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# US Construction Spending, Labor & Materials Outlook

FTA Revenue Estimating Conference  
New Orleans      September 23, 2019

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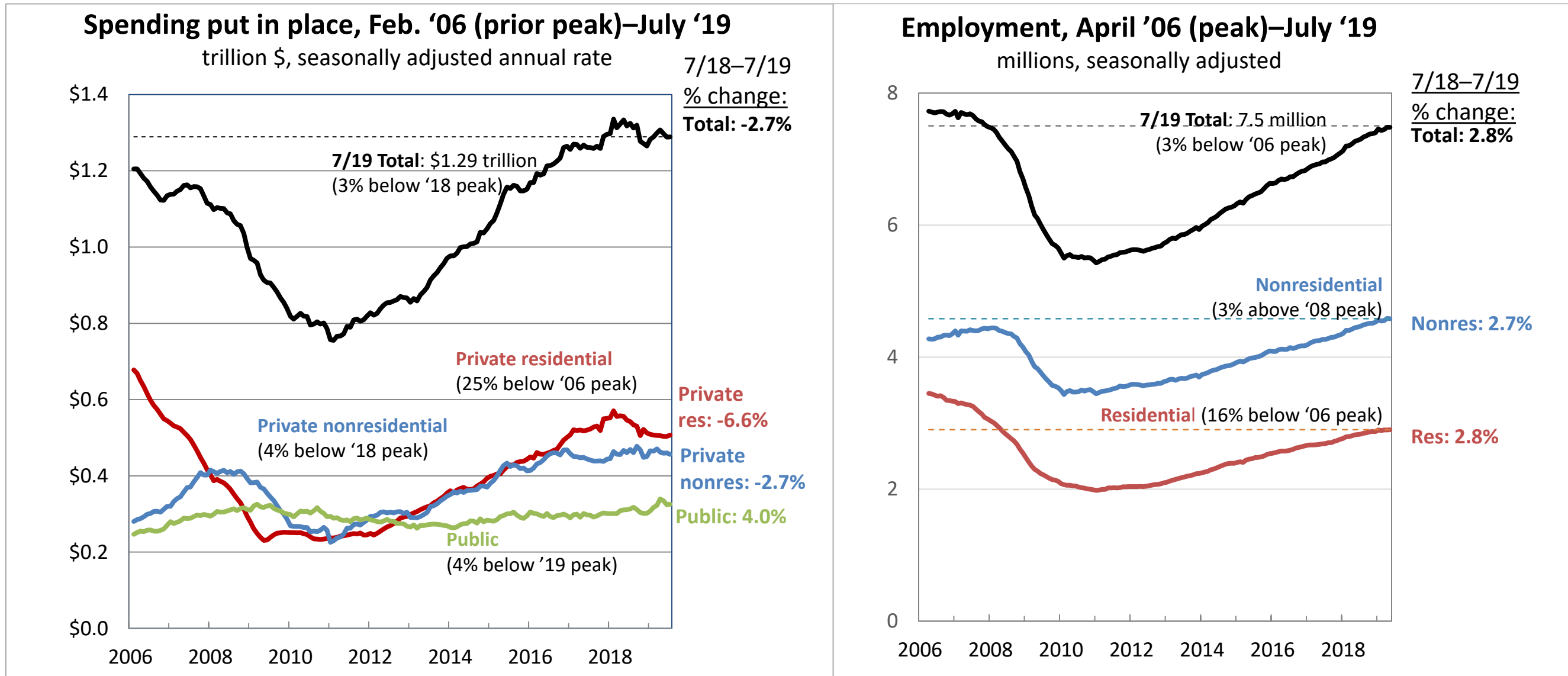
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## Headline Forecast

- The US economy is still expanding but more slowly:
  - consumer, business confidence, stocks are still high but getting more volatile
  - latest data are weak for manufacturing; mixed for apts., single-family housing
  - concerns about trade, slowing global growth have added to recession risk
- Contractors remain busy and confident; construction employment is growing in most states and spending is up in most project categories
- Three concerns:
  - impact of trade policies on materials costs and on demand for construction
  - ongoing labor shortage, worsened by hostile immigration policy
  - if interest rates rise, may cut demand for income-producing projects, new homes

# Construction spending & employment, 2006–2019



Source: spending--U.S. Census Bureau; employment--Bureau of Labor Statistics

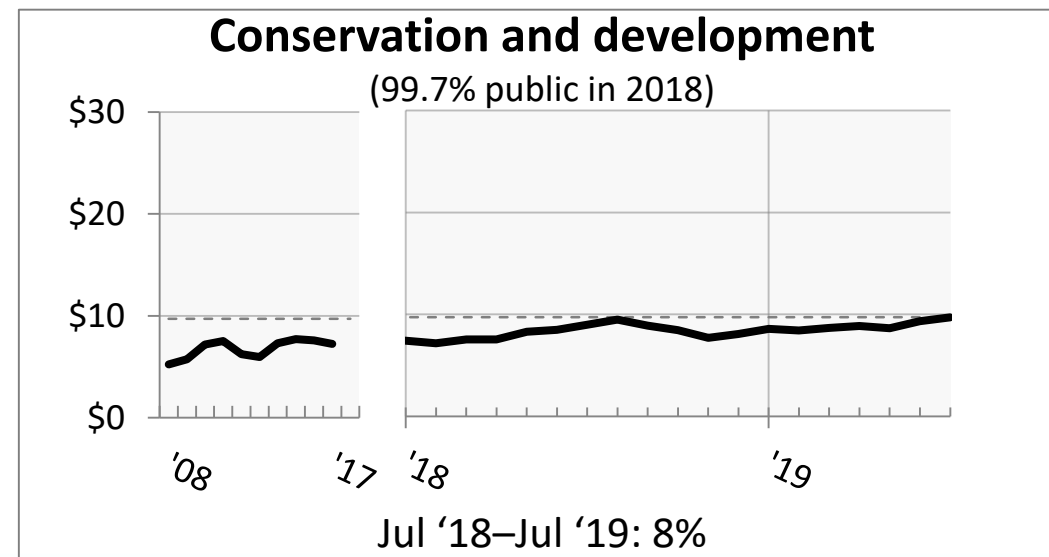
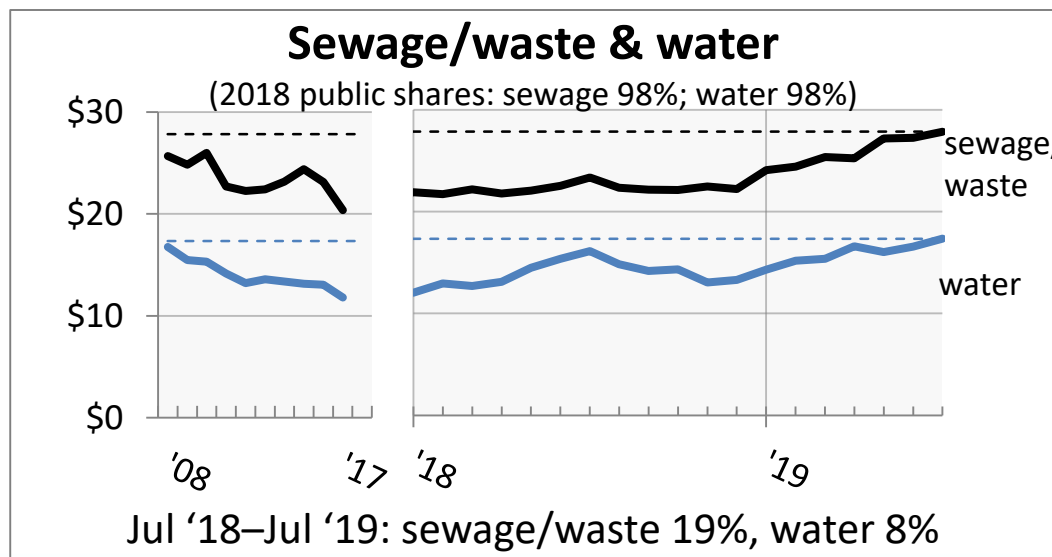
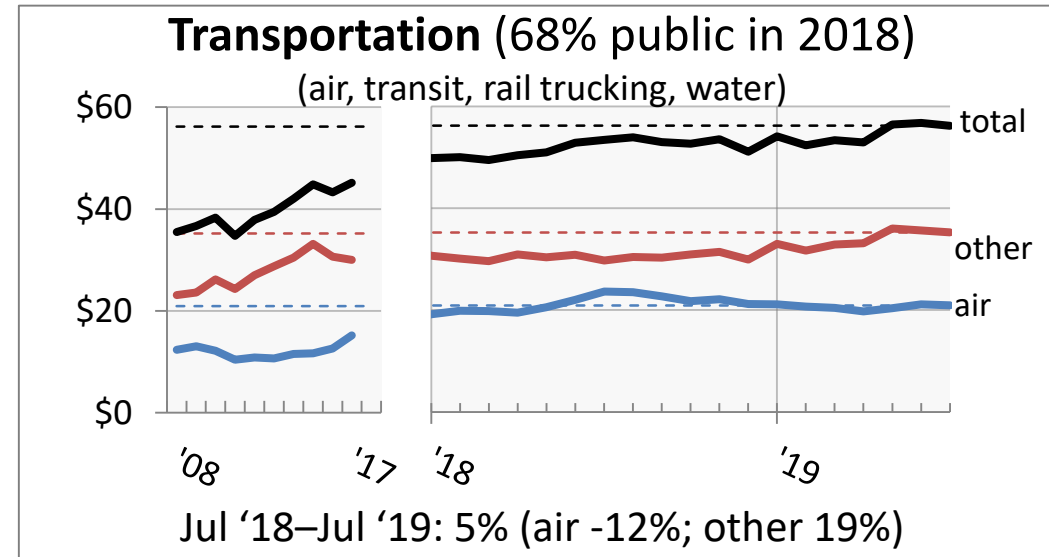
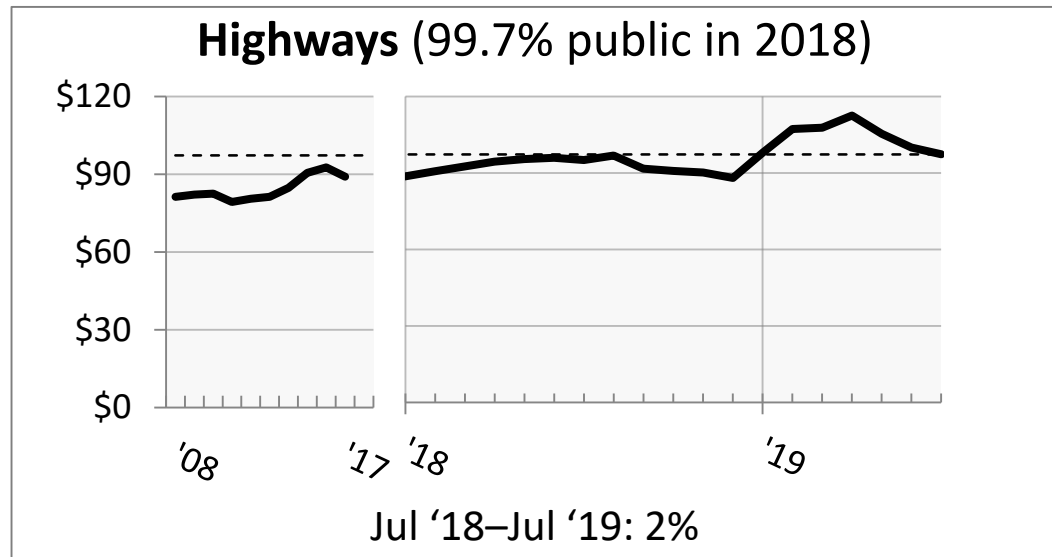
## Nonresidential spending by segment: 2017-2018 change and 2019 forecast

