SPECIAL REPORT

2021 ANNUAL REPORT & FORECAST

CONSTRUCTION EQUIPMENT

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Then Covid Happened

By **ROD SUTTON**, Editorial Director

Last year started with anticipation. Construction businesses expected to build on the economic strength of the previous couple of years. Even in a year promising another contentious national election season, the overall mood was quite positive.

Then rumor of a virus in China manifested itself as it spread around the globe, eventually forcing a response that took the wind out of the U.S. economy. Shutdowns, layoffs, and fear pivoted the Spring optimism into a 9-month (and counting) roller coaster ride. Even with construction designated as "essential," backlogs shrank and projects were postponed or canceled.

The year that had been forecast to be "very good" turned ugly, and every construction vocation save home building reported an "average" or "off" business year in 2020.

On these pages, we flesh out how construction performed last year and how it is expecting to perform in 2021. Adding to the overall analysis, we provide a deeper look into various vocations within the industry.

Each report is based on a survey of the respective markets, conducted right before the national elections. Respondents to our questionnaires are managers in the various markets.

Construction Equipment has surveyed equipment users and construction managers about business and fleet performance for more than 30 years in order to present an annual business review and outlook for the industry.

We again partnered with several sibling publications in specific construction vocations for a broad view of the construction industry. Our Scranton Gillette/SGC Horizon partners include *Building Design+Construction*, representing the nonresidential market; *Professional Builder*, representing the homebuilding industry; *Roads & Bridges*, on the transportation front; and *Water & Wastes Digest*, which covers the country's water infrastructure issues.

Inside our 2021 Annual Report & Forecast, we report on the industry as a whole, then each magazine's editor analyzes their individual market for a more detailed look at the upcoming year.

We express our appreciation and thanks to Case Construction Equipment for its continuing partnership with us in presenting this analysis of the construction industry. Case is a full-line manufacturer of earthmoving equipment, and its support of this project allows us to publish substantial amounts of data and analysis for the industry's use.

Rumor of a virus in China manifested itself as it spread around the globe, eventually forcing a response that took the wind out of the U.S. economy. It turned 2020's optimism into a roller coaster ride.

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INDUSTRY OVERVIEW

A Soft Bounce for Some

By **ROD SUTTON**, *Editorial Director*

The construction industry learned quickly that "essential" does not guarantee success. As governmental responses to the coronavirus pandemic threatened to extinguish hospitality and entertainment businesses, its labeling of construction as an "essential" business ensured that work could continue—if it was available.

Comparing 2020 as a business year to 2019 does not mean much, even less when measured against the extraordinary optimism of 12 short months ago. A thriving economy succumbed to the pandemic response. The business outlook for 2020 was "very good" to "good," but the reality plummeted to "average" and "off."

Nonresidential and water infrastructure was hardest hit, reporting business as "off." Home building called the year "good," as home-bound workers sought safer or more comfortable space, or further feathered the nests they already inhabited. Fleet managers and those in the transportation markets labeled 2020 as "average."

Each of these markets is covered by Scranton Gillette/SGC Horizon publications, siblings of *Construction Equipment.*

Most regions reported that 2020 was "average," again off from what many expected to be a "very good" year. Mid-Atlantic and Pacific regions were "off," perhaps as they housed many coronavirus hot spots and shut downs. Mountain reported a "good" 2020.

Most respondents, by vocation and region, expect a soft bounce back in 2021, with the aggregate business forecast of "good." Pacific expects to move from "off" to "average," while Mid-Atlantic expects to leapfrog from "off" to "good." Home building expects to attain "very good," but nonresidential moves up slightly to "average."

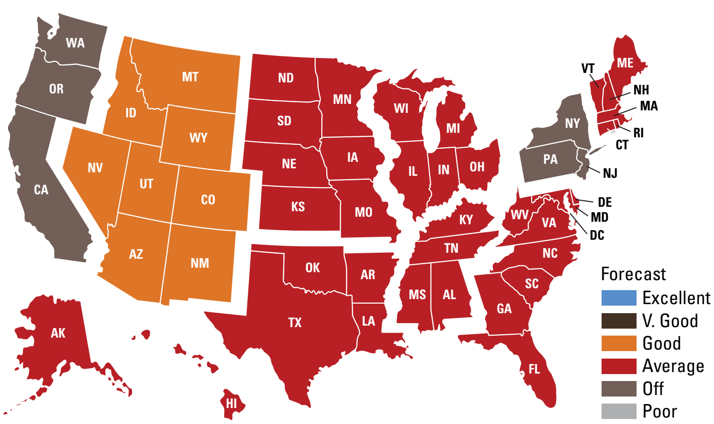
Demand may be putting the damper on expectations.

The Associated General Contractors of America released a coronavirus survey in October in which 78 percent of respondents said they were experiencing project delays or disruptions due to the virus. Three out of four respondents said an owner had postponed or canceled upcoming work.

"The survey results make it clear that the months-long pandemic is undermining demand for projects, disrupting vital supply chains, and clouding the industry's outlook," said Ken Simonson, chief economist.

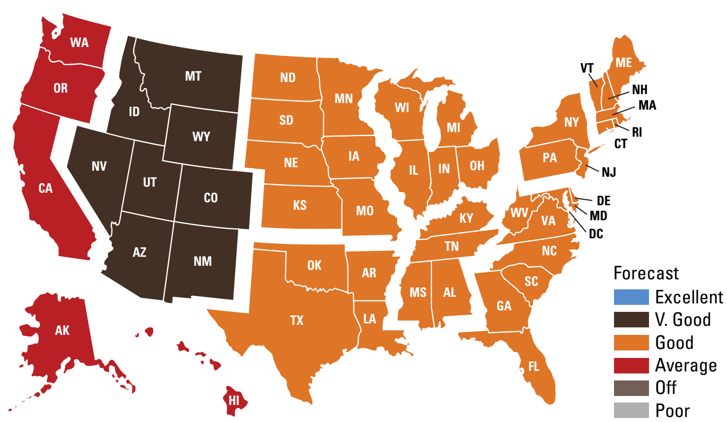
Most vocations expect contract volume to bounce back in 2021. Trends are

2020 Industry Business Report



The pandemic knocked down all regions from forecasts, with most citing 2020 as an "average" business year. Harder hit regions were Pacific States and Mid-Atlantic, at "off," and Mountain States said 2020 was a "good" year.

2021 Industry Business Outlook



Every region expects 2021 to be better, with most forecasting a "good" business year. Pacific States region remains behind the rest, and the Mountain States region expects a "very good" 2021.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

measured as a net percentage, subtracting the percentage of respondents expecting a decrease in volume from those expecting an increase. For the group, that net is 24.1 percent, a good improvement from the net of -6.3 percent reported for 2020. The forecast for 2020 had been a net of 43.5 percent. Again, home building is bucking the trend, with the only positive net for 2020 (16.6 percent) and strong 45.5 percent forecast for 2021.

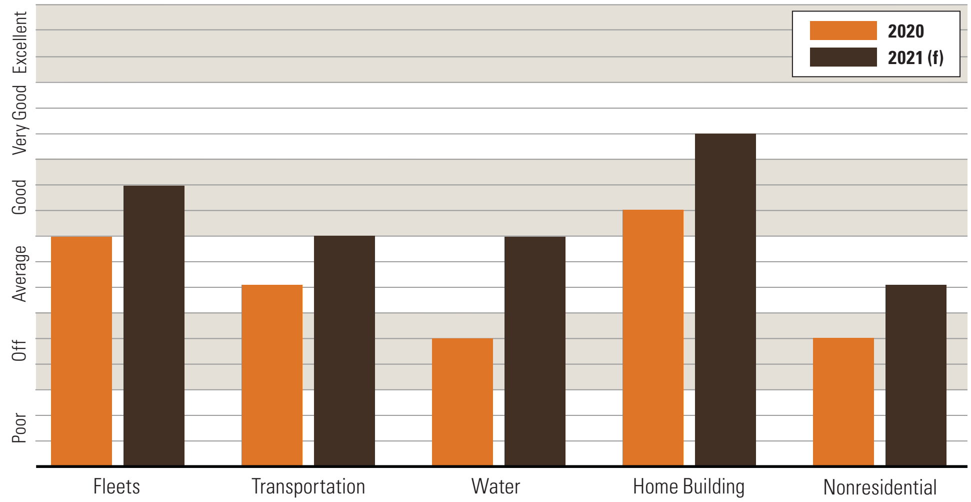
Bid price forecasts are fueling volume expectations, with the industry trend a net of 59.6 percent. Home building (77.6 percent) and water infrastructure (64.4 percent) are above the trendline; nonresidential (47.1 percent), transportation (49.4 percent), and fleet managers (51.6 percent) are below it. Not much variance from the trendline exists across regions.

