ACEC Private Industry Brief

Economic Outlook

Q3 2020 Review

Introduction

In this issue of ACEC's *Private Industry Briefs* we provide an update on the five macroeconomic trends during this unprecedented recession, analyze how long a recovery may take for our industry, and take a deeper look at the two markets showing significant growth—single-family residential and telecommunications, with a focus on broadband.

Sources for the Q3 2020 Review & Updated Outlook include:

U.S. Census Bureau, National Association for Business Economics, FMI, U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, U.S. Department of Housing and Urban Development, American Institute of Architects, Associated Builders and Contractors, National Association of Home Builders/Wells Fargo, *Engineering News-Record*, and the Federal Funds Information for States.

5 Macroeconomic Trends for 2020

1. A "U-Shaped" Recovery Most Likely:

- As the global coronavirus pandemic continues into the fourth quarter of 2020, economists predict that a "V-shaped" recovery—with a quick "bounce back" to pre-pandemic levels of economic activity—is increasingly unlikely.
- Although several very promising vaccines are expected to deploy soon, public health experts note these will not be widely available until mid-2021.
- The National Association for Business Economics (NABE) October 2020 Outlook survey shows more than 70% of economists think either a vaccine or a comprehensive testing/tracing program is the greatest upside risks to the economy *(see chart and further information on page 3)*.

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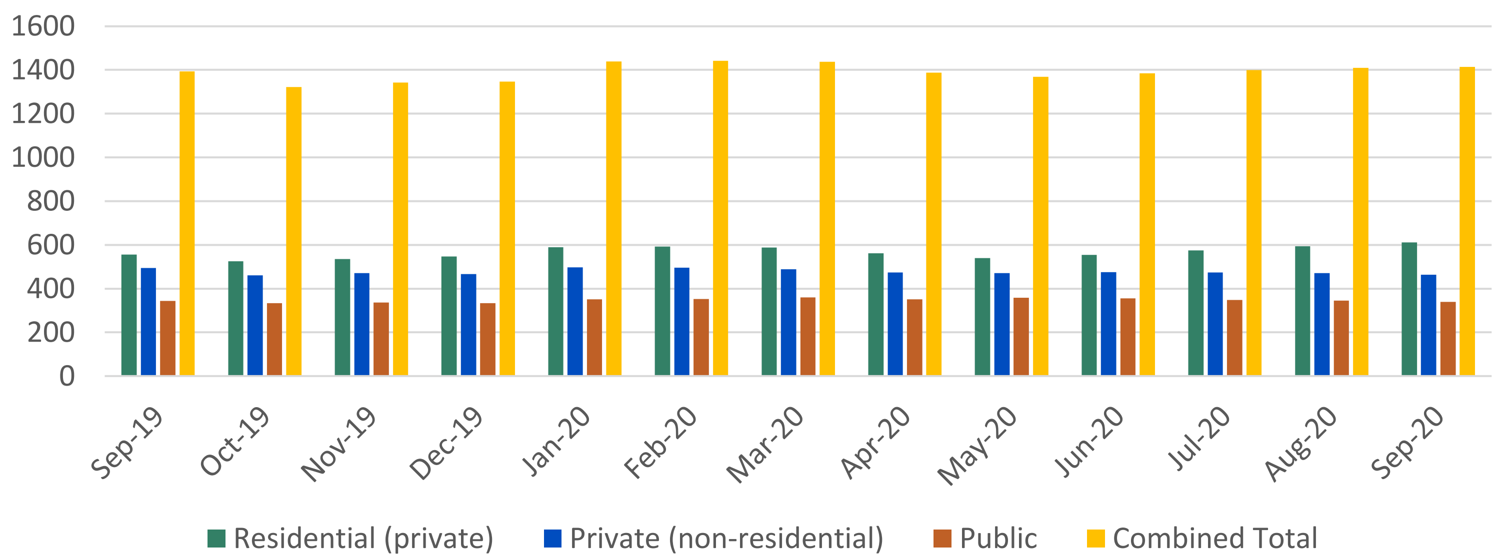
U.S. Construction Put in Place, September 2019-September 2020

(in billions $)



Source: U.S. Census Bureau

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5 Macroeconomic Trends for 2020

continued

- FMI forecasts a "U-shaped" trend in the design and construction markets, with construction put-in-place spending not returning to 2019 peak levels for more than five years *(see chart below/left)*.
- Although no recession is the same as past ones, it is notable that U.S. A/E firm revenues took six years to return to 2008 levels coming out of the Great Recession *(see chart below/right)*.