	<b>2018 vs. 2017</b>	<b>Jan-Jul 2019 vs. Jan-Jul 2018</b>	<b>2019 forecast</b>	<b>2020 forecast</b>
<b>Nonresidential total (public+private)</b>	<b>3.7%</b>	<b>2.6%</b>	<b>2-4%</b>	<b>0-4%</b>
Educational	1	-3	-1 to -3	0-5%
Power (incl. oil & gas field structures, pipelines)	-3	8	6-8	5-10%
Highway and street	2	12	10-12	5-10%
Office	8	7	5-6	near 0
Manufacturing	0.1	4	2-4	near 0
Transportation (air, land, water)	12	8	6-8	5-10%
Retail	5	-26	-20 to -30	-15 to -20%
Health care	-1	4	3-5	-0-5%
Warehouse	16	-3	-1 to -3	near 0
Lodging	10	11	9-11	near 0
Sewage & waste disposal	4	6	6-8	
Other* (13% of 2018 total)	6	-1	-1 to 1	

\*Amusement, farm, communication, water supply, public safety, conservation, and religious  
 Source: U.S. Census Bureau construction spending report; Author's forecast

# Construction spending: public works

annual total, 2008–17; monthly, 1/18-7/19 (seasonally adjusted annual rate); billion \$

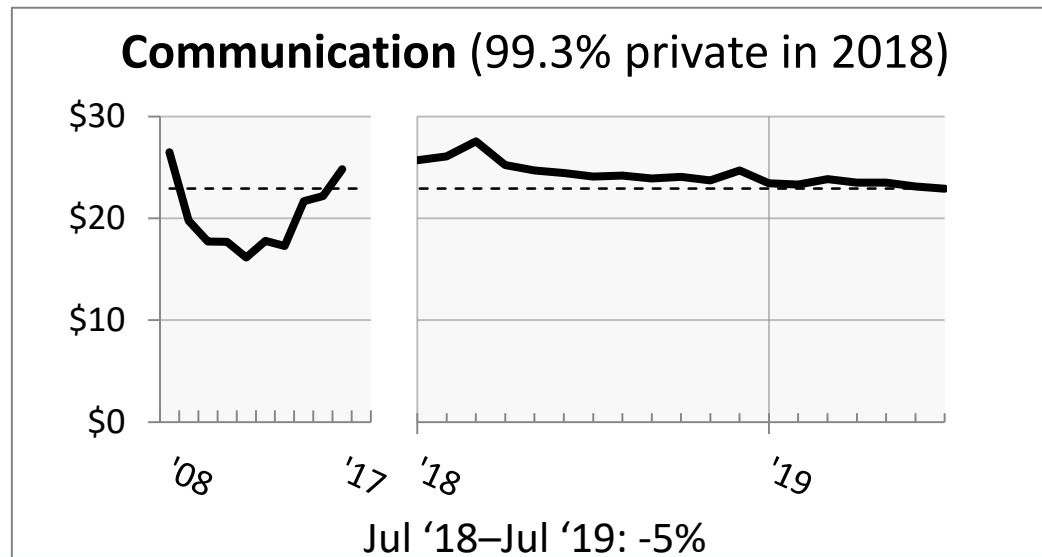
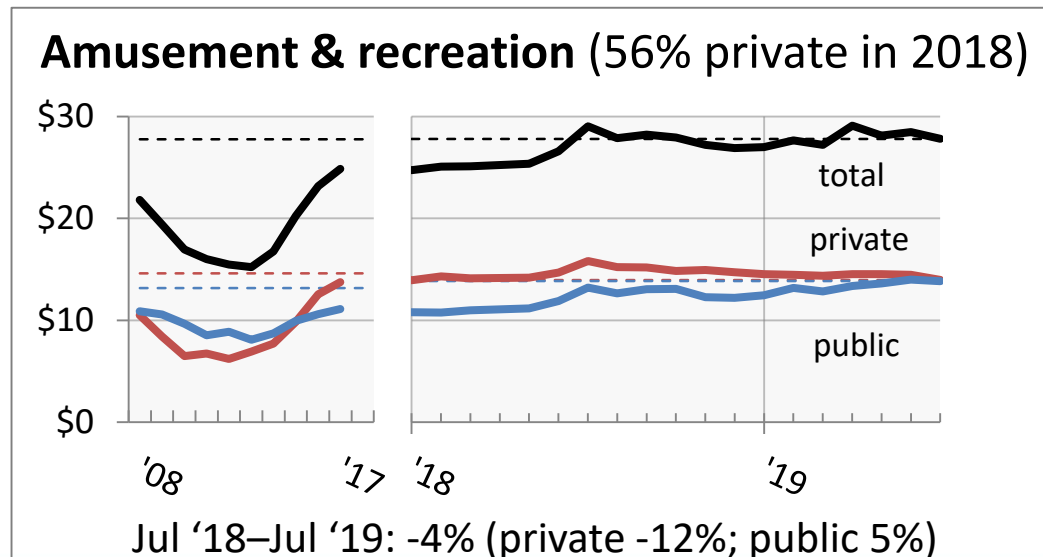
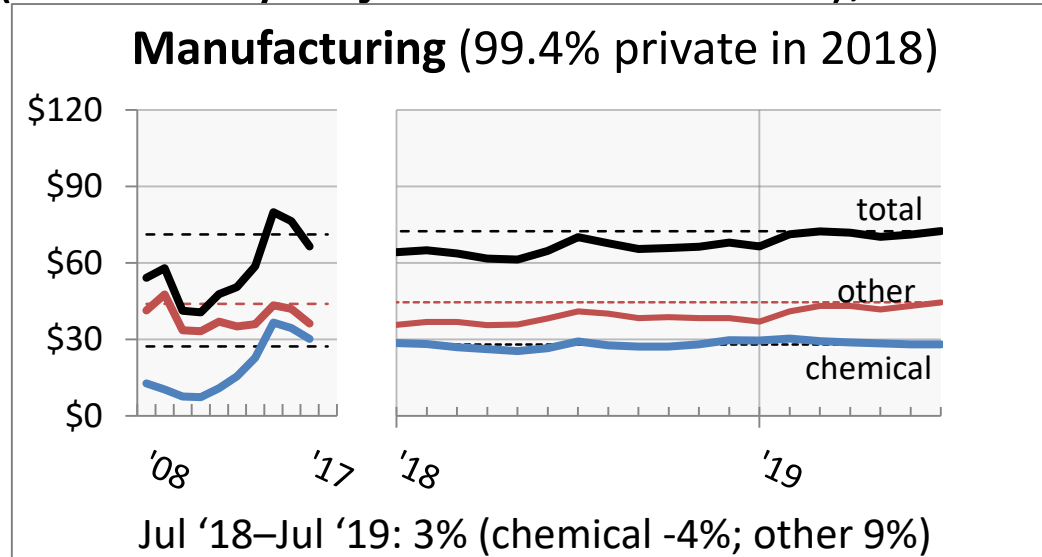
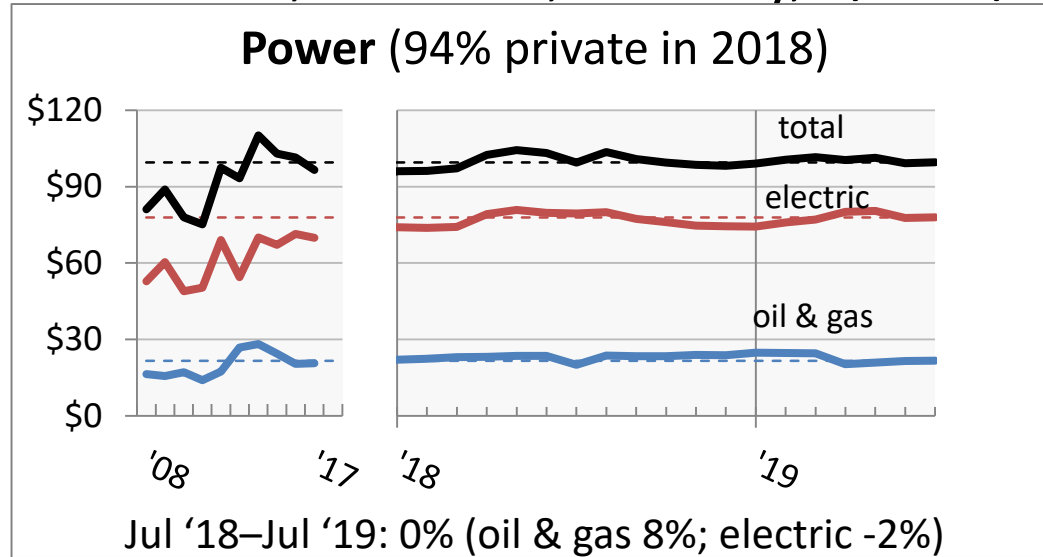


## **Key points: roads, transportation, sewer/water**

- Any federal infrastructure spending increase won't occur until 2021 or later, but state highway funding and toll projects are increasing
- Many new and ongoing public & private airport projects; selective increases in transit construction
- Water & sewer/wastewater spending are at or near record levels after large drop in 2016-17; little long-term new funding likely
- Conservation will grow if Corps of Engineers can award enough \$

# Construction spending: industrial, heavy

annual total, 2008–17; monthly, 1/18-7/19 (seasonally adjusted annual rate); billion \$



