

ACEC Private Industry Brief

Economic Outlook

Q1 2019 & Annual Outlook



Introduction

Welcome to the inaugural issue of ACEC's quarterly publication on economic trends and indicators most relevant to the engineering industry. In this issue you'll find the top five macroeconomic trends for 2019, construction and A/E revenue data, information on state economic momentum and the gas tax, and an outlook and analysis around private-sector markets, including public private partnerships (P3s).

Sources for the Economic Outlook include: U.S. Census Bureau, U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, U.S. Energy Information Administration, WEF, CBRE, FMI, NABE, S&P CoreLogic Case-Shiller Index, AIA, ABC, IMF, NASBO, FFIS, API, ENR, and USA Today.

2019 WEF Top 10 Global Risks:

More than 1,000 World Economic Forum (WEF) stakeholders participate in an annual survey to identify the greatest risks to global economic growth. WEF is comprised of leading companies and economists and is known largely for its flagship annual meeting in Davos, Switzerland. Environmental risks continue to grow in prominence, providing opportunities for the engineering industry to solve the most critical of challenges.

1. Extreme weather events (e.g. floods, storms)
2. Failures of climate change mitigation and adaptation
3. Major natural disasters (e.g. earthquakes, tsunamis, volcanic eruptions, geomagnetic storms)
4. Massive incidents of data fraud/theft
5. Large-scale cyberattacks
6. Man-made environmental damage and disasters (e.g. oil spills, radioactive contamination)
7. Large-scale involuntary migrations
8. Major biodiversity loss and ecosystem collapse (terrestrial or marine)
9. Water crises
10. Asset bubbles in a major economy

5 Macroeconomic Trends for 2019

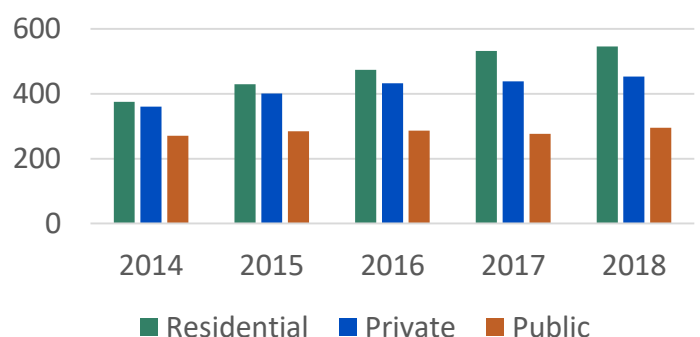
▶ 1. Reaping Benefits from the 'Fiscal Stimulus':

The U.S. entered 2019 as the fastest growing advanced economy globally. Economists agree that the fiscal stimulus—largely the Tax Cuts and Jobs Act (passed in December 2017)—drove robust expansion in 2018 with gross domestic product (GDP) and employment growth stronger than one would normally see so late in an expansion cycle.

Confidence and momentum is expected to drive growth through 2019. The Act restructured some income brackets, reduced personal income taxes for many Americans, shrank the C corporation tax rate to 21%, and made it easier to repatriate profits earned abroad. In its *2019 Real Estate Market Outlook*, commercial real estate firm CBRE anticipates a 2.7% gain in GDP, benefiting all sectors. FMI forecasts that total engineering and construction spending for the U.S. will end up growing 3% in 2019, compared to 4% in 2018 in its Q1 2019 report.

