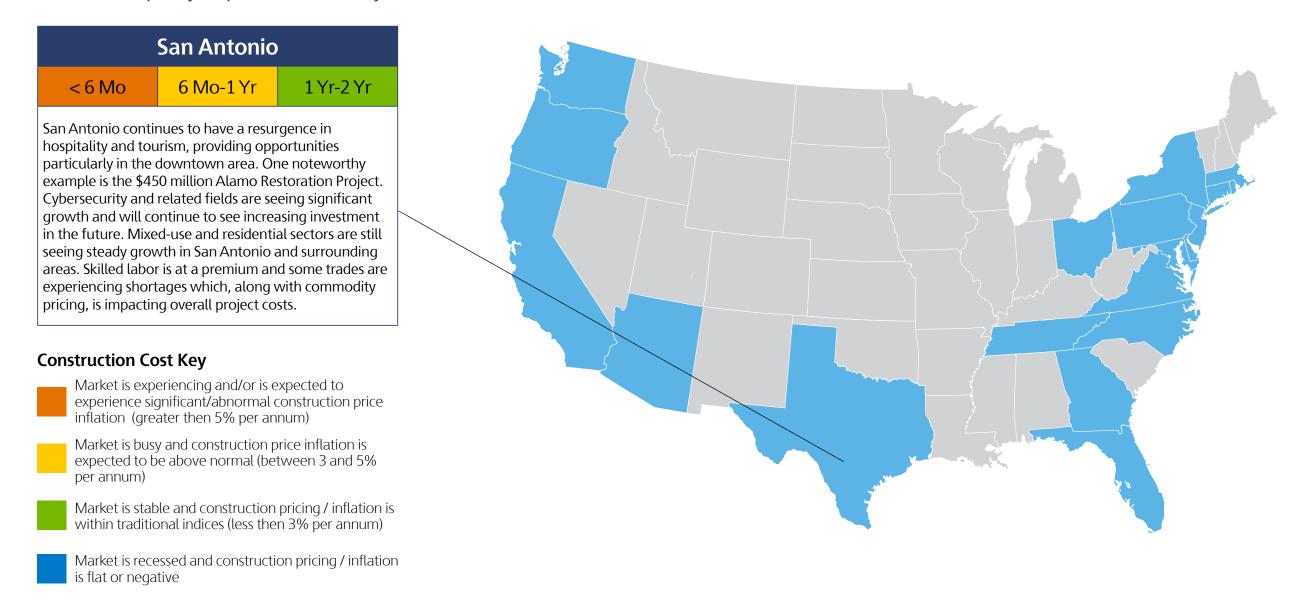


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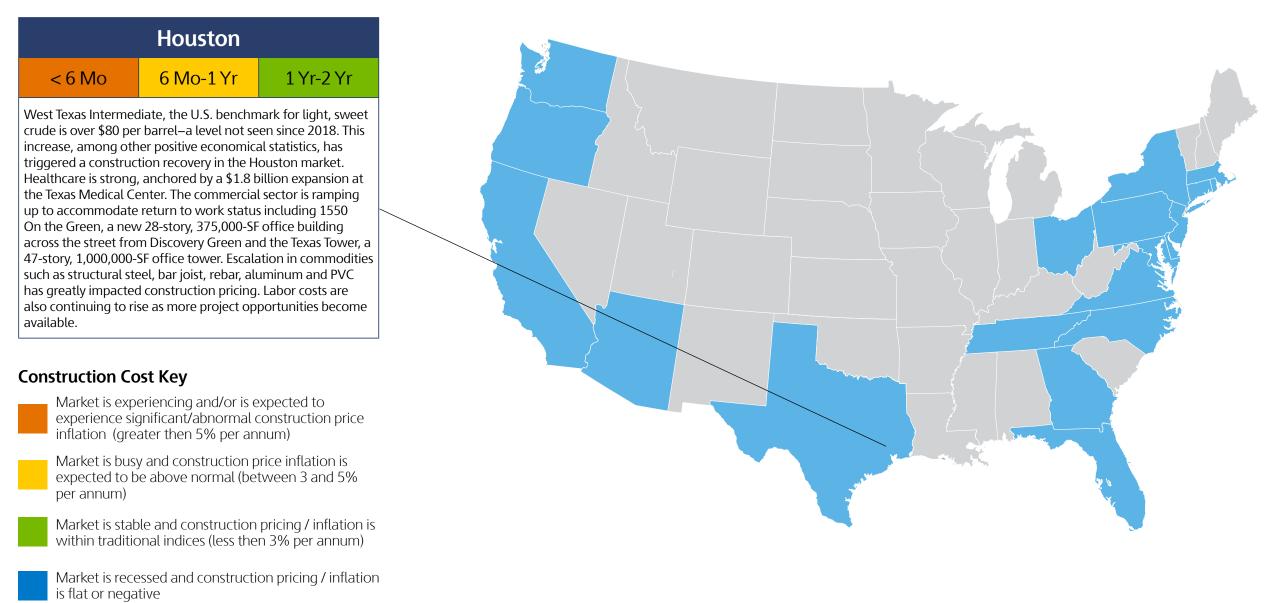
Dallas 1 Yr-2 Yr < 6 Mo 6 Mo-1 Yr North Texas is still experiencing tremendous activity in all market sectors. In Higher Education, local universities and community colleges are continuing to expand their existing campuses. Corporate relocation is robust, as more Fortune 500 companies, including AECOM and The PGA, have announced plans to move to the area. Other market sectors, such as mission critical, continue to provide opportunities as new projects are either in the planning or construction phase. To accommodate the influx of people relocating to Texas, specifically North Texas, mixed-use and residential sectors are flourishing. As subcontractors fill up their backlog and the demand for quality crafts people increases, labor will become an issue. **Construction Cost Key** Market is experiencing and/or is expected to experience significant/abnormal construction price inflation (greater then 5% per annum) Market is busy and construction price inflation is expected to be above normal (between 3 and 5% per annum) Market is stable and construction pricing / inflation is within traditional indices (less then 3% per annum) Market is recessed and construction pricing / inflation is flat or negative

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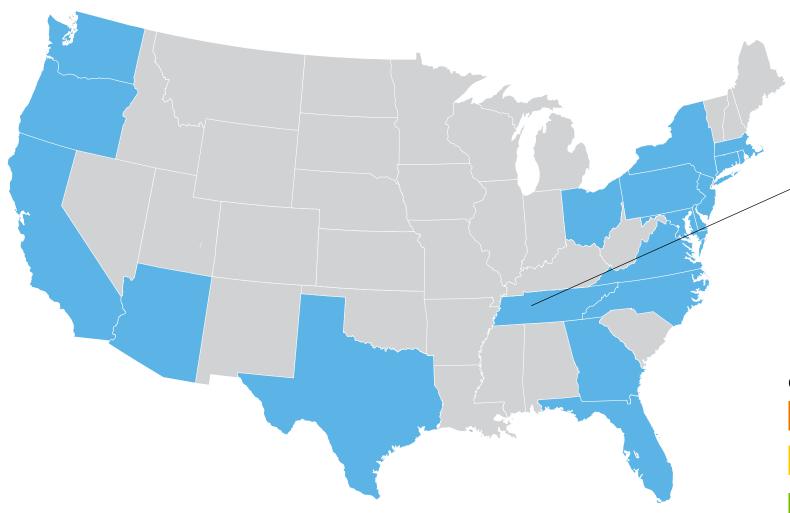


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Nashville							
< 6 Mo	6 Mo-1 Yr	1 Yr-2 Yr					

Nashville continues to remain one of the most popular destinations for business relocations and maintains aggressive housing growth to keep up with demand. PWC classifies Nashville as a top-three real estate market for 2021. Oracle's announcement to invest over \$1.2 billion and move a portion of their HQ operations to Nashville will result in additional commercial and infrastructure development in the North Bank area.

Construction materials and commodities continue to remain in high demand and affect pricing. Mining, logging and construction employment has remained relatively flat for 2021. This, combined with the increase in building permits for the 2020-2021 fiscal year in Nashville, continues to place a strain on skilled labor for many construction trades. With this peak in 2021, Cumming is projecting the market to cool going forward in 2022 and 2023.

Construction Cost Key

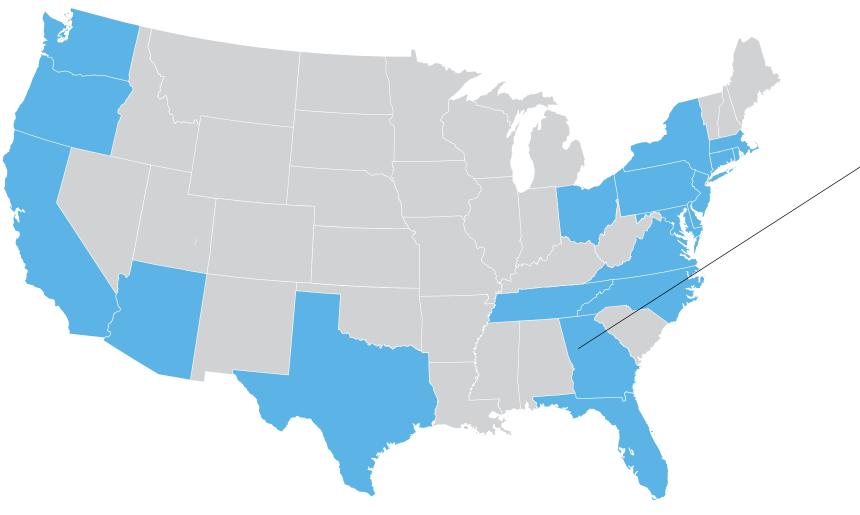
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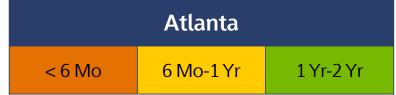
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Click on the map to jump to another city or state.