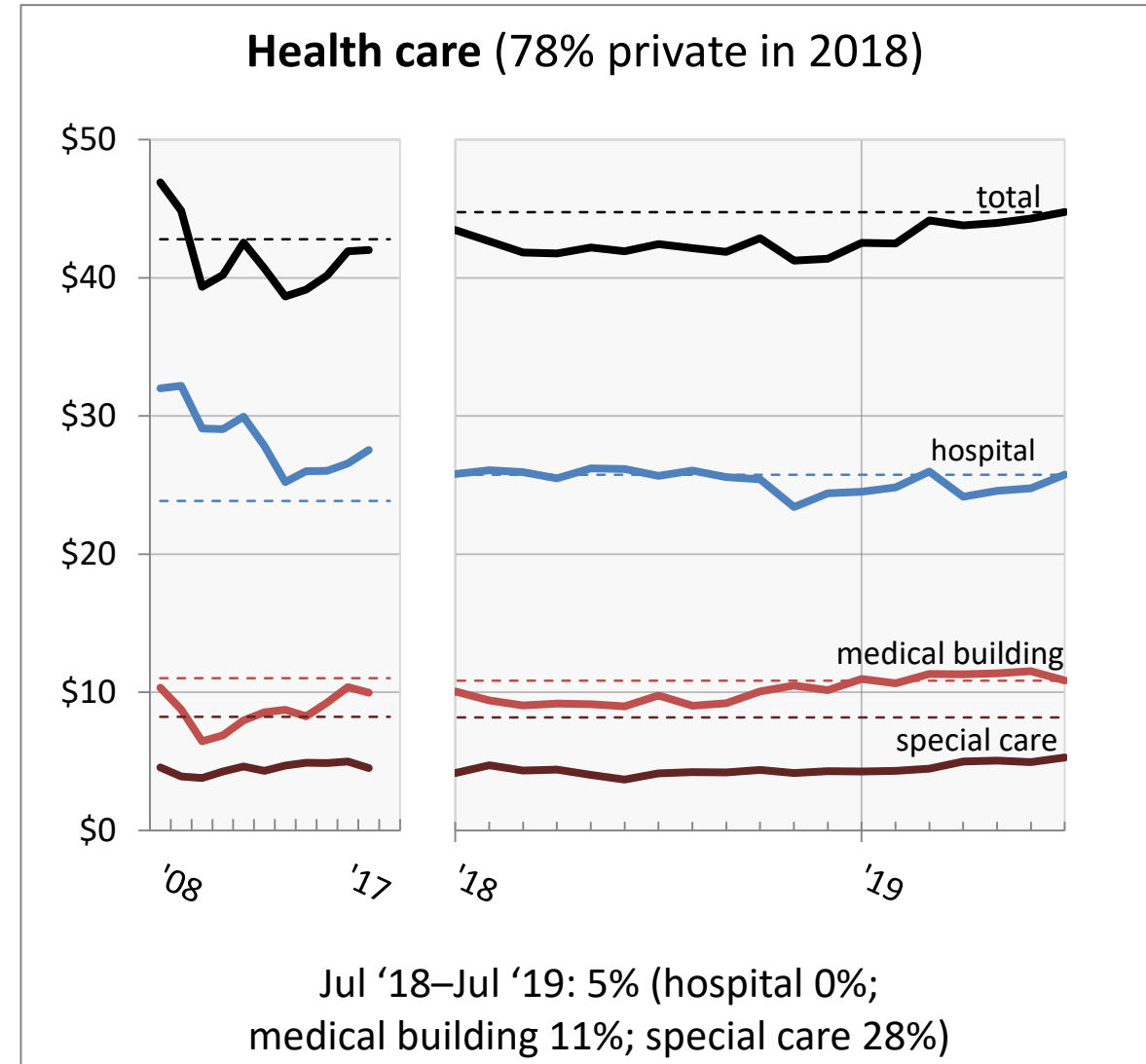
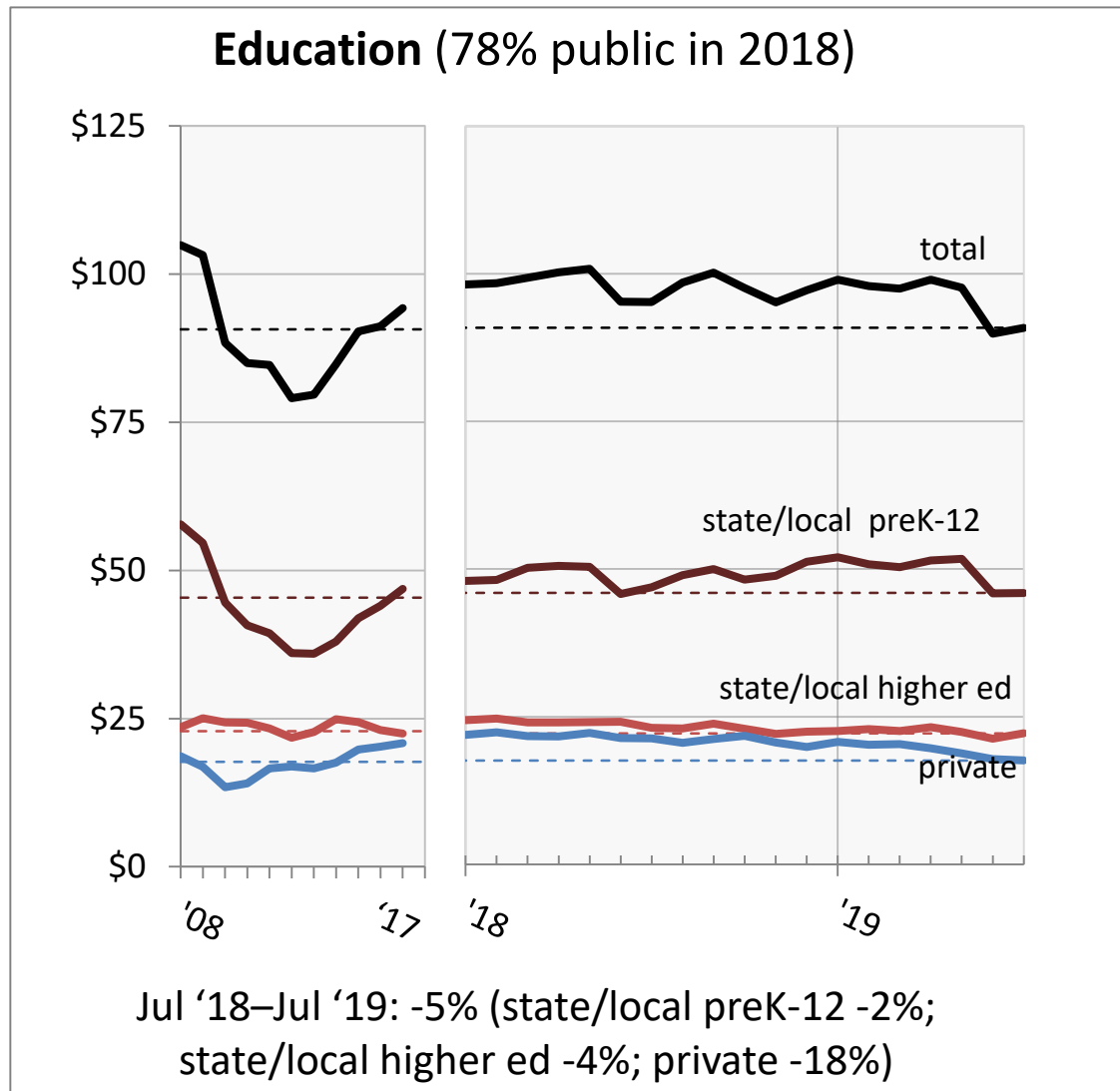
## **Key points: power & energy, mfg, amusement, communication**

- Solar, wind power are growing; oil & natural gas pipelines have hit court & regulatory delays; new drilling is down as oil, gas prices fall
- Manufacturing construction is benefitting from energy projects, U.S. economic growth; but tariffs, foreign retaliation, slowing global economy are major concerns
- Amusement & recreation spending is very “lumpy”—a few big stadiums at irregular intervals; but funding for local, state, federal parks keeps eroding
- Communication may revive as wireless firms build out 5G networks



# Construction spending: education, health care

annual total, 2008–17; monthly, 1/18-7/19 (seasonally adjusted annual rate); billion \$

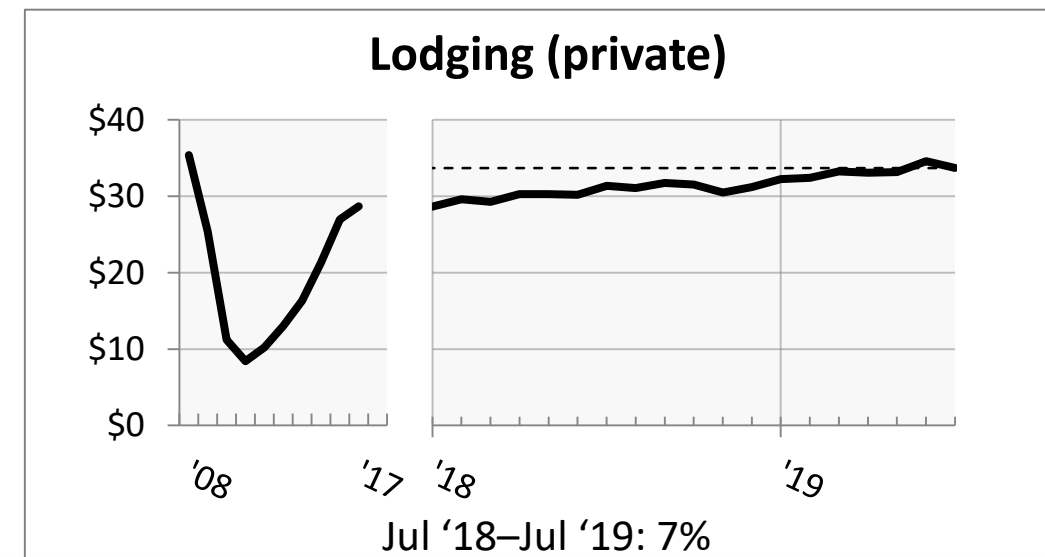
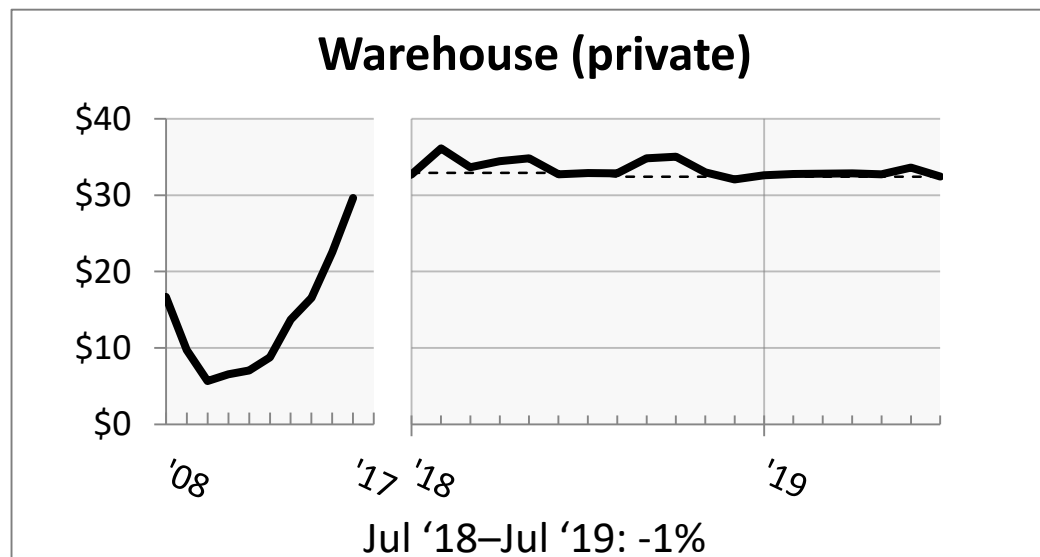
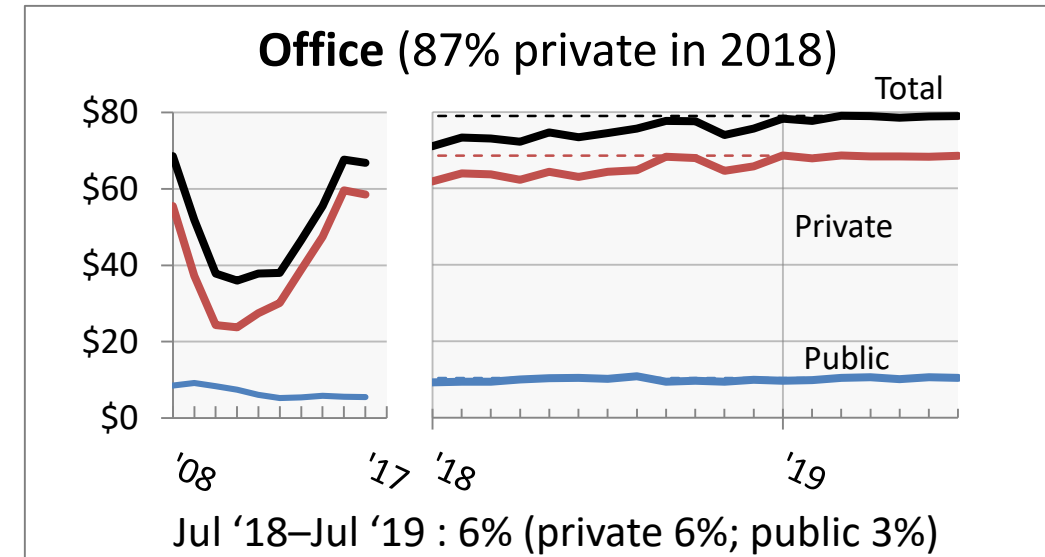
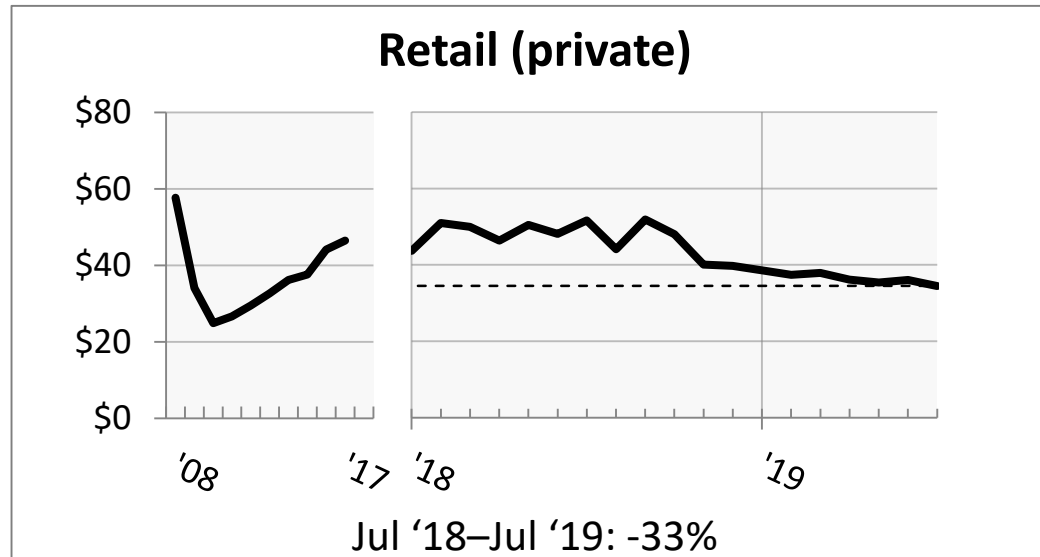