Material prices, a component of bid estimates, are also expected to increase by many respondents in 2021. Against a trendline of net 71.2 percent, water infrastructure was highest at 77.8 percent net, and nonresidential lowest at 66.7 percent net. Again, most regions were in line except for Mid-Atlantic, where the net was far above the trendline at 87.4 percent.

Markets across the industry are either "intensely" or "very" competitive for 65.0 percent of respondents, down slightly from 2020. Among nonresidential respondents, the percentage who labeled competition as "intense" or "very" dropped from 79.4 percent to 59.9 percent in 2020. Similar competition was reported by 48.2 percent of water infrastructure respondents. Nationally, markets were most competitive

Business Year Ratings

(actual vs forecast, all industries)

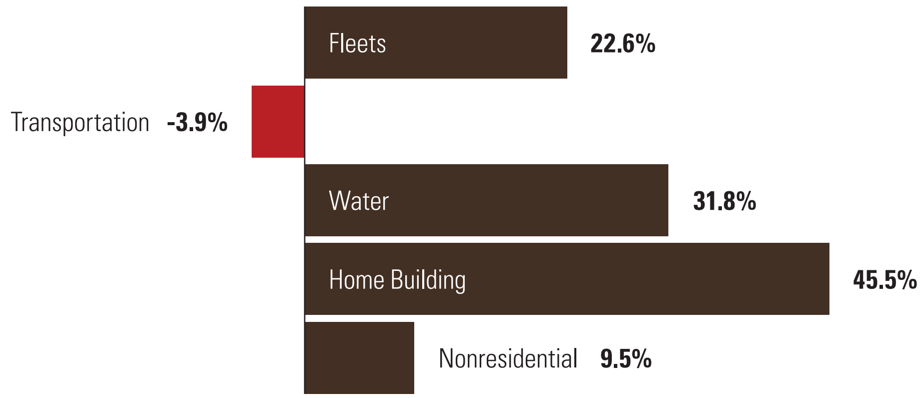


Although the pandemic weakened the economy in 2020, the home building market outperformed other markets, recording a "good" business year. Nonresidential and water infrastructure were "off." Expectations for 2021 are for improvement, with forecasts ranging from "very good" for home building to "average" for nonresidential.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

Revenue Expectations

(percentage expecting increase minus decrease, net)



The effect of the pandemic response on project pipelines is evident in revenue expectations for 2021. Whereas home building, privately funded, shows a strong net, publicly funded transportation projects lag in negative territory. Nonresidential construction revenue expectations are also low.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

Annual Report & Forecast Methodology:

Scranton Gillette Communications and SGC Horizon publish several magazines in the construction sector. Participants in the 2021 Annual Report & Forecast asked their subscriber bases about not only overall construction trends, but also trends specific to the sector in which they work. Each publication sent email invitations to its subscriber base, inviting participation in an online survey. About 1,700 responded. Respondents by market include fleet managers, 400; transportation, 247; water infrastructure, 296; nonresidential, 171; and home builders, 612.

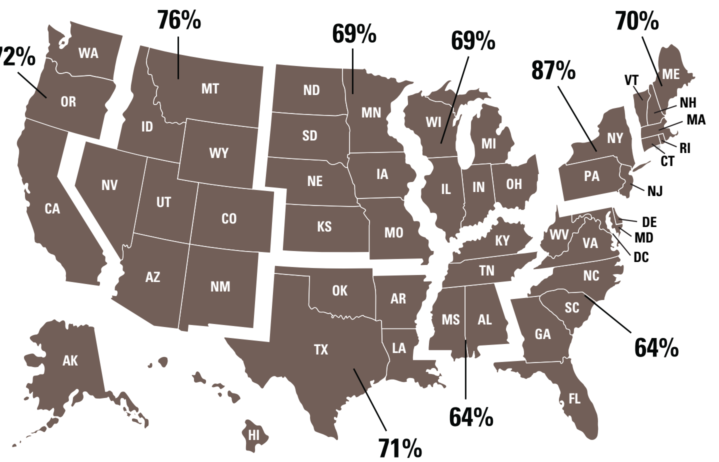
INDUSTRY OVERVIEW

in the South Atlantic, with nearly 77.5 percent describing them as "intensely competitive" or "very competitive."

The pandemic response to a resurgence puts pressure on overall firm health heading into 2021. Some 69.9 percent of respondents described it as "very good" or "good," down from 80 percent at the same point last year. Among nonresidential respondents, 57.1 percent described that level of firm health; among homebuilders, it was 76.9 percent.

2021 Material Prices

(percentage expecting increase minus decrease, net)

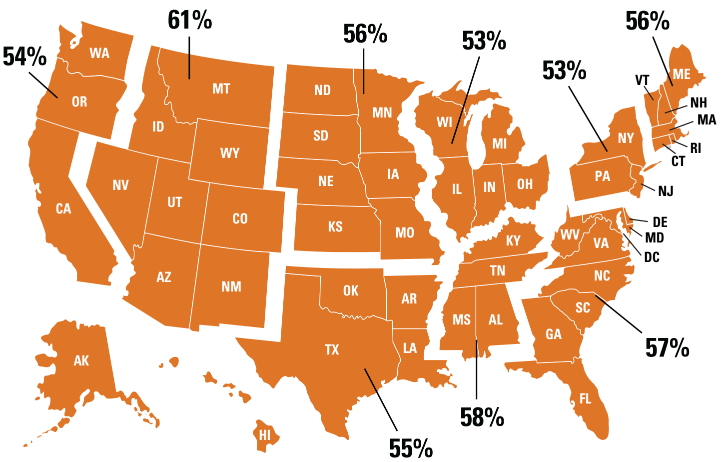


Regional differences in expectations for 2021 material prices range from a net of 64 percent in two southern regions to a high of 87 percent net in the Mid-Atlantic.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

2021 Bid Prices

(percentage expecting increase minus decrease, net)

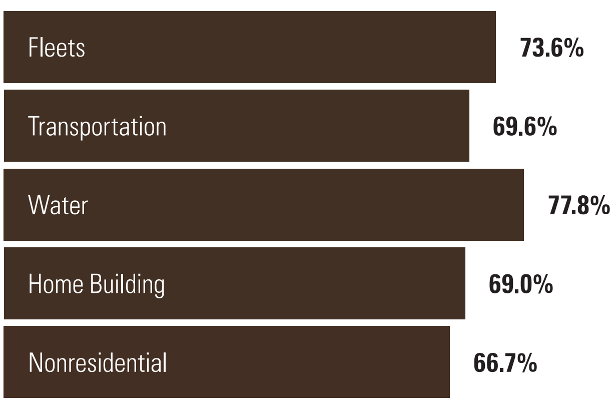


Bid price expectations for 2021 remain relatively similar across the country. The net in the Mountain States region correlates with its "very good" expectation for 2021 as a business year.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

Material Price Expectations

(percentage expecting increase minus decrease, net)

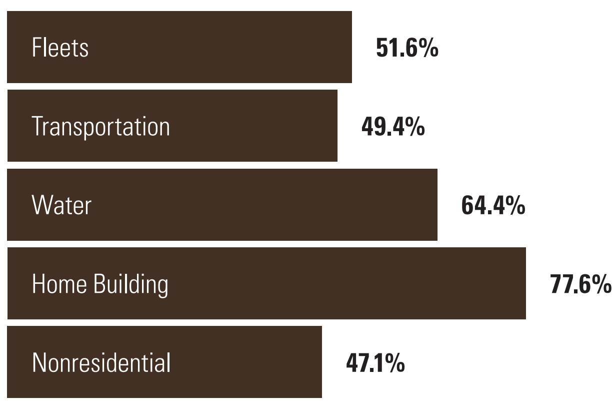


Construction material prices will climb in 2021, with net expectations rather consistent across vocations. Water infrastructure respondents are more weighted toward increases in material prices, with none expecting decreases in material prices in 2021.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

Bid Price Expectations

(percentage expecting increase minus decrease, net)



All vocations expect bids prices to increase in 2021. Measured by subtracting the percentage expecting a decrease from that expecting an increase, the percentage shows a strong tendency for bid increases. Home building has the highest expectations for increase.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

Fleets Pause for Covid

By **ROD SUTTON**, Editorial Director

Last year, the industry began 2020 concerned about global trade. In 2021, it's a global pandemic.