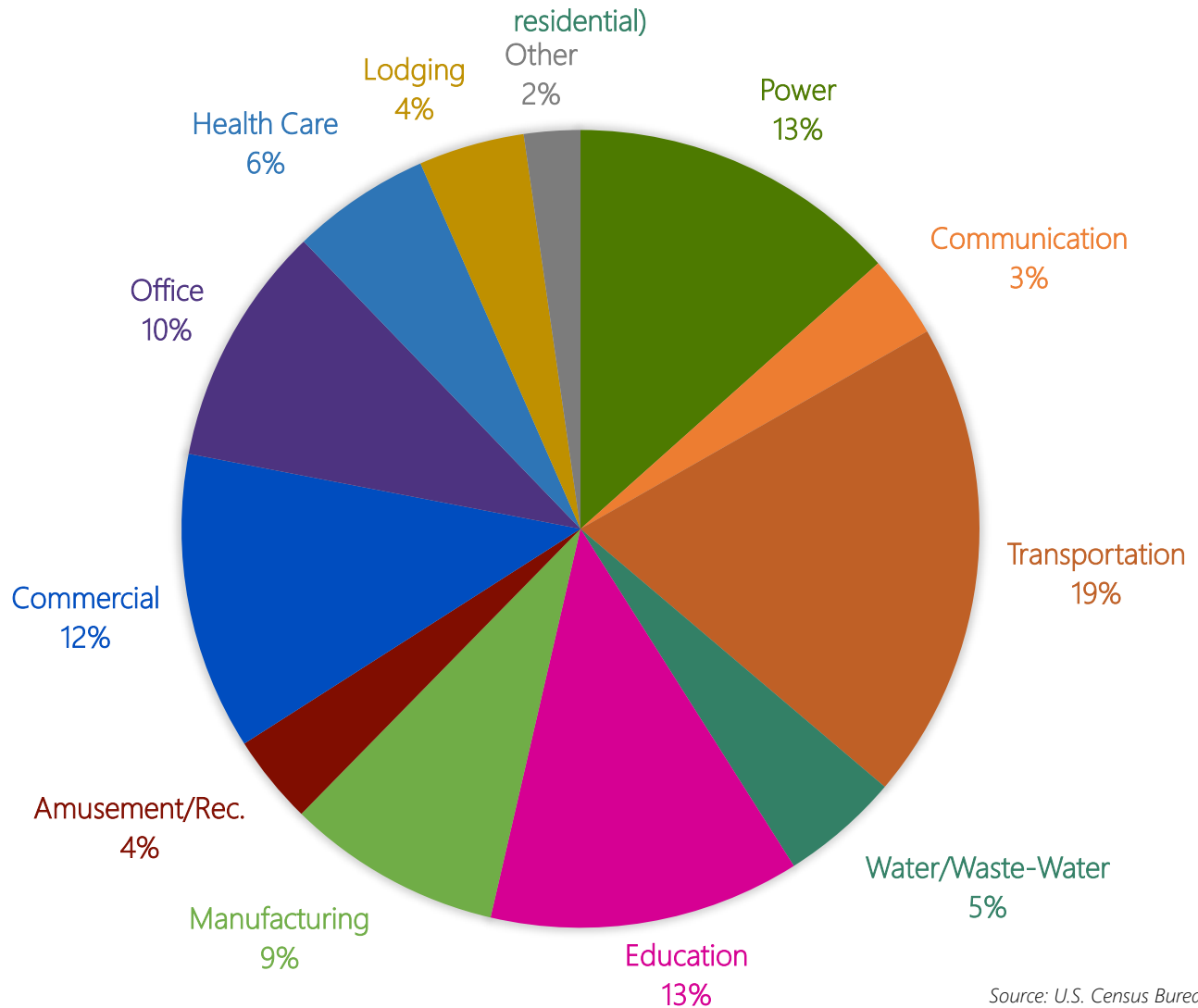
In 2018 there was nearly \$1.3T of U.S. construction put in place, with \$546B spent on residential projects; \$453B on private-sector projects; and \$295B on public projects.

U.S. Construction Put in Place, 2014-2018
(in billions \$)



Source: U.S. Census Bureau

2018 U.S. Construction Put in Place by Project Type (non-



5 Macroeconomic Trends for 2019

continued

► 2. Record Low Unemployment Continues:

The unemployment rate is at an astonishing 49-year low, which affects all industries—particularly engineering and other professional services where human capital is the ‘product’. Despite record low unemployment, growth in wages on the whole has been slow; this is helping to prolong the economic expansion cycle by keeping inflationary pressure low, according to economists.