## Key points: education & health care

- Rising house & commercial property values are supporting school district tax receipts & bond issues for preK-12 projects
- More school spending is on urban/older suburban school reconstruction & expansion, less on new schools in new subdivisions
- Higher-ed enrollment is shrinking and some small colleges are closing; decrease in full-tuition foreign students will hurt budgets
- State of stock market affects college construction capital campaigns
- Health care spending is shifting from hospitals to standalone special-care facilities (urgent care, surgery, rehab, hospices) and doctors' offices

# Construction spending: developer-financed

annual total, 2008–17; monthly, 1/18-7/19 (seasonally adjusted annual rate); billion \$



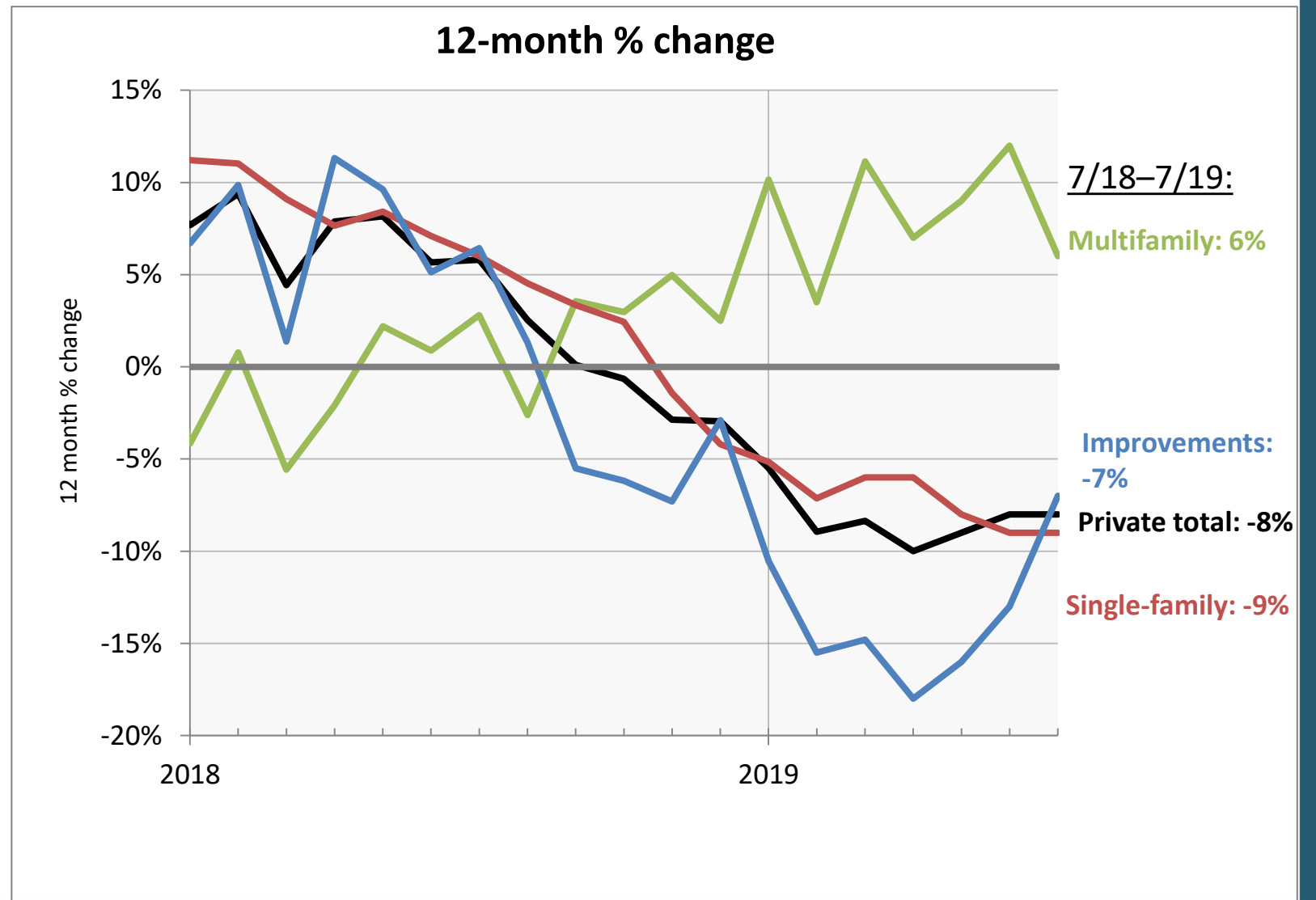
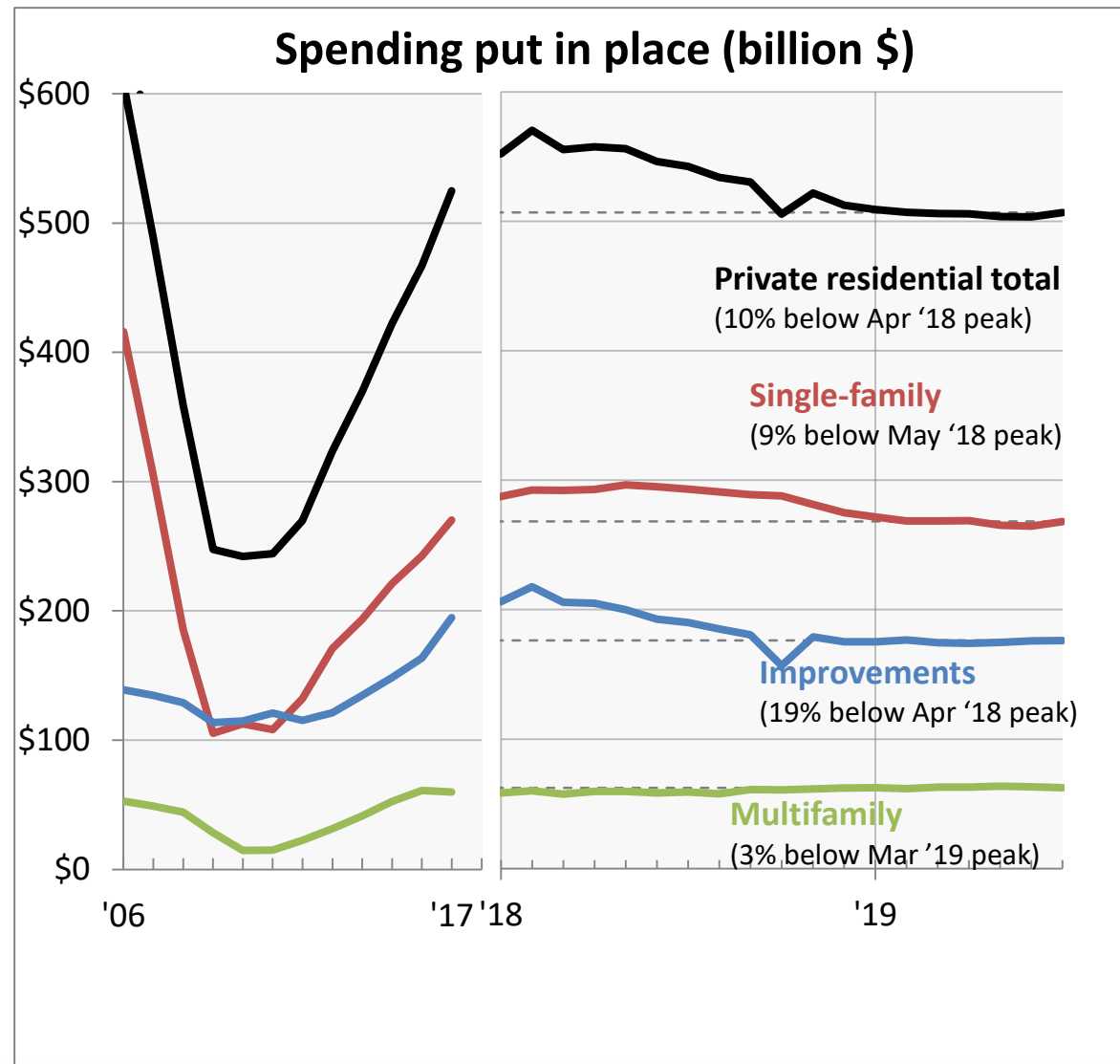
Source: U.S. Census Bureau construction spending report

## **Key points: retail, warehouse, office, hotel, data centers**

- Retail now tied to mixed-use buildings & renovations, not stand-alone structures; massive store closings imply ongoing downturn
- Warehouse growth is still benefiting from e-commerce but trade wars are reducing inbound and outbound shipments
- Office employment is still rising but space per worker is shrinking; more urban & renovation work than new suburban office parks
- Hotel “pipeline” is still large but sector is very interest-rate sensitive
- Data centers remain a strong niche but no data available on how strong

# Private residential spending: single-family poised to grow; pickup in multifamily

annual total, 2006–17; monthly, 1/18-7/19 (seasonally adjusted annual rate); billion \$

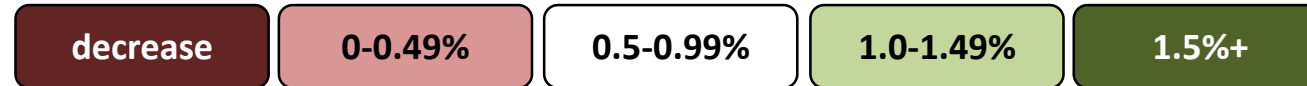


Source: U.S. Census Bureau construction spending report

## **Residential spending forecast—2019: -3 to -5%; 2020: 2-7% (3% in 2018)**

- Single-family--**2019: -6 to -8%; 2020: 5-10%** (7% in 2018); low interest rates, rising income & wealth will boost home buying, but builders face challenges
- Multifamily--**2019: 5-7%; 2020: 0-5%** (-1% in 2018)
  - occupancy rates, rents have leveled off; some millennials moving to houses but some seniors moving to apartments
  - millennials are staying longer in cities and denser suburbs where multifamily construction is bigger share of market than in outer suburbs
  - nearly all multifamily construction is rental, not condo; more high-rises
- Improvements--**2019: -7 to -9%; 2020: 5-10%** (-2% in 2018); additions and renovations should track homebuying closely

