

2022 AGC / A₄LE Cost Update

2020-2021 Cost Influences

2021 Costs

IDC Research in August 2021:

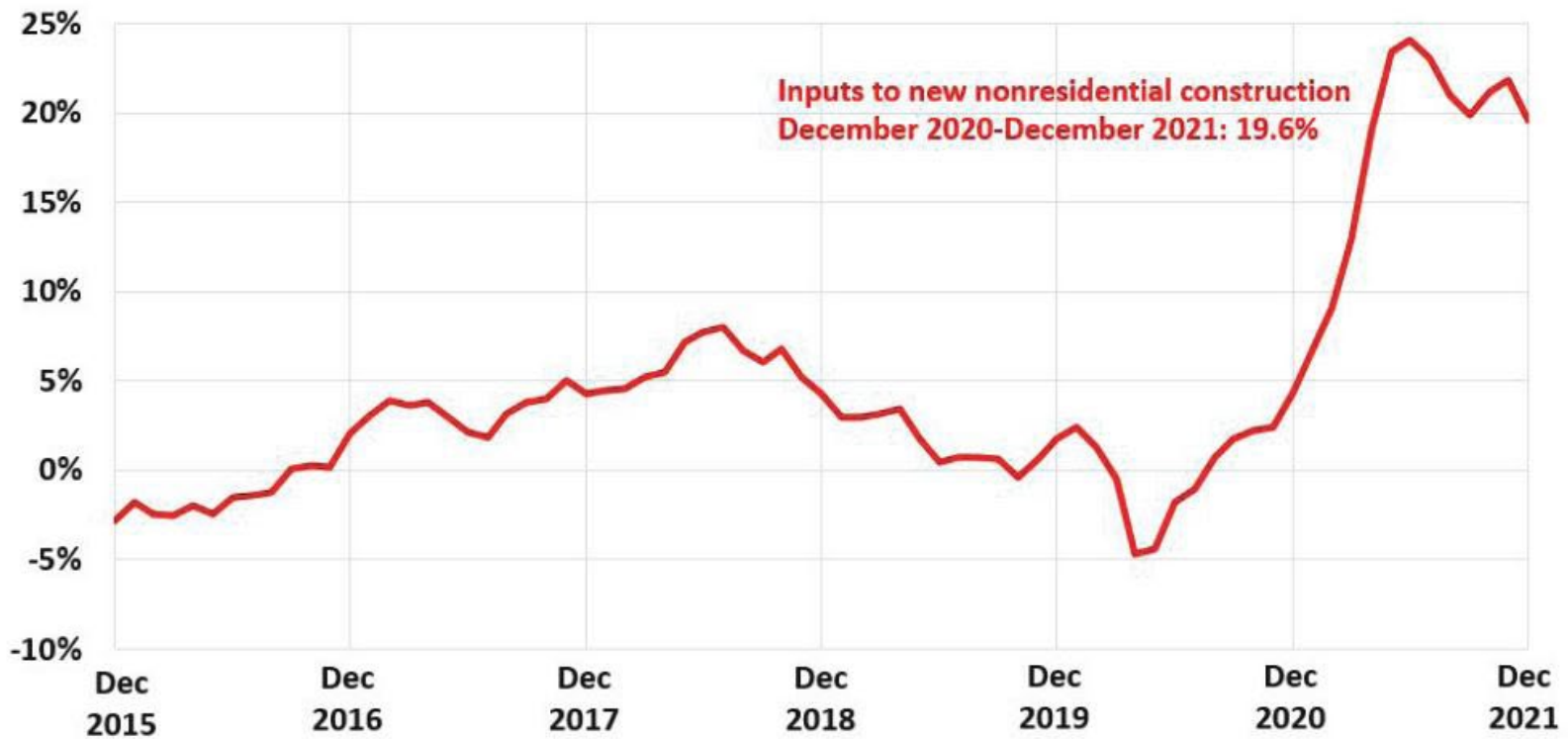
- 75% of developer projects nationally are out of budget and are 70 days late

AGC 2021 cost results: 2021 Non-residential costs increased for the year by 24%

Figure 1

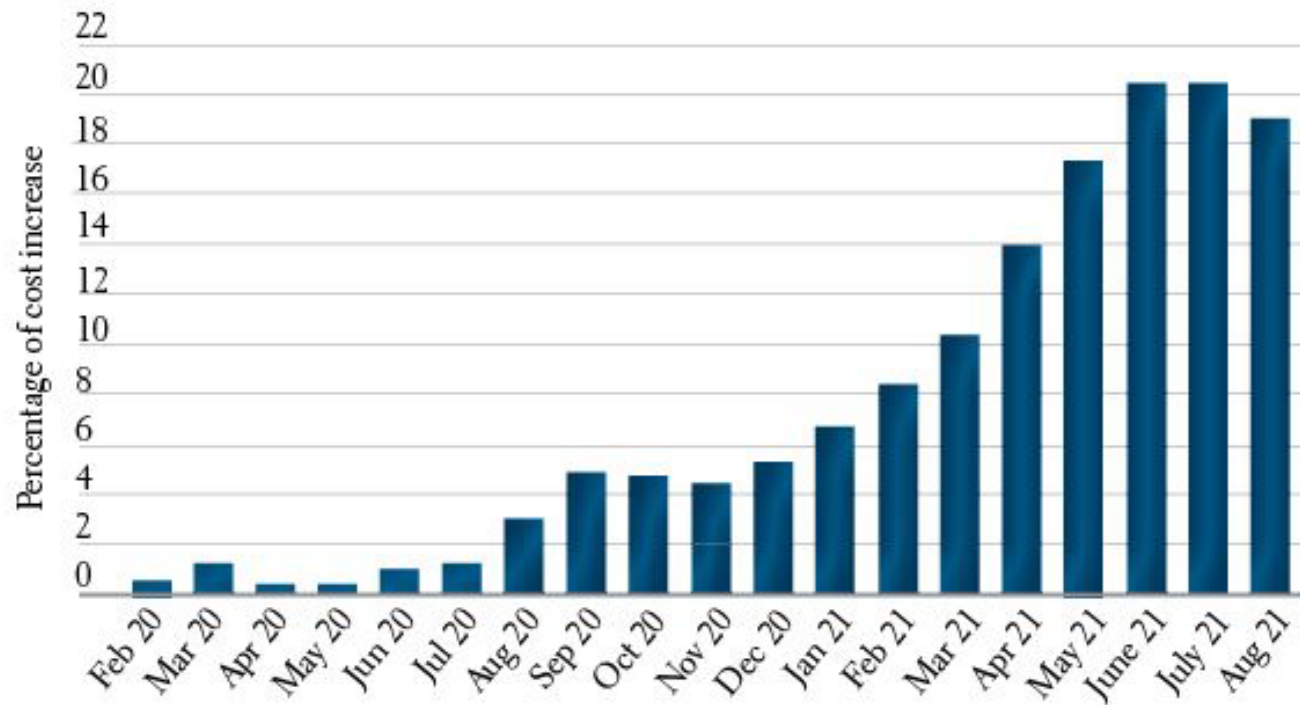
Change in prices for inputs to construction