2. Federal Stimulus is Key:

- Congress has not passed a second relief package, since passing the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) in March 2020, shortly after the pandemic began.
- State and local governments, which generally cannot run budget deficits, are in particular need for federal support as they face significant budget shortfalls.

3. Consumers Drive the U.S. Economy:

- Nearly 70% of U.S. economic activity is dependent on consumer spending, which is why a global health crisis requiring social distancing caused a dramatic impact.
- The commercial (includes retail) and lodging market segments are expected to decline by 25% or more over the coming years.

4. Private Markets First to Decline, Public Following:

- Comparison of year-over-year construction put-in-place numbers for Q3 confirms that private markets declined first; the bottom of the market is not expected until 2022.
- Public markets show stability, but the recession impact is expected to be felt more dramatically in coming years—particularly if states and localities are not supported by a federal stimulus.
- Single-family residential is beginning to surge *(see page 4 for more details)*.

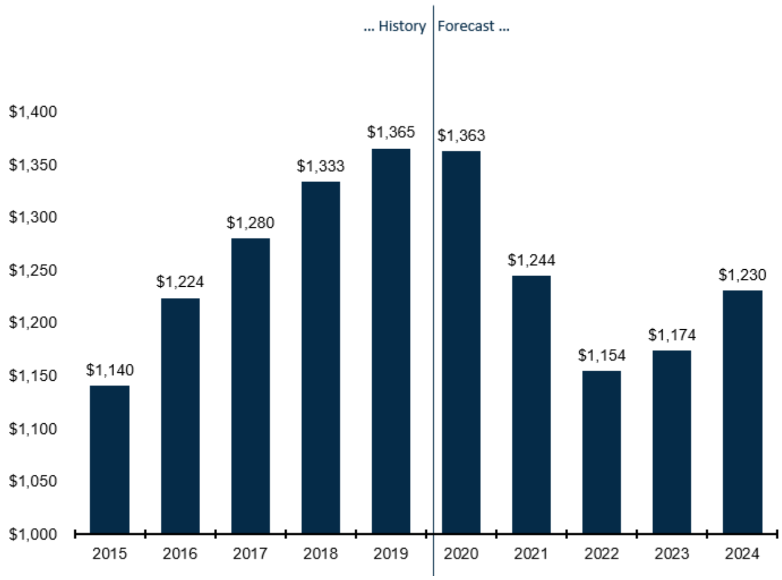
Source: U.S. Census Bureau

Construction Put in Place	Q3 2020	Q3 2019	Change
Total Construction	$1.407 T	$1.330 T	+5.5%
Residential (private)	$593.3 B	$526.3 B	+11.3%
Private (non-residential)	$469.7 B	$470.0 B	-0.1%
Public	$344.3 B	$334.0 B	+3.0%

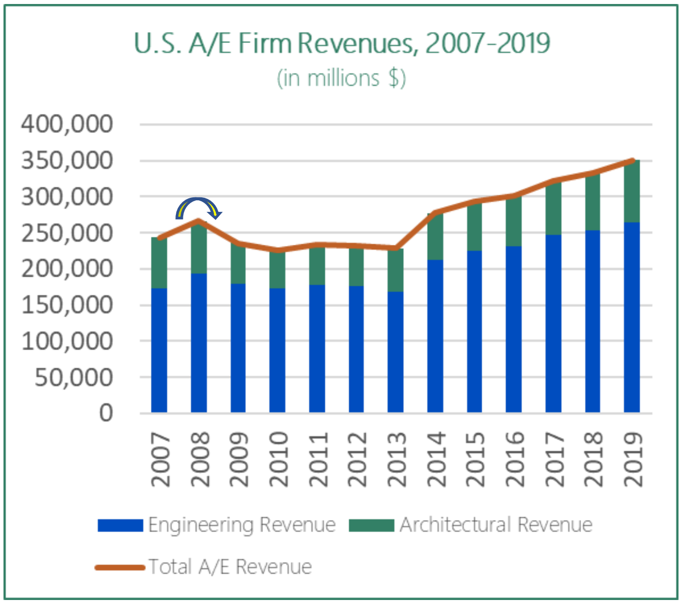
5. Future Design Impacts Stemming from Pandemic:

- A crisis such as COVID-19 may significantly impact future design trends including a desire for suburban and rural living with greenspace; and even a reduced demand for public transit and office space.