However, in many industries—particularly design and construction—there is pressure to keep raising wages due to labor shortages. These shortages can hamper further growth if positions cannot be filled, as companies need to be able to find additional workers to take advantage of the still-strong economic conditions.

► 3. Interest Rates Expected to Remain Low:

The expectation of a recession not being in the near term is being credited by many economists to the Federal Reserve’s ‘dovish’ policy change in January 2019 away from multiple rate hikes. A near-majority of the National Association for Business Economics (NABE) Q1 2019 Outlook Survey panelists say they anticipate only one interest rate hike in this cycle compared to what was thought would be three when the same survey was conducted in December.

The economy appears healthy enough to sustain rate hikes when considering the unemployment and core inflation rates and consumer confidence. However, the Federal Reserve is likely considering factors such as a slowdown in the global economy and a flattening of home prices in the U.S. Annual gains in housing prices are now at their lowest since 2015, according to the S&P CoreLogic Case-Shiller Index (March 29, 2019).

4. Trade Issues and an International Slowdown Likely to have Impact:

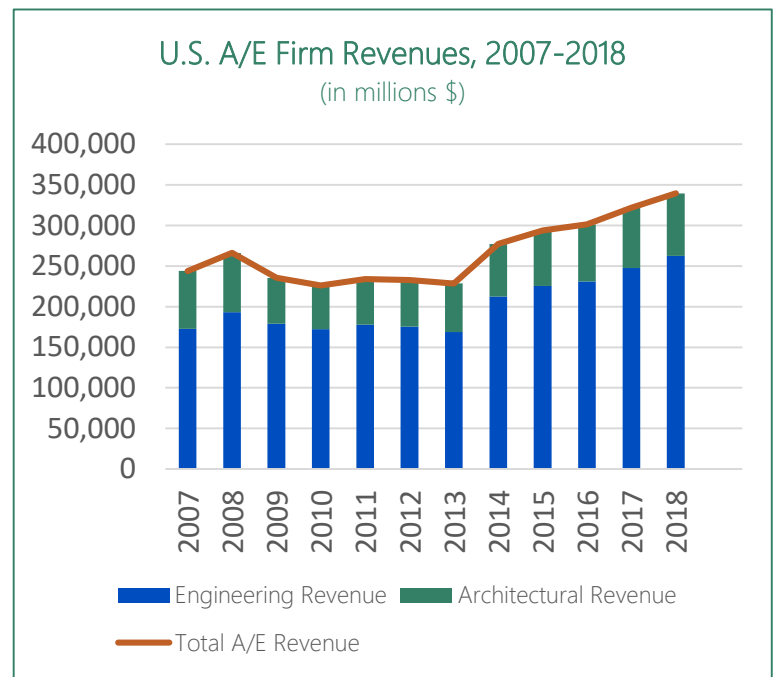
Although the U.S. had continued economic growth in 2018, the year was seen as difficult for trade and relations among world economic powers. Political risks, such as unresolved U.S.-China trade negotiations and Brexit, dominated headlines. It is still unclear what the economic impact of such international tensions will be on the U.S. economy.

According to WEF, there is an international trend toward state-centered politics with the world entering “a period of divergence following a period of globalization... the tension between the globalization of the world economy and the growing nationalism of world politics is deepening risk.”

NABE Q1 2019 Outlook Survey panelists agree, naming external headwinds from trade policy and slower global growth as the primary downside risks to U.S. economic growth; the global slowdown is real. WEF says “... the rate of global growth appears to have peaked”; the International Monetary Fund (IMF) is pointing to a slowdown from 3.6% in 2018 to 3.3% in 2019. China—the second largest economy in the world—is expected to go from 6.6% growth in 2018 (its worst rate in 28 years) to 6.3% in 2019 and 6.1% in 2020.