Year-over-year change in PPI, 2015 - 2021, not seasonally adjusted

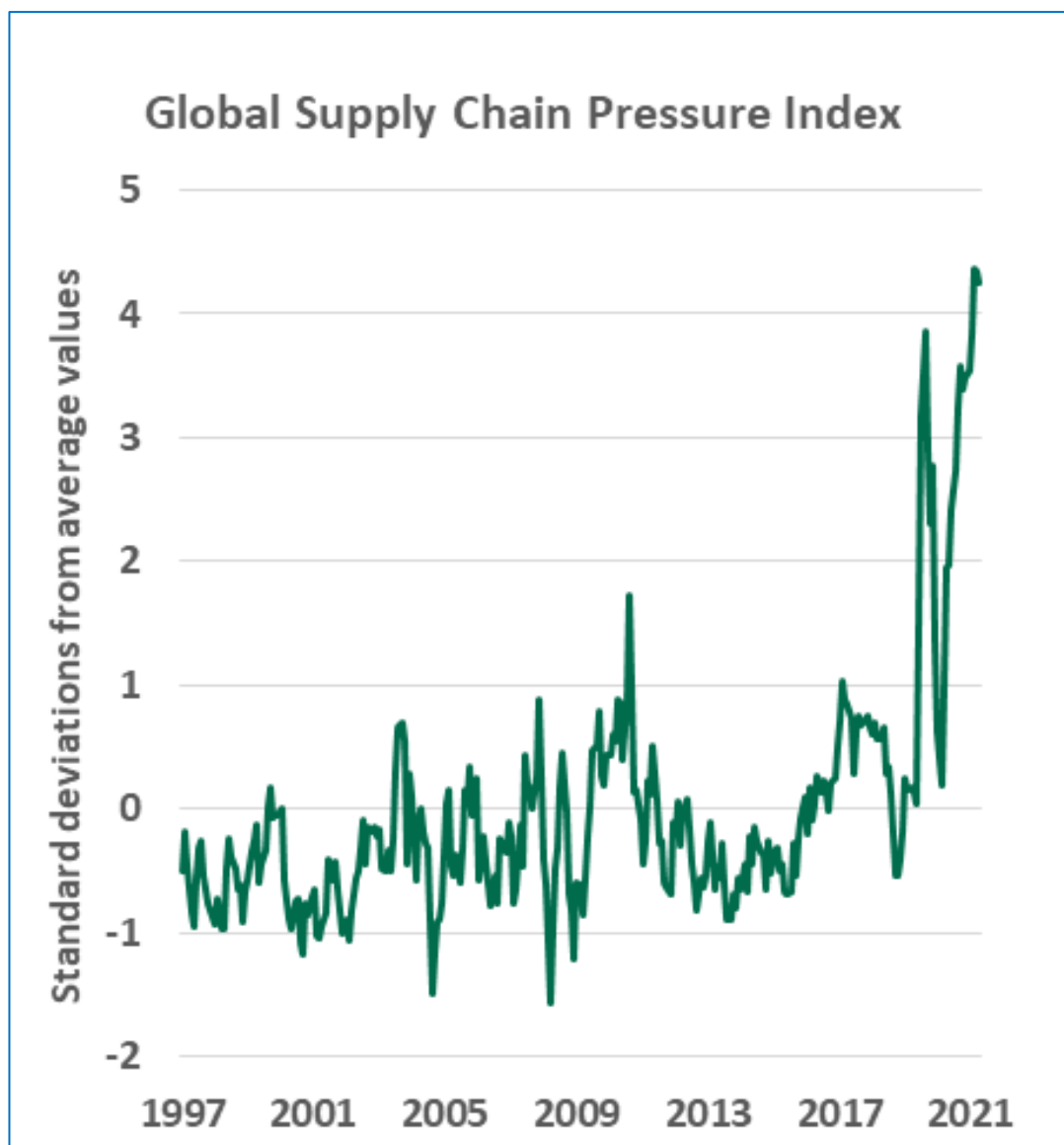


Source: Bureau of Labor Statistics, producer price indexes, www.bls.gov/ppi

PRICES SURGE FOR CONSTRUCTION MATERIALS AND COMPONENTS IN 2021 VS. 2020



Source: U.S. Department of Labor Bureau of Labor Statistics

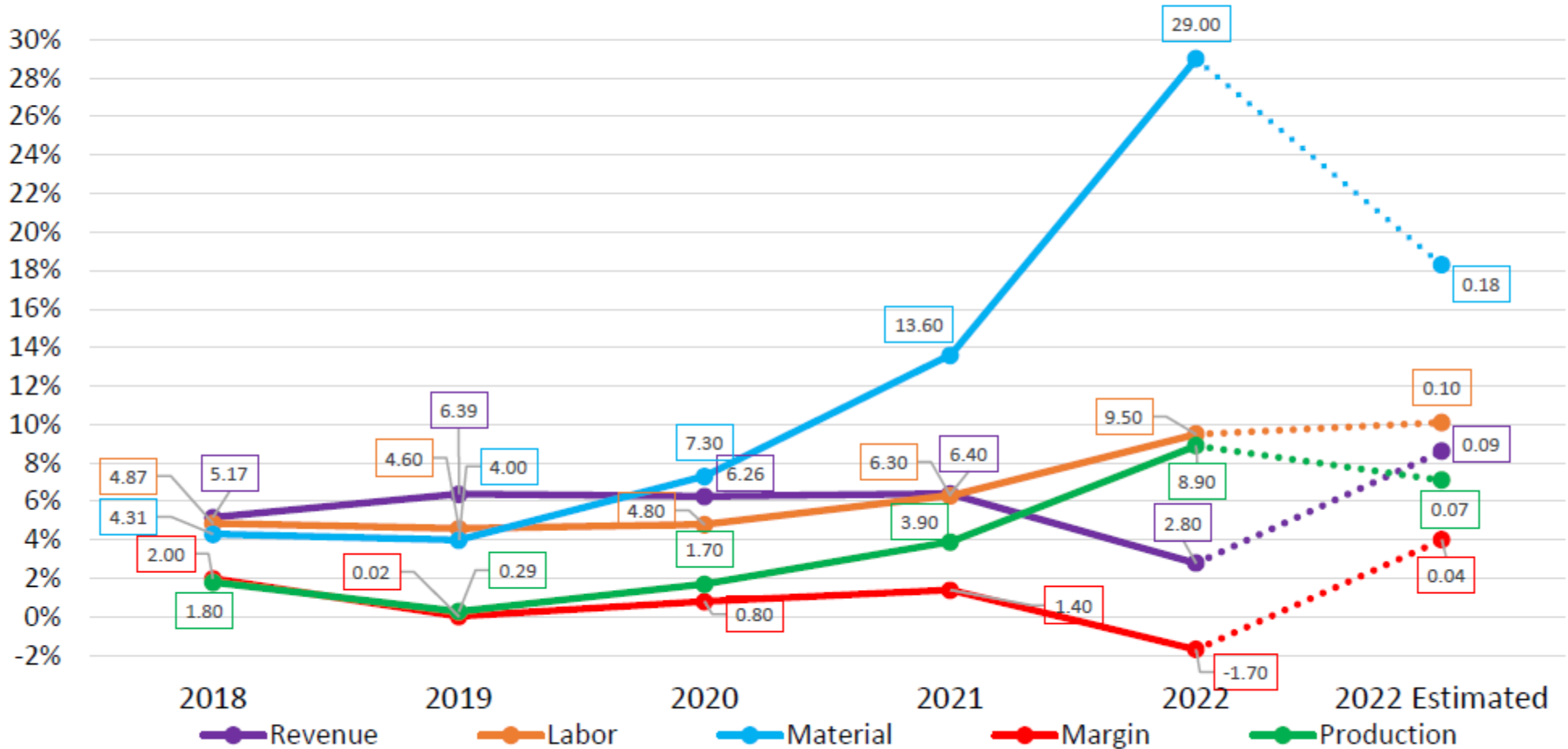


Sources: Shanghai Shipping Exchange, Goldman Sachs, Federal Reserve Bank of New York

Money Supply Inflation

Year	Increase in Money Supply	Inflation Impact Felt In:
2008 - 2009	8%	2010
1/2020 - 6/2020	20%	2021 - 2022
2021	20% +	2022 - 2023

Subcontractor Revenue & Profit Materials & Labor 2018 - 2021 Actual with 2022 Projected

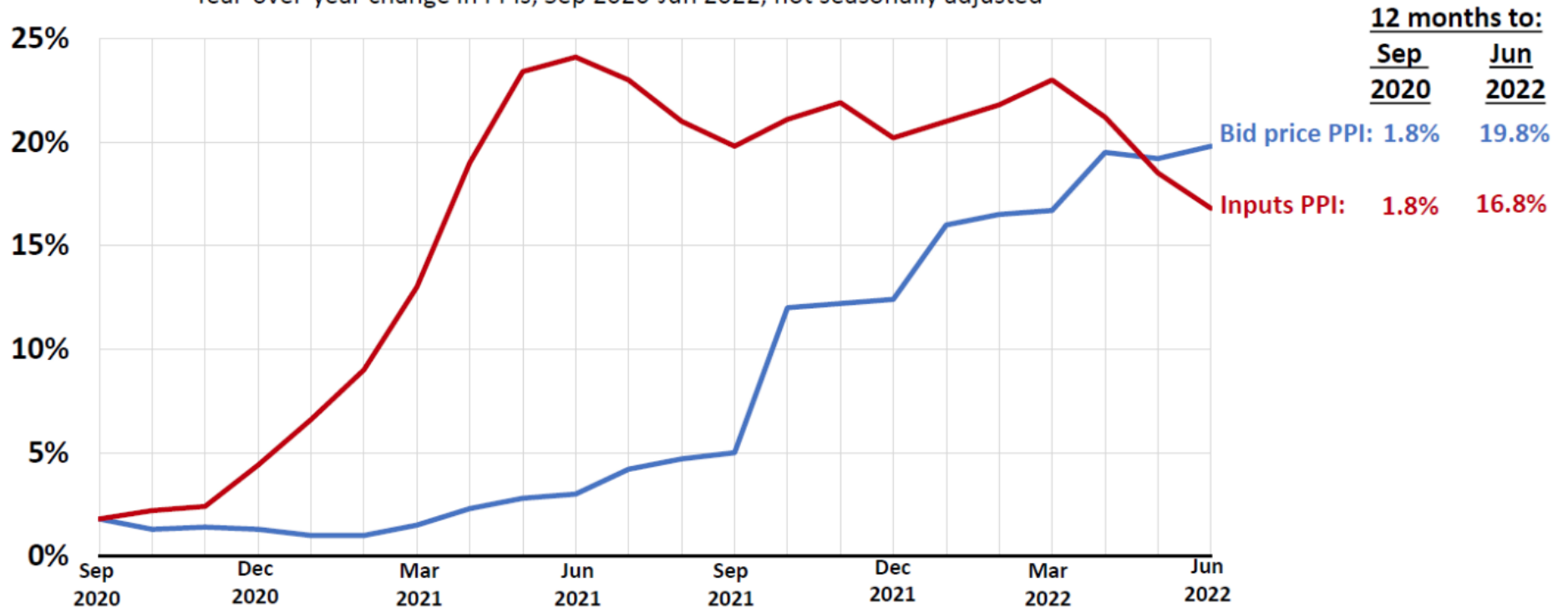


Source: Durotech Inc. proprietary Texas market wide cost survey.