FMI Forecast for Construction Put in Place



Source: FMI (September 2020), U.S. Census Bureau



Source: U.S. Census Bureau

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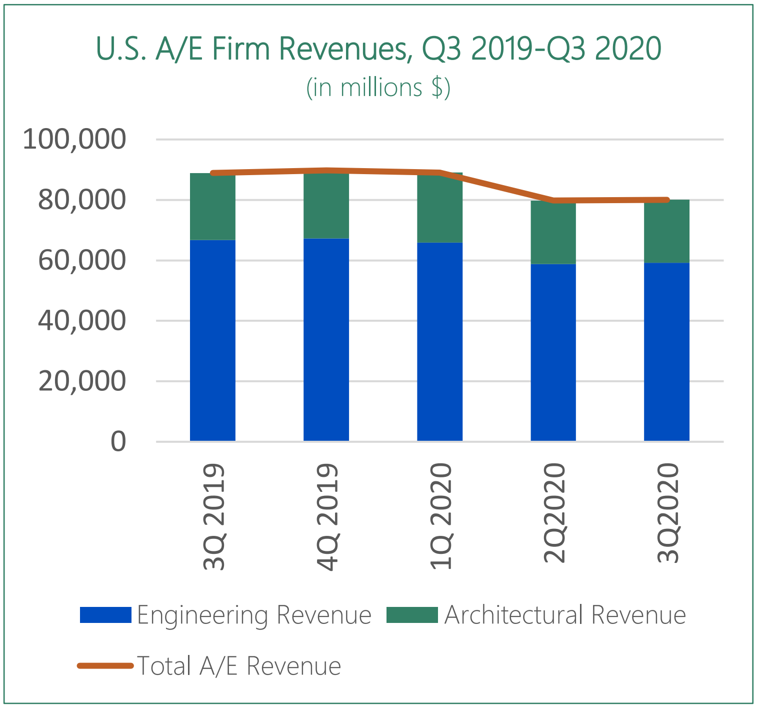
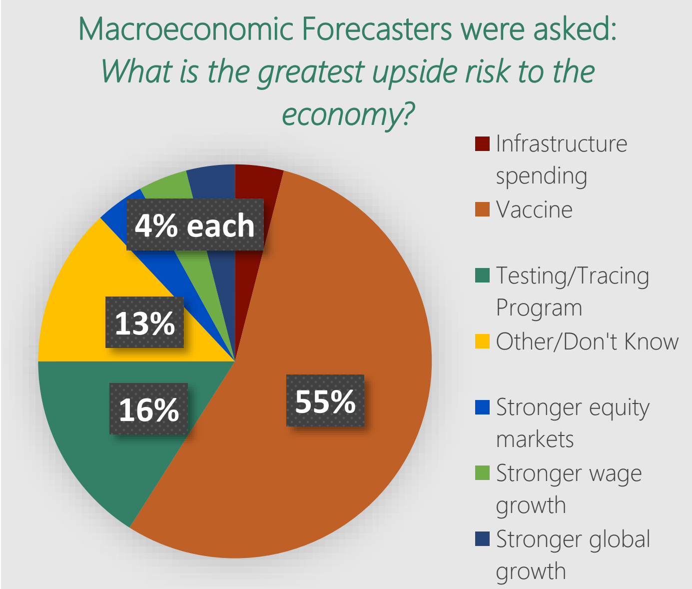


Source: U.S. Census Bureau

Q3 2020 A/E Revenues Down 11.8% YOY

The U.S. Census Bureau's 'advance estimate' of total A/E revenues for Q3 2020 is $80.08 billion (B), an 11.8% decline from the same quarter last year. This is less than half a point improvement from Q2 2020 A/E revenues, at $79.77B. Q2 2020 was the first full quarter of the pandemic-caused recession.

Overall, this may be good news for our industry—as there was not a further decline. Whether or not we can hold at this level will largely depend upon a vaccine—its effectiveness, timing, deployment and acceptance by the public—as well as the necessary stimulus to state and local governments.