5. Predicting the Next Recession:

With the current economic expansion being the second longest bull run on record (the longest was between March 1991–March 2001 at 120 months) economists and the business press are speculating when the next recession will come and what will trigger it. Nearly everyone agrees that a recession is not around the corner, with 2019 growth expected to remain strong—although not to 2018 levels. Many downgraded forecasts for 2019 during the first quarter.



Source: U.S. Census Bureau

NABE Survey Chair Gregory Daco, chief U.S. economist with Oxford Economics, explained how “Three quarters of respondents have reduced their 2019 GDP growth outlook in response to trade policy developments. Nonetheless, recession risks are still perceived to be low in the near term. Panelists put the chances of a recession starting in 2019 at around 20% and the chances of a recession by the end of 2020 at 35%.”

Survey panelists showed a consensus on real GDP growth slowing from 2.9% in 2018 to 2.4% in 2019 and then 2.0% in 2020.

This correlates to FMI’s construction spending forecasts, which show growth in 2019, a flattening in 2020, a slight decline in most markets in 2021-2022, with a slow rebound in 2023.

Macro & Industry Indicators	2014	2015	2016	2017	2018
Gross Domestic Product (GDP) Growth	2.5%	2.9%	1.6%	2.2%	2.9%
Core Inflation Rate (2% is target)	1.7%	1.8%	2.2%	1.8%	2.1%
Unemployment Rate	6.2%	5.3%	4.9%	4.4%	3.9%
New Housing Permits	1.05M	1.18M	1.21M	1.28M	1.32M (est.)
A/E/C Industry Economic Indicators					
Engineering Business Index (ACEC)*	67.90	63.60	63.03	65.58	64.28
Architectural Billing Index (AIA)*	51.80	51.19	51.24	52.24	52.04
ABC Backlog Indicator (yearly average)	8.43 mos.	8.53 mos.	8.65 mos.	8.85 mos.	9.15 mos.
FMI Non-Residential Construction Indicator*	64.0	60.1	57.775	60.875	58.65

*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, ACEC, AIA, ABC & FMI

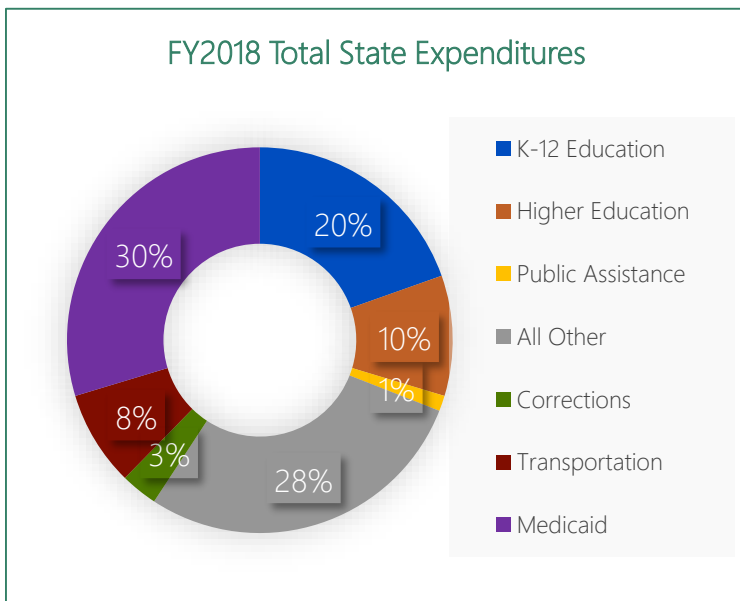
State of the States

Fiscal year 2019 is expected to mark the ninth consecutive annual increase in states' general fund spending and revenues, according to the National Association of State Budget Officers (NASBO). This is mostly due to a healthy economy that has slowly expanded over many years and not to an increase in federal funding to states.

In the last two years, increases for most states have been moderate, with transportation spending being the largest percentage increase, when compared to other expenditure categories. However, transportation only makes up about 8% of states' fiscal year 2018 spending, according to NASBO.