Figure 5

Costs vs. bid prices for new nonresidential construction

Year-over-year change in PPIs, Sep 2020-Jun 2022, not seasonally adjusted



Source: Bureau of Labor Statistics, producer price indexes, www.bls.gov/ppi

Increase in Material Cost

		Estimated	Actual
Houston Subcontractors	2020	7.3%	7.6%
Houston Subcontractors	2021	13.6%	29%
Houston Subcontractors	2022	18.3%	
	2020 - 2021	20.9%	35.6%
AVERAGE		10.45%	17.8%

= 1.5% per month

Source: Durotech Inc. proprietary Texas market wide cost survey.



Sources: Bloomberg, Freightos

Driver Shortage: Don't Fall For It

May 05, 2022 | By Brian C. Gaffney



Tags: Trucking, Supply Chain Management, Legislation, Public Policy, and Regulations, Labor Management, Transportation

The talking point that states the trucking industry is facing a driver shortage to explain the state of supply chain is a lie. Don't fall for it. There has been a "shortage" of drivers for well over 20 years so be sure you are getting honest answers when digging into your supply chain issues.

I left the trucking industry in 2011, when the Hours of Service (HoS) rules were a pending change to combat driver fatigue and give carriers the bargaining power they needed to force shippers and receivers to pay more money for keeping drivers idle at docks while they waited to load or unload.

The HoS failed to give that power, however, because the carrier would just be denied the chance to haul that freight ever again. Carriers gave in, and the same tune continues to play. Drivers receive minimal compensation for the time they sit; time that they cannot log as "off duty, not driving" or my favorite "off duty, sleeping" as I would nap until my truck was loaded.

Back then, my drive time would be suspended while in the sleeper, ready to use once my truck was finally loaded—and I was rested. Drivers today cannot do so, and when they are finally loaded, they must then hurry to make up for lost time.



Brian C. Gaffney,
Supply Chain
Specialist, Natural
Fiber Welding, 309-
214-3009

DOT Hours of Service Rules

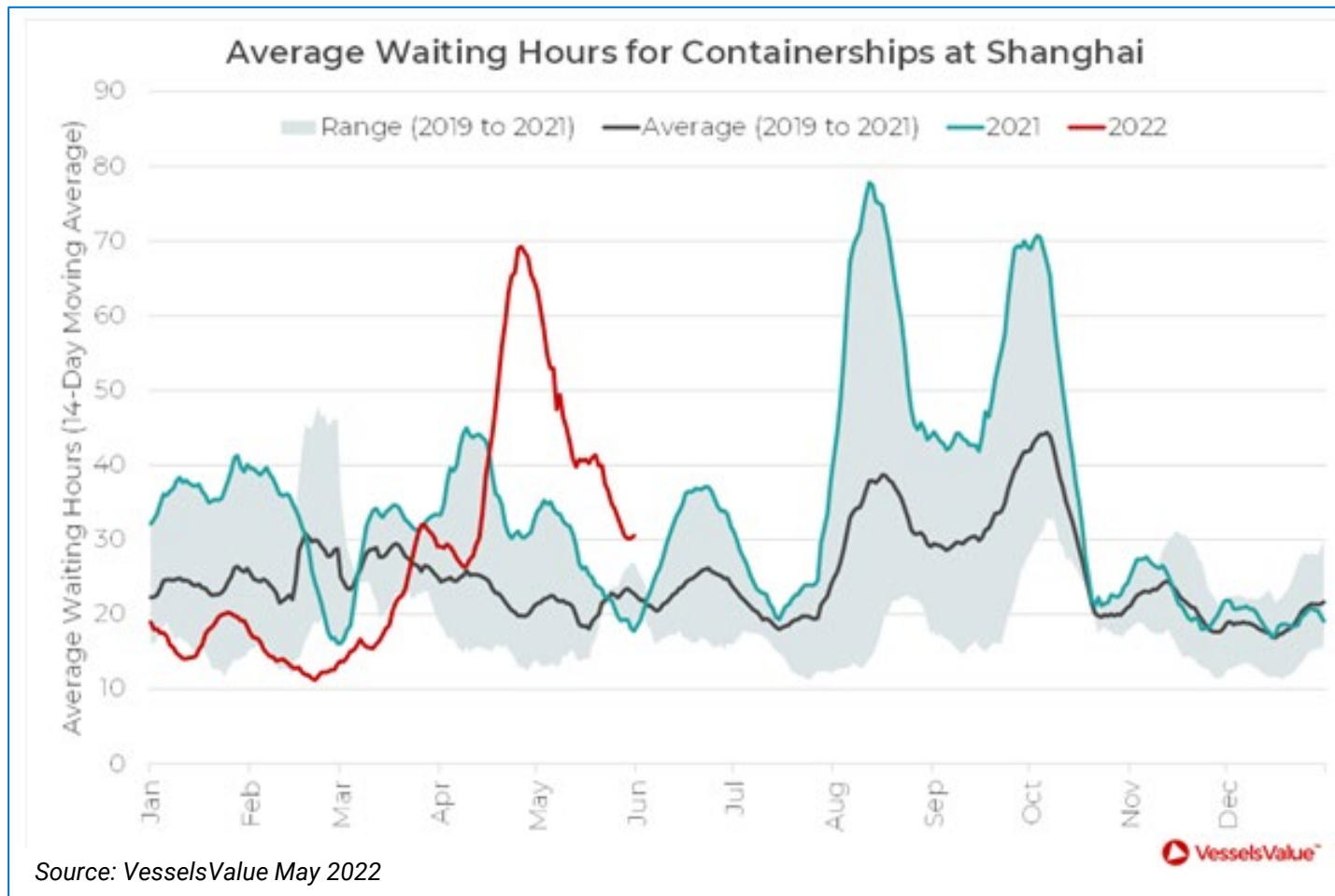
- Metered drive time
- Cannot sleep while loading
- Cannot rest when they want

TRUCKLOAD TROUBLES

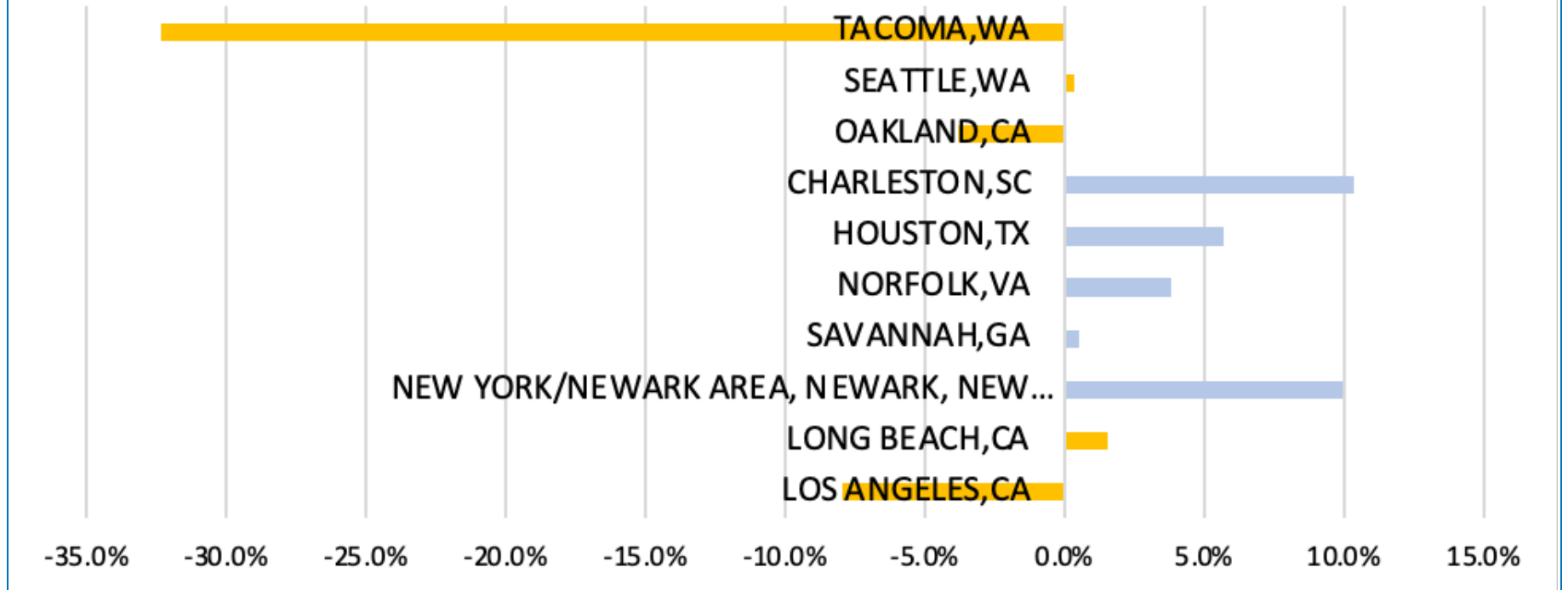
- **51% of truckloads** booked in 2021 were moving partially empty
- **96% of LTL shippers** experience delays between 1-4 days; some experience 5-6 day delays
- **1 in 2 shippers** are paying for air in underutilized truckload shipments
- **100% of shippers** had to remanufacture and reship goods due to damage