Source: National Association for Business Economics, October 2020

Vaccine(s): The Best Hope for our Economic Recovery

A vaccine (55%) or a successful test and trace policy (16%) that slows the COVID-19 pandemic are seen as the greatest upside risks to the U.S. economy by a panel of macroeconomists surveyed by the National Association for Business Economics (NABE).

Only 16% of NABE panelists cited more traditional upsides, equally divided between: infrastructure spending (4%), stronger equity markets (4%), stronger wage growth (4%), and stronger global growth (4%). No panelists viewed tax reform or trade policy as an upside risk.

Macro & Industry Indicators	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Gross Domestic Product (GDP) Growth	+2.6%	+2.4%	-5.0%	-31.4%	+33.1%
Core Inflation Rate (2% is target)	2.3%	2.3%	2.3%	1.3%	1.7%
Unemployment Rate	3.6%	3.5%	3.8%	13.0%	8.8%
New Housing Units Authorized (seasonally adjusted annual rate)	1.43M	1.49M	1.44M	1.18M	1.50M
A/E/C Industry Economic Indicators					
Architecture Billings Index (AIA)*	52.7	52.6	46.3	33.8	42.3
ABC Construction Backlog Indicator	8.8 mos.	8.7 mos.	8.4 mos.	7.9 mos.	7.8 mos.
FMI Construction Industry Round Table (CIRT) Index*	64.9	57.6	63.6	21.6	52.1
FMI Design Index*	63.2	60.9	62.7	39.8	49.3

**Index scores over 50 indicate expansion; below 50 indicate contraction.*

Sources: U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, U.S. Census Bureau, U.S. Department of Housing and Urban Development, AIA, ABC & FMI

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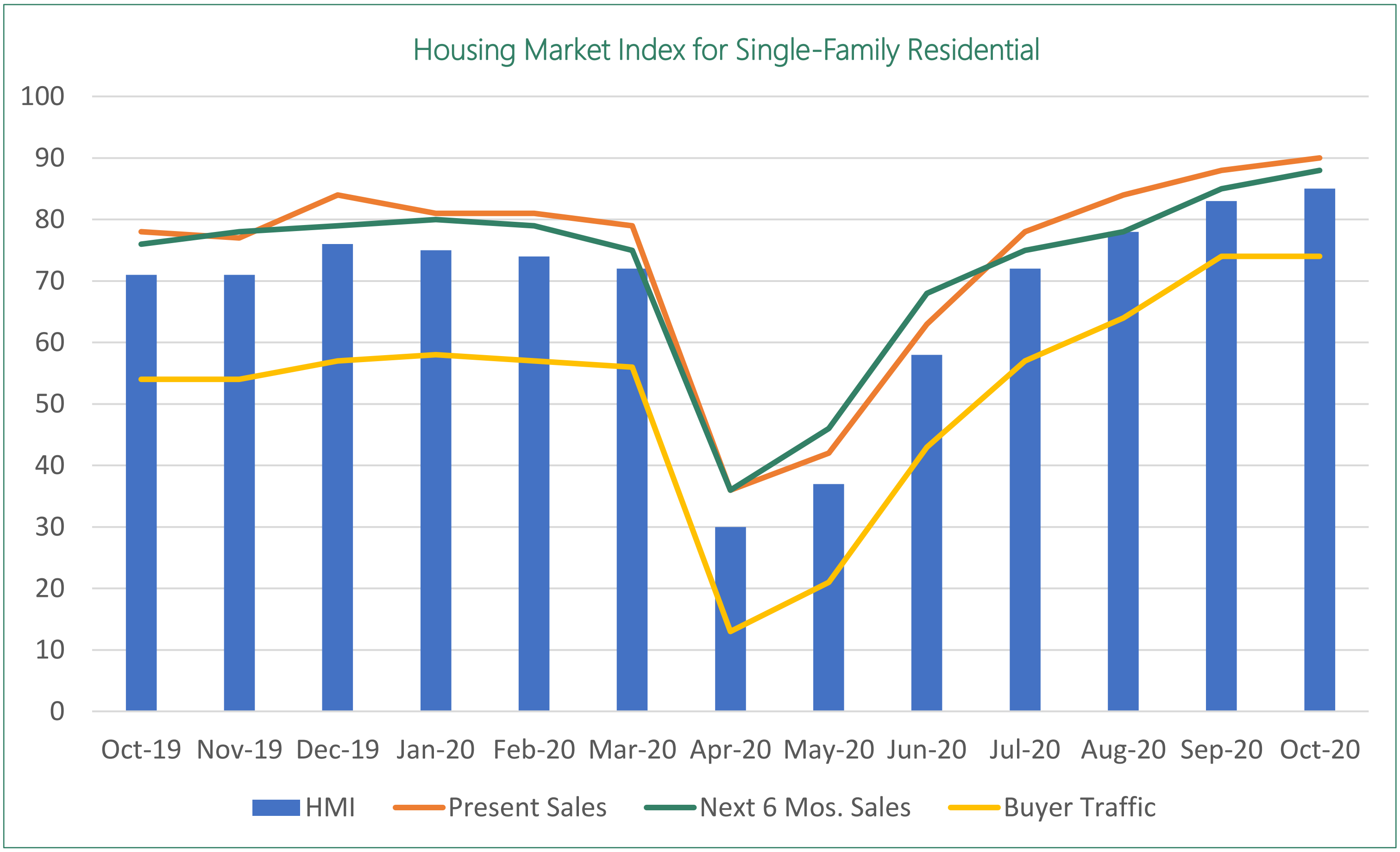