Material prices and lead times continue to increase monthly in Georgia. The latest challenge in the market has been roofing material and polyiso insulation material shortages. A possible solution is alternative material selections to meet project schedule while maintaining the designed R value for the roof system. Additionally, the residential market is still going strong in Atlanta with no slow down on the horizon.

Construction Cost Key

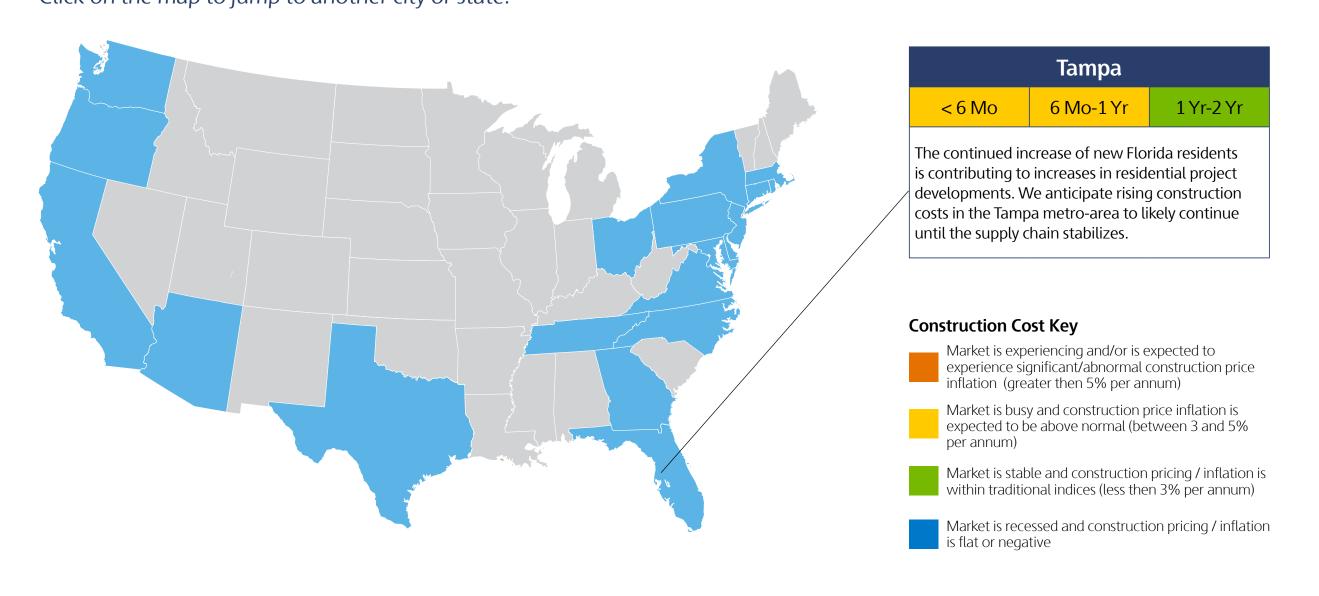
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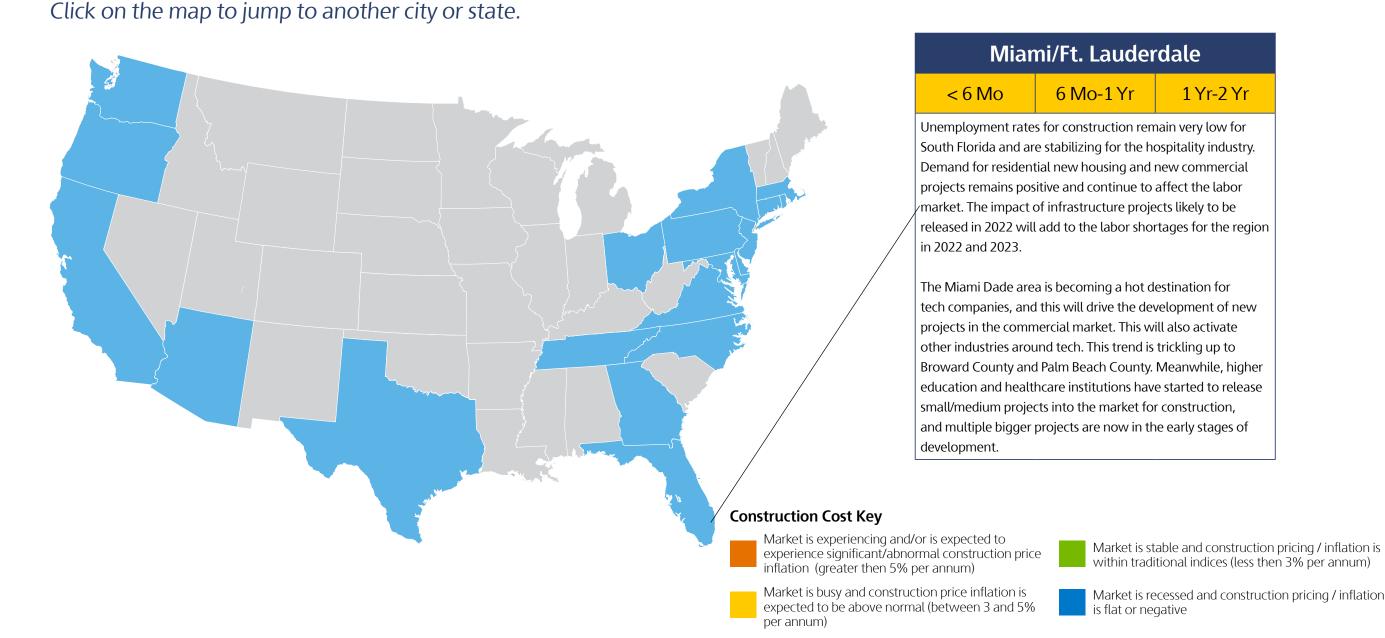
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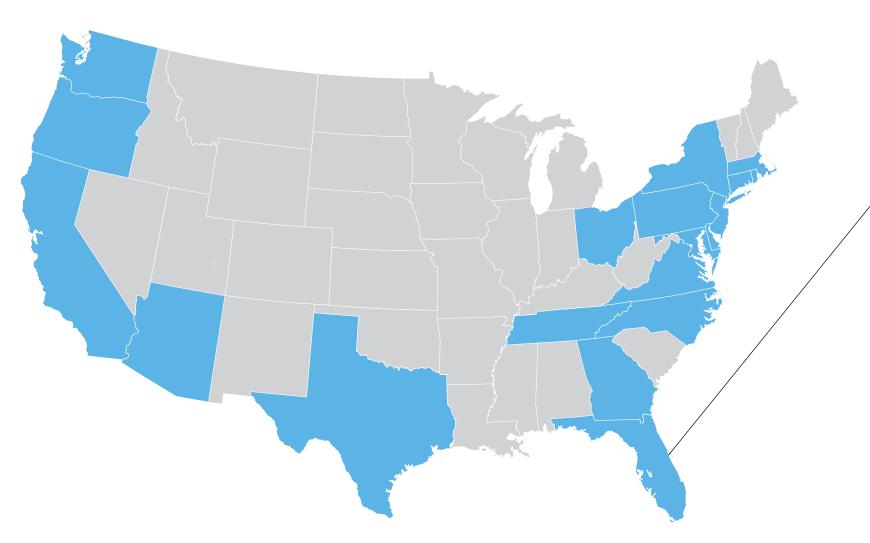


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Click on the map to jump to another city or state.





The continued increase of new Florida residents is contributing to increases in residential project developments and directly affects the labor market. With low overall unemployment rates, especially for construction, monthly increases of material prices and lead times, we anticipate rising construction costs in the Orlando metro and Central Florida areas to continue until the supply chain stabilizes.

Construction Cost Key

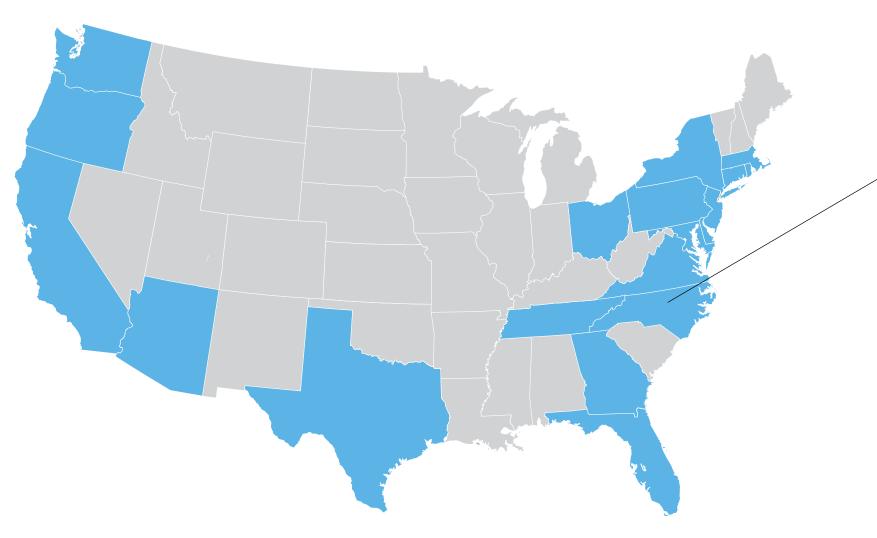
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Click on the map to jump to another city or state.



North Carolina / Virginia

< 6 Mo

6 Mo-1 Yr

1 Yr-2 Yr

In the greater Raleigh market, major projects in the following sectors are driving optimism: science and tech, healthcare and corporate campus headquarters. This is offsetting declines in education projects and other sectors. Across Virginia, several large projects in multiple market sectors—including higher education, healthcare and data centers—are coming to market in the next three to six months after pandemic-related delays. While the pace of material cost escalation is cooling, strong demand is expected to keep pressure on pricing as labor availability continues to be an issue. This is particularly true in more geographically remote markets throughout the region where bid competition is more limited.