– *Flock Freight survey of 200 shippers across various industries*

April 2022 • Inbound Logistics 1



Top 10 Ports Volume Shift May - Sep '21 Versus Feb - June '22



Source: Descartes Datamyne

7/26/22

One TEU Shanghai to West Coast \$6,957.00
to East Coast \$10,000.00

(source: FBX)

Houston June 2022

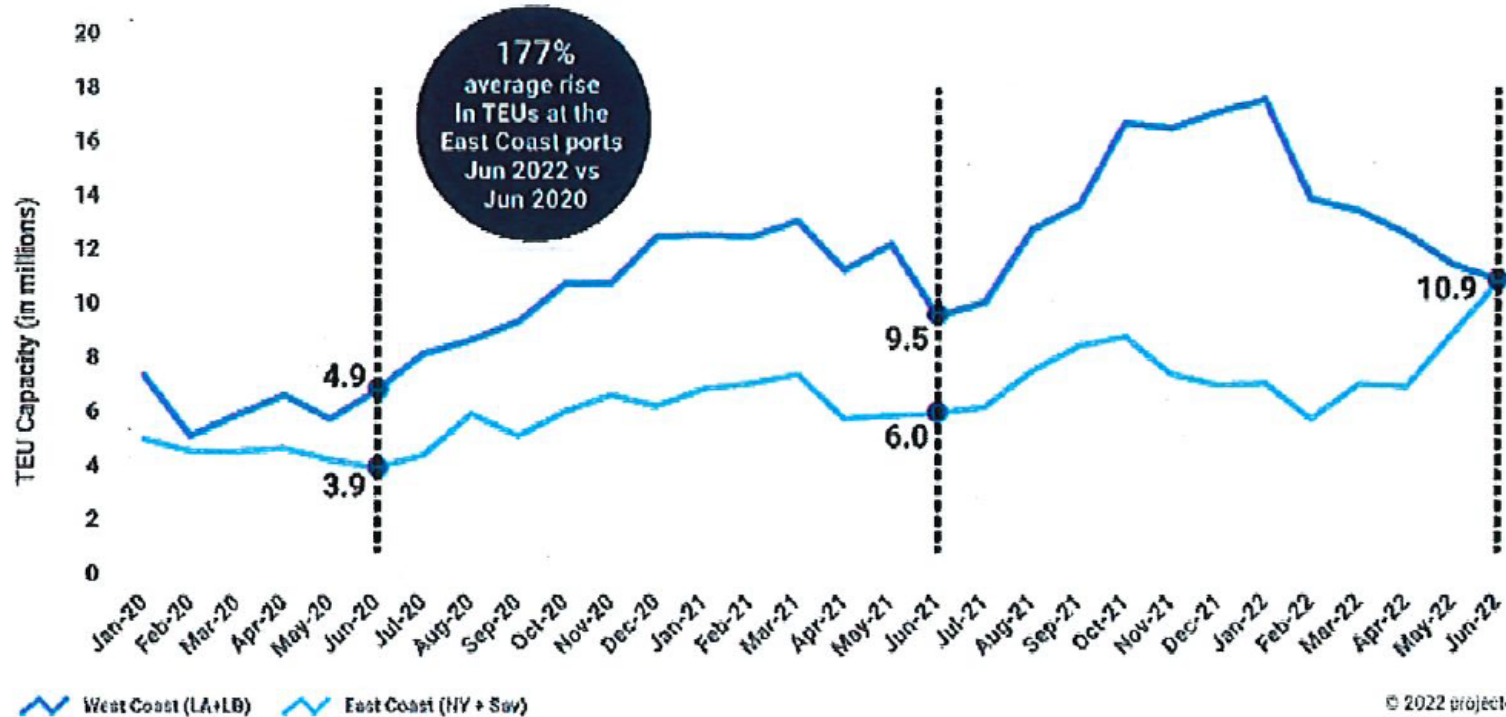
TEU volume +106% yoy, +25% ytd

(source: Port of Houston)

Arriving TEU Volumes by Month - West Coast vs East Coast

While EC ports are seeing a steady rise in the TEU capacity since Feb 2022, the WC ports are witnessing a decline

project44



As of 7/13/22:

- Port of Long Beach has a record number of imported containers
- Dock workers contract expired 6/30/22
- Rail service is an issue
- 27,000 containers on docks at Los Angeles, at \$100/container plus \$100/Day
- 25,000 containers on docks at Long Beach, at \$100/container plus \$100/Day
- AB5: Could limit independent truckers
California truckers claim they could lose 25,000 + drivers

Materials Commodity Prices

Copper		Iron Ore		Aluminum		Baltic Dry Index (\$135,000 in 2008)	
14-Mar	\$3.04 /lb	11-Jan	\$180.00 /ton	11-Feb	\$1.20 /lb	12-Jan	\$1,783
15-Mar	\$2.74 /lb					14-Jan	\$2,337
16-Feb	\$2.02 /lb	16-Feb	\$45.58 /ton	16-Feb	\$0.68 /lb	16-Feb	\$2,417
17-Feb	\$2.78 /lb	17-Feb	\$86.60 /ton	17-Feb	\$0.84 /lb	17-Feb	\$7,402
18-Jun	\$3.38 /lb	18-Jun	\$66.00 /ton	18-Jun	\$1.05 /lb	18-Jun	\$1,340
19-Mar	\$2.92 /lb	19-Mar	\$85.79 /ton	19-Mar	\$0.95 /lb	19-Mar	\$600
20-Mar	\$2.84 /lb	20-Mar	\$83.76 /ton	20-Mar	\$0.87 /lb	20-Mar	\$582
21-Mar	\$3.99 /lb	21-Mar	\$163.68 /ton	21-Mar	\$1.00 /lb	21-Mar	\$2,072
22-Mar	\$4.62 /lb	22-Mar	\$150.11 /ton	22-Mar	\$1.66 /lb	22-Mar	\$2,684
↓		↓		↓		↓	
15% Increase		9% Decrease		66% Increase		30% Increase	
22-Jul	\$3.31 /lb	22-Jul	\$106.69 /ton	22-Jul	\$1.10 /lb	22-Jul	\$2,145

Source: Composite of Spot Market sources

2016-2021 Square Foot Data Average Ranges Greenfield

Elementary School Cost Data

	2016	2017	2018	2019	2020	2021
Spread	\$169-220	\$153-200	\$172-233	\$151-253	\$180-275	\$208-337
Low/High	\$51	\$47	\$61	\$102	\$95	\$98

Middle/Jr. High School Cost Data

	2016	2017	2018	2019	2020	2021
Spread	\$171-245	\$178-254	\$182-256	\$168-248	\$209-266	\$208-253
Low/High	\$74	\$76	\$74	\$81	\$57	\$45

High School Cost Data

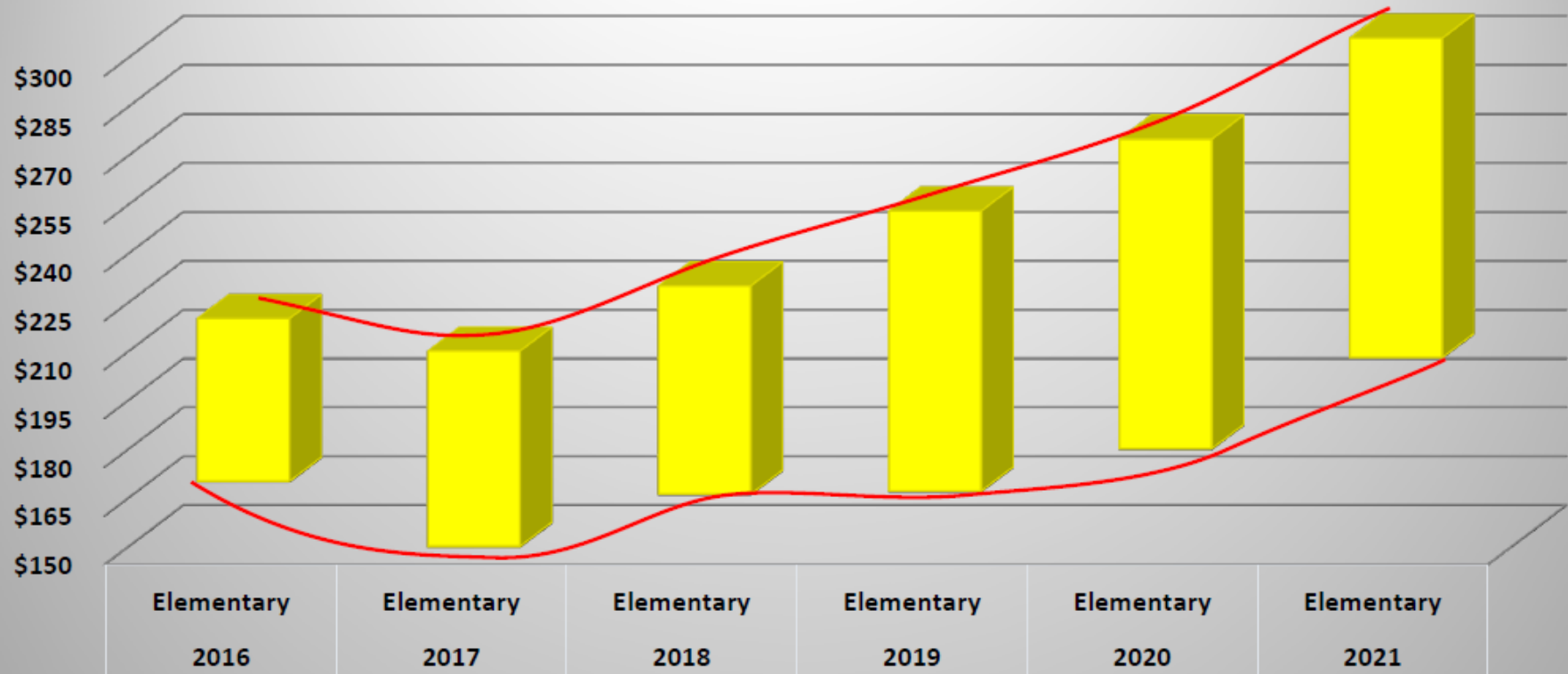
	2016	2017	2018	2019	2020	2021
Spread	\$210-253	\$218-263	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
Low/High	\$43	\$45				