Source: National Association of Home Builders/Wells Fargo

Single-Family Residential Surges

The single-family housing market is emerging as a star during the economic recovery from the COVID-19 pandemic. This is good news for ACEC member firms that engage in land development services, as well as firms that design infrastructure which supports neighborhoods—such as water/wastewater, K-12 schools and roadways.

Single-family homebuilding jumped 8.5% to a rate of 1.108 million units in September, according to monthly joint numbers by the U.S. Census Bureau and the U.S. Department of Housing and Urban Development. This is the highest rate of single-family starts since June 2007 according to the *World Property Journal*. Permits to build single-family homes—a leading indicator—increased 7.8% to the strongest level since 2007, according to Bloomberg, which also noted that construction of single-family homes in September reached the highest level in more than 13 years. In the nation's largest region, the South, new single-family home construction starts rose 17.7% to a 13-year high. Single-family homes accounted for 78% of total homebuilding, which is the largest share recorded since 2010. Multi-family construction, which makes up the rest of the market, is experiencing a decline, largely attributed to being overbuilt coming out of the Great Recession.

Analysts attribute single-family growth to several factors: record-low interest rates, families looking for more space as they engage in work-from-home and remote schooling during the pandemic, and the demographics of the large millennial generation.

It is no surprise that builder confidence is soaring. The National Association of Home Builders/Wells Fargo Housing Market Index (HMI) rose by two points to an all-time high of 85 in October, up from the previous all-time high of 83 recorded in September *(see chart above)*. These months are the first with readings over 80 in the index's 35-year history. HMI measures three components: present single-family sales, single-family sales over the next six months; and prospective buyer traffic.

Outlook by Market Sector

The following three pages detail the expected growth and decline of market sectors through 2024, updated with Q3 information from FMI. Market sectors with the greatest declines include those most sensitive to consumer spending, travel, and socializing. The two with expected actual growth include communication (data centers and broadband), as well as highway and street (assuming solid reauthorization of transportation spending).

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Commercial & Residential Real Estate

Key drivers/trends:

- Growth of the industrial/distribution market due to e-commerce, often in unexpected urban locations
- 'Retail apocalypse' with stores closing and adaptive reuse of properties
- Focus on limiting buildings' energy usage and carbon emissions
- Decline of the multi-family market
- Expected growth of suburbs and second-tier cities in part due to coronavirus pandemic

Market Scope: The commercial and residential real estate market is 'vertical' in nature and contains a variety of commercial and residential real estate property types, including: office; industrial; retail; multi-family residential, including student and senior housing; and hospitality. Clients are typically developers and owner-users, such as large retailers. A wide range of engineering services is provided to these clients, including mechanical/electrical/plumbing (MEP), structural, site-civil, surveying, geotechnical, and environmental services. Land development-focused firms also include residential home builders as major clients.