Responses to the coronavirus invasion deeply disrupted the economy, which had been humming along with increased employment and talk of finally addressing infrastructure spending. But even as construction was labeled an "essential" business, meaning companies could continue to work, the backlog for new construction work was slowing. Any project dependent upon government funding fell under a cloud as tax revenues dropped at the state and local levels, and the costs of responding to the pandemic increased.

Responses to our survey came in just prior to the national elections, increasing, perhaps, the level of uncertainly among respondents but also causing more equipment managers to participate. About 400 equipment asset managers responded to this year's questionnaire.

Respondents in last year's Annual Report & Forecast anticipated a "very good" year ahead of them. Forecasts were also high for contract volume increases, with a net of 47.4 percent (those expecting increases minus those expecting a decline in volume). These expectations were as much an indication of the state of the nation's economy as they were a forecast for the construction industry.

Covid crushed those expectations.

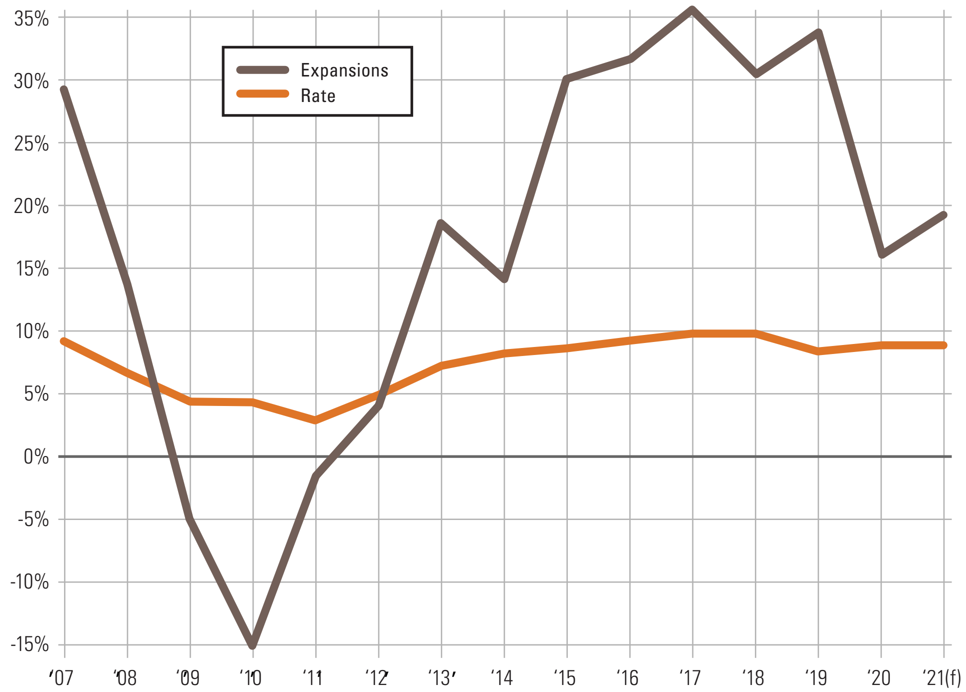
Managers of the nation's fleets of construction equipment said 2020 turned out as an "average" business year rather than the "very good" year they expected just 12 months earlier. The year was the worst business year for respondents since 2014, the last year labeled as "average" or lower.

Respondents engaged in highway/heavy construction rated 2020 as "average;" those in general building rated it as "good." Although the sample size was small, fleets involved in material production rated the year as "off." Managers of the nation's largest fleets, with estimated replacement values (ERV) larger than $10 million, also broke with the group and rated 2020 as "good." These numbers perhaps reflect the ability of large fleets to weather the disruptions as well as the strength of the general building markets.

Large fleets look at 2021 to be on pace with 2020, and smaller and mid-sized fleets expect the year to bounce back. For fleets less than $10 million ERV, the outlook ranges from "good" to "very good." Aggregated responses for all fleet sizes and vocations reflect an expectation that

Fleet Management Trends

% of Fleet Expanding (Net)
Average Fleet Replacement Rate



Managers curtailed fleet expansions in 2020, reporting a net of 16 percent that mirrored circumstances coming out of the recession several years ago. Fleet replacement rate, however, faltered only slightly to 9.3 percent in 2020. Fleet managers expect the rate to stay at that level for this year.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

CONSTRUCTION EQUIPMENT FLEETS

2021 will be a “good” business year. Expectations fall short of the “very good” and “excellent” business years reported in 2017-2019, indicating that the pandemic has taken substantial air out of the industry. The survey closed right before the national elections, so some of the caution may be a result of not knowing what changes loom for the economic landscape as well as the mood in Washington for more pandemic-related funding and movement on infrastructure investment.

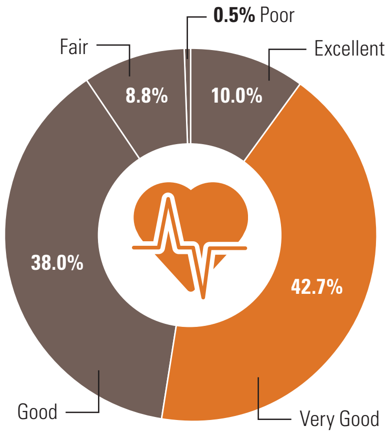
Contract volume trends reflect this, with 42.5 percent of respondents saying their revenue for 2020 was less than in 2019. About 30 percent said it had increased, leaving a net of -12.1 percent for the year. The expectation for 2020 was a net of 47.4 percent, a mark missed by a mile. Only the largest fleets reported a net for 2020 in the positive range for revenue growth.

Forecasts for 2021 are positive, however, with increases in contract volume expected across all fleet sizes. Overall, the net for 2021 is 22.6 percent with about 44 percent of all fleet managers expecting contract volume to increase in 2021 compared to 2020. One-third expect it to be the same as in 2020. The forecast is the lowest since 2014, although the same concerns driving business outlook certainly would suggest caution when it comes to volume projections.

Expectations for bid pricing in 2021 remain similar to what fleet managers forecast for 2020. About 62 percent of respondents expect bid pricing to increase this year, leaving a net of 51.6 percent. Last year, the net was 55.6 percent, which was a three-year low. Material prices are expected to increase in 2021, with a net of 73.6 percent. This is up slightly from last year’s expectations, with a net of 63.7 percent.

Despite the pandemic, fleet trends remain in positive territory. Of course, fleet expansions fell short of expectations, recording a net similar to 2014. The net for 2020 was 16.1 percent, about half of what was forecast for the year: a net of 30.5 percent. Expectations for 2021 are up slightly, with a net of 19.1 percent. Slightly less than two-thirds of respondents said the number of machines in their fleets remained the same in 2020 compared to 2019, and the same percentage say it will stay the same in 2021.

Managers for large fleets, with ERV greater than $10 million, were more positive. The net for 2020 fleet expansions was 25.0 percent (versus 16.1 for all fleets), and the expectation for 2021 is a net of 28.6 percent (versus 19.1 percent for all fleets). Fleet replacement rates were also higher among managers of large fleets. In 2020, that rate was 10.1 percent, compared to 9.3 percent for all fleets. The smallest fleets, those with ERV less than $500,000, reported a replacement rate of



Fleet Health

(% responding)

More than half of respondents reported their fleet to be in “excellent” or “very good” health, up from 48 percent in 2019. Of course, Covid reduced hours of service, but it bodes well for the expected upturn. Less than 10 percent of managers reported fleet health as “fair” or “poor,” down from 12.3 percent in 2019.