# Population change by state, July 2017–July 2018 (U.S.: 0.62%)

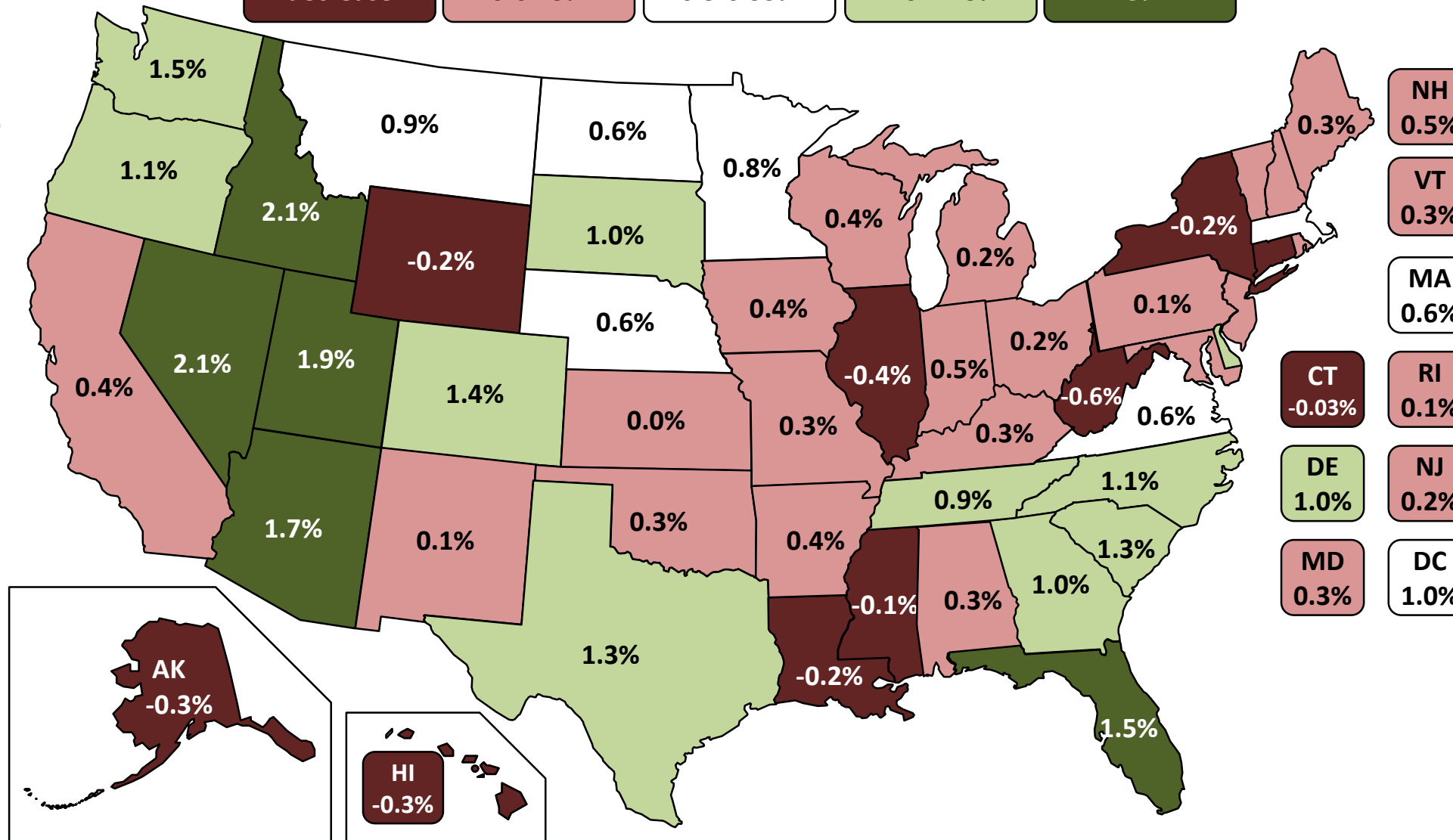


## Top 5

NV	2.1%
ID	2.1%
UT	1.9%
AZ	1.7%
FL	1.5%

## Bottom 5

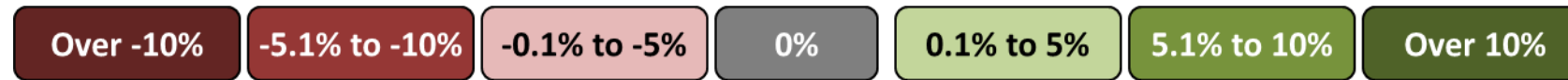
WV	-0.6%
IL	-0.4%
AK	-0.3%
HI	-0.3%
NY	-0.2%



Source: U.S. Census Bureau

# State construction employment change (U.S.: 3.2%)

7/18 to 7/19: 40 states and DC up, 10 states down

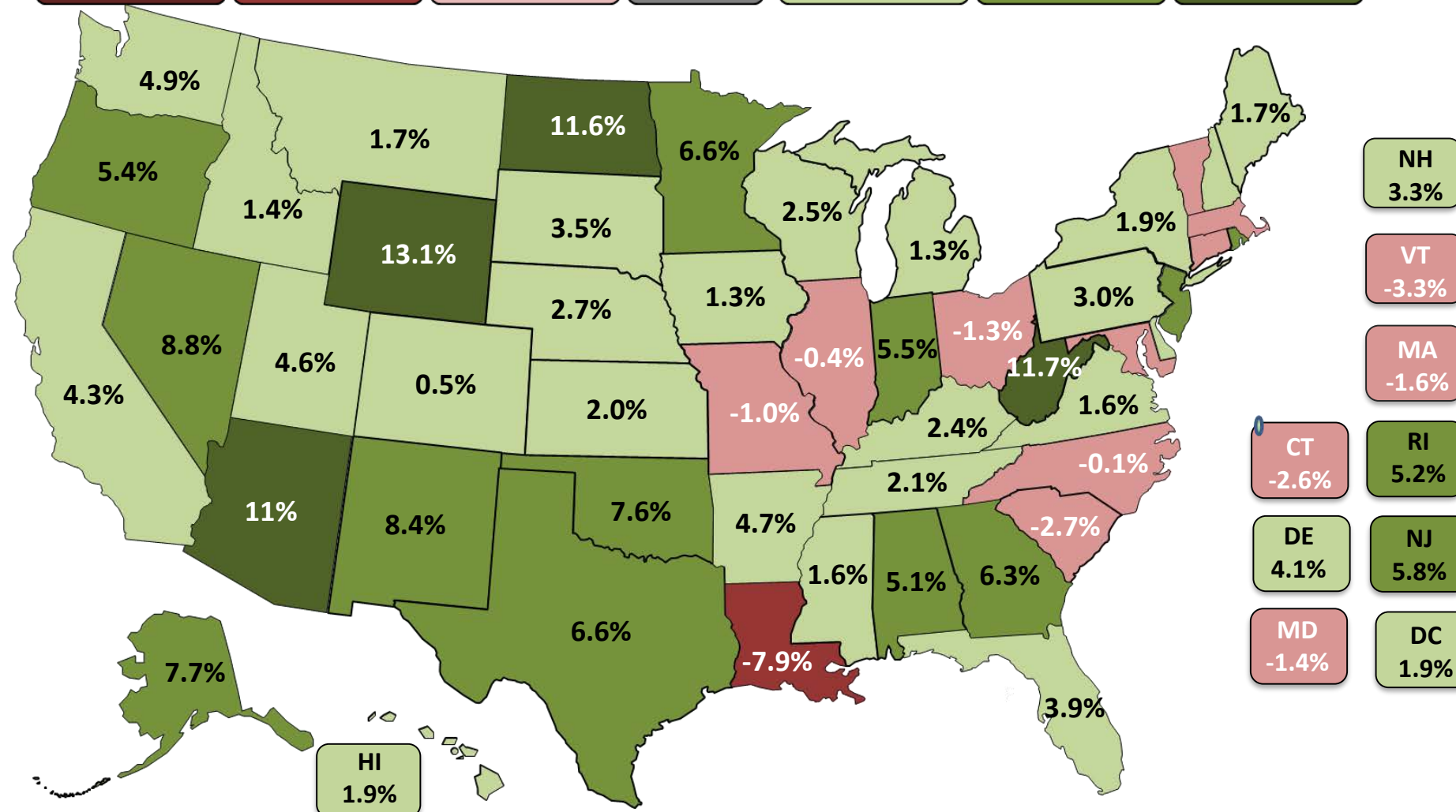


## Top 5

Wyoming	13.1%
West Virginia	11.7%
North Dakota	11.6%
Arizona	11.0%
Nevada	8.8%

## Bottom 5

Louisiana	-7.9%
Vermont	-3.3%
South Carolina	-2.7%
Connecticut	-2.6%
Massachusetts	-1.6%

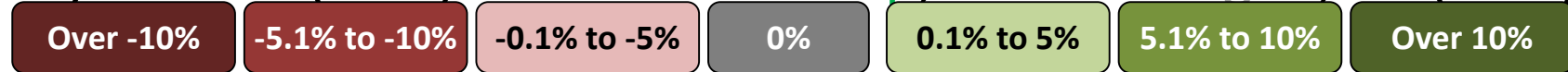


Note: Shading based on unrounded numbers  
 Source: BLS state and regional employment report