HISD not included in this survey.

Note: The above SF cost are for new schools and do not include any addition, renovation, or replacement schools.

Source: Durotech Inc. proprietary Texas market wide cost survey.

Elementary School Square Foot Trends



Source: Durotech Inc. proprietary Texas market wide cost survey.

Jr. High School Square Foot Trends



Source: Durotech Inc. proprietary Texas market wide cost survey.

2021 Houston Market Wide Results

Q1/2021

230.97 / sf

Q2/2021

293.78 / sf = +27%

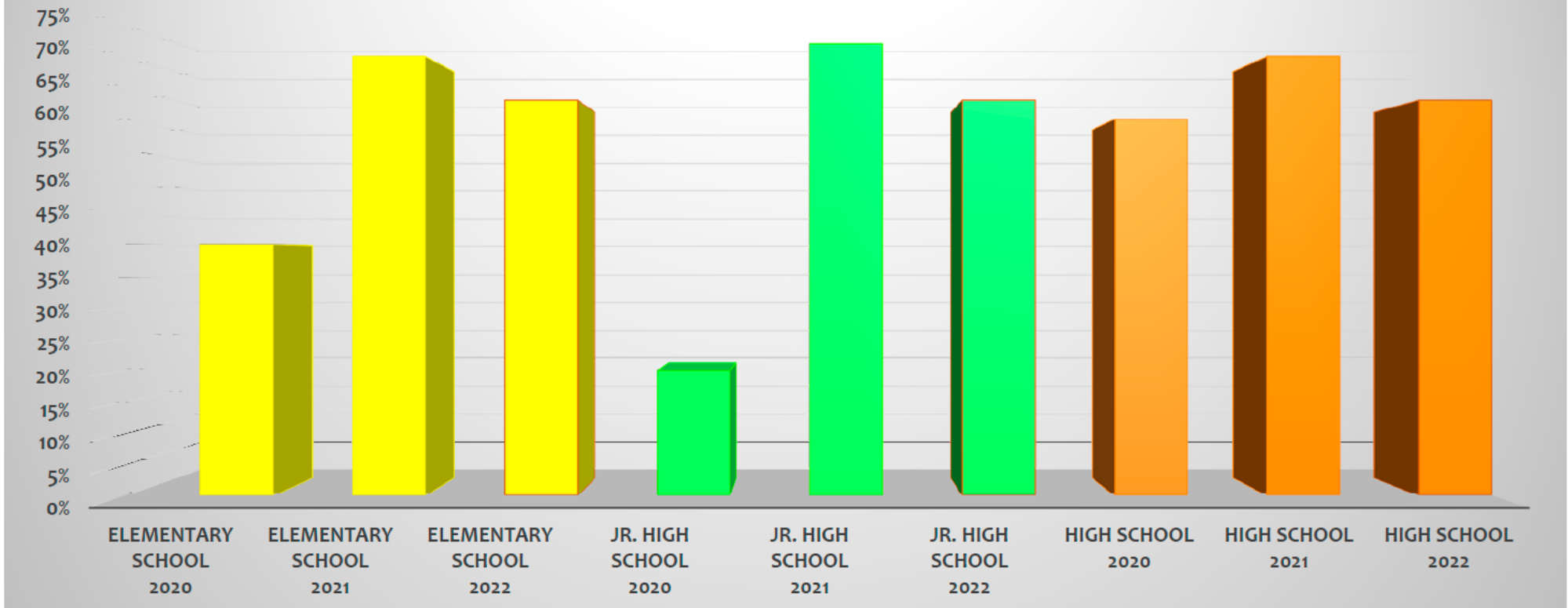
Source: Durotech Inc. proprietary Texas market wide cost survey.

Design Professional Average Future Cost Projections

	2019	2020	2021	2022	2023	2024
Elementary School	\$200-258/sf (Avg. \$229/sf)	\$195-255/sf (Avg. \$222/sf)	\$180-270/sf (Avg. \$225/sf)	\$240-335/sf (Avg. \$282.50/sf)	\$260-350/sf (Avg. \$305/sf)	\$290-375/sf (Avg. \$320/sf)
Middle / JH School	\$210-280/sf (Avg. \$250/sf)	\$225-245/sf (Avg. \$231/sf)	\$200-290/sf (Avg. \$245/sf)	\$260-350/sf (Avg. \$273.50/sf)	\$276-322/sf (Avg. \$299/sf)	\$309-345/sf (Avg. \$321/sf)
High School	\$245-305/sf (Avg. \$280/sf)	\$245-290/sf (Avg. \$267/sf)	\$190-270/sf (Avg. \$230/sf)	\$287-305/sf (Avg. \$296/sf)	\$317-345/sf (Avg. \$331/sf)	\$332-386/sf (Avg. \$359/sf)

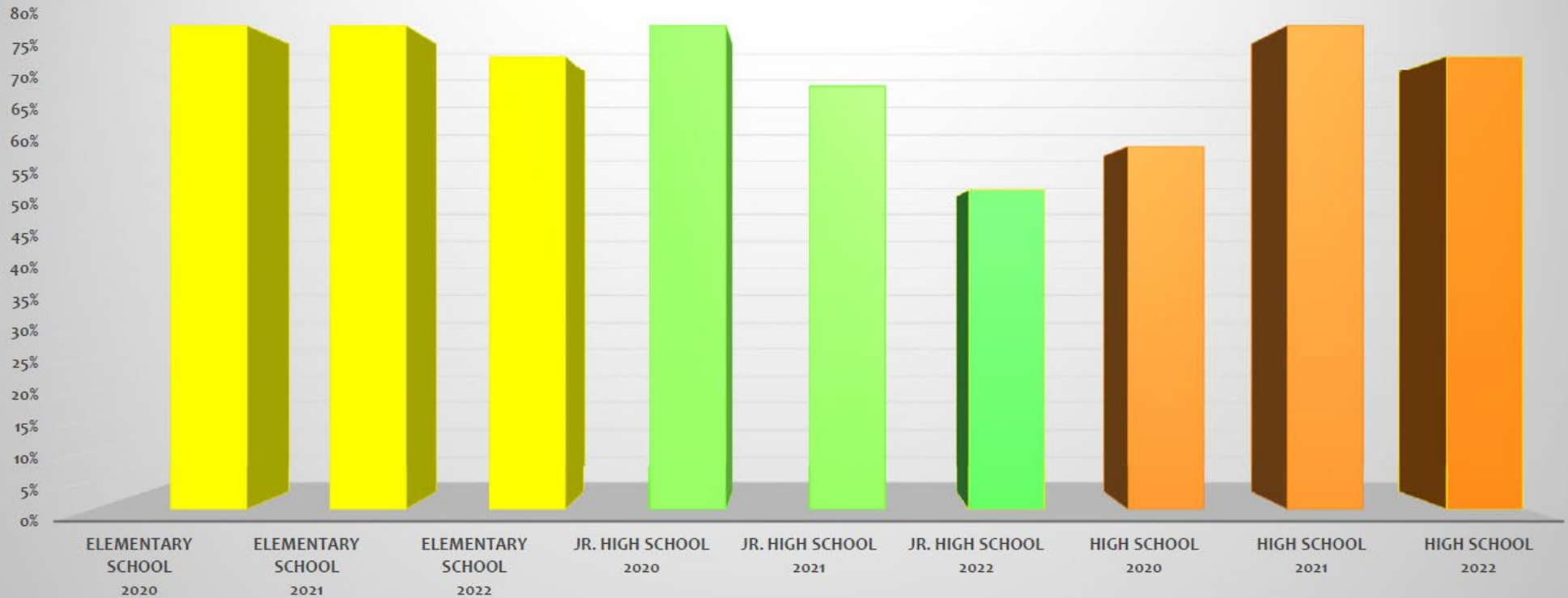
Source: Annual Design Professional Survey by Durotech Inc.