Construction Cost Key

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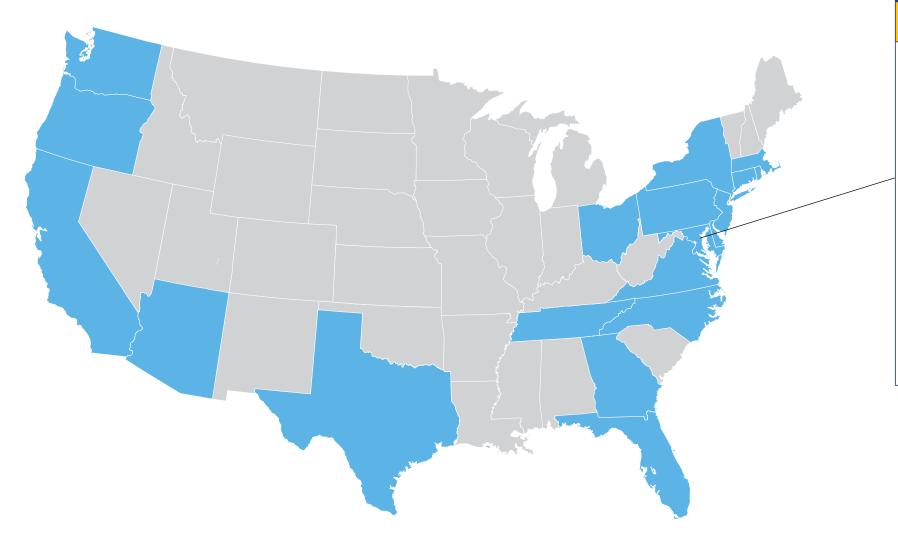
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Click on the map to jump to another city or state.



Washington, D.C.

< 6 Mo

6 Mo-1 Yr

1 Yr-2 Yr

The current market is busy for the next six months, projecting out to the next one to two years. The residential, healthcare, life sciences/higher education and office markets are slowly coming back. Subcontractors are bidding and turning down some work to keep up with bids hitting the market. Subcontractors also want to build up their backlog. This is a result of several projects that were previously on the market and pushed or put on hold due to the pandemic that are currently back on the market for bids/procurement.

Some subcontractors have reduced their profits to offset the significant escalation, while others have had to pass on escalation to clients. Subcontractors are offsetting rising prices by procuring materials early and holding them in storage or getting LOIs to lock in pricing. To combat these challenges, there is a need to be creative with solutions, such as strategic supply chain procurement.

Construction Cost Key

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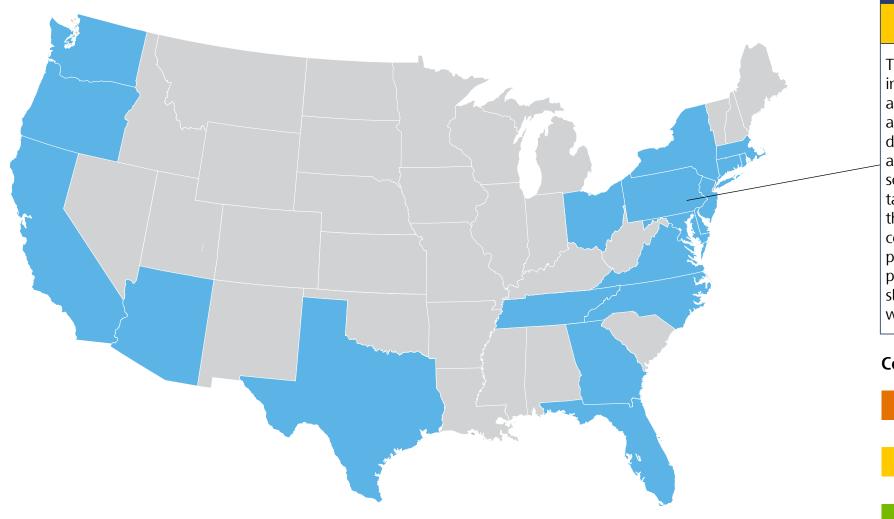
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Click on the map to jump to another city or state.



Philadelphia						
< 6 Mo	6 Mo-1 Yr	1 Yr-2 Yr				

The labor market is very busy with a shortage in workers, especially in the MEP trades. We are working to help support new initiatives for attendance in local trade schools to help with that demand. The economy in our area is very steady, and we are starting to see increased needs for life sciences construction. Life sciences businesses are taking full advantage of talent graduating from the region's colleges and universities. Healthcare continues to grow, with at least four to five major projects in construction, and many more in the planning stages. Higher education construction is slower to come back online, as schools continue to work through the virtual/in-person balance.

Construction Cost Key



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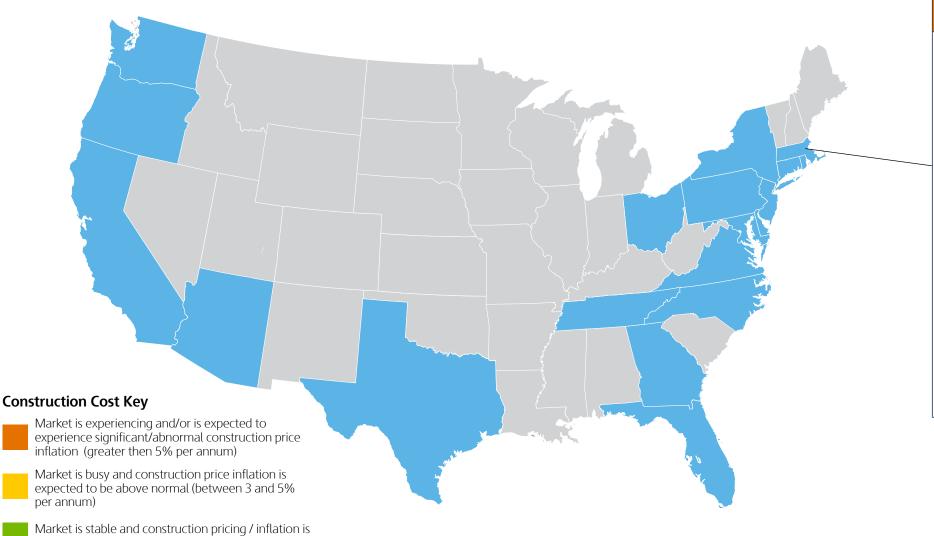
Market is recessed and construction pricing / inflation

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Boston
< 6 Mo 6 Mo-1 Yr 1 Yr-2 Yr

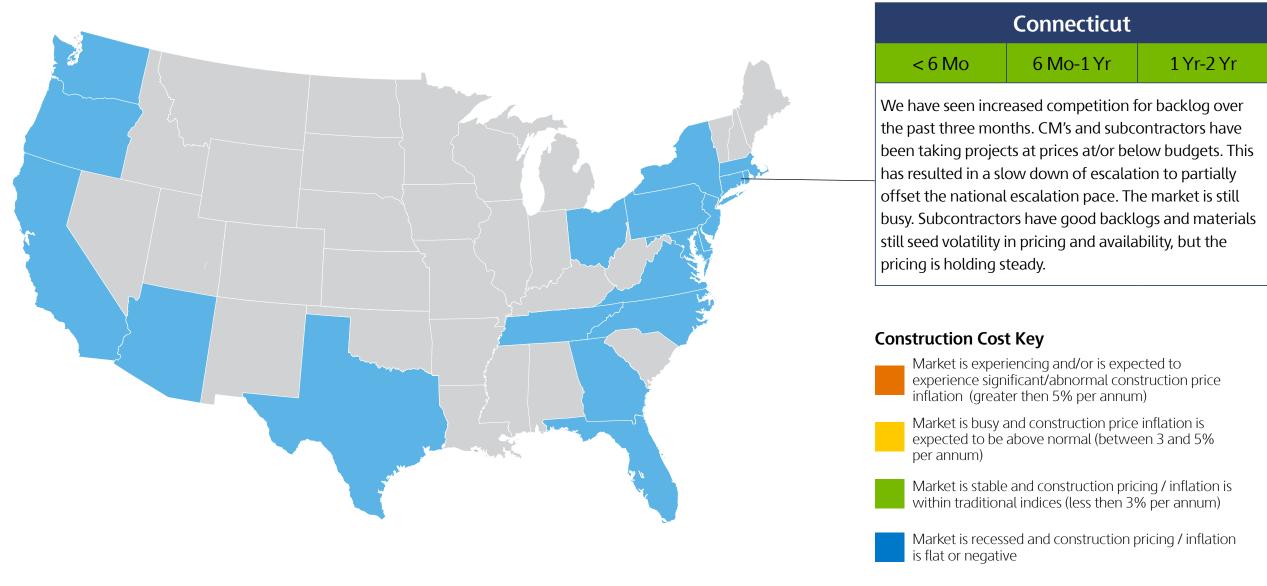
We have experienced unprecedented continued growth in the Boston market driven by pent-up demand from a year ago when the market was slow. Life sciences, higher education, corporate commercial, residential and now even government work is pushing this growth, with significant expansion in the commercial lab and pharmaceutical sectors. Many subcontractors are at or near capacity with good backlogs for the remainder of 2021 and into 2022. Material price growth has slowed from the pace of earlier this year, but availability remains a major issue. Most traditional long lead items times have increased, some by as much as 100 percent. There is also a disruption in the certainty of delivery dates related to continued shortages of shipping labor. We anticipate that this pressure will continue well into 2022, and will work to mitigate this by collaborating with our local subs and national supply chain management team to help ensure materials are available to meet our clients' expectations.