"Rising property values, ongoing rapid job creation, and confident consumers translate into rising real estate values as well as income and retail sales tax collections, which in turn created additional resources to invest in infrastructure. That helps explain the chunky year-over-year spending increases in a number of publicly funded categories," explains Associated Builders and Contractors (ABC) chief economist Anirban Basu.

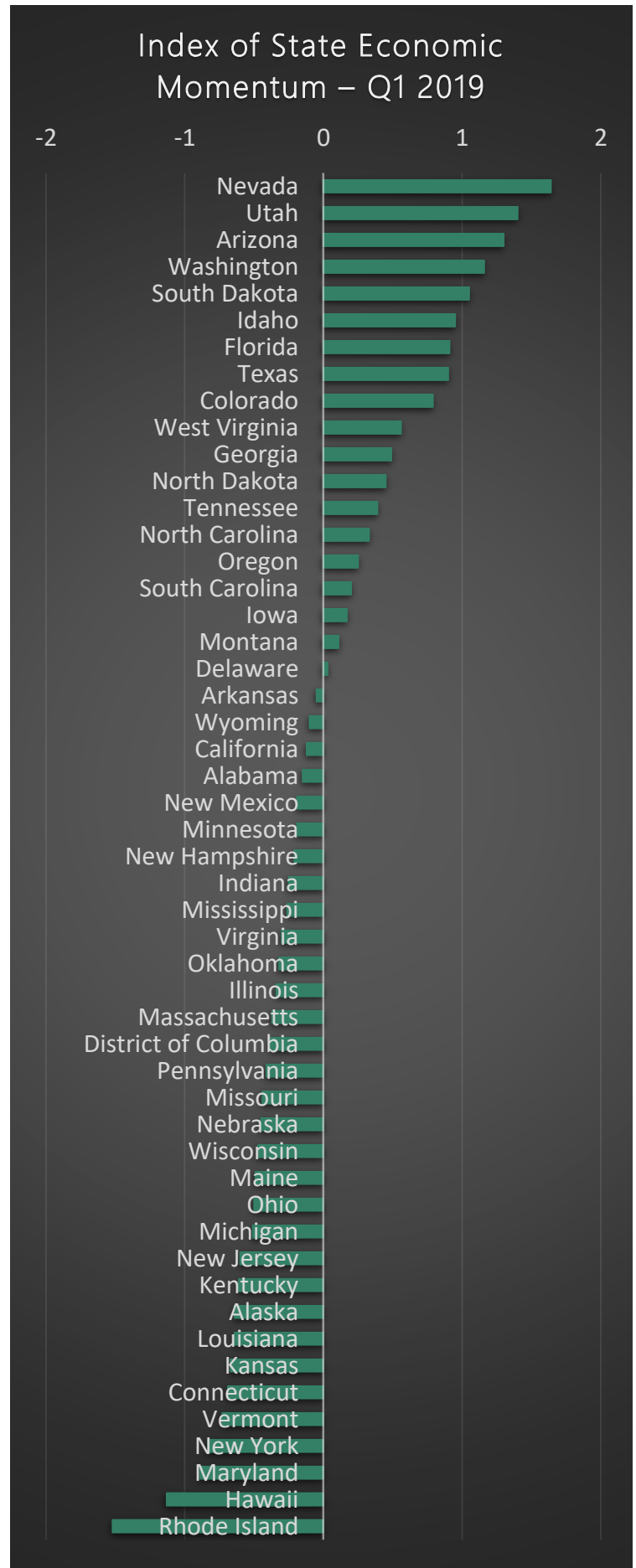
Long-term spending pressures on states fall into three categories: pensions, retiree health care, and infrastructure. Uncertainty exists for 2020 and beyond, as states prepare for the next recession (e.g. a lower tax intake), and future federal uncertainty.



Index of State Economic Momentum

The Index of State Economic Momentum is a quarterly measure of economic vitality that takes into account the 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.