Design Professionals Concerns - Curriculum Cost Impact



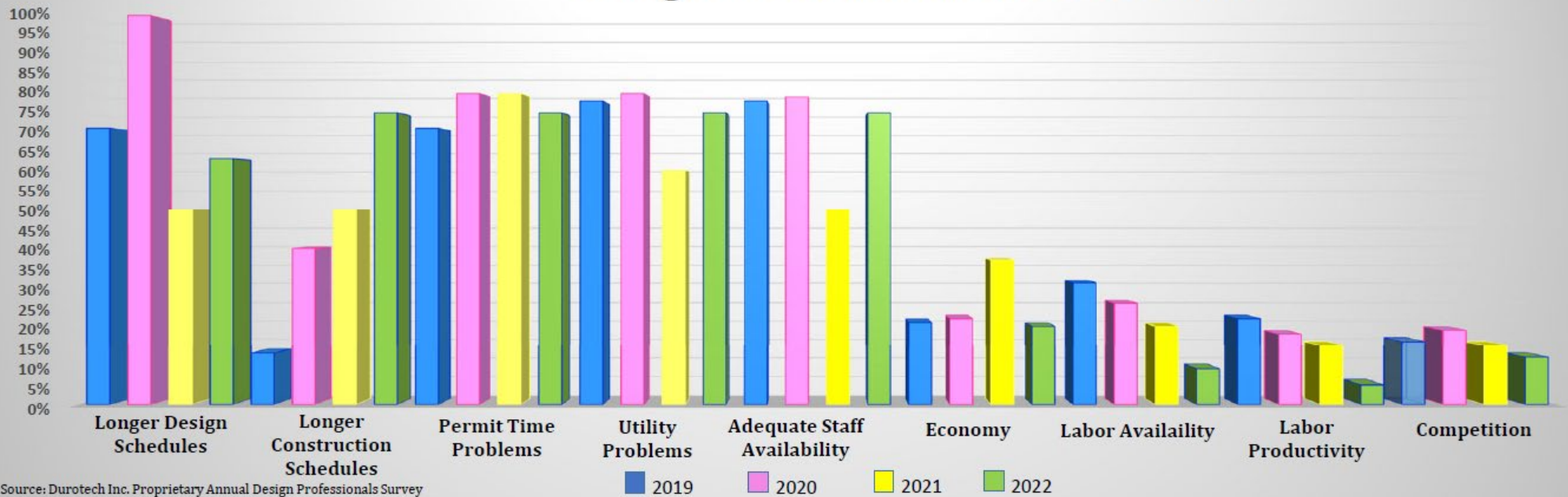
Source: Durotech Inc. Proprietary Annual Design Professionals Survey

Design Professionals Concerns - Design Expectations



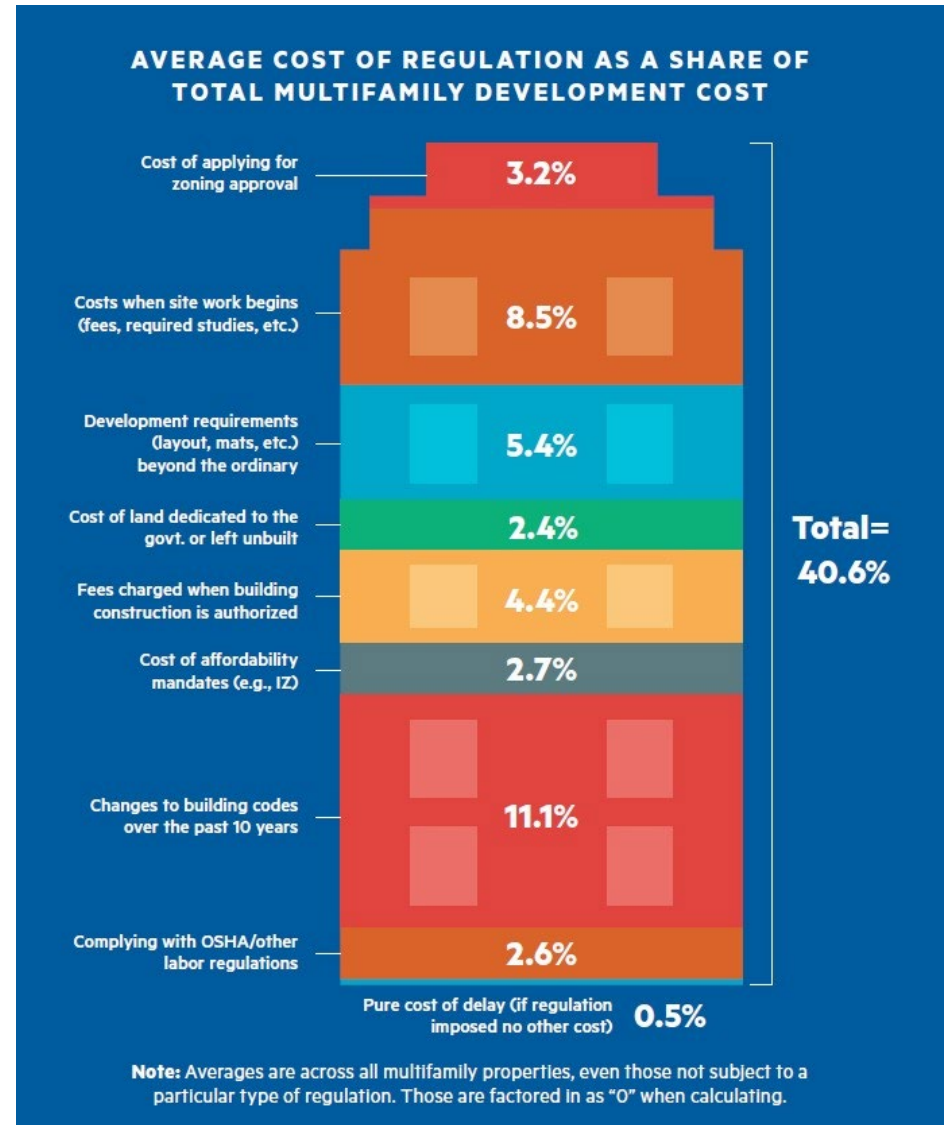
Source: Durotech Inc. Proprietary Annual Design Professionals Survey

Design Professionals Concerns



Per a study by National Association of Home Builders and National Multi-Family Council:

40.6% of new multi-family construction cost is attributed to government regulations.



Specialty Contractor Surveys & Trends

	Labor Intensive Trades					Finish/Specialty Trades					MEP Trades					Average All Trades					
	2019 Actual	2020 Est.	2020 Actual	2021 Actual	2022 Est.	2019 Actual	2020 Est.	2020 Actual	2021 Actual	2022 Est.	2019 Actual	2020 Est.	2020 Actual	2021 Actual	2022 Est.	2019 Actual	2020 Est.	2020 Actual	2021 Est.	2021 Actual	2022 Est.
Materials Cost																					
Increases	3.50	3.90	5.40	38.10	15.90	2.98	5.36	8.40	15.60	15.50	6.17	5.72	11.20	28.83	24.90	4.00	4.80	7.60	13.60	29.00	18.30
Labor Cost																					
Increase	4.10	3.80	4.90	9.70	15.90	3.50	4.40	6.10	6.80	6.60	4.56	6.56	4.75	11.83	10.46	4.60	4.60	5.00	6.30	9.50	10.10
Labor																					
Production	0.29	0.79	0.18	4.40	0.79	-1.80	7.70	3.81	-1.80	7.70	0.44	1.56	2.08	0.44	1.56	0.29	3.60	1.80	3.90	8.90	7.10
Revenue																					
Increase	7.50	6.90	-2.12	6.41	12.88	-2.20	1.90	11.80	-2.60	6.50	14.89	2.83	14.00	4.17	6.17	6.31	12.60	6.50	6.40	2.80	8.60
Margin																					
Increases	-1.20	0.20	2.00	0.90	3.60	0.60	1.55	0.20	4.90	2.50	27.22	1.72	0.04	5.00	6.25	0.02	0.02	0.08	1.40	-1.70	4.00

* Percentage indicated are an average of all respondents in each category and overall.

Source: Durotech Inc. proprietary Annual Subcontractor Survey.