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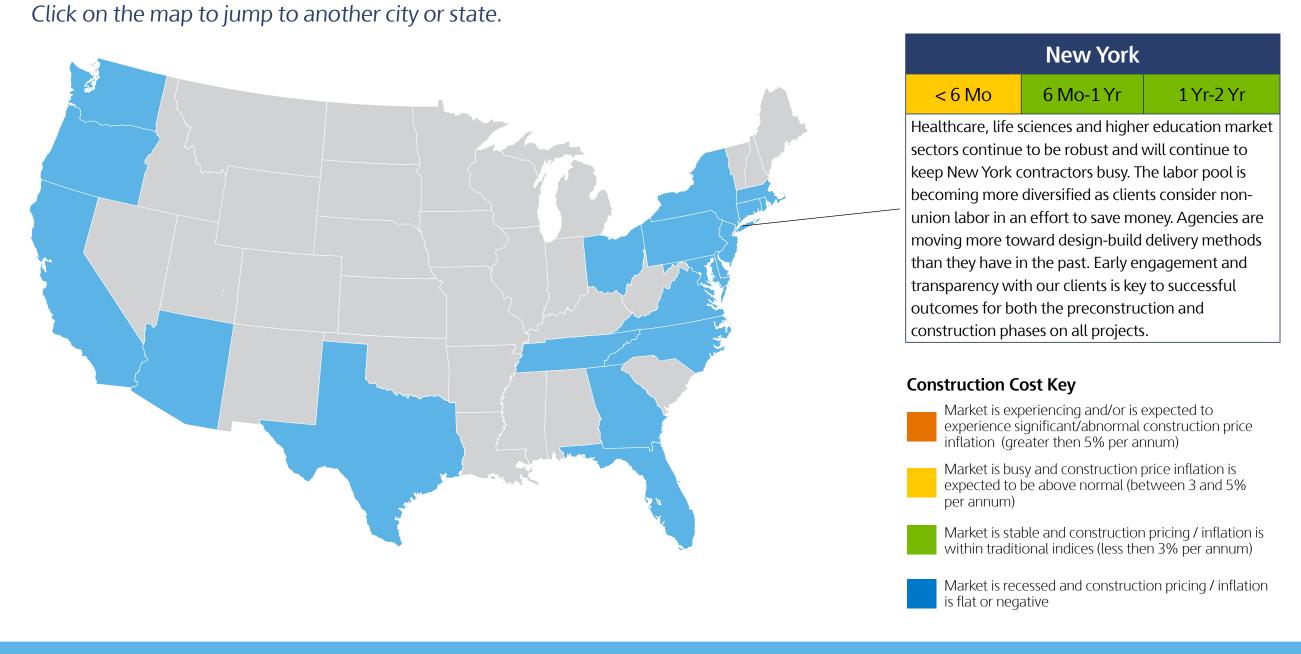
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Forecasting Local Construction Costs Across the U.S.

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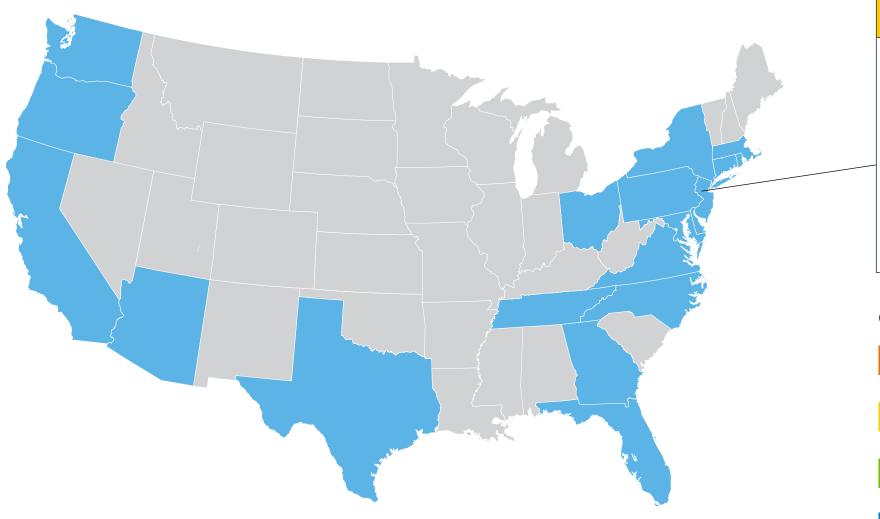


↓ Click to jump to each section

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Click on the map to jump to another city or state.



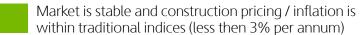
New Jersey < 6 Mo 6 Mo-1 Yr 1 Yr-2 Yr

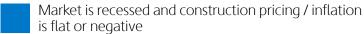
More life sciences and higher education projects are starting in Southern New Jersey, while commercial and large infrastructure projects are ramping up in the Central and Northeast regions, like Newark. Lead times for structural steel, particularly joists, and MEP equipment have become problematic. Some larger clients with national purchasing agreements are buying long lead items directly in an effort to stay on schedule. Our keys to success include: early engagement with clients, coordinated procurement strategies with owners and soliciting budgets/bids from open shop subcontractors.

Construction Cost Key







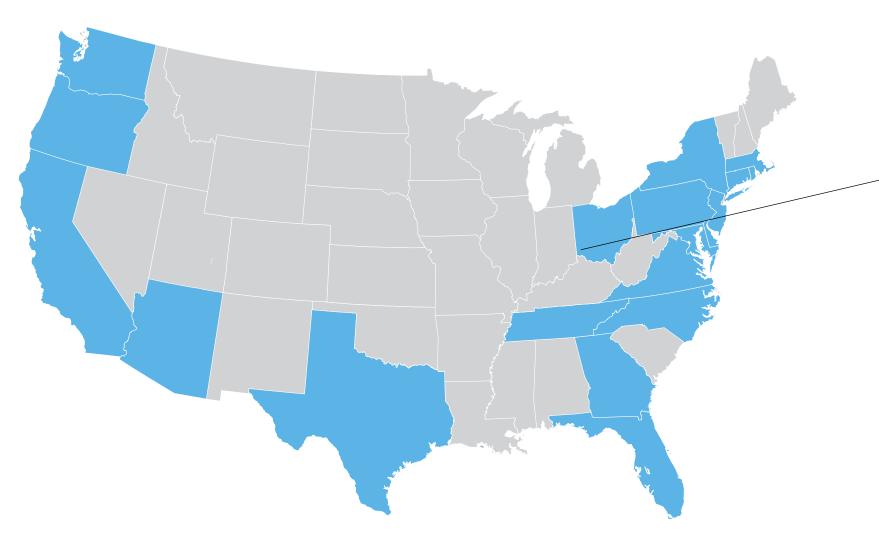


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Forecasting Local Construction Costs Across the U.S.

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Click on the map to jump to another city or state.



Cincinnati						
< 6 Mo	6 Mo-1 Yr	1 Yr-2 Yr				

The demand for construction has remained strong in the Cincinnati area. The primary drivers are multifamily housing, private commercial development and education. Healthcare has started to see some growth, after the initial contraction in 2020 due to the pandemic. The local supply chain continues to see disruption due to ongoing pandemic issues, as well as natural disasters. Currently, polyISO roof insulation, metal decking, PVC and equipment are seeing major disruptions that are causing project delays. The labor market is tight with most companies reporting smaller than ideal crew sizes. This challenging labor market is increasing the need for overtime to meet project schedules. This, along with wage increases necessary for employers to stay competitive, will continue to drive higher than normal escalation.

Construction Cost Key

- Market is experiencing and/or is expected to experience significant/abnormal construction price inflation (greater then 5% per annum)
- Market is busy and construction price inflation is expected to be above normal (between 3 and 5% per annum)
- Market is stable and construction pricing / inflation is within traditional indices (less then 3% per annum)
- Market is recessed and construction pricing / inflation is flat or negative

↓ Click to jump to each section

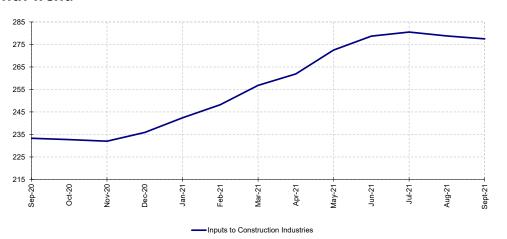
Construction and Labor (page 1 of 3)

Per the U.S. Bureau of Labor Statistics (BLS), construction spending during August 2021 was estimated at a seasonally adjusted annual rate of \$1,584.1 billion, virtually unchanged from (±1.0 percent) the revised July estimate of \$1,584.0 billion. The August figure is 8.9 percent (±1.5 percent) above the August 2020 estimate of \$1,455.0 billion. During the first eight months of this year, construction spending amounted to \$1,034.5 billion, 7.0 percent (±1.0 percent) above the \$966.7 billion for the same period in 2020.

Construction Spending	1 Month	1 Year
Public Construction		
Total Public Construction	+0.5%	-4.0%
Office	-1.7%	-9.6%
Commercial	+0.8%	-10.3%
Healthcare	-0.6%	-0.7%
Education	+1.1%	-5.9%
Public Safety	-2.6%	-36.0%
Private Construction		
Total Private Construction	-0.1%	+13.0%
Office	+0.2%	-4.2%
Commercial	-0.8%	+7.8%
Healthcare	-1.1%	+0.1%
Education	-0.8%	-15.6%
Lodging	-2.3%	-30.7%
Total Construction	0.0%	+8.9%

Inputs to Construction Industries

12-Month Trend





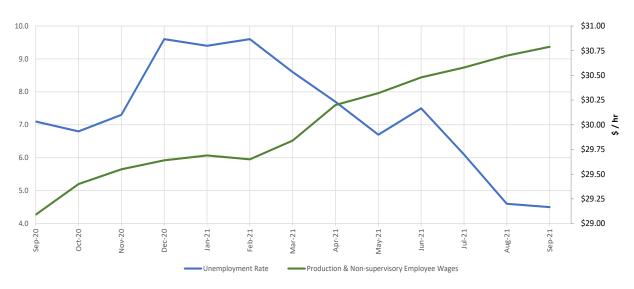
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Construction and Labor (page 2 of 3)

Labor **has not** been driving construction cost escalation in 2021. Construction unemployment has returned to pre-pandemic levels, hitting a measured rate of 4.5 percent, which is down from 7.5 percent in June 2021, according to the U.S. Bureau of Labor and Statistics. Construction employment rose by 22,000 in September 2021 but has shown little net change thus far this year. Employment in construction is 201,000 below its February 2020 level. Average hourly wages rose from \$32.16 in February 2021 to \$33.25 in September, moderately higher than in traditional years at 4.5 percent in the past 12 months. However, it is estimated that there are nearly 300,000 unfilled construction jobs nationwide so while labor cost inflation is not the immediate concern, labor shortages and therefore production, is a concern.