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



Commercial & Residential Real Estate

Key drivers/trends:

- Rise of industrial/distribution market due to e-commerce
- ‘Retail apocalypse’ with stores closing and adaptive reuse of properties
- Impacts of natural disasters/catastrophes
- Continued demand for workforce housing
- Flattening of the multi-family market

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. Within the currently dynamic retail market sector exists different property types, unique in their physical design and popularity: urban/high street retail; neighborhood/community shopping centers; lifestyle/entertainment centers; outlet centers; power centers; and regional malls.

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



Construction Put in Place Forecast by market segment	2018a	2019e	2020f	2021f	2022f	2023f	Growth 2018- 2023
Commercial	\$89.514B	\$92B	\$88B	\$89B	\$93B	\$99B	10.6%
Office	\$72.915B	\$76B	\$75B	\$74B	\$78B	\$83B	13.8%
Lodging	\$31.902B	\$31B	\$30B	\$31	\$31B	\$33B	3.4%
Amusement & Recreation	\$26.518B	\$27B	\$26B	\$25B	\$26B	\$28B	5.6%
Residential (single, multi & improvements)	\$546.173B	\$552B	\$552B	\$567B	\$588B	\$615B	12.6%

Sources: U.S. Census Bureau & FMI

Intermodal & Logistics

Key drivers/trends:

- Increase of freight—estimated to grow in volume by 40% by 2045—largely due to e-commerce
- Panama Canal expansion resulting in port and intermodal/landside facility growth
- Focus on ‘last mile’ for freight delivery
- Trucking labor shortage puts some focus on freight rail
- International trade and tariffs of significant influence

Market Scope: The intermodal and logistics market is a dynamic and growing 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 1,100 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	2018a	2019e	2020f	2021f	2022f	2023f	Growth 2018- 2023
Manufacturing	\$65.133B	\$68B	\$65B	\$64B	\$66B	\$69B	5.9%
Transportation (buildings)	\$51.782B	\$56B	\$61B	\$65B	\$69B	\$69B	33.3%

Sources: U.S. Census Bureau & FMI

Energy & Utilities

Key drivers/trends:

- Growth of natural gas—resulting in ‘Second Shale Revolution’; 2018 production rate higher than boom years of 2011-2014
- Need for additional pipeline capacity, particularly in Northeastern U.S.
- Solar and wind growing to meet electricity demand
- Focus on energy efficiency goals driven by ‘Green New Deal’-type city and state policies

Market Scope: The energy and utilities market is estimated to be \$32 billion, resulting in 34% of overall market share for *Engineering News-Record (ENR)* Top 500 firms in 2018. 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 <i>Forecast by market segment</i>	2018a	2019e	2020f	2021f	2022f	2023f	Growth 2018- 2023
Power	\$100.152B	\$103B	\$107B	\$112B	\$117B	\$125B	24.8%
Communication	\$24.634B	\$25B	\$26B	\$27B	\$28B	\$30B	21.8%
Sewage & Waste Disposal	\$22.058B	\$23B	\$22B	\$23B	\$25B	\$26B	17.9%
Water Supply	\$13.822B	\$14B	\$15B	\$16B	\$16B	\$17B	23.0%

Sources: U.S. Census Bureau & FMI

Health Care & Science+Technology

Key drivers/trends:

- Demographic drivers with growth of 65+ population due to aging baby boomers
- Focus on smaller facilities and not large hospitals
- Demand for medical office buildings outpacing supply
- ‘Retailing’ of health care through CVS Minute Clinics and adaptive reuse of mall space to healthcare space
- Increase of telehealth

Market Scope: The health care and science+technology (S+T) markets are large and steadily growing, with \$43 billion in HC construction estimated for 2018, growing to \$49 billion by 2022. More than 626 health care systems and 5,500 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. Capital spending is increasingly focused on renovations and infrastructure upgrades.