Key: a=actual, e=estimate, f=forecast

Construction Put in Place *Forecast by market segment*	2019a	2020e	2021f	2022f	2023f	2024f	Change 2019-2024f
Commercial	$80.44B	$78B	$67B	$56B	$56B	$60B	-25%
Office	$84.86B	$81B	$70B	$60B	$59B	$62B	-27%
Lodging	$33.07B	$29B	$22B	$19B	$18B	$20B	-40%
Amusement & Recreation	$28.80B	$26B	$21B	$18B	$17B	$18B	-38%
Residential (single, multi & improvements)	$550.94B	$565B	$502B	$451B	$459B	$484B	-12%

Sources: U.S. Census Bureau & FMI

Intermodal & Logistics

Key drivers/trends:

- Infrastructure challenges related to urban locations and 'last mile' delivery needs
- Growth of Southeastern U.S. ports and their connections
- New inland ports emerging, along with increased investment in rail
- Trade policy issues and recession may hamper growth considerably
- E-commerce continues to be a strong driver

Market Scope: The intermodal and logistics market is a dynamic one, with various types of facilities, including marine terminals, rail terminals, depots and container yards, inland ports, freight airport terminals, and industrial real estate located adjacent to intermodal facilities. Many facilities are like mini-cities, and a wide range of engineering design services are required for their creation and expansion, including land development, transportation, mechanical/electrical/plumbing, structural, environmental, geotechnical, and water-related design. With more than 2,200 facilities, the North American intermodal market is the largest in the world.

Key: a=actual, e=estimate, f=forecast

Construction Put in Place *Forecast by market segment*	2019a	2020e	2021f	2022f	2023f	2024f	Change 2019-2024f
Manufacturing	$80.08B	$77B	$74B	$73B	$75B	$77B	-4%
Transportation (buildings)	$57.14B	$58B	$54B	$50B	$50B	$53B	-7%

Sources: U.S. Census Bureau & FMI

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Energy & Utilities

Key drivers/trends:

- Sharp decline in oil market in Spring 2020, with volatility expected to continue
- Decreasing demand for energy due to sharp drop in economic activity
- Focus on energy efficiency goals driven by 'Green New Deal'-type city and state policies; a national political change in 2020-2021 could shift priorities more broadly
- Pre-recession, both solar and wind were growing to meet electricity demand

Market Scope: The energy and utilities market was estimated to be $29 billion, resulting in 28% of A/E revenues for *Engineering News-Record (ENR)* Top 500 firms in 2019. Many firms count oil and gas companies, as well as utilities, as major clients. Typically working under a Master Services Agreement or similar type of contract, a wide range of engineering services are provided to these clients, including: civil, mechanical/electrical, structural, environmental, geotechnical, and water-related design. Energy and utility clients are also significant buyers of surveying and mapping services because their projects often span large geographies.

Key: a=actual, e=estimate, f=forecast

Construction Put in Place *Forecast by market segment*	2019a	2020e	2021f	2022f	2023f	2024f	Change 2019-2024f
Power	$113.89B	$115B	$111B	$108B	$110B	$116B	+2%
Communication	$22.24B	$23B	$24B	$25B	$26B	$27B	+18%
Sewage & Waste Disposal	$26.09B	$27B	$27B	$25B	$24B	$25B	-4%
Water Supply	$15.88B	$17B	$17B	$16B	$16B	$16B	+1%

Sources: U.S. Census Bureau & FMI

Communication Market Strongest & Broadband is Critical Infrastructure

The communication market sector is considered the most resilient during the current pandemic-caused recession, and FMI forecasts it will grow 18% (the fastest of any sector) over the next few years.

The need for social distancing during the COVID-19 pandemic has translated into millions of Americans needing to work from home, engage in distance learning, shop via the internet, and even have medical appointments using telemedicine. Increased streaming of media and meeting platforms is not just a market trend—but a life necessity. Analysis by the Uptime Institute finds that media streaming represents the biggest portion of global internet traffic and it is in fact the internet's "energy guzzler".

For broadband there remains a significant challenge in bringing connectivity all the way to residences and small businesses nationwide, particularly in rural areas. According to the Federal Communications Commission (FCC) *2020 Broadband Deployment Report*, 22.3% of Americans in rural areas and 27.3% of those on Tribal lands lack access to high-speed internet.