Construction Unemployment

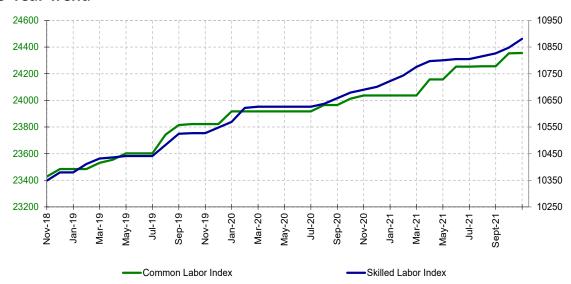
12-Month Trend



Common and Skilled Labor Index

12-Month Trend



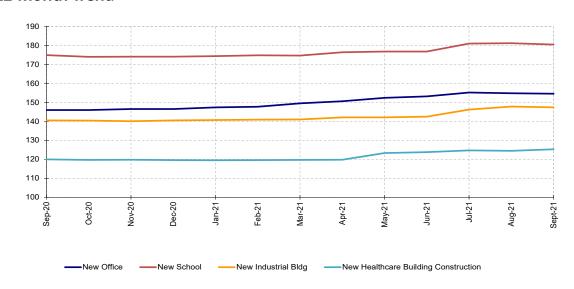


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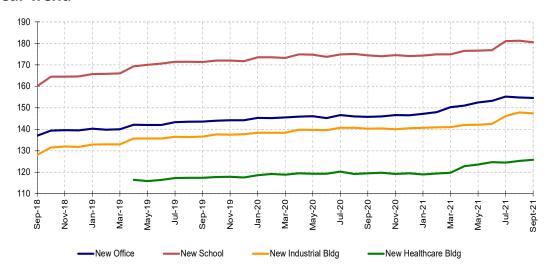
Construction and Labor (page 3 of 3)

New Construction Index

12-Month Trend

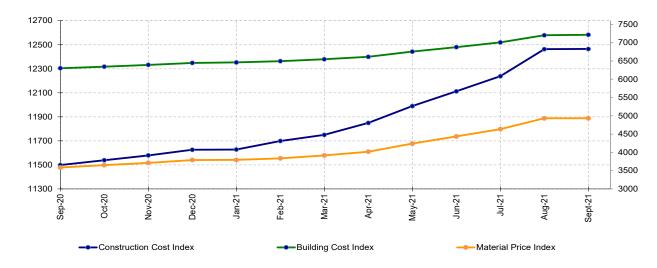


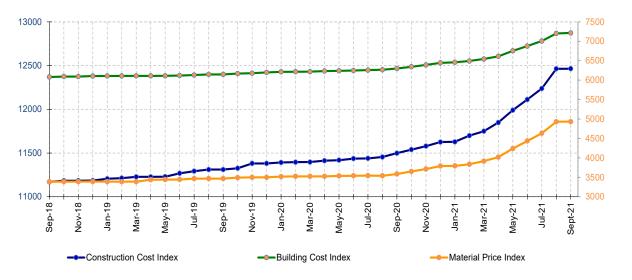
3-Year Trend



Construction Cost, Building and Material Price Index







↓ Click to jump to each section

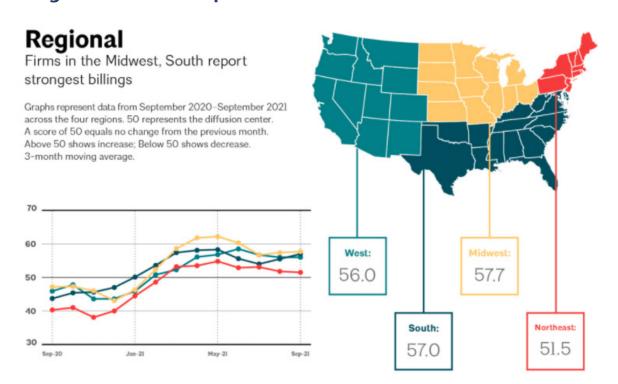
Architecture Billings Index

The September ABI score of 56.6 is still one of the higher scores seen this year. Furthermore, in the immediate post-recession periods that have been captured throughout the index's history, ABI scores over the last eight months are among the highest. Following the abrupt downturn last year, recovery is strong with firms reporting plenty of work in the pipeline and strong business conditions.

Strongest conditions remain in the Midwest and South, with some less growth in the Northeast. Firms reporting strongest billings concentrate in commercial/industrial projects, multifamily residential and institutional specializations.

This index demonstrates whether or not architectural firms are billing for or signing new design contracts. A score of 50 is neutral, above 50 means they are seeing an increase in volume, and below 50 means a decrease in volume. The construction industry feels the impact of this index with a 9 to 12 month lag time.

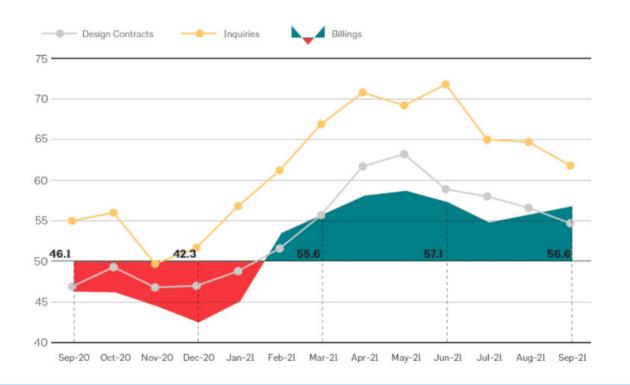
Regional ABI for September 2021



Architecture Billings Index

12-Month Trend





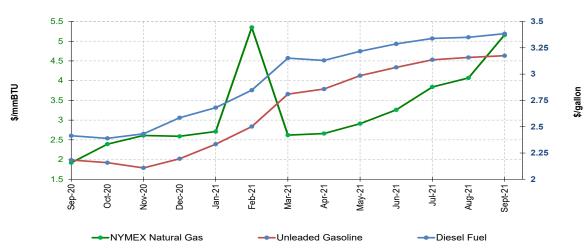
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Commodities Pricing

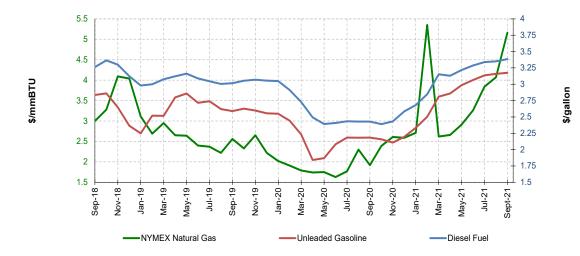
The average price of a gallon of gasoline is up \$1.20 from September of 2020. While fuel costs are a contributor to onsite construction installation costs, their significance is much larger in the manufacture and transportation of raw and fabricated materials that are in turn delivered and made part of buildings. The recent increases have been passed on to consumers by way of increased transportation and logistics costs. As costs of fuel and oil have risen, so have costs of other goods that make up the global economy.

Natural Gas, Gasoline, Diesel Fuel

12-Month Trend

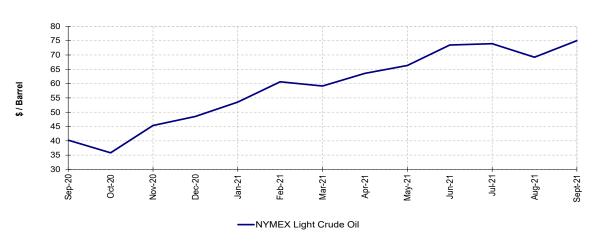


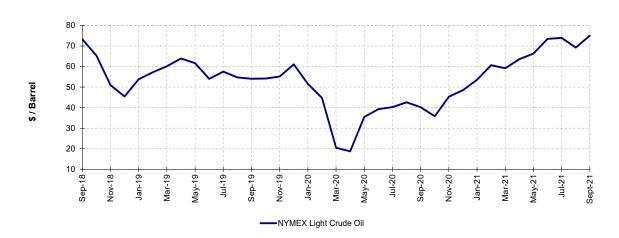
3-Year Trend



Light Crude Oil

12-Month Trend





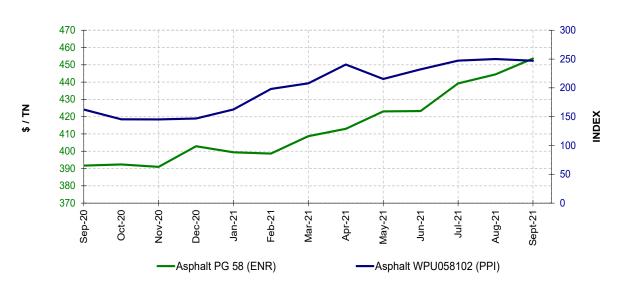
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Materials Pricing (page 1 of 8)

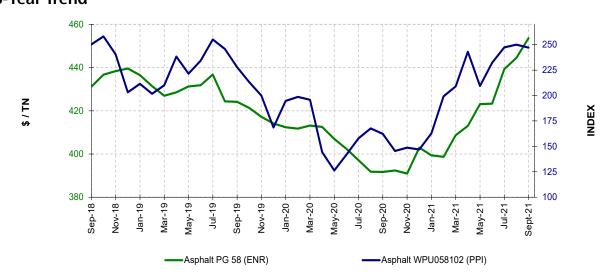
Asphalt pricing is creeping up primarily due to the increasing costs of petroleum. This appears to stem largely from the speculation that the current administration will constrain U.S. oil production and OPEC nations will restrict exports.