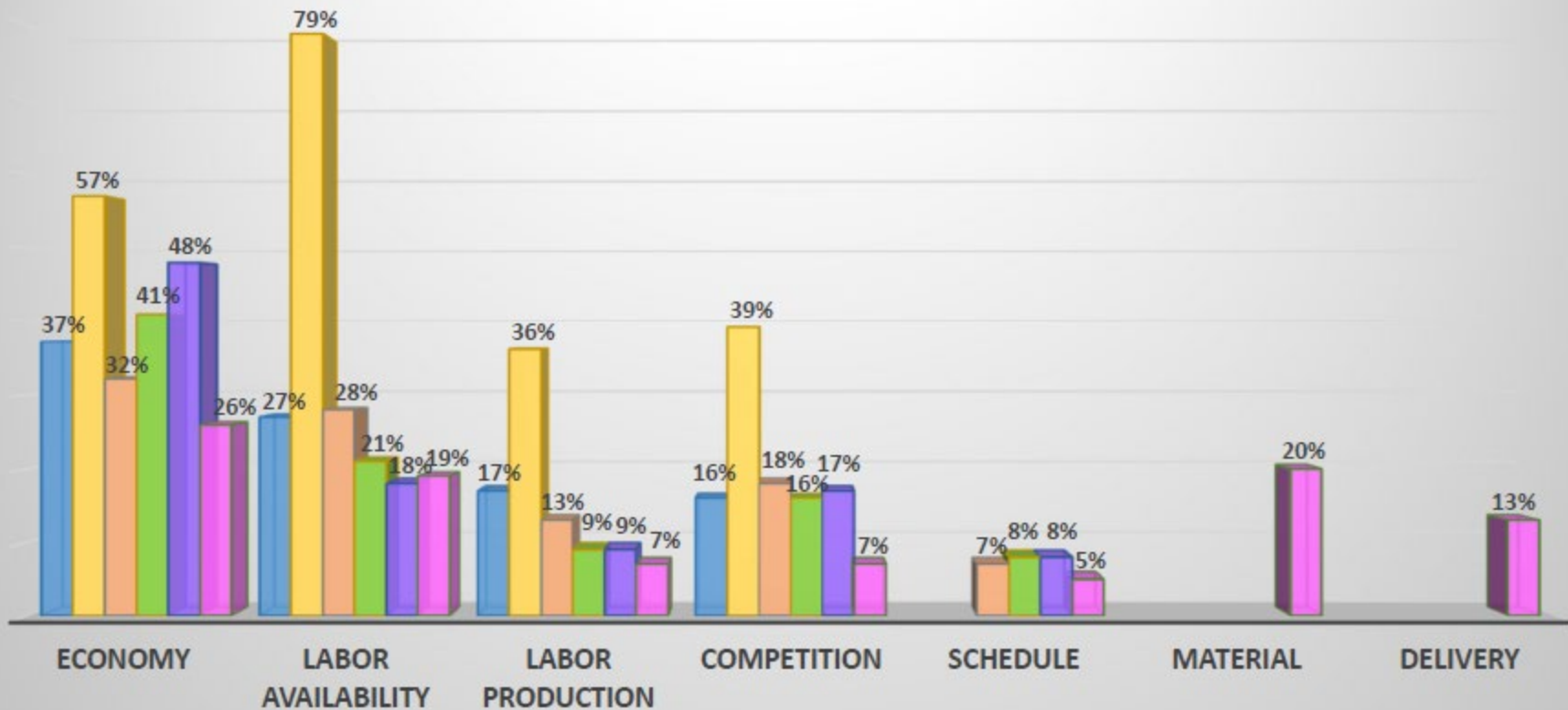
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6.31	12.60	6.50	6.40	2.80	8.60
0.02	0.02	0.08	1.40	-1.70	4.00

Source: Durotech Inc. proprietary Annual Subcontractor Survey

Subcontractors' Major Concerns in 2022



Source: Durotech Inc. proprietary Annual Subcontractor Survey

■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021 ■ 2022

Northern Trust Projections 7/22

		GDP	CPI	Unemployment	Treasury Bill Rate	
					2-year	10-year
2022	2/22	3.4%	227.50			
	3/22	3.7%	-13.13	3.6%	1.91	2.34
	7/22	2.0%	8.0	3.7	2.72	3.82
2023	3/22	2.4%	212.65	3.4%	2.47	2.75
	7/22	1.5%	3.7	3.8	2.91	3.81
<ul style="list-style-type: none"> • Conference Board (NYC non-profit research) 1/22 - Inflation into 2023 • Jamie Dimon, Chairman Morgan Stanley: 10-year boom in consumer spending 10-year baby boom • Chairman, AECOM: "Global Infrastructure Renaissance" • Chairman, Jacobs: "Multi-year Growth" 						
<p>Russia: Energy Impact Major Aluminum and Copper Producer</p> <p>Expect big future defense expenditure in US and Europe</p>						

Ken Simonson: Look for Growth and High Input Prices in 2022

AGC's chief economist sees more fulfillment centers and office remodeling projects, but says it will take time for the current supply chain issues to resolve.

Ken Simonson, chief economist for the Associated General Contractors of America, is optimistic, but also realistic about the 2022 construction economy.

In November 2021, he provided insights in a webinar entitled, "2022 Economic Forecast," sponsored by the Foundation of the Wall and Ceiling Industry, the educational and research arm of the Association of the Wall and Ceiling Industry.

Source: 2022 Forecast - Ken Simonson, Chief Economist, AGC

DODGE MOMENTUM INDEX

(2000=100, Seasonally Adjusted)

	Feb-22	Jan-22	% Change
Dodge Momentum Index	158.2	151.9	4.2%
Commercial Building	177.0	174.8	1.3%
Institutional Building	135.0	123.6	9.2%

Source: Dodge Construction Network

DODGE MOMENTUM INDEX

(2000=100, Seasonally Adjusted)



Source: Dodge Construction Network

Year to Date Construction Starts

June 2022

Nonresidential Building	13%
Residential Building	3%
Nonbuilding Construction	-2%

Source: Dodge Construction Network

Recession Predictions			
	2022	2023	2024
Goldman Sachs		15%	35%
Bank of America	Mild	Mild	
Morgan Stanley		36%	
Bloomberg			72%
Guggenheim			Late 24
Nomura Securities			Late 24

Crude Oil Prices	
Crude = 1/3 of CPI jump despite being 7% of CPI	
WTI	75.99 <u>bbl</u> on 1/3/22 120.92 <u>bbl</u> on 6/13
Brent	78.25 <u>bbl</u> on 1/3/22 128.44 <u>bbl</u> on 6/13

Warehouse/Distribution Center Construction

6/21 **CBRE:** US needs 330 million new SF by 2025

2/22 **NAIOP Forecast:**
2022 - 401 million SF net absorption
2023 - 334 million SF net absorption

CBRE Houston:
2021 - 22 million SF net industrial absorption
2022 - #1 in US in big box new construction over 200,000 SF

Clear Height:
Now: 37 feet clear
Prior: 33 feet clear
Earlier: 22 feet clear

This means more steel, more concrete.

Source: CBRE & NAIOP

At Current Rate, Available Logistics Space In U.S. Would Dry Up In Record 16 Months: Prologis

May 12, 2022 | Jarred Schenke, Bisnow Atlanta ✉



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Demand for warehouse space will push rents up another 22% this year, Prologis reported.

Despite [Amazon's](#) planned pullback on new warehouse growth, rampant demand for industrial space, as well as supply chain delays, has reduced the available inventory of warehouses to historic lows, according to a new report from global industrial powerhouse [Prologis](#).

At current rates of supply and demand, logistics tenants could burn through available inventory in 16 months, according to Prologis, a record-low benchmark for inventory.

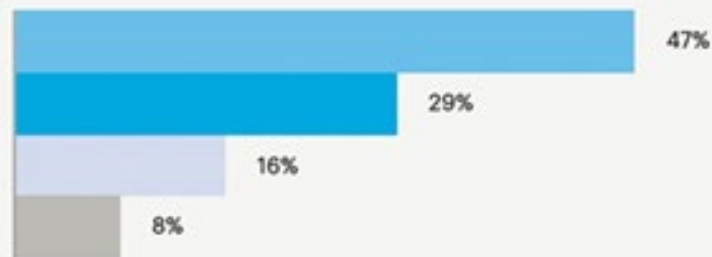
“That may sound like a long time, but prior to 2021, that rate has never dipped below 32 months,” Prologis head of U.S. research [Heather Belfor](#) said during a [webinar Tuesday](#). “This is by far the shortest time in history.”

The market continues to tighten even as construction has taken off — 375M SF of new distribution space is expected to come online in the U.S. this year, according to Prologis. But competition for space and supply chain issues have sped up rent increases, according to Prologis, which found industrial rents grew 8.5% between Q4 2021 and Q1 2022. Construction deliveries came in lower than expected, driving vacancy down to 3.2%, a new record low.

Have you considered reshoring manufacturing operations to the United States?

92% of manufacturing executives considered or already have reshored their manufacturing operations to the United States.