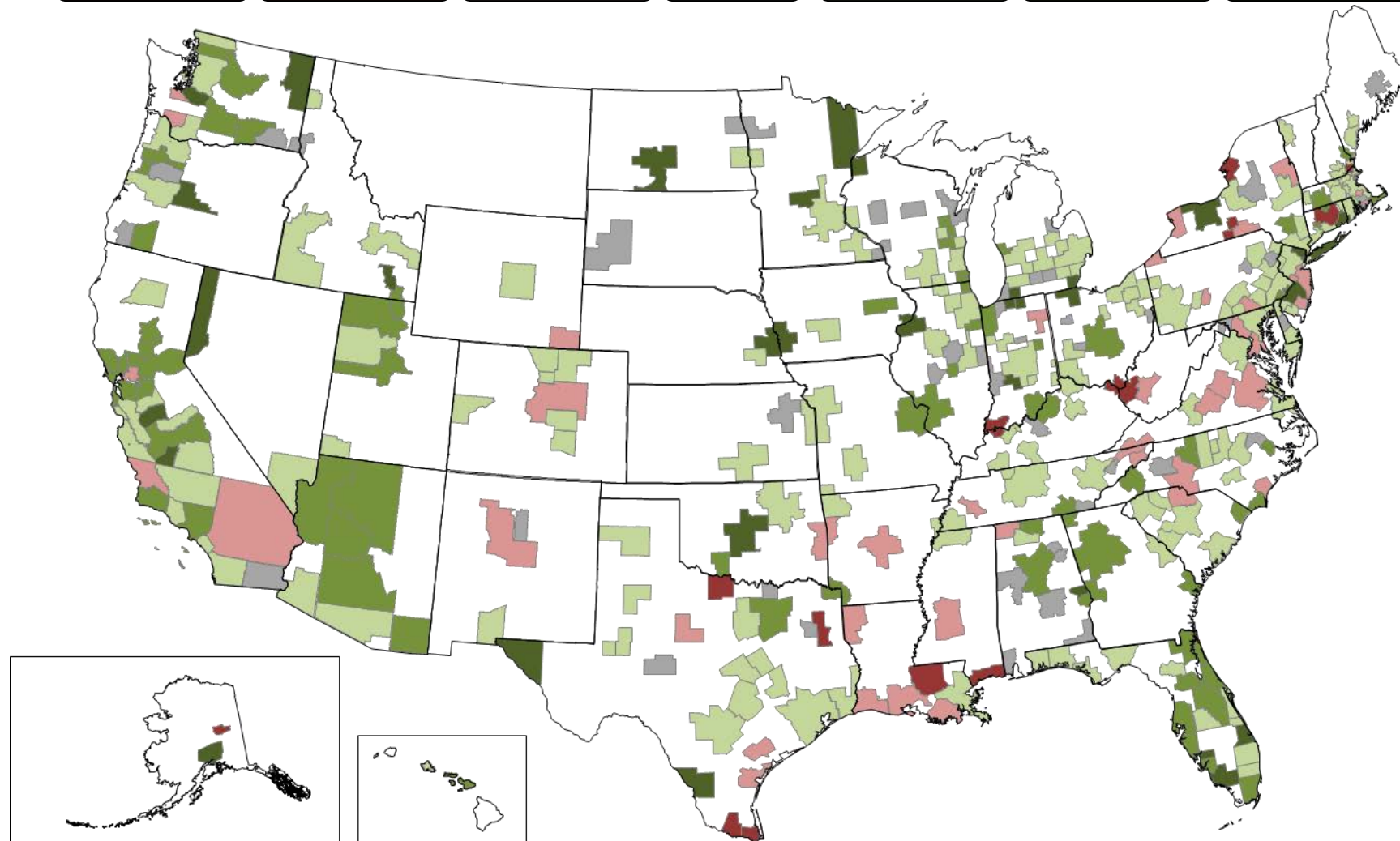
# Metro construction employment change (U.S.: 3.2%)

7/18 to 7/19: 255 (71%) of 358 metros **up**, 47 unchanged, 56 (16%) **down**



## Top 5

Spokane-Spokane Valley, WA	23%
Auburn-Opelika, AL	19%
Davenport-Moline-Rock Island, IA-IL	17%
Laredo, TX	15%
El Paso, TX	14%

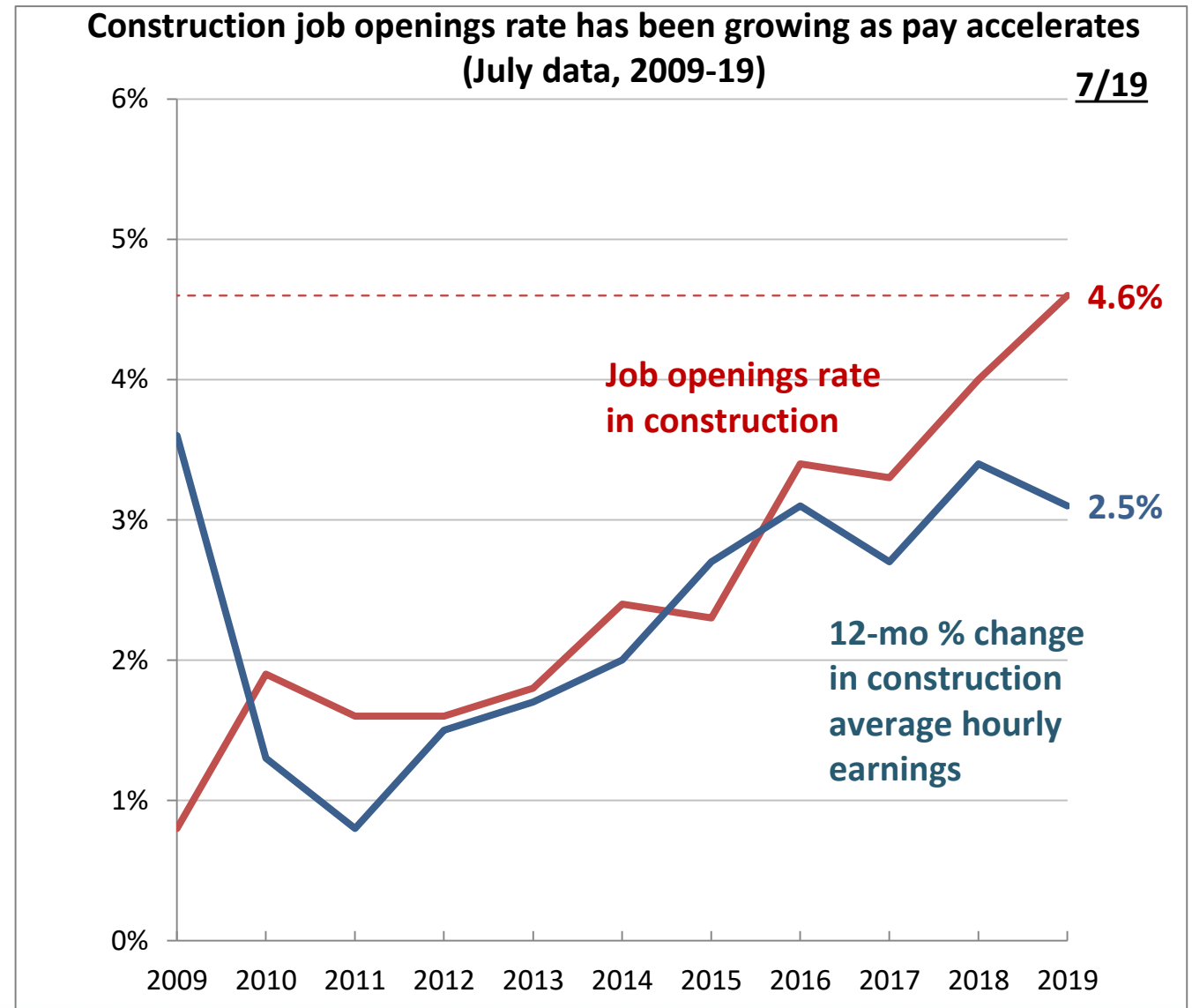
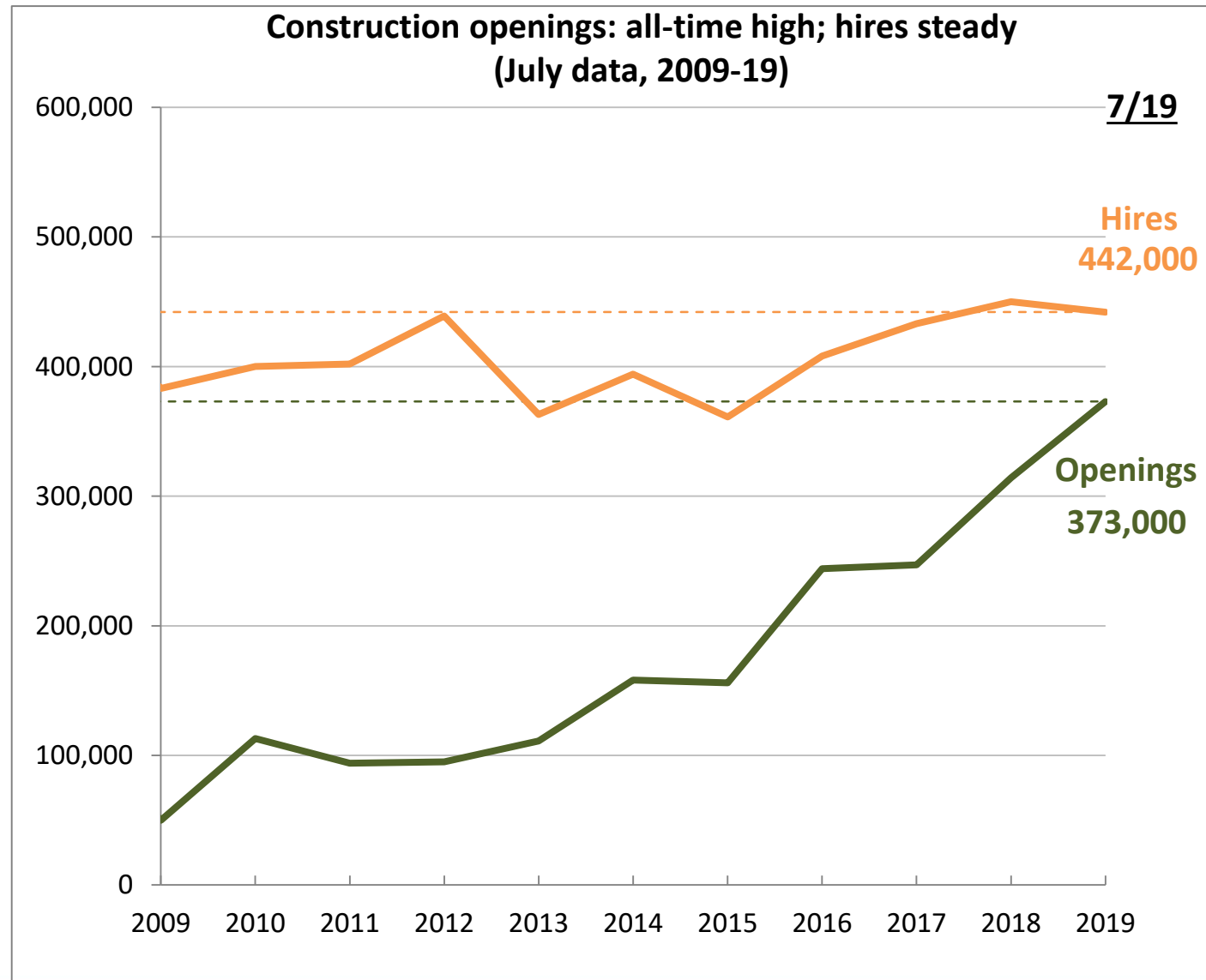


## Bottom 5

Watertown-Fort Drum, NY	-10%
Gulfport-Biloxi-Pascagoula, MS	-9%
Longview, TX	-9%
Hartford-West Hartford-East Hartford, CT NECTA	-9%
Baton Rouge, LA	-9%