Asphalt Products Pricing

12-Month Trend



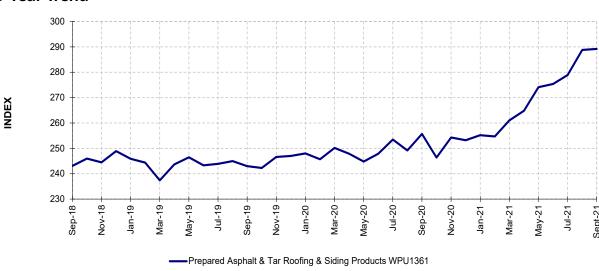
3-Year Trend



Prepared Asphalt & Tar Roofing Products Index 12-Month Trend



Prepared Asphalt & Tar Roofing & Siding Products WPU1361



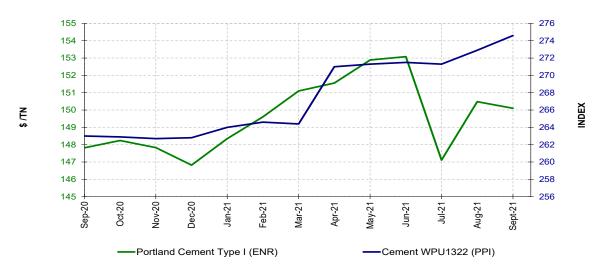
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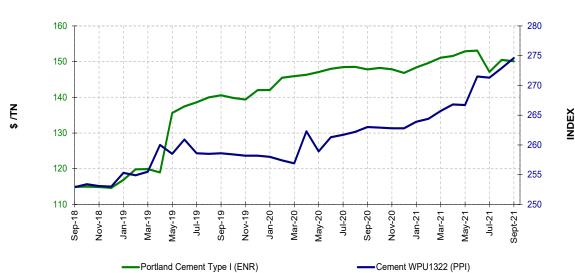
Materials Pricing (page 2 of 8)

While cement pricing has fluctuated, it has not been a root cause of construction inflation. The greater challenge in this space has been cement supply and its impact on concrete supply. Logistical challenges from point of manufacture to batch plant to jobsite have been hampering projects, causing construction teams to take extra care to plan concrete deliveries.

Cement Products

12-Month Trend



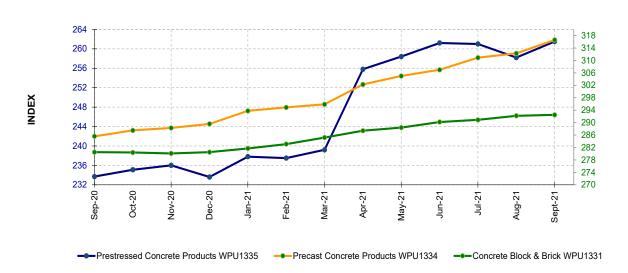


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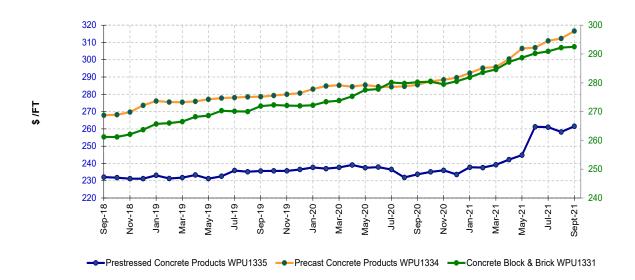
Materials Pricing (page 3 of 8)

Concrete Products

12-Month Trend

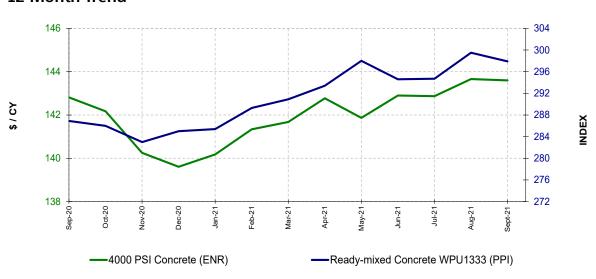


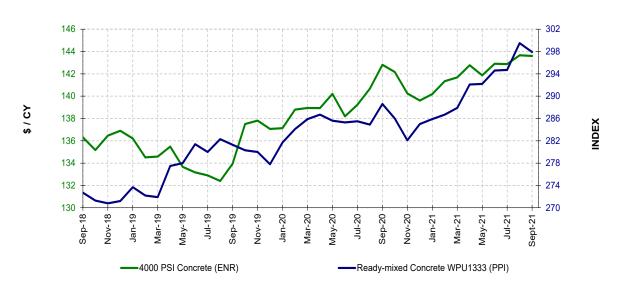
3-Year Trend



Concrete PSI and PPI

12-Month Trend





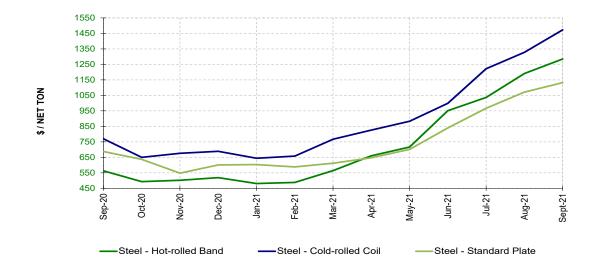
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Materials Pricing (page 4 of 8)

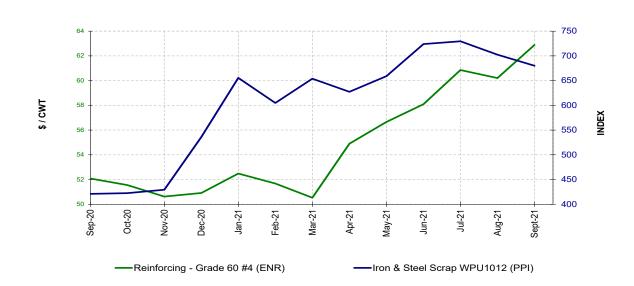
World crude steel production for the 64 countries reporting to the World Steel Association (worldsteel) was 156.8 million tonnes (Mt) in August 2021, a 1.4 percent decrease compared to August 2020. The U.S. produced 7.5 Mt of crude steel in August 2021, an increase of 26.8 percent over August 2020. China produced 83.2 Mt in August 2021, down 13.2 percent on August 2020.

Structural Steel - Hot-rolled Band, Cold-rolled Coil, and Standard Plate

12-Month Trend



Reinforcing - Grade 60 #4 and Iron & Steel Scrap 12-Month Trend



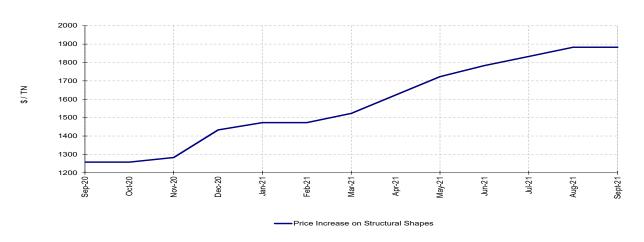
↓ Click to jump to each section

Materials Pricing (page 5 of 8)

Steel pricing has continued to increase, however, pricing appears to be flattening. We do not expect pricing to fall in the short term, but we do expect pricing to stabilize near current levels. Lead times are also beginning to ease. For example, lead times for bar joists peaked at 52 weeks and are now receding to 40-45 weeks. In addition, decking lead times have eased to 20-25 weeks as steel coil is more readily available.

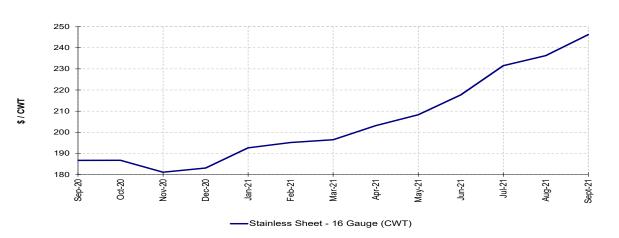
Price Increase on Structural Shapes

12-Month Trend

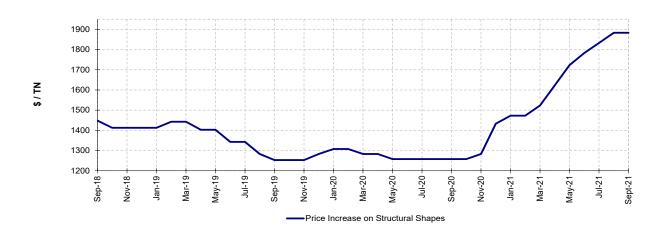


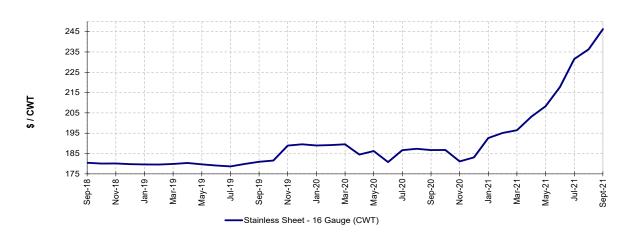
Stainless Steel

12-Month Trend



3-Year Trend





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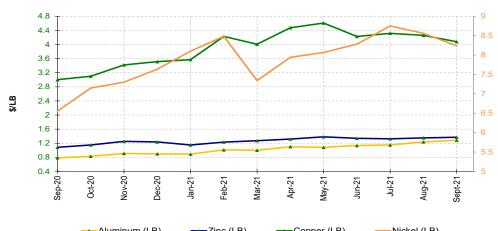
Materials Pricing (page 6 of 8)

Aluminum: Price continues to remain elevated as demand is increasingly outpacing supply. Output from China continued to decline under pressure to reduce emissions. The Outlook for 2022 is higher pricing and a supply deficit.