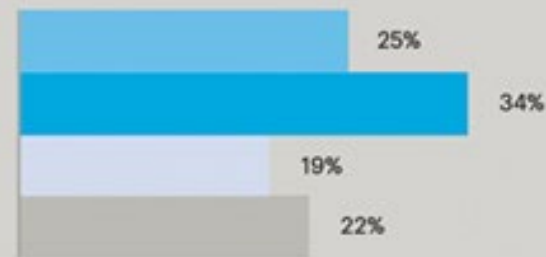
Sentiment toward reshoring: manufacturing executives



- Yes, we have already reshored some manufacturing operations to the United States (within past three years).
- Yes, we have decided to reshore some of our manufacturing operations (within the next three years).
- Maybe. We are evaluating reshoring but have not decided.
- No, we are not considering reshoring manufacturing operations.

78% of CEOs have considered reshoring or already have reshored operations to the United States.

Sentiment toward reshoring: CEOs



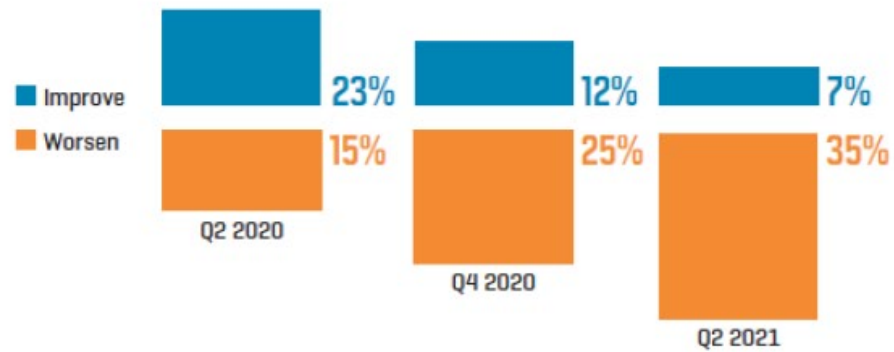
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Source: Kearney analysis

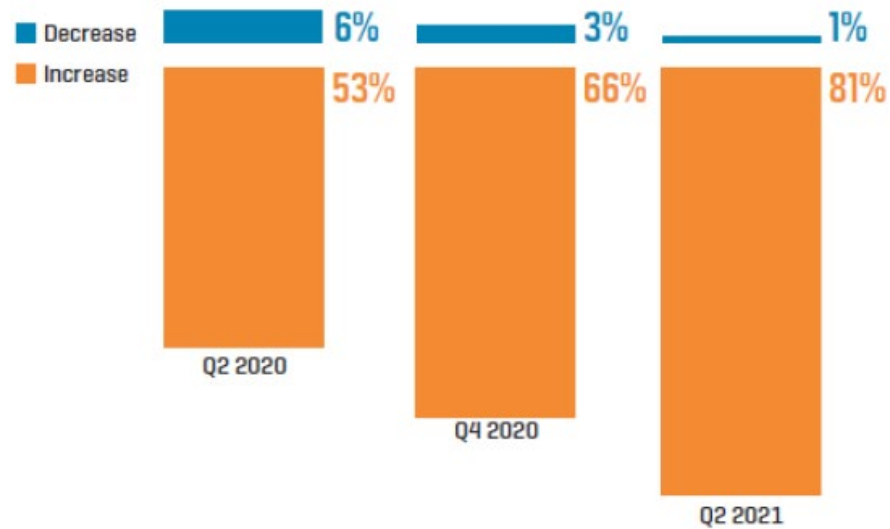
AGC National Cost Data

	May 2022 vs. April 2022	May 2022 vs. May 2021
Bid input costs	1.9%	18.9
Bids for:		
Warehouses	(.1%)	31%
Office Buildings	.6%	19%
Healthcare	0	15%
Schools	11%	15%
Materials:		
Steel Mill products	(3.8%)	33%
Aluminum Mill products	1.7%	31%
Plastic construction products	7.9%	38%
Tar roofing & siding	2%	19%
Insulation	0	17%
Lumber	1.4%	(15%)

Expected Change in Skill Levels of Skilled Workers in the Next 6 Months

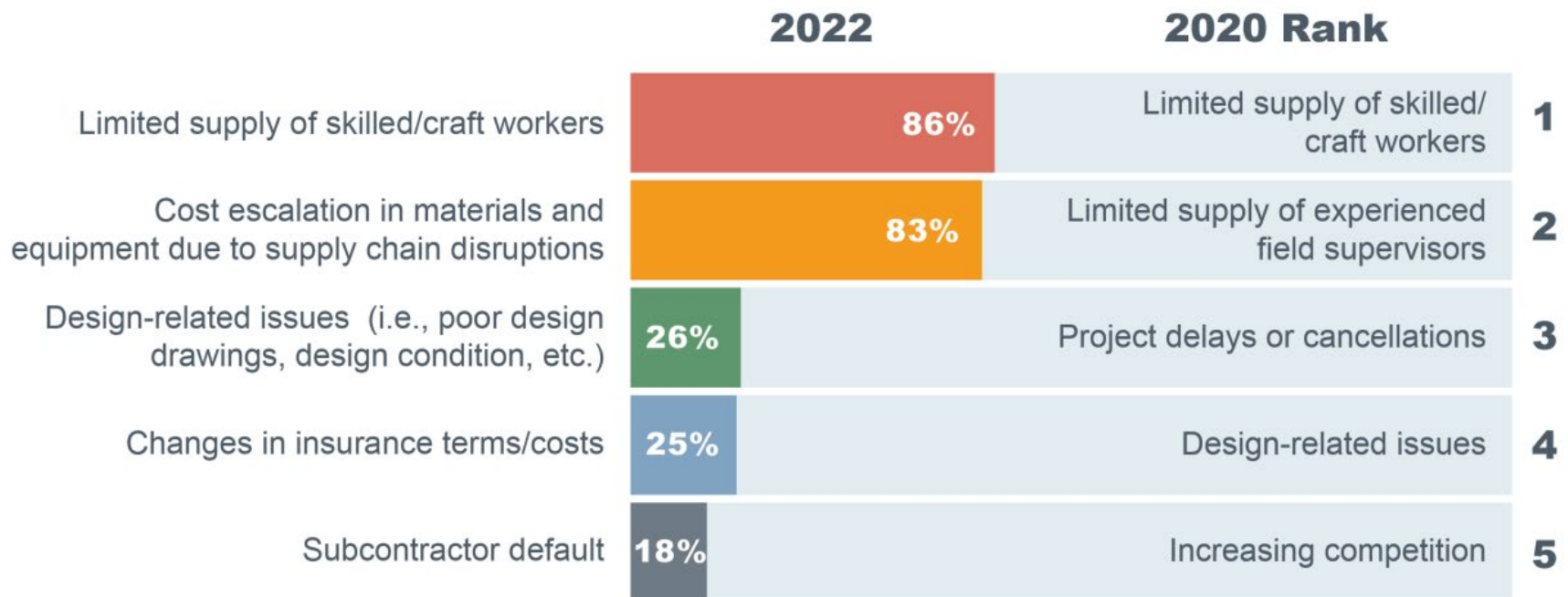


Expected Change in Cost of Skilled Workers in the Next Six Months



Source: Dodge Construction Network Worksite Newsletter

Top Risks Today



Construction Industry
Unemployment 3.7%



Lowest in 23 years BLS tracking history

Davis Bacon Act Changes

At Present:

Since 1980, 51% range of area wages becomes prevailing wage. If area wages do not fall in a range, then a weighted average is used. This formula favors lower area wages.

New Calculation:

30 % range of area wages becomes prevailing wage. If area wages do not fall in a range, then a weighted average is used. This formula favors higher wages.

Current Construction Labor Situation

AGC/Auto Desk Survey	73% have raised wages
	89% report difficulty hiring craft workers
	86% report difficulty finding salaried workers
	74% expect to hire more staff in 2022
ABC Economist Projections	Shortfall of 650,000 craft workers

Local Construction Cost Impactors

Inflation	High probability it will continue through 2023
Materials	Cost and delays continue through Q3/2022 and are bumpy in 2023.
Infrastructure	Work, especially at Houston metro level, raises steel/concrete/underground/site costs.
Texas Medical Center 3	More construction begins, drawing down skilled labor supply.
Metro Area Residential Subdivisions	Increase and multi-family work pushes some costs.
K-12	\$8 billion+ of Houston metro area K-12 2022 bonds on 2022 ballots
Labor	Costs appear likely rise for skilled labor. This can become a long-term impact.
Energy Cost	Appear likely to rise and filter into all product costs due to petroleum-based components.
Defense	Spending rises causing some metals and critical materials and electronic costs to increase.
Reshoring/Restructuring of Supply Chain	Increases manufacturing/distribution construction and costs
Source: <u>Durotech Inc.</u> proprietary Texas market wide cost survey.	

Cost Projections

A. Quicker supply chain restructure, quicker Ukraine settlement, less Ukraine consequences

2022	2023	2024
10-16% increase	8-12% increase	6-10% increase

B. Multi-year supply chain restructure, Ukraine Consequences longer, more severe; China COVID lockdown is extended

2022	2023	2024
16-19% increase	12-16% increase	10-12% increase

C. Recession

2022	2023	2024
10-14%	Unknown	Unknown

Note: You should not rely on Durotech's projections as a basis for any determination for your purposes. You should retain professional expertise and evaluate the individual circumstances of your factual scenario in determining any escalation for any building program under consideration.