Source: BLS state and regional employment report

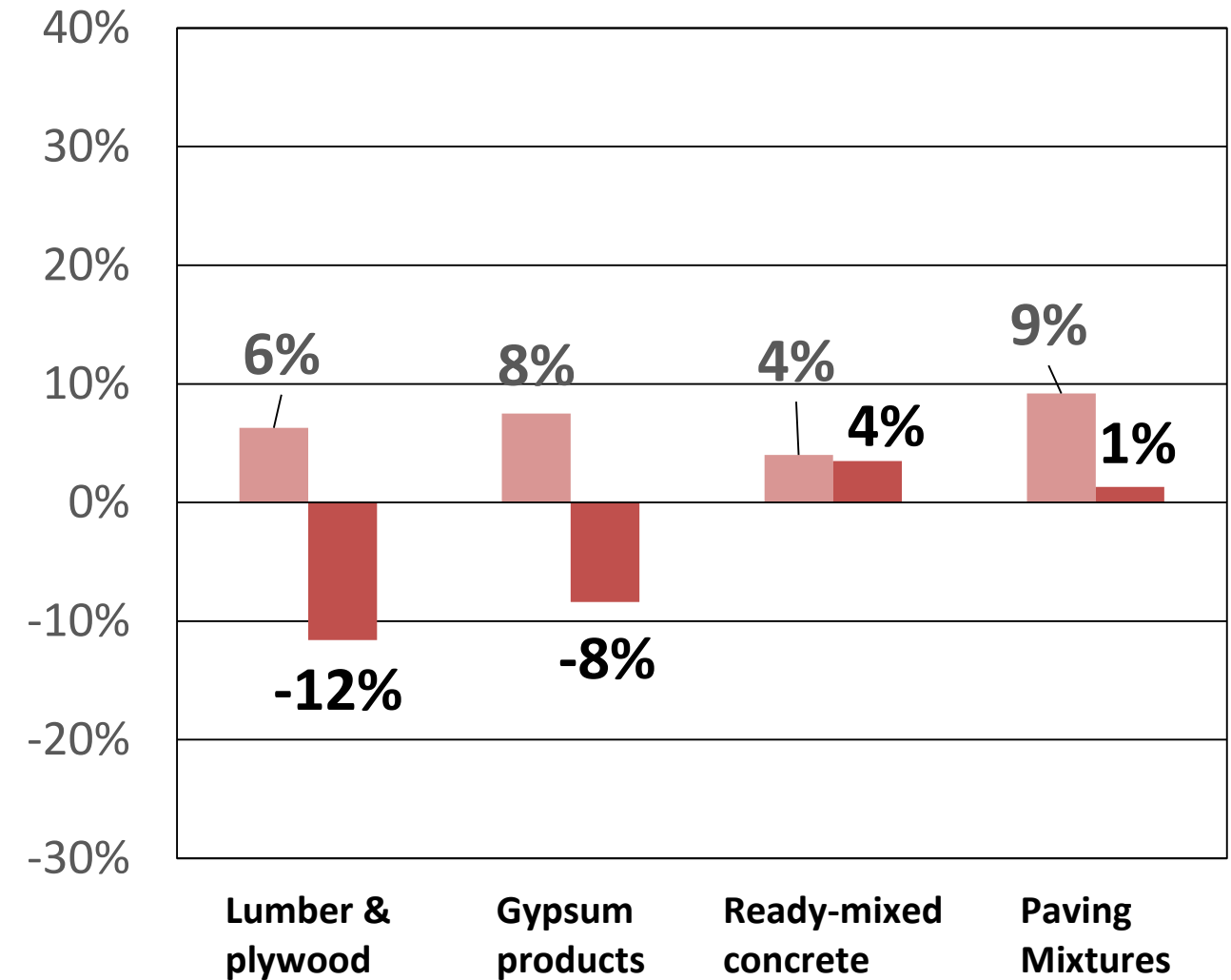
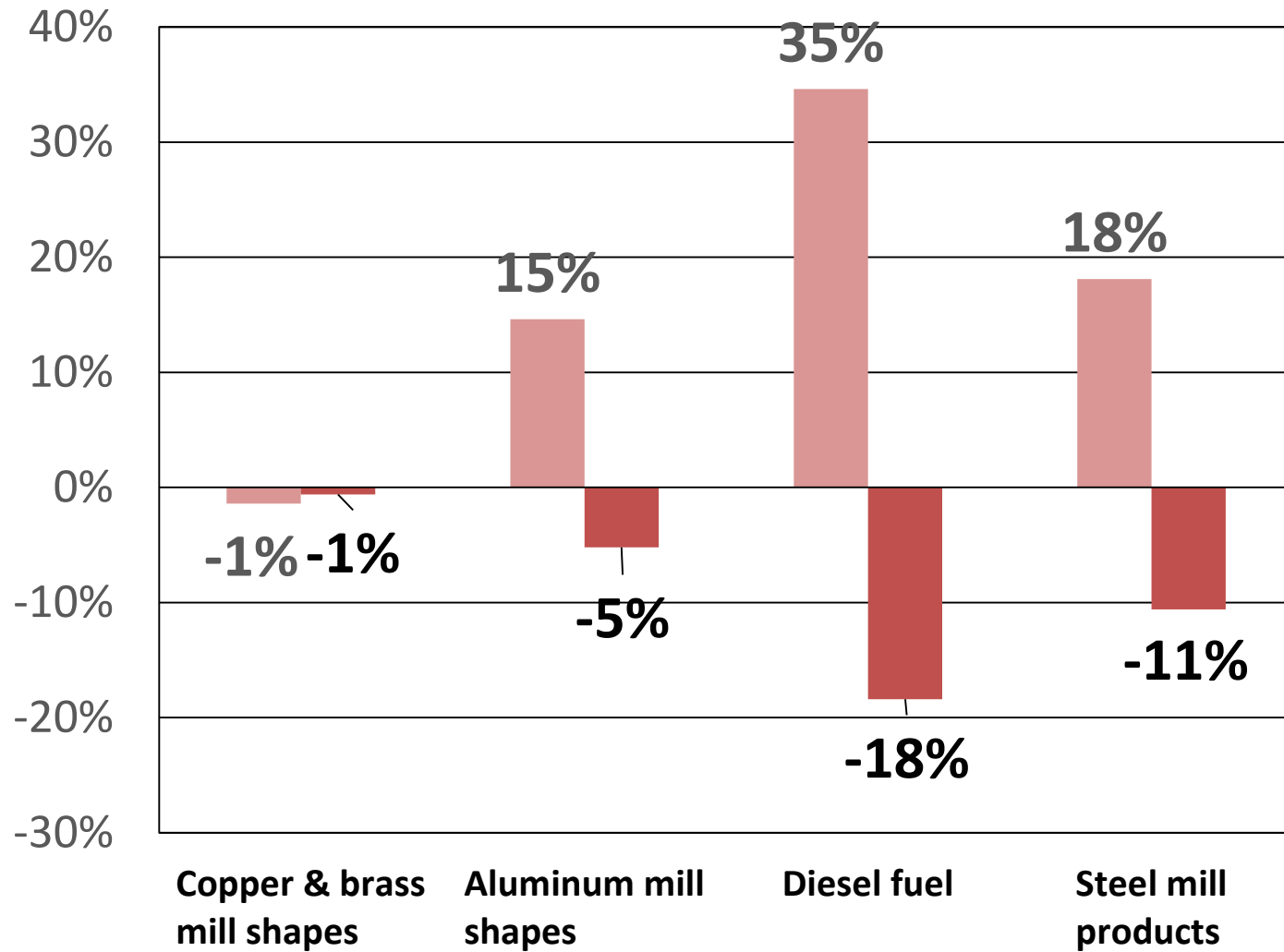
# Construction workforce indicators (not seasonally adjusted)



Source: Bureau of Labor Statistics

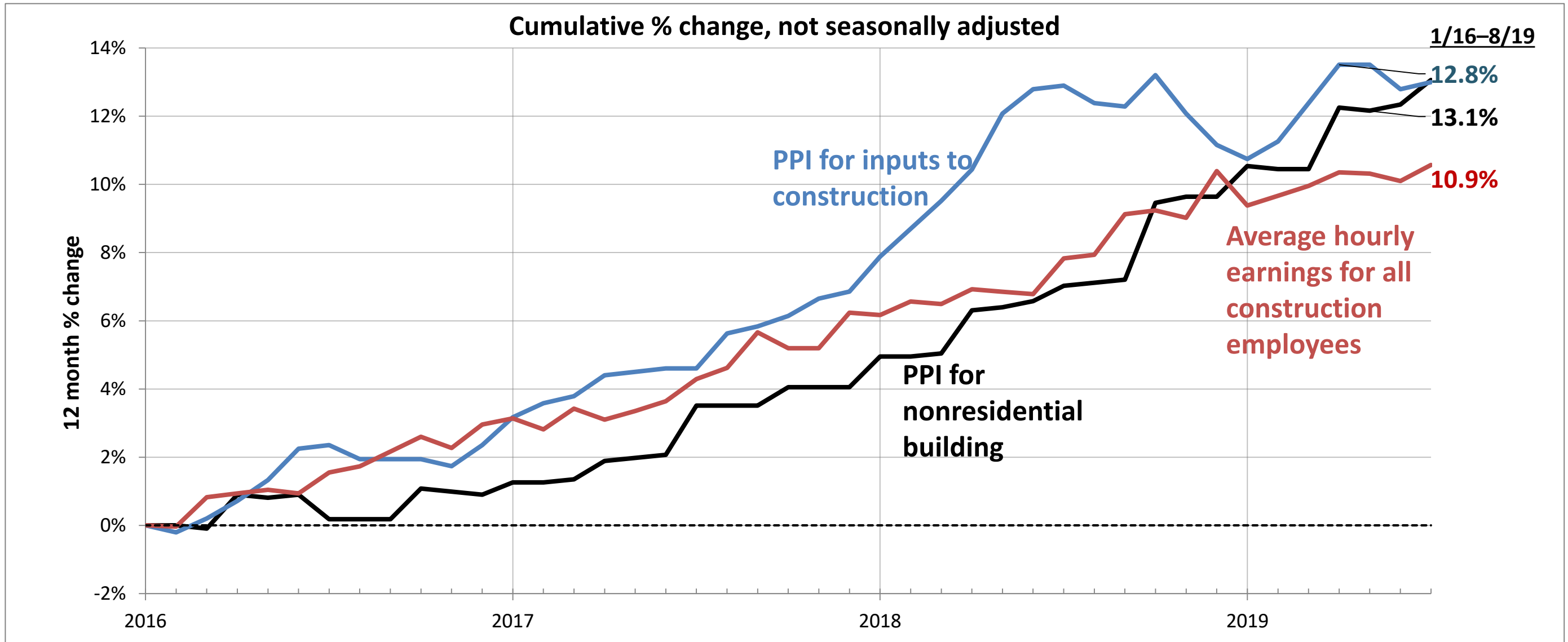
# 12-month change in producer price index for key inputs

■ August 2017 – August 2018 ■ August 2018 – August 2019



Source: Bureau of Labor Statistics

# Cumulative changes in materials & labor costs vs. bid prices



Source: Bureau of Labor Statistics

## Summary: 2018 actual, 2019 year-to-date & forecast

	2018 actual	Jan.-July '19 vs. '18	2019 forecast	2020 forecast
Total spending	3%	-2%	0-2%	1-5%
Private – residential	3%	-9%	-3 to -5%	2-7%
– nonresidential	4%	0.6%	0-2%	0-4%
Public	4%	6%	3-5%	0-4%
Goods & services inputs PPI	3.8%*	0.1%**	2-3%	3-5%
Wages & salaries (avg. hourly earnings)	3.6%*	2.7%**	3-3.5%	3.5-4.5%

\* Dec. 2017-Dec. 2018    \*\*July 2018- July 2019

# AGC economic resources

(email [ken.simonson@agc.org](mailto:ken.simonson@agc.org))

- *The Data DIGest*: weekly 1-page email (subscribe at <http://store.agc.org>)
- monthly press releases: spending; producer price indexes; national, state, metro employment with rankings
- yearly employment & outlook surveys, state and metro data, fact sheets: [www.agc.org/learn/construction-data](http://www.agc.org/learn/construction-data)

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**CONSTRUCTION COSTS SURGE IN APRIL AS NEW TARIFFS AND OTHER TRADE MEASURES LEAD TO SIGNIFICANT INCREASES IN MATERIALS PRICES**  
*Association Officials Warn That the New Tariffs and Resulting Price Spikes Have the Potential to Undermine Benefits of Tax and Regulatory Reform, Urge Administration to Reconsider*

The cost of goods used in construction jumped in April at the fastest year-over-year rate since 2011, with ongoing increases for a wide range of building materials, including many that are subject to proposed tariffs that could drive prices still higher and cause scarcities, according to an analysis by the Associated General Contractors of America of Labor Department data released today. Association officials said that the new data indicates many firms are already being squeezed by higher materials prices that they are unable to pass along to their customers.