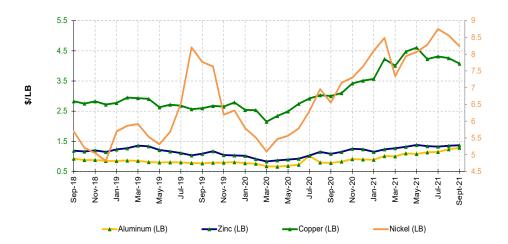
Zinc: Price spiked earlier this month to a 14 year high due to concerns of supply shortages caused by high coal prices in China and production cuts in Europe. Though prices have come down slightly over the past week it is unlikely that there will be much relief.

Aluminum, Zinc, Copper and Nickel

12-Month Trend



3-Year Trend

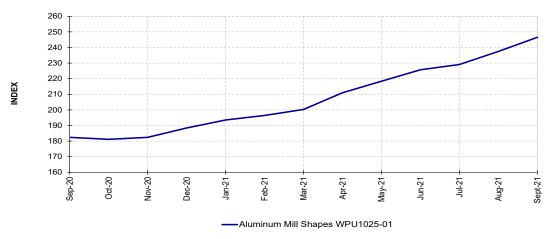


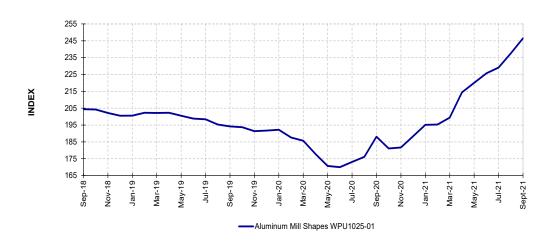
Copper: Prices for copper surged in October partially driven by supply uncertainty surrounding production disruptions in copper producing giants Chile and Peru. Additionally the push towards sustainable energy is keeping demand for copper high. This trend is expected to continue and accelerate, keeping copper pricing high in the long term.

Nickel: Nickel prices continue to rise due to limited supplies as output from top producers Russia and the Philippines declined and inventory levels have dropped. Prices will likely continue to rise as demand downstream is strong.

Aluminum Mill Shapes

12-Month Trend



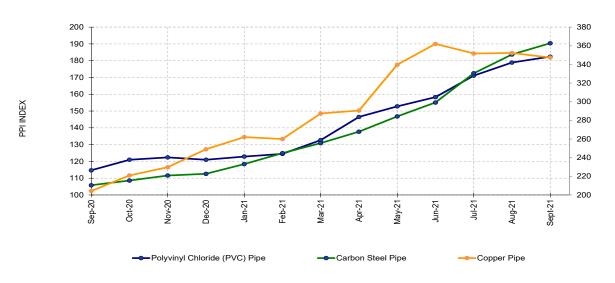


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Materials Pricing (page 7 of 8)

Pipe Pricing

12-Month Trend



Polyvinyl Chloride (PVC) Pipe: Average prices continue to rise, up eight percent since Hurricane Ida struck the Gulf Coast in August and up 48 percent year-to-date.

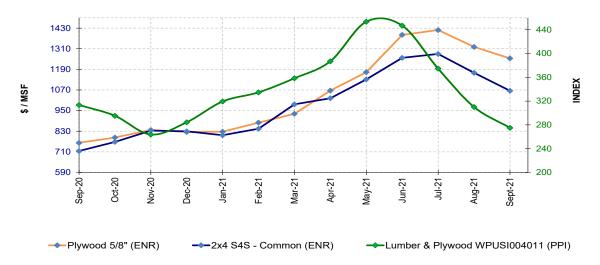
Copper Pipe: While raw copper costs have stabilized, the price of copper pipe continues to increase, up more than 32 percent since January 2021.

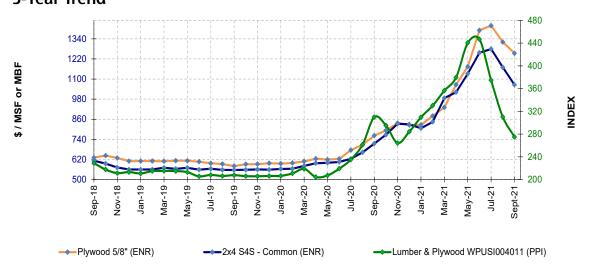
Carbon Steel Pipe: Average cost of carbon pipe is also up more than 60 percent year-to-date due to increased costs of raw material and transportation.

Wood Product Pricing

A tapering in the thriving residential construction market has helped lumber-based product prices recede. While still significantly above pre-pandemic values, the downward trend is continuing into Q4.

12-Month Trend





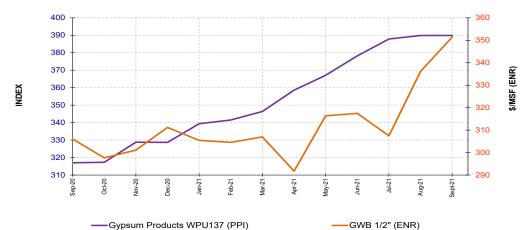
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Materials Pricing (page 8 of 8)

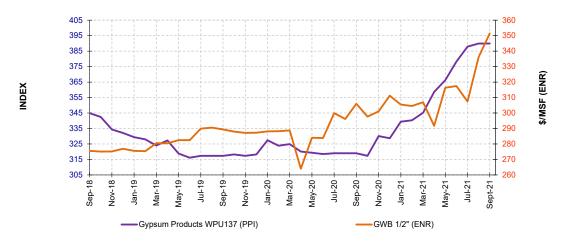
Gypsum-based product pricing has continued to escalate, with a 20 percent increase announced by major manufacturers in October. Lumber pricing, by contrast, has declined significantly and is now below levels seen in the Fall of 2020, before escalation began. Metal stud framing and ceiling suspension system pricing have continued to increase. Major manufacturers have announced recent price increases. Armstrong, for example, announced a 10 percent increase on their metal-based products, including suspension systems, effective October 18. It is anticipated that this will begin to slow as steel's steady climb has started to plateau.

Gypsum Product Pricing

12-Month Trend



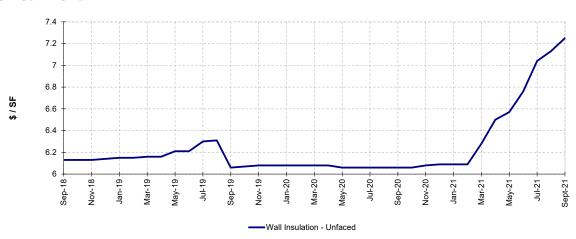
3-Year Trend



Wall Insulation

12-Month Trend





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Supply Chain Trends

To learn more about supply chain trends, reach out to <u>Tom Park</u> or <u>Rob Cantando</u>.

As we end the third quarter of 2021, building material supply chains continue to struggle with a supply/demand imbalance. While residential demand remains very high, commercial construction demand is up significantly, led in large part by surging demand for data and distribution centers. On the supply side, manufacturers continue to be challenged by a number of headwinds, including labor shortages, raw material supply disruptions, ground transportation delays, ocean freight delays due to a shortage of workers at ports, and significant imbalance of shipping containers. These challenges are being felt quite differently across different categories of material, for example, steel providers' ability to deliver a complete structural steel package to the jobsite is gated by the availability of bar joists and decking with lead-times extending out to one year.

On the other hand, products that are heavily dependent on raw materials flowing out of petrochemical processing plants are experiencing one disruption after another. Plants that were still struggling to catch up after disruptions caused by Winter Storm Uri have now been hit with Hurricane Ida. Hurricane Ida took significant portions of the supply chain offline. For example, 40 percent of US PVC production was affected. Fifty eight percent of MDI (a key ingredient in polyISO insulation, plywood, adhesives, sealants and specialty coatings) production remained offline 10 days after Ida made landfall. Some PVC suppliers have implemented allocation, and others have declared force majeure and have cut contracts by more than 30 percent. Price increases have been announced by several resin manufacturers, and it is likely those costs will be passed along downstream as well, although no cost increases have been reported yet.

Status Key		nding Up nificantly	7 Tre	nding Up	Stable/Consistent Fluctuating Trending Down
Category	Current Lead Time	Current Price	6-12 Mo. Forecast Lead Time	6-12 Mo. Forecast Price	Comments
Roofing products	•	A	7	7	Roofing material lead times continue to extend. Roofing system deliveries can be as long as 10 months, depending on the materials specified. The toughest product to get is polyISO insulating panels. Lead times for polyISO are now greater than 10 months. In some cases, polystyrene insulation can be substituted for polyISO. However, many projects are taking advantage of this substitution and now polystyrene lead times can be as long as four to six months, depending on the source.
Structural steel	1	1	(-)	(-)	While steel shapes, such as wide flange members, are up significantly in price (75-130 percent depending on shape and dimensions), the largest impacts to steel pricing and lead times revolve around joists and decking materials. Because of the significant building activity in warehousing, distribution and data centers, joist lead times remain extended out beyond 40 weeks and decking is out to 25 weeks. In addition, joist and decking prices have increased 300 to 400 percent. In recent weeks, these lead times have started to ease and price increases are slowing.
Architectural interiors (ceilings, drywall, metal studs, flooring, paint, etc.)	7	7	(-)	7	Steel-based products, such as metal studs and acoustical ceiling suspension systems, continue to escalate. Armstrong has announced an additional increase of 10 percent on all suspension systems effective October 18, 2021. In addition, they are suggesting guidance of an additional five percent for any estimating out beyond February 1, 2022.
Wood-based building materials (lumber, wood floors, finish material)	7	A	(-)	7	Lumber is one of the few bright spots in building material supply chains. Both dimensional lumber and panel pricing are down significantly. Dimensional lumber is down 72 percent from its peak in May and is now 24 percent below pricing seen in fall 2020, before the significant run-up in pricing began. Panel pricing is down 64 percent from the May peak and 14 percent below fall 2020 pricing. However, the free-fall in pricing appears to have ended and is now steadying at current levels.