The U.S. Chamber of Commerce's Chamber Technology Engagement Center (C_TEC) reports that if rural small business had broadband access annual GDP and employment would increase by $41.3 billion and 316,605 jobs, respectively. In addition, rural access would likely slow out-migration from rural areas, improving overall economic development. Private telecommunications companies have had little incentive to invest in rural connectivity on their own, as the customer base is often not dense enough to support the cost of the infrastructure.

Recognizing the need for federal action in connecting rural America to broadband, the FCC in 2010 established the National Broadband Plan, which initiated a decade-long push for connectivity, with considerable activity in the last couple of years, including the FCC's new Rural Digital Opportunity Fund, which targets deployment of high-speed broadband networks in rural America. The FCC will direct up to $20.4 billion over 10 years to finance networks.

The activities around funding and financing rural broadband deployment, and the focus on how electric cooperatives (referred to as "co-ops") can play a new and unique role in this deployment, present new business opportunities for engineering firms. Co-ops were created after President Franklin D. Roosevelt established the Rural Electrification Administration in 1935, bringing electricity to rural parts of the country in the 1930s and 1940s. Today there are still 900 co-ops, which are independent electric utilities owned by the members they serve. Co-ops once again have the opportunity to transform rural America through broadband deployment. In 2010 only one co-op was providing broadband connectivity, but as of 2019 more than 140 were offering broadband, according to the Institute for Local Self-Reliance. Besides supporting their rural customers, there is an additional driver for co-ops, who need to add fiber to modernize their electrical grids to be "smarter", more resilient and more efficient. According to the National Rural Electric Cooperative Association 200+ co-ops who are not yet deploying broadband are exploring this additional offering.

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Health Care & Science+Technology

Key drivers/trends:

- Worldwide focus on a coronavirus vaccine shines a light on the biopharma and science and technology (S+T) industries
- Demographic drivers with growth of 65+ population due to aging baby boomers
- Increase of telehealth
- 'Retailing' of health care through CVS Minute Clinics and adaptive reuse of mall space to healthcare space
- Expected demand for changes in HVAC design due to pandemic

Market Scope: The health care (HC) and science+technology (S+T) markets are generally considered 'recession-proof' due to an aging population, and this is a theory that will be put to the test in the coming years. Health care construction grew to more than $45B in 2019 with major clients for firms being more than 600 health care systems and 6,000 hospitals are in the United States. Besides hospitals, facility types include outpatient centers and medical office buildings (MOBs) as well as laboratory, production and administrative space for pharmaceutical, biotechnology, and university clients. A wide range of engineering services are provided to these clients, often with specialized needs related to mechanical/electrical, HVAC and commissioning.

Key: a=actual, e=estimate, f=forecast

Construction Put in Place *Forecast by market segment*	2019a	2020e	2021f	2022f	2023f	2024f	Change 2019-2024f
Health Care	$45.56B	$46B	$44B	$42B	$44B	$45B	-1%

Sources: U.S. Census Bureau & FMI

Public Sector & P3s

Key drivers/trends:

- Tax revenues from gas, sales, and income taxes expected to drop sharply due to shutdowns and recession
- Need for federal stimulus directed strategically to state and local governments, who for the most part cannot run deficits
- Highway and street funding expected to be a bright spot in the coming years, with a once-expected decrease in car usage likely not to trend as quickly due to pandemic
- The education market (which is the second largest overall by annual construction-put-in-place value) may transform due to financial constraints and focus on virtual classrooms

Market Scope: The public market is significant for engineering firms and involves federal, state, and municipal clients. Projects are of course both 'horizontal' and 'vertical' in nature, ranging from K-12 schools and public universities; roadways, bridges, airports and transit facilities; civic and public safety buildings, which includes police and fire stations; as well as water/wastewater facilities and dams. Environmental, stormwater management and flood mitigation services are also increasingly in-demand by public clients.

Key: a=actual, e=estimate, f=forecast

Construction Put in Place *Forecast by market segment*	2019a	2020e	2021f	2022f	2023f	2024f	Change 2019-2024f
Educational	$105.37B	$98B	$91B	$91B	$94B	$98B	-7%
Highway & Street	$97.56B	$99B	$97B	$100B	$105B	$108B	+10%
Public Safety	$10.53B	$12B	$11B	$10B	$10B	$11B	+4%
Conservation & Development	$9.13B	$9B	$8B	$7B	$8B	$9B	0%

Sources: U.S. Census Bureau & FMI

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Index of State Economic Momentum

The Index of State Economic Momentum is a quarterly measure of economic vitality which accounts for growth of personal income, employment and population. The measures of these three components are averaged, the national average is 'zero' and each state's momentum is listed as a percentage above or below the national average *(see table to right)*.