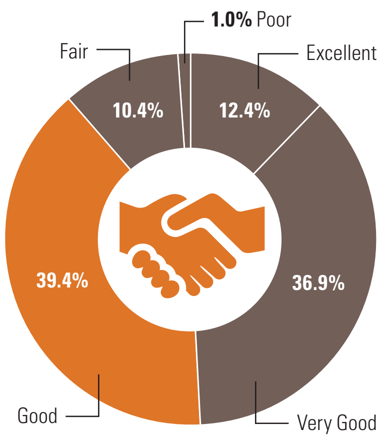
Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

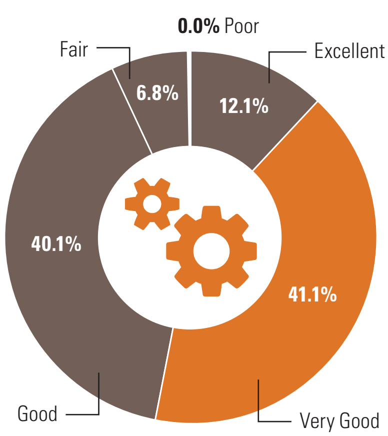
Rate Dealer Ability to Partner on Service

(% responding)

Managers evaluated their ability to partner with dealers in a meaningful way in regards to service and support, and almost half rated their primary dealer as “excellent” or “very good,” about the same as in 2019. On the other end of the spectrum, the percentage rating their dealer as “fair” or “poor” ticked up from 8.2 percent to 11.4 percent in 2020.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey





Rate Dealer Understanding of Machine Technology

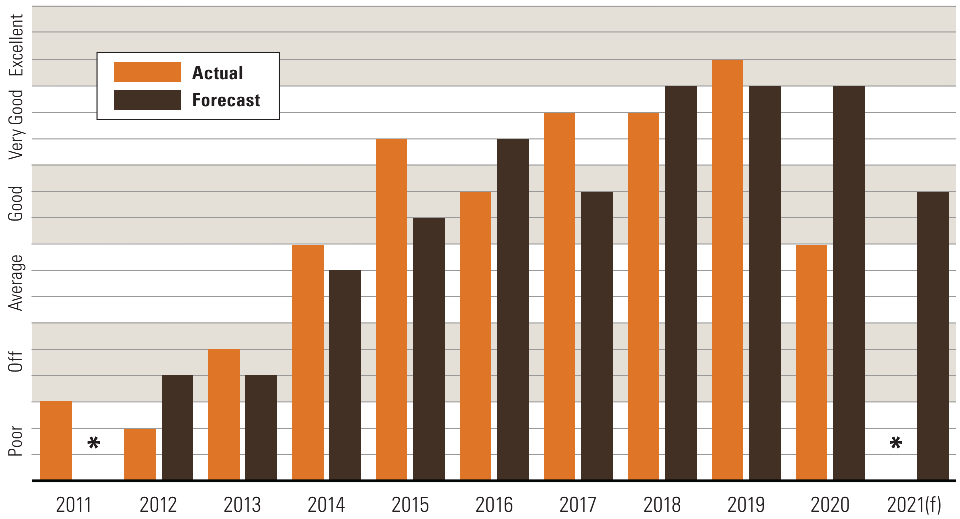
(% responding)

The percentage of fleet managers rating their primary dealer as either “excellent” or “very good” in their understanding of the technology in the machines that they sell declined in 2020 to 53.2 percent. Technology is defined as everything from machine data to sensors and engine controls.

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

Business Year Ratings

(actual vs forecast, fleets)



Covid derailed the three-year trend toward "excellent," knocking 2020 into "average" territory for fleet managers. Expectations remain positive, however, with managers looking for business to improve in 2021 to "good."

* No data

Source: *Construction Equipment*/Case Construction Equipment Annual Report & Forecast Survey

Acquisition Strategies

Purchase outright	47.6%
Purchase by financing	39.3%
Rental/purchase	16.2%
Short-term rental	13.9%
Lease/purchase	10.5%
Lease	9.2%

Source: *Construction Equipment/*Case Construction Equipment Annual Report & Forecast Survey

The percentage of fleets acquiring machines through outright purchase rose to the highest level since 2017. Use of other acquisition strategies dipped a bit, and leasing strategies bumped up, both for straight leasing and lease/purchase agreements.

Equipment Workforce

Increased	21.5%
Decreased	28.5%
Stayed the same	50.0%

Source: *Construction Equipment/*Case Construction Equipment Annual Report & Forecast Survey

Half of respondents reported keeping their overall workforces stable in 2020, the second year in a row. Although one of five increased employment, three of 10 reduced their employee ranks. Declines were across employee types, although service and maintenance cutbacks were less severe, with 20.5 percent reporting layoffs.

7.5 percent in 2020 and expect to replace 9.1 percent in 2021.

As an aggregate, however fleets reported a replacement rate of 9.3 percent: considered a healthy number, although slightly off the 10.1 percent forecast for the year. Fleet managers forecast a similar rate of replacement for 2021, 9.3 percent.

The pandemic put a pause—or at least a pump on the brakes—on fleet plans. The danger, of course, is that delayed replacement threatens overall fleet health. Based on responses at the end of 2020, fleet managers should be positioned to absorb a short delay. More than half, 52.7 percent, of respondents said their fleet is in "excellent" or "very good" condition. This is up from 48.5 percent in 2019 and 43.5 percent in 2018. Large fleets, with ERV greater than $10 million, reported more positive fleet health, with 67.8 percent reporting fleet condition as "excellent" or "very good."

On the other end of the scale, 9.3 percent of respondents described the condition of their fleet as "fair" or "poor." Only 4.8 percent of large fleets said the same.

Acquisition and labor

One in five (19.3 percent) fleet managers said rising acquisition costs are not affecting their acquisition plans. Others are adjusting plans in order to manage for increases. About a quarter, 23.6 percent, said they will buy fewer machines, and 15.3 percent will buy used rather than new. One in five, 21.4 percent, of large fleets will increase their new-equipment budget, compared to 12.3 percent of all fleets able to increase budgets.

Acquisition strategies remain similar to previous years, with the exception of those fleets using outright purchase. In 2020, 47.6 percent said they purchase major machines (more than $25,000) outright, compared to 38.2 percent in 2019. More than one-third (39.3 percent) purchase by financing equipment, 16.2 use rental/purchase agreements, 10.5 use lease/purchase agreements, and 9.2 lease.

Short-term rental is an acquisition strategy used by 13.9 percent of respondents. About one-quarter (26.8 percent) of respondents increased their use of short-term rental in 2020, compared to 2019, and 16.3 percent decreased their use. For the majority (57 percent), however, use of short-term rental remained constant last year.

Not surprising, respondents cited changes in workforce in 2020. Steady increases of the past five years were replaced by decreases, no doubt related to the pandemic. Last year, 21.5 percent of fleets increased their workforce compared to 2019, and 28.5 percent decreased it. Half of respondents said they were able to hold steady. In the service and maintenance area, the numbers were not as stark, with 61.5 percent reporting no change in the number of workers, and 20.5 percent decreasing the number of employees in this key area of fleet management.

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TRANSPORTATION

Anyone's Guess

By **BRIAN W. BUDZYNSKI**, Senior Managing Editor, *Roads & Bridges*

What a year, huh?

One is tempted to consider the past several months alone as a testament to human fortitude and folly in equal measure, akin to social behaviors as reported from a more feudal period of history. And yet, from a strictly professional perspective—despite concerns that are deep, many, and true—there is nonetheless cause for optimism. As the dust settles on the 2020 national elections, we don't have enough to conjecture how support for the cause of national infrastructure will play out.

So let's start with what we have.

According to a report recently released by the American Road & Transportation Builders Association (ARTBA), 94 percent of all transportation investment ballot measures nationwide were passed in this election cycle, representing $14 billion in one-time and recurring revenue for transportation improvements. This represents the highest level of such approval in the 20 years ARTBA has tracked such statistics. Among the notable results is an increase in sales tax in Arkansas, a state historically wary of tax increases of any kind, projected to generate $205 million for state highways and a further $44 million for local roads and bridges; a 20-year extension of a 25-cent sales tax increase in Sonoma County, California, expected to raise $520 million; a "special purpose" tax in Georgia that will go into effect in 2022 and generate an estimated $330 million for a cash-starved rural landscape in desperate need of local and state road improvements; and, on an even grander scale, a $7.1 billion bond (approved by a two-thirds majority) in Austin, Texas, that will fund the initial and ongoing costs of Project Connect, a transit plan anchored by two high-capacity light rail lines serving the city's densest neighborhoods.

This past summer, *Roads & Bridges,* in partnership with civil engineering firm Tensar, published the results of a multi-part industry survey on Covid-19 and its impacts—both present and estimated—on transportation planning and construction.

Front of mind for all contractors and governmental agencies, as a matter of diligence and operational concern, is safety. With the need for improved social and workplace safety nets, one major question is what will be the long-term impact to infrastructure costs due to the pandemic. After all, everyone has little choice but to put more skin in the game in this regard.

Utah DOT materials manager Bill Lawrence sees a double-sided coin.

"Our construction program continues to move forward, though the way business is being handled is different. There are some instances of less efficiency, but there are others that have shown to be more efficient, such as teleworking."

James Bailey, SVP of Skanska Civil USA, was more optimistic, saying, "The construction industry is generally quick to adapt to new safety standards after initial resistance, e.g., the new silica standards. The biggest struggle adapting to the pandemic has been the ability to procure the required PPE and supplies. We will certainly see an increased cost to purchasing safety supplies and requirements to sanitize tools, equipment, and areas, but I believe we will overcome these productivity-related impacts in the long term."

With construction remaining an "essential" industry throughout the country, it is generally expected that this—along with returning, as close as is practical, to a full economic reopening—will be key to keeping construction inflation in check.