(Continued on following page)

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Supply Chain Trends (continued)

We expect to see these raw material disruptions further impact key building material categories such as roofing, PVC pipe and fittings, rigid insulation, specialty coatings, epoxies, resin-based bench and counter tops, as well as plastic molded parts.

In addition, the impact of transportation and shipping disruptions is being felt across a wide range of products. In this issue, we will take a deep dive into some of the key factors affecting transportation and will introduce a new metric (LMI) that we will be tracking to gauge the health of key logistical factors.

Further analysis on specific categories:

 Roofing Products: Roofing materials are typically procured as a complete package to be sure that all components are compatible and to allow roofing providers to warrant the total system. We have had some success with substituting certain materials to improve delivery dates, however, this takes a coordinated effort. It is important to work hand-inhand with the roofing material supplier, the subcontractor, the design team and the owner. Some substitutions require design modifications. For example, replacing polyISO with polystyrene will typically result in the need for a thicker insulating panel to achieve the same R-Value. **Steel:** Steel has escalated dramatically since August of 2020. Since August, structural shapes have increased between 70 to over 100 percent. Because of the nearly year-long lead-times associated with joists, projects are being redesigned to castellated beams or steel shapes to improve lead times. Other projects are moving towards a phased GMP approach, where structural steel designs are completed first and can be procured, securing a place in the fabrication queue. Elevated pricing and lead times are expected to remain, with easing anticipated sometime in 2022.

Building control

Electrical commodity

systems

materials

			-		THE RESERVE OF THE PERSON NAMED IN COLUMN 2 IS NOT THE OWNER.
Status Key		Trending Up Significantly	7 Tr	ending Up	Stable/Consistent Fluctuating Trending Down
Category	Current Lead Time	Current Price	6-12 Mo. Forecast Lead Time	6-12 Mo. Forecast Price	Comments
Lab casework and fume hoods	7	7	-	-	Lab casework manufacturers are being impacted by two main inputs: steel and resins (for bench tops). Resin pricing has increased by over 300 percent and steel pricing has doubled. In addition, resin is in short supply and is leading to extended lead times. Overall, lab casework pricing is up 10 to 12 percent and lead times have been extended from 8 to 12 weeks, to 26 weeks.
Plumbing (includes fixtures)	7	7	∼	7	Prices for copper, PVC, steel and stainless steel plumbing materials are expected to increase over the next six months as demand remains strong and supply chain issues persist. Price and lead time for plumbing fixtures holds the greatest risk over the next six months due to container ship transportation delays and premiums for ocean freight. YTD average price changes for pipe are up 76 percent for PVC, up 44 percent for steel and up 51 percent for copper.
HVAC equipment	1	7	1	7	High demand, shortage of factory labor and supply chain constraints have led to significant lead time increases within the past three months across all HVAC equipment manufacturers. Reported lead times are between two and three time longer than typical lead times prior to the pandemic, while actual lead times being experienced by projects can be as much as four times longer. Air cooled chillers and full custom air handlers are experiencing the longest lead times in the range of 30 to 40 weeks. In order to mitigate risk of late deliveries, projects should add a minimum four week safety factor to all quoted lead times.

While a global shortage of semiconductors is affecting several

industries, the impact on building controls has been minimal

due to mitigation efforts by controller manufacturers. Prices

lead time in this category.

chain constraints.

and lead time for materials are expected to increase moderately,

however installation labor will continue to dominate price and

Price and lead time for electrical commodity items are expected

to increase over the next six months due to demand and supply

↓ Click to jump to each section

Supply Chain Trends (continued)

- Steel: Steel pricing appears to be leveling off. In addition, there are some discussions starting around eliminating the Section 232 tariffs on imported steel. The Coalition of American Metal Manufacturers and Users (CAMMU) is urging the Biden Administration to eliminate the tariffs, stating that the U.S. has become an island of high-cost steel.
- Architectural Interiors: Metal studs continue to escalate with Super Stud announcing a 10 percent increase as of October 1, 2021. This brings total inflation on metal studs to 100–120 percent since Fall 2020.
 - After a quiet period for drywall pricing, new increases have been announced by many manufacturers (including USG, CTD and Nat. Gyp.) of 20 percent, effective in October. Poly ISO and polystyrene insulation also continue to escalate. Hunter (polyISO producer) has announced a 10 percent increase, effective Jan. 1, 2022. In addition, Dupont has announced a 10 percent increase on their polystyrene products, effective Oct. 1, 2021. Lead times for Rockwool's mineral wool product is now exceeding 200 days, leading them to announce that they will continue to acknowledge new orders but will not provide delivery dates.
- Wood-based Building Materials: Lumber pricing presented in the Supply Chain section of this report, reflects current pricing as it exits lumber mills in North America. This pricing has fallen dramatically. However, there is still higher priced inventory in the supply chain all the way through to wholesale and retail outlets. Plywood and lumber price declines at points of sale will continue to fall as inventory levels are burned off. Earlier in this report, we presented plywood price data that had not fallen off as dramatically, because it is measured at points of sale.

Special Considerations:

Status Key		rending Up ignificantly	7 Tr	ending Up	Stable/Consistent Fluctuating Trending Down
Category	Current Lead Time	Current Price	6-12 Mo. Forecast Lead Time	6-12 Mo. Forecast Price	Comments
Doors and Hardware	7	7	7	7	Hollow metal door pricing is continuing to be impacted by the escalation in steel pricing. Metal door pricing has escalated by 50 percent or more, and lead times have also extended. Typical metal door lead times of four to six weeks are now extended out to 12 weeks or more. The wood door supply chain is experiencing significant disruptions because of lack of available cores. Lead times for wood doors can be as long as 28 weeks. Door hardware has not been impacted as harshly. Lead times for door hardware now stand at six to eight weeks, slightly extended from the typical four to six weeks.
Appliances	7	7	7	7	Demand for appliances continues to be very high. Relief is not expected until Q2 2022 at best. Prices are expected to rise over the next 6 to 12 months by at least three to five percent. In addition to high demand, production is also being limited by the global semiconductor shortage and shipping challenges.
Elevators, Escalators, Moving Walks	7	7	7	7	Prices are up slightly from Q2, however year over year, pricing for low-rise and mid-rise elevators are up significantly. Lead times are flat compared to Q2 but are up two to three weeks in each category, including escalators. Price and lead times are likely to increase further over the next six months.
Electrical Gear	1	•	7	1	Pricing for all electrical equipment is up significantly since Q2, as a result of very large demand, reduced labor and increased input costs. Lead time for 600v to 5kV switchgear is also up significantly, now 44 to 52 weeks due to strong demand from data centers and warehousing projects. Busway and solid-state breakers are running 20 weeks and 40 weeks respectively.
Lighting	7	7	7	7	All major lighting manufacturers have announced price increases in the range of five to ten percent. Prices and lead times are expected to increase over the next six months as demand remains strong and shipping delays and costs increase.

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Supply Chain Trends (continued)

• **Transportation:** Of all the challenges that logistics managers are currently facing, transportation prices and capacity are the most difficult. Volume of shipments are up across the board as consumers in the U.S. continue to buy goods, and ocean carriers do not have enough capacity to meet consumer demand. Spot rates for shipping containers remain elevated and costs for ocean freight are almost 400 percent higher than last year.

Prices to ship a container from China to the west coast of the U.S. soared to more than \$20,000 per unit in August as the container dislocations continue to create difficulties. Pre-runup pricing was \$3,800 per unit. In mid-September there were a record number of 67 vessels waiting to be unloaded at the LA/Long Beach ports, which account for about 40 percent of all inbound volume from Asia to the U.S. Moving inland, lingering challenges remain: shortages of labor, trucks, chassis and rail equipment are amplifying the problem. Volume is up 18 percent in railroad intermodal units year over year. Problems persist and there has been no relief to shortages of labor. Fuel prices continue to remain elevated, and surcharges are continuing to be enforced. These issues are being experienced at ports globally, and project teams should continue to be aware of extended ship times when determining release dates. Categories to monitor include plumbing fixtures, lighting fixtures, escalators, moving walks and absorption chillers. In some cases, curtainwall and structural steel are impacted. If projects are sourcing glass or fans from Germany, be aware that extended ship times should be expected.

<u>Risks:</u> China has implemented a zero-tolerance approach to COVID cases, as risk from the delta variant increases. This means that even a few cases can cause a whole part to be shut down. The second largest part in China went into lockdown for two weeks.

port to be shut down. The second largest port in China went into lockdown for two weeks, and the shutdown created increased backlog in products. If drastic measures continue to be enforced, this could further reduce inventory levels and product availability downstream..

Logistics: The Logistics Managers Index (LMI) tracks key metrics, such as transportation, warehousing and inventory data collected monthly from industry professionals. A value less than 50 indicates a contracting market and above 50 a growing market. The average through January 2020 was 63.15, with the LMI trending down. The average from February 2020 to present is 66.31, indicating strong expansion. June-August 2021 were the highest three months since inception, with an average of 74.4, largely driven by transportation growth. The key takeaway for August's LMI of 73.8 is that transportation prices and utilization continue to grow. Peak transportation season is in full swing (with the holidays approaching), which adds pressure to a strained supply chain making relief early next year unlikely.



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Sources and References

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Previous Reports

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April 2021 (Q1 Report)

January 2021 (Q4 Report)

October 2020 (Q3 Report)

June 2020 (Q2 Report)

February 2020

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October 2019

Questions, Comments and Feedback

If you have questions, comments or feedback about the data and information presented in this report, please reach out to <u>Steve Stouthamer</u> or <u>David</u> <u>Formichella</u>.

If you are having issues with the file, spot an error or are interested in developing material similar to this report, please reach out to <u>Sarah Vakili</u>.