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



Construction Put in Place <i>Forecast by market segment</i>	2018a	2019e	2020f	2021f	2022f	2023f	Growth 2018- 2023
Health Care	\$42.099B	\$42B	\$43B	\$44B	\$47B	\$50B	18.8%

Sources: U.S. Census Bureau & FMI

Public Sector & P3s

Key drivers/trends:

- Consistent increase in municipal and state spending on K-12 schools, roadways and public safety facilities, largely due to healthy public coffers due to strong tax revenue
- Population growth drives public spending
- Increasing use of alternative delivery, including public-private partnerships
- Increasing focus on making public infrastructure resilient to flooding and natural disasters

Market Scope: The public market is significant for engineering firms and involves federal, state, and municipal clients. Projects are '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 <i>Forecast by market segment</i>	2018a	2019e	2020f	2021f	2022f	2023f	Growth 2018- 2023
Educational	\$94.256B	\$99B	\$102B	\$106B	\$109B	\$115B	22.0%
Highway & Street	\$92.642B	\$97B	\$101B	\$106B	\$111B	\$113B	22.0%
Public Safety	\$9.243B	\$10B	\$10B	\$11B	\$11B	\$12B	29.8%
Conservation & Development	\$8.211B	\$9B	\$9B	\$9B	\$10B	\$10B	21.8%

Sources: U.S. Census Bureau & FMI

2017-2018 Significant P3 Closings:

1. Los Angeles International Airport Automated People Mover (LAX APM)
2. Los Angeles International Airport Consolidated Rent-a-Car Facility (LAX CONRAC)
3. Denver Airport (Jeppesen Terminal)
4. Colorado's I-70
5. Purdue University Student Housing
6. Lansing Correctional Facility, Kansas
7. Howard County, Maryland Courthouse
8. Massachusetts Bay Transit Authority Automated Fare Collection System (MBTA AFC)
9. Michigan's I-75
10. Wayne State University Student Residences
11. Texas Woman's University Student Housing
12. Virginia's I-395
13. Virginia's 'Transform 66'

Source: Husch Blackwell

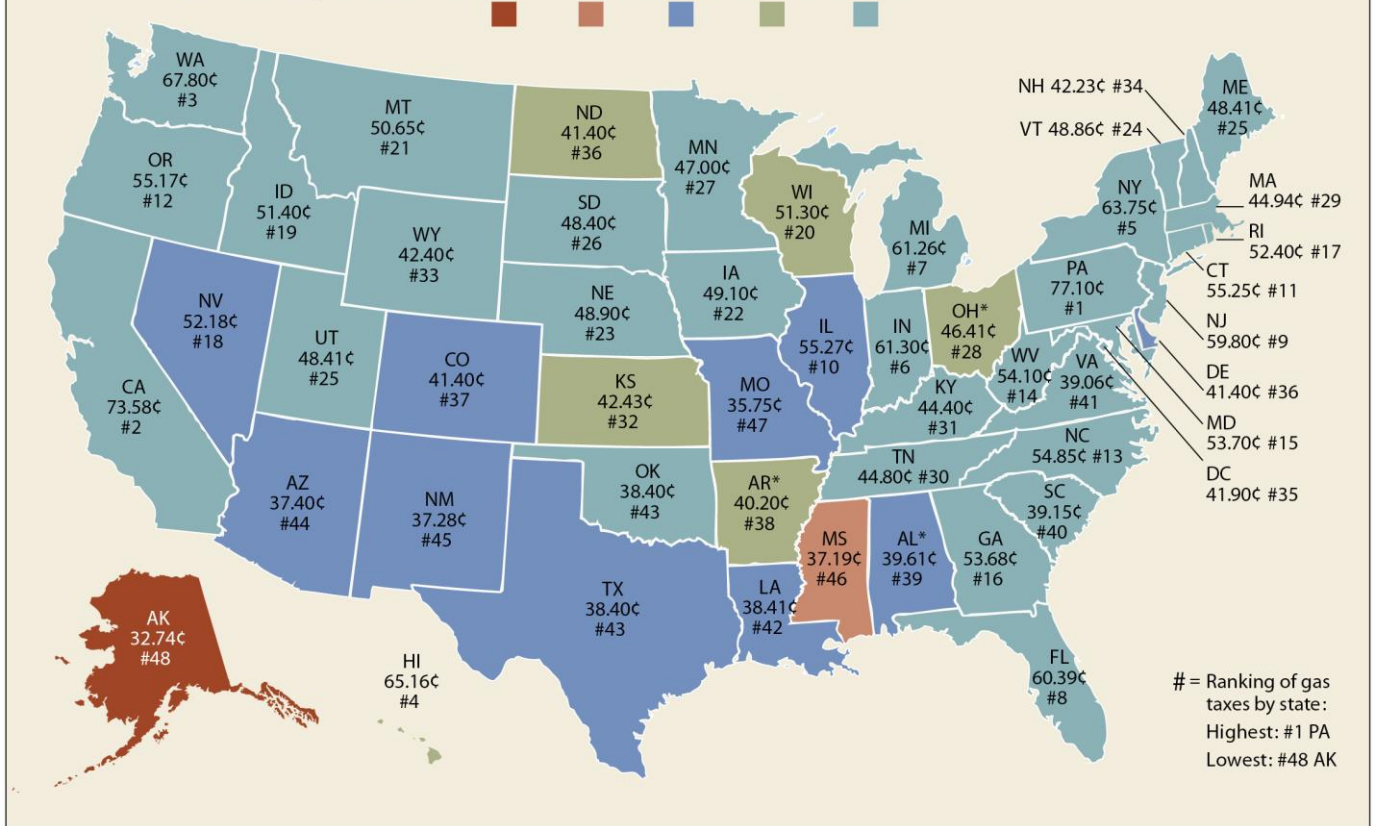
P3s Used for Increasingly Diverse Project Types