As to what 2021 might bring by way of a long-term federal bill, Jeff Lackey, VP of TranSystems, says:

"I do expect to see increases in design/build. History has shown us with stimulus packages that alternative delivery has been a part of that process. I would anticipate that would be the case with any new [bill] that would be passed."

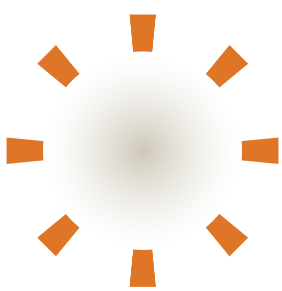
It is presumed that "business as usual" construction is, in essence, now a thing of the past, even if such presumption is not yet universally accepted. Yet there are many in the industry who see this

States Move on Funds

(% responding)

Raising taxes and fees remains the primary funding mechanism for states heading into 2021, although four out of 10 respondents are choosing to do nothing.

Source: *Roads & Bridges*



40.4%

SAY MY STATE IS NOT DOING ANYTHING

Raise in the gas tax and/or other fees: **30.0%**

Issuing more bonds: **17.5%**

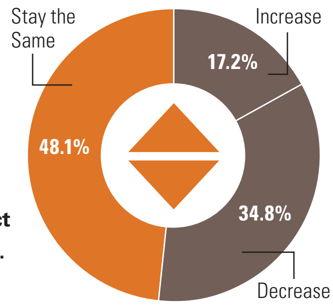
More tolling/public-private partnerships: **12.1%**

Funding Changes

(% responding)

Twice as many respondents expect state funding to decrease than increase, although about half expect 2021 levels to remain at 2020 levels.

Source: *Roads & Bridges*

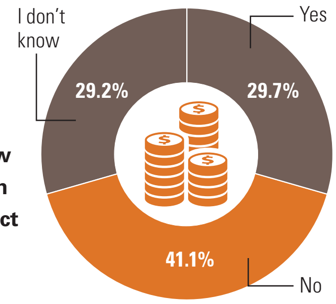


Adequate Funds

(% responding)

State funding remains below need, and slightly more than four of 10 respondents expect that to be the case in 2021.

Source: *Roads & Bridges*



disturbance to the norm as a positive: perhaps a harbinger of long overdue change. ARTBA VP of regulatory affairs Nick Goldstein is among them:

"There are positive outcomes resulting from the pandemic, and those include a heightened awareness of health risks that can arise from everyday working conditions. We've learned we can and should do more to protect our health, whether those are health pathogens or hazardous chemicals or other contaminants. The required use of face coverings has helped workers better overcome resistance to wearing such PPE, and the consequences for not doing so are more acute and real."

Still, some see state and local budgets in disarray and worry that workforce adaptation will fall behind the curve set by the pandemic, in which modes of construction and materials development will, like the virus itself, be novel. To this end, Ken Simonson, chief economist for the Associated General Contractors, says, "With possibly fewer onsite workers at any time and more use of offsite manufacturing...it is not clear factories will be able to attract and train workers or have the flexibility to supply diverse project needs."

The idea of diversity in choosing and prioritizing projects has also been in the scrum since the federal economic stimulus package was released earlier this year. State and local agencies across the country have had to significantly reduce or outright eliminate capital improvement programs due to reduced revenues needed to support program costs. Although every state and locality has its own unique "wish list," the single most common and perhaps most important through-line in all of it is ROI.

"Data suggests every dollar spent in infrastructure investment returns many more dollars to the economy," says David Lawry, director of municipal services for Chastain & Associates. "Our nation's infrastructure was in crisis before Covid-19 and the pandemic has only made the crisis worse."

This opinion was echoed by TransSystem's Lackey, who went on to say, "Life cycle cost needs to be part of any discussion. Projects that provide expansion opportunity, spur development, and help ease pressure on state annual budgets are also prime candidates."

Nebraska DOT geotechnical engineer Mark Lindemann summed it up best: "We must get the most benefit out of every dollar spent."

Roads & Bridges also ran its own survey to take the pulse of the industry, and what we discovered was that, by and large, road conditions are continuing to suffer. Even though the general reduction in traffic levels would seem to make all but obvious the opportunity to start on a plethora of maintenance projects, 56 percent of rural roads and 68 percent of urban roads are in only "fair" condition or worse—and respondents are not hopeful this will improve in the coming year. More than two-thirds saw conditions worsen through 2020. This can be attributed to the unfortunate conflation of a large backlog on state of good repair and timidity sourced from the federal government's inability to pass a long-term, sustainable funding package to follow the FAST Act. Only state-maintained highways looked close to good, and that due to marginally stronger funding streams.

Although the extension of FAST Act funding levels into 2021 does offer some respite, the fact remains that it is a Band-Aid over a hemorrhage. Any contractor or DOT engineer knows that when projects take years—plural—to design, approve, and build, what is needed is the confidence that three or four years down the road there will be dollars at the ready. Until there is, however, there will continue to be shakiness. There will continue to be large-scale projects that are only partially funded and may have to lay dormant or half-finished, until funding can be had. Added to this is the nationwide reduction in gas-tax generated revenue, which many suggest begs the question: Is our reliance on the gas-tax model finally failing? Is a nationally adopted vehicle-miles-traveled model going to replace it? This may be, in coming years, the single most significant impact of the pandemic-related recession.

It is likely that we will not feel the full impact of the economic downturn resulting from the coronavirus pandemic and the restrictions it has imposed on operations until 2022. No matter the trends suggested in various industry analyses or the cautious optimism proffered by industry experts, a pall hovers above everything like a layer of blue smoke in a barroom, that all the talk about what the future may hold is just so much sound and fury, signifying nothing. Although it is a frustrating conclusion, the only honest one to draw is that what happens next is anyone's guess.

Essential and Resilient

By **BOB CROSSEN**, Managing Editor, *Water & Wastes Digest*

A year unlike any other. Unprecedented. Historic.

2020 has more platitudes going for it than any other year in the lifetime of the editors overseeing *Water & Wastes Digest*, and the same can likely be said for practically all the *WWD* audience members.

In 2020, the water industry started strong and remained determined, diligent, and unrelenting in the face of the challenges presented throughout the year. From the ongoing and continuing global coronavirus pandemic to a tumultuous election—the results of which could present considerable change for the industry—the larger conversations of society have begun to permeate across the water and wastewater industry as a whole.

Issues of water access, water affordability, and water equity have become increasingly important as industry companies and associations doubled down on diversity and inclusion initiatives. Social media groups became even more united in sharing their work experiences as essential workers during the pandemic, despite often being left off the sharable photos and memes thanking essential workers. And perhaps most notably for the market was the acceleration of digital and smart water technologies and the impact it will have on future digital technologies.

WWD annually surveys its audience on the status of the industry and expectations for the coming year. Comparing the results of the 2020 survey to previous years, it appears that 2020—an election year—mirrors many of the responses and feelings of respondents in 2018—also an election year.

Although nearly half of respondents to this year's survey said 2020 was a "good" year (49 percent) and 16.3 percent said it was "very good," nearly a quarter of the respondents said it was "mediocre" (24.8 percent). This is the largest portion to indicate "mediocre" since 2018 when 21 percent indicated it to be as such. Respondents are not deterred by this, however, as more than half said next year will be "good" (54.9 percent) and more than a quarter said it would be "very good" (25.5 percent). This follows a similar trend in 2018 when 70 percent of respondents that year thought 2019 would be "good," "very good," or "excellent."

This outlook on the industry stresses just how resilient water and wastewater utilities are. Many of the steps a utility would take to become more resilient to extreme weather events—which have become an increasingly dominant reason for technology purchases—also made them resilient to the pandemic. Also, water and wastewater services were considered essential during the outbreak and proceeding months, so critical projects and construction continued, albeit after an initial stall.

"We had a healthy amount of activity occurring before the pandemic," said Chad Mize, SVP of sales and marketing for Mueller Water Products. "There was this little lull. And then as we've seen, as people have been able to get back to work and have figured out how to work from home, and city councils get back together and they get to approve projects, that things certainly continue to roll."

Revenue Trends

(% responding, vs. previous year)

	2020	2021
Increased	27.1%	42.2%
Decreased	29.7%	10.4%
Stayed the same	43.2%	47.4%

Source: *Water & Wastes Digest*

Other notable findings from the 2020 survey include revenue projections and the expectations of new construction compared to utility upgrades in the coming years. Firstly, revenue expectations for 2021 appear promising. Although respondents largely indicated their revenue remained the same from 2019 to 2020 (43.2 percent) and expect their revenue to remain the same in 2021 (47.4 percent), the percent of respondents who expected 2021 revenue to increase (42.2 percent) leaves only 10.4 percent expecting a decrease in revenue for 2021.