"Contractors have started to boost the prices they charge, but they are falling further behind on the cost of materials they buy," said the association's chief economist, Ken Simonson. "This imbalance poses two risks—either contractors will suffer decreased profit margins or project owners with fixed budgets will cut back on the projects they undertake."

The producer price index for inputs to construction industries, goods—a measure of all materials used in construction projects including items consumed by contractors, such as diesel fuel—rose 1.0 percent in April alone and 1.2 percent over 12 months. The year-over-year increase was the steepest since 2011, economists noted.



[www.agc.org/learn/construction-data](http://www.agc.org/learn/construction-data)

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## D.C., 39 states add construction jobs through August; ABI slides; housing starts surge

Seasonally adjusted **construction employment** increased from August 2018 to August 2019 in 39 states and the District of Columbia and declined in 10 states and was unchanged in Mississippi, Bureau of Labor Statistics [data](#) released today show. AGC posted [analysis](#) and a revised set of state construction [fact sheets](#). Texas added the most construction jobs over the year (43,900 jobs, 5.9%), followed by California (34,300 jobs, 4.0%), Florida (20,900 jobs, 3.8%), and Arizona (15,400 jobs, 9.7%). North Dakota added the highest percentage of construction jobs over 12 months (12.1%, 3,100 jobs), followed by Nevada (11.7%, 10,500 jobs), Arizona, and New Mexico (9.2%, 4,300 jobs). Construction employment reached new highs (in records dating back to 1990) in two states: Nebraska and Texas. Louisiana again lost the largest number and percentage of construction jobs for the year (-10,100 jobs, -6.6%). Other states with large job losses include Ohio (-3,600 jobs, -1.6%), Maryland (-1,600 jobs, -1%), Vermont (-1,000 jobs, -6.6%) and Connecticut (-1,000 jobs, -1.7%). Construction employment rose from July to August in 29 states, decreased in 21 and was flat in D.C. (AGC's rankings are based on seasonally adjusted data, which in D.C., Hawaii and Delaware is available only for construction, mining and logging combined.)

"Demand for design services in August took a markedly downward swing compared to July's already soft score," the American Institute of Architects (AIA) [reported](#) on Wednesday. AIA's **Architecture Billings Index (ABI)** "score of 47.2 in August showed a significant drop in architecture firm billings compared to the July score of 50.1. (Any score below 50 [on a 0-100 scale] indicates a decrease in billings.) The design contracts score also declined to 47.9 in August, representing a rare dip for this indicator....'The sizeable drop in both design billings and new project activity, coming on the heels of six months of disappointing growth in billings, suggests that the design expansion that began in mid-2012 is beginning to face headwinds,' said AIA Chief Economist Kermit Baker....'Currently, the weakness is centered at firms specializing in commercial/industrial facilities as well as those located in the Midwest. However, there are fewer pockets of strength in design activity now, either by building sector or region than there have been in recent years.'" The ABI measures the percentage of surveyed architecture firms that reported higher billings than a month earlier, less the percentage reporting lower billings. Scores (based on three-month moving averages) varied by practice specialty: institutional, 50.6, up from 49.5 in July; residential (mainly multifamily), 50.5, up from 49.8; commercial/industrial, 46.9, down from 47.3; and mixed practice, 46.3, down from 48.9.

**Housing starts** (units) in August jumped to the highest level in 12 years, up 12% at a seasonally adjusted annual rate from July and 6.6% year-over-year (y/y) from August 2018, the Census Bureau [reported](#) on Wednesday. Multifamily (five or more units) starts soared 31% from July and 14% y/y, although the data are typically volatile and often substantially revised in later months. Single-family starts increased 4.4% for the month and 3.4% y/y. For the first eight months of 2019 combined, total starts slipped 1.8% from a year ago, with single-family starts down 2.7% and multifamily starts up 0.4%. **Residential permits** climbed 7.7% for the month and 12% y/y. Multifamily permits jumped 15% and 27%, respectively. Single-family permits rose 4.5% for both intervals. Multifamily permits in the first eight months of 2019 combined totaled 298,000, 22% higher than year-to-date starts, implying there is a backlog of projects that may break ground in the next several months.

"The latest labor force statistics from the [Census Bureau's] 2018 Current Population Survey show that **the construction industry continues to struggle to attract younger workers**," the National Association of Home Builders [posted](#) on Thursday in its "Eye on Housing" blog. "While workers under the age of 25 comprised 12.3% of the U.S. labor force, their share in the construction industry reached only 9% in 2018. Meanwhile, the share of older construction workers ages 55+ increased from less than 17% in 2011 to almost 22% in 2018. An earlier [post](#) showed that the construction workforce is aging faster than the overall labor force. Compared to the workforce in all industries, construction has a relatively smaller share of younger workers, but a larger proportion of workers in their prime-working age....as of 2018, only about 9% of construction workers were 16-24 years old, less than the employment share of this age group in all industries. Around 69% of construction workforce were in the prime working years of 25-54, compared to 64% in overall workforce. The share of workers ages 55 and older was 21.7% in construction, implying that a substantial portion of workforce would retire in near future....Analysis of the age distribution of construction workers over time reveals that the construction workforce is aging, with the share of older workers ages 55+ rising from 16.8% in 2010 to almost 22% in 2018. At the same time, the proportion of workers ages 25 to 54 declined from 74.6% to 69.3%. This change in age composition of construction labor force is largely because the last elements of the Baby Boomer generation are entering the 55+ age group. The share of younger construction workers ages 19 -24 edged up to 9.0% from 8.6%."

"The U.S. Energy Information Administration (EIA) expects that U.S. **wind capacity additions** in both 2019 and in 2020 will be near the annual record level of additions set in 2012," EIA [posted](#) on Thursday in its "Today in Energy" blog. "Wind capacity additions through June 2019 totaled 3.7 gigawatts (GW). According to projects reported to EIA through surveys and on EIA's Preliminary Monthly Electric Generator Inventory, operators expect another 8.5 GW to come online by the end of this year, with an additional 14.3 GW by the end of 2020....the legislated phaseout of the PTC extension for wind is largely driving the increase in annual wind capacity additions in 2019." Offshore projects may increase in 2020, but timing remains uncertain.

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# The Economic Impact of Construction in the United States and California

## Economic Impact of Construction:

- U.S. gross domestic product (GDP)—the value of all goods and services produced in the country—totaled \$20.6 trillion in 2018; construction contributed \$840 billion (4.1%). In California, construction contributed \$111 billion (3.8%) of the state's GDP of \$3 trillion.
- Construction wages and salaries in 2018 totaled \$468 billion in the United States, including \$62.3 billion in California.

## Construction Spending and Starts:

- Nonresidential spending in the U.S. totaled \$761 billion in 2018 (\$461 billion private, \$301 billion public).
- Residential construction spending in the U.S. totaled \$546 billion (\$290 billion single family, \$60 billion multifamily, \$190 billion improvements, \$7 billion public).
- Private nonresidential spending in California totaled \$30.1 billion in 2018. State and local spending totaled \$30.3 billion. (Totals are not available for residential or federal construction spending).
- Nonresidential (building and heavy/civil) starts in California totaled \$43 billion in 2018, according to ConstructConnect.

## Construction Employment (Seasonally Adjusted):

- Construction (residential + nonresidential) employed 7.5 million workers in July 2019, an increase of 177,000 (2.7%) from July 2018, but 3% less than in April 2006, when U.S. construction employment peaked.
- Construction employment in California in July 2019 totaled 900,700, an increase of 4.3% from July 2018, but 5% less than the state's peak in June 2006.
- Construction unemployment is near a series low. In the 2019 AGC-Autodesk Workforce Survey, 78% of firms in the U.S. and 68% in California reported difficulty filling hourly craft worker positions.

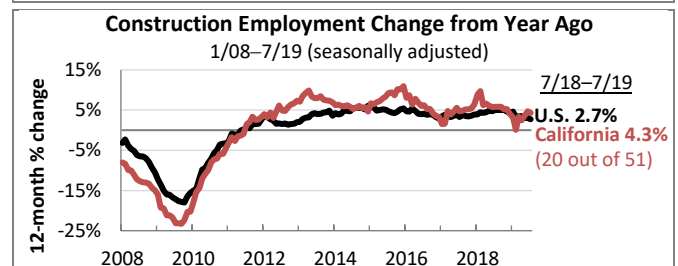
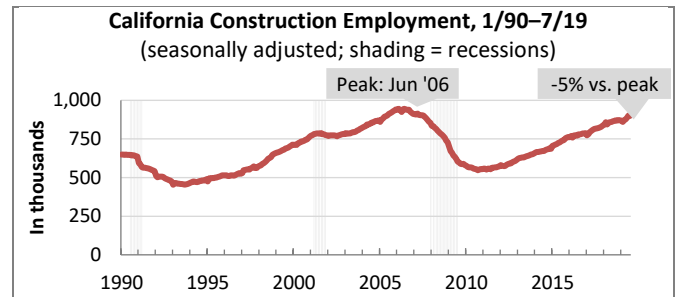
## Construction Industry Pay:

- In 2018, pay for all construction *industry* employees in the U.S. averaged \$62,727, 10% more than the average (mean) for all private-sector employees. Construction industry pay in California averaged \$70,084 in 2018, 3% more than the state average for all private-sector employees.
- The five most numerous construction *occupations* in California had higher median pay than the median for all employees in the state. (Half of workers earn more than the median; half earn less.)

## Small Business:

- The United States had 810,295 construction firms in 2016, of which 92% were small (1 to 19 employees). California had 80,657 construction firms in 2016, of which 91% were small.

\*The Bureau of Labor Statistics reports employment for construction, mining and logging combined for metro areas in which mining and logging have few employers. Construction-only employment change is shown for a metro if BLS posts that data.



Empl. Change by Metro (not seasonally adjusted)		Rank
Metro area or division	7/18–7/19	(out of 358)
Statewide (Construction)	4%	
Statewide (Mining, logging, and construction)*	4%	
Anaheim-Santa Ana-Irvine Div.	3%	172
Bakersfield	2%	212
Chico*	8%	43
El Centro*	0%	256
Fresno	6%	70
Hanford-Corcoran*	10%	18
Los Angeles-Long Beach-Glendale Div.	8%	43
Madera*	5%	103
Merced*	12%	8
Modesto*	2%	212
Napa*	6%	70
Oakland-Hayward-Berkeley Div.	6%	70
Oxnard-Thousand Oaks-Ventura	4%	128
Redding*	5%	103
Riverside-San Bernardino-Ontario	-0.3%	305
Sacramento--Roseville--Arden-Arcade	6%	70
Salinas	5%	103
San Diego-Carlsbad	3%	172
San Francisco-Redwood City-South San Francisco Div.	9%	31
San Jose-Sunnyvale-Santa Clara	1%	229
San Luis Obispo-Paso Robles-Arroyo Grande*	-5%	338
San Rafael Div.	8%	43
Santa Cruz-Watsonville*	2%	212
Santa Maria-Santa Barbara	7%	54
Santa Rosa	7%	54
Stockton-Lodi	7%	54
Vallejo-Fairfield	-3%	321
Visalia-Porterville*	3%	172
Yuba City*	7%	54

**5 most numerous construction jobs and median annual pay in California (2018 data)**

Occupation	Number of employees	Median annual pay	Pay relative to median
All occupations	17,007,690	\$42,430	
Construction Laborers	104,150	\$43,930	+4%
Carpenters	100,570	\$56,770	+34%
Electricians	66,260	\$64,260	+51%
First-Line Supervisors of Construction Trades and Extraction Workers	55,920	\$78,440	+85%
Plumbers, Pipefitters, and Steamfitters	48,040	\$56,270	+33%