Use of public-private partnership (P3) contracts for developing infrastructure is continuing at a steady pace in the United States. Overall, trends include P3s being used for large projects—those with total costs in excess of \$125 million—as well as an increasing variety of project types beyond transportation, including social infrastructure, broadband projects and water/wastewater facilities. ('Social infrastructure' is a term the P3 community generally uses for building projects, including health care, education, housing, and civic facilities.)

The *Husch Blackwell Public-Private Partnership Report* (March 2019) details that 13 major P3 projects financially closed in 2017-2018. Note that of these 13 projects, three are for airports, four are for roadways, one is for transit, and the other five are for social infrastructure. Besides there not being one dominant project type in recently awarded and successful P3s, the trend is moving away from projects having traditional revenue streams from users, such as from tolls or student housing fees.

Gas Taxes by State & Last Rate Increase

Decade of last gas tax increase: 1970s 1980s 1990s 2000s 2010s



* Note: This map does not reflect 2019 enacted legislation for increases not yet in effect in Alabama, Arkansas and Ohio.

Source: American Petroleum Institute (API) As of April 1, 2019.

Gas Tax Trends

Since 2013, 30 states have increased user fees (i.e. gas taxes) to fund transportation programs. This bipartisan success occurred in majority Republican states like Georgia, Nebraska, and Utah; majority Democratic states like Massachusetts, New Jersey, Vermont, and California; and even competitive 'purple' swing states like Michigan and Virginia.

Such state revenue increases are essential because existing funding streams are not keeping pace with inflation. Exacerbating this shortfall, excise rates tied to fuel consumption are dwindling because of increased fuel efficiency and the increasing popularity of electric vehicles.

The general public largely supports infrastructure investment. The success rate for state and local ballot initiatives seeking to raise revenue for transportation projects was 78% from 2009 to 2018.

At the national level, business and labor leaders are expected to work closely in 2019 to support an increase of the federal gas tax, which is still 18.4 cents per gallon and has not been adjusted since 1993.

Upcoming Private Industry Briefs



April | May
Public-Private Partnerships (P3s)



June | July
Commercial & Residential Real Estate



August | September
Intermodal & Logistics



October | November
Energy & Utilities



December | January 2020
Health Care & Science+Technology