As for new construction, for the third year in a row, the majority of respondents indicated no new construction would be conducted in the next 36 months. Instead, the focus continues to be on upgrades to existing systems and equipment. Results from 2020 show 37.7 percent and 11.6 percent of respondents indicated they will be upgrading in 24 months and 36 months, respectively. New construction is not off the table, however. Results also show 27 percent of respondents indicated new construction in 24 months and 9.3 percent are looking at a 36-month timeline.

With the new Lead & Copper Rule Revision (LCRR) expected to make its mark in 2021, upgrades to existing system equipment make a lot of sense, as utilities will be expected to replace lead service lines. Also important to note is the requirement of the LCRR for utilities to inventory lead pipe, which opens pathways for solutions providers with the capabilities to conduct this inventory at scale.

This expectation is further reflected in the focus of budgets for 2021 as the two leading categories are Pipe/Distribution Systems and Sewers/Collection Systems with Monitoring falling into third behind them, which points out another key talking point for 2020: smart water.

Smart water's rapid adoption

For the third year running, Monitoring has been listed in the top three budget items, which shows the increasing demand for smart water technologies. The talking points regarding smart water this year are the acceleration of smart technologies and their adoption by utilities due to the pandemic. The market has shifted from a push mindset to a pull as utilities recognize the need for the solutions.

"We thought before the pandemic that there was adoption acceleration occurring in the market at high single digits," Mize said. "I think post-pandemic, we feel like there's going to be a double-digit growth in that type of technology space and solutions across the country."

Smart water technologies have allowed the industry to work remotely, monitor systems from their homes, and ultimately has helped them comply with social distancing guidelines.

With many utilities now in an age of data, Mize said the next step will be insights. Solutions providers are already ahead of the curve on providing platforms for data insights; the missing piece are data scientists who can make the most out of that data.

On a different topic entirely, the protests of the death of George Floyd in June resulted in marked responses from industry companies and associations as it relates to diversity and inclusion. Lynn Broaddhus, president of the Water Environment Federation said the response from WEF to this event—a statement of solidarity released within days—would likely not have occurred two or three years ago. This, she noted, indicates how far the association has come, but she also recognized how much more work is needed for the future.

"You would have never seen WEF do that two years ago, three years ago," Broaddhus said. "It would be hard to imagine WEF doing that if we hadn't been doing our homework on what this meant for us and what message we want to be sending to our members, especially those who are really affected most directly by what was going on."

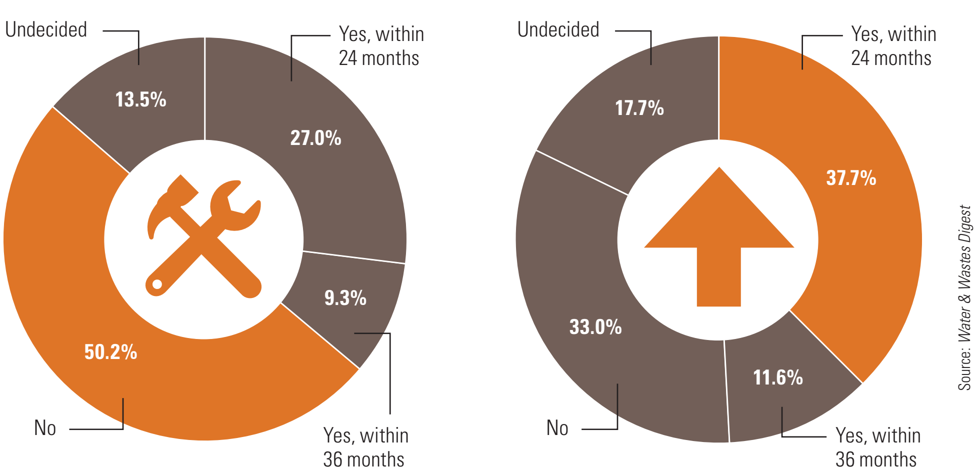
Diversity and inclusion dovetail with three other critical industry terms that have been added to many industry association roadmaps in the past couple of years: water affordability, water access, and water equity. The pandemic highlighted the magnitude of these issues as communities with the lowest income—which often also are communities of color—were disproportionately affected by the pandemic. Overlay data on access to clean and affordable water, and it showcases a strong correlation between the increased spread of the disease and water.

Lastly, the U.S. EPA released an update to the Financial Capabilities Assessment, which is a document aimed specifically at generating financial resources for communities of low and moderate income to be used for water and wastewater projects. This is the first time it has been updated since 1997, and it received far-reaching praise throughout the water sector as a means to address the issues noted above.

Facility Construction & Upgrades Plans

(% responding)

Water & Wastewater New Construction | **Water & Wastewater Upgrades**



HOME BUILDERS

Cautious Optimism

By **RICH BINSACCA,** Editor-in-Chief, *Pro Builder Media*

Suffice it to say that 2020 was an unusual year for the nation's home builders, one in which rosy and robust forecasts flew out the window in March only to return beyond anyone's expectations by the late summer and continue on a torrid pace into 2021.

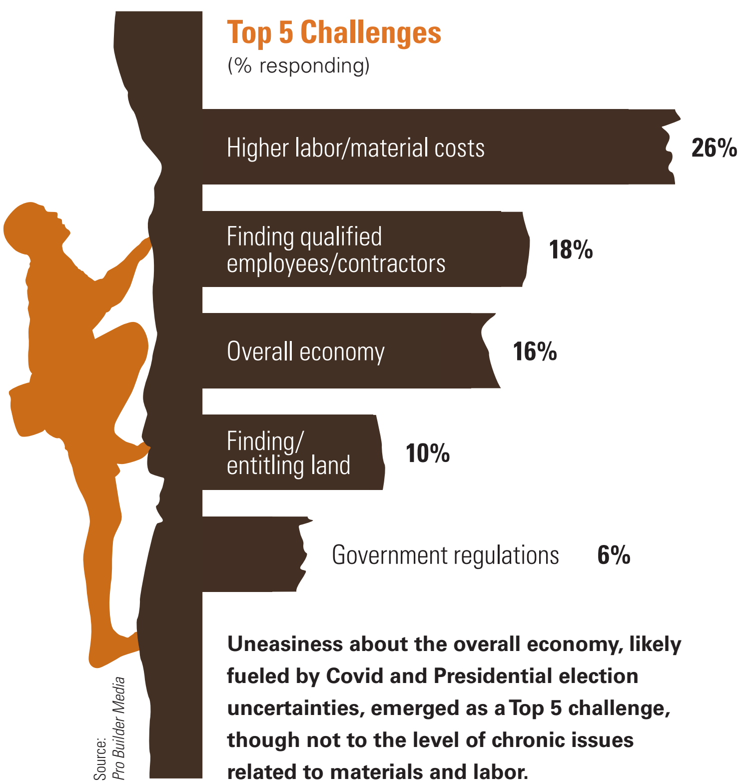
As it was, the responses to *Pro Builder*'s annual reader forecast survey picked up where builders left off a year ago, and then some. Representing a broad spectrum of the housing industry nationwide, there remains a general optimism despite lingering concerns and ripple effects from Covid-19, namely lumber supply shortages (and resulting price increases) and delays in delivering homes to satisfy record sales, which several builders noted.

Consider that while 41 percent of housing professionals expect to build the same number of homes in 2021 as they did in 2020 (a slightly higher share than predicted a year ago), another 52 percent expect to exceed this year's numbers: some by a lot. And, more than two-thirds of builders expect their revenues to increase in 2021, as they did coming into 2020.