For states with large urban areas and dense populations the impact seems to have been greater—largely due to the need to resort to social distancing earlier in the pandemic. The strongest example of this is New York, which ranks last for Q3 and ranked second-to-last in the previous Q2 ranking. The impact of New York's stagnation will not be just regional, as the New York metro economy is larger than Canada's, and accounts for 10% of U.S. GDP, according to the U.S. Bureau of Economic Analysis.

Source: *State Policy Reports* by the Federal Funds Information for States (FFIS)

Private Industry Briefs

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Economic Reviews & Updates

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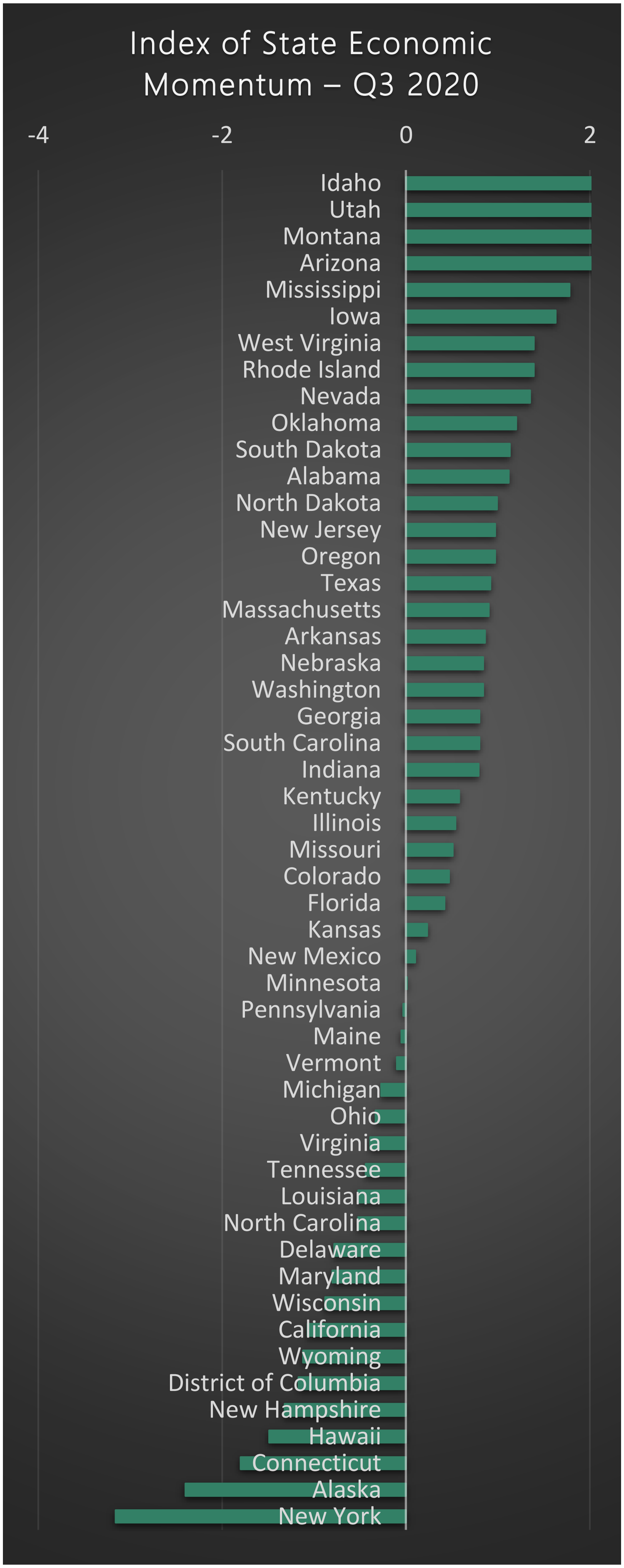
ACEC's Private Industry Briefs include annual updates of four key markets, as well as quarterly economic reviews. Further coverage can be found in *Engineering Inc.*'s regular column 'The Private Side.'



Source: FFIS