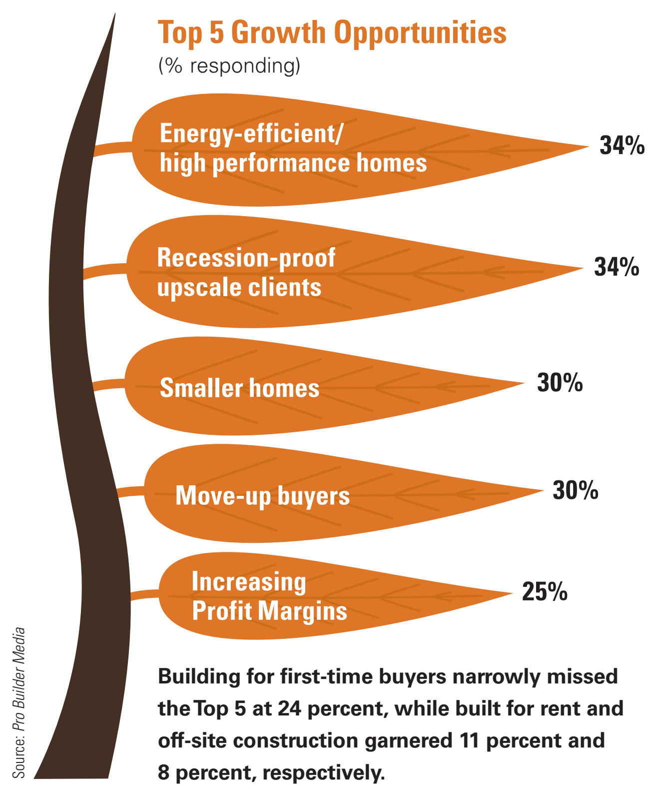
With that, far more predict 2021 will be a "very good" year (11 percent think it will be "excellent") and 77 percent consider the overall health of their companies to be "good" or "very good" going into the new year.

If there are any sidewinds or headwinds, it is with the cost and ability to build. More than 80 percent of builders expect materials costs and bid prices to increase, while that and finding qualified labor are the top two challenges by far.

As for whether the pandemic will continue to impact business through the new year and beyond, those who responded to the survey seem to be taking it in stride. "It definitely changed the way we do business," said one, while another added, "We are used to the challenges now."



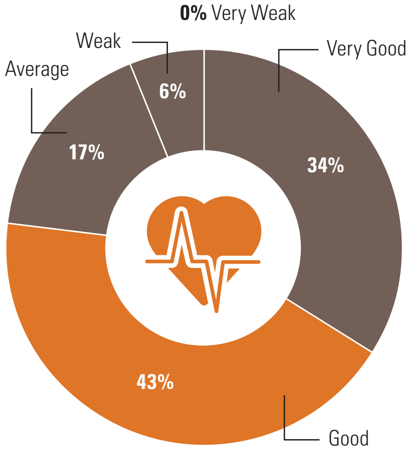
Uneasiness about the overall economy, likely fueled by Covid and Presidential election uncertainties, emerged as a Top 5 challenge, though not to the level of chronic issues related to materials and labor.



Building for first-time buyers narrowly missed the Top 5 at 24 percent, while built for rent and off-site construction garnered 11 percent and 8 percent, respectively.

Company Health

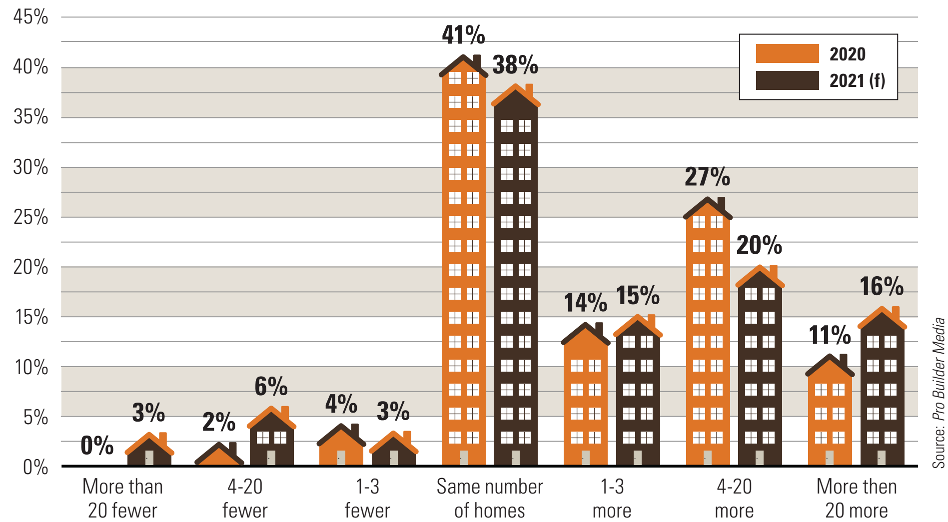
(% responding)



Source: *Pro Builder Media*

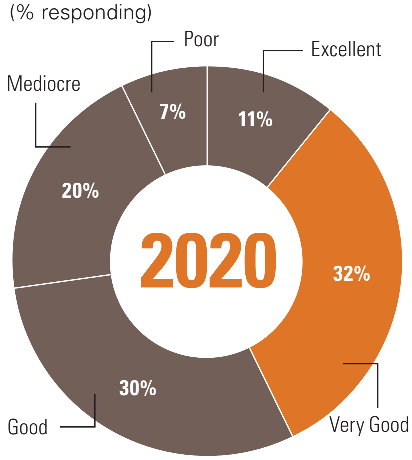
Home Sales Climbing

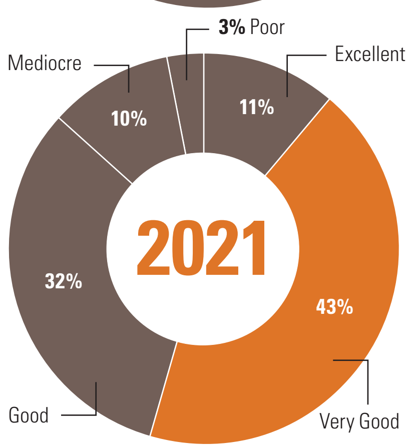
(% responding, 2021 compared to 2020, 2020 forecast)



Business Report and Outlook

(% responding)

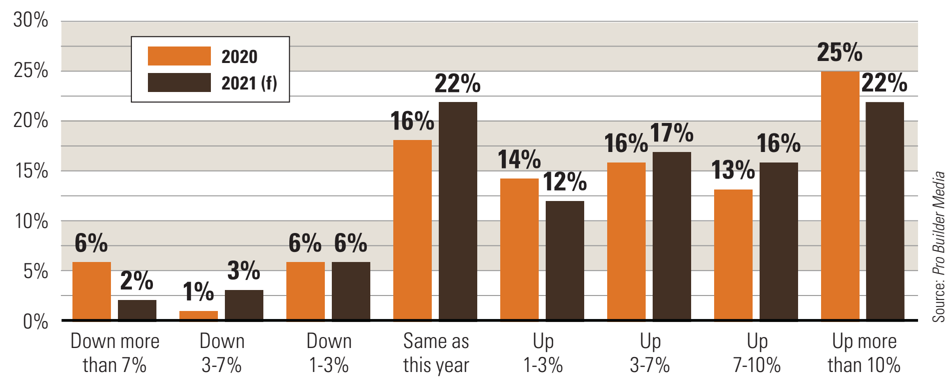




Source: *Pro Builder Media*

Sales Outlook

(% responding, 2021 compared to 2020, 2020 forecast)



Planning for 2021

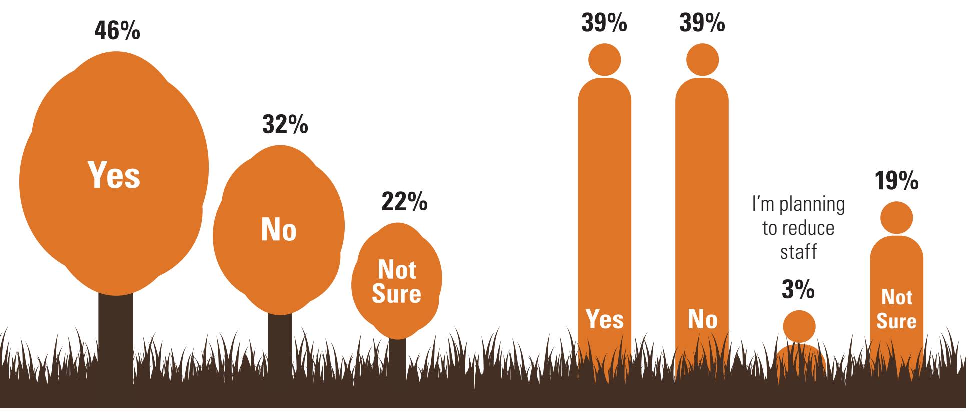
(% responding)

If you can find it...

Are you planning to purchase land in 2021?

If you can find them...

Are you planning to hire additional staff in 2021?

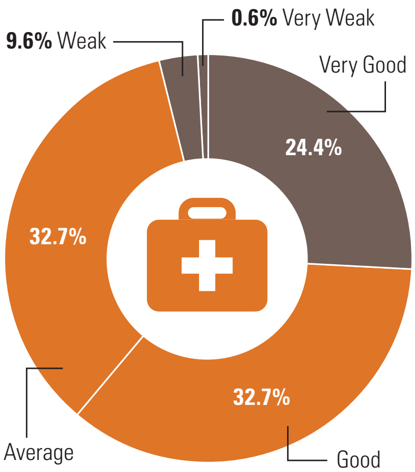


Source: *Pro Builder Media*

NONRESIDENTIAL

Covid Stalls Growth

By **JOHN CAULFIELD, Senior Editor**, *Building Design+Construction*

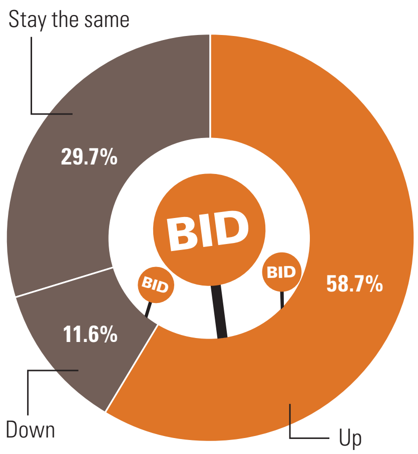


Overall Health of Firm

(% responding)

One-quarter of respondents rate their firm's health as "very good" at the end of 2020, with about 10 percent calling it "weak" or "very weak."

Source: *Building Design & Construction*

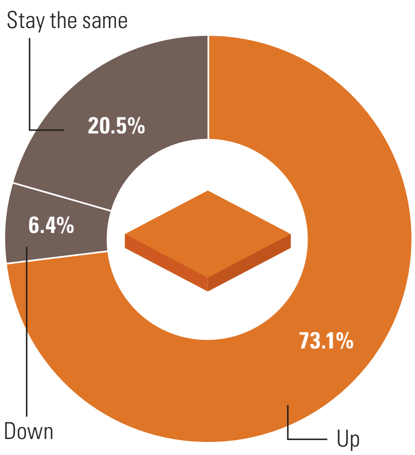


2021 Bid Prices Expectations

(% responding)

Fewer respondents are expecting bid price increases than in past years, with slightly more than one in 10 expecting bid prices to drop in 2021.

Source: *Building Design & Construction*



2021 Material Prices Expectations

(% responding)

Material prices will increase in 2021, with few expecting a decrease. This will not only put pressure on bids, but also profits.

Source: *Building Design & Construction*

Last year's optimism about growth in the nonresidential building sector has been overwhelmed by a novel coronavirus whose persistent spread raises questions about business prospects for next year and beyond.

Construction spending will be off by 8.1 percent in 2020 and 4.8 percent in 2021. That's the consensus among nine market watchers—ranging from the Associated Builders and Contractors to IHS Economics—whose projections were aggregated in the American Institute of Architecture's (AIA) mid-year Consensus Construction Forecast, released in July.

With the exceptions of healthcare and public safety, every major building category is expected to lose ground this year and next. This trend would end an almost decade-long expansion in construction spending.

Things weren't looking much better as summer turned to fall. The total value of construction put in place as of September 2020, $794.3 billion, was down 4.4 percent from the same month in 2019, according to Census Bureau estimates. The office building category alone was off 15.4 percent. Education, the largest nonresidential building sector, declined 4.8 percent.

A recent *BD+C* survey of architects, engineers, and contractors reflects these broader outlooks. Half of those polled reported that their firm's revenue was less, compared to 2019. Nearly one-third gauged their firm's financial health as "weak or very weak." Two-fifths describe 2020 as a "mediocre" or "poor" business year. More of the same in 2021 is expected by 31.1 percent.

But it's not all gloom and doom. More than one-quarter of respondents say their firms have found market penetration points that have allowed them to generate more revenue than in 2019. A surprising 28.3 percent of survey respondents rated 2020 as an "excellent" or "very good" business year. About the same portion is anticipating 2021 to be similarly robust, with 37.3 percent expecting revenue increases next year.

With construction projects being delayed or postponed because of the virus, competition has ratcheted up. Nearly 60 percent of respondents characterize their markets as "intensely" or "very" competitive. And there has been very little relief in materials prices during the pandemic: nearly three-quarters of respondents—73.1 percent—expect prices to keep rising next year. One-fifth think prices will level off.

BD+C asked firms to weigh in on business prospects for 2021 in several building sectors. Here are some of the high (and low) points:

• 55.6 percent of respondents see immediate prospects for the hospitality sector as "weak" or "very weak."

• 58 percent of respondents think prospects for the retail sector in 2021 are "weak" or "very weak."

• More than half of the survey respondents whose firms operate in the office sector expect business prospects to be "weak" or "very weak" next year.

• Nearly one-third of respondents expect prospects in the industrial sector to be "excellent" or "very good."

• Nearly 40 percent of the survey's respondents that serve the multifamily sector said it will be an excellent or very good market next year.

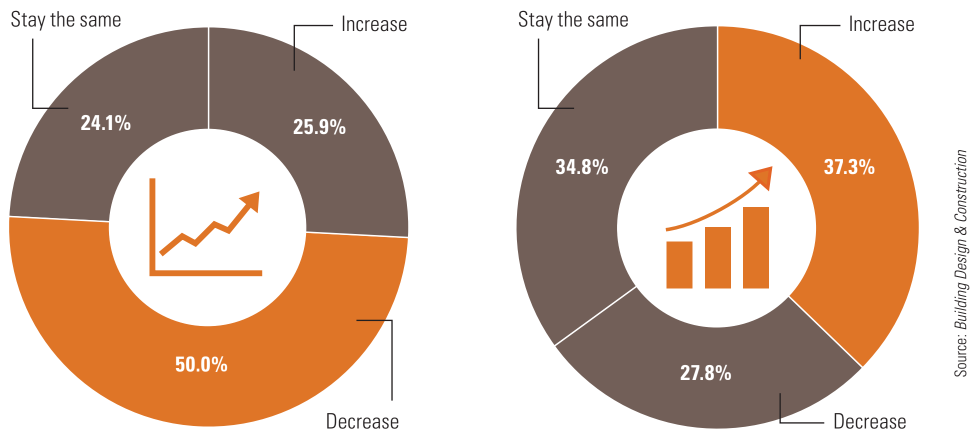
• More than one-third say the data centers and mission-critical facilities markets will be "excellent" or "very good" in 2021.

2020 Revenue Results and 2021 Financial Outlook

(% responding)

How has your firm's revenue changed in 2020, compared to 2019?

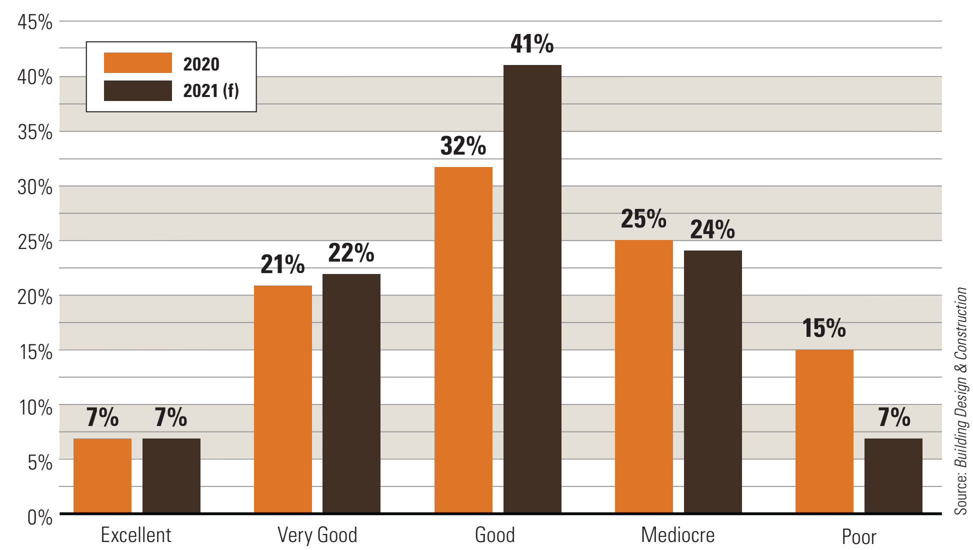
How do you expect your firm's revenue to change in 2021, compared to 2020?



The Covid response drove down revenue for half of respondents in 2020 as some projects were cancelled or delayed. As projects for 2021 remain in flux, more than one-third of respondents expect revenue to grow compared to 2020.

2020 Business Results and 2021 Outlook

(& responding)



Business ratings reflect the effects the coronavirus response has had on the economy and on nonresidential construction. Whereas the percentage of respondents at the "excellent" and "very good" range see it continuing, there is a sizable shift for those reporting "poor" and "mediocre" years in 2020.

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