February 11, 2020

U.S. Construction Spending, Labor & Materials Outlook

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### AGC members’ expectations for 2020 compared to 2019 survey

<table>
<thead>
<tr>
<th>Category</th>
<th>2020 Net % Who Expect Dollar Value to be Higher</th>
<th>2019 Net % Who Expect Dollar Value to be Lower</th>
<th>Source: AGC 2020 Outlook Survey, Dec 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water/Sewer</td>
<td>25%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Bridge/Highway</td>
<td>20%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Higher Education</td>
<td>16%</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>K-12 school</td>
<td>20%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Multifamily Residential</td>
<td>11%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>11%</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>20%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Public Building</td>
<td>10%</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Transportation (e.g., transit, rail, airport)</td>
<td>20%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Retail, Warehouse, Lodging</td>
<td>10%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>17%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Private Office</td>
<td>8%</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Federal (e.g., VA, GSA, USACE, NAVFAC)</td>
<td>17%</td>
<td>15%</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Net = % who expect dollar value to increase - % who expect decrease
Construction spending, 1/06–12/19

trillion $, seasonally adjusted annual rate; not inflation-adjusted

Source: U.S. Census Bureau

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### Nonresidential spending by segment
2018 & 2019 year-to-date change; 2020 forecast

<table>
<thead>
<tr>
<th>Segment</th>
<th>2018 vs. 2017</th>
<th>2019 vs. 2018</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonresidential total (public+private)</td>
<td>3.7%</td>
<td>2.8%</td>
<td>0-4%</td>
</tr>
<tr>
<td>Power (incl. oil &amp; gas field structures, pipelines)</td>
<td>-3</td>
<td>7</td>
<td>5-10%</td>
</tr>
<tr>
<td>Highway and street</td>
<td>2</td>
<td>9</td>
<td>5-10%</td>
</tr>
<tr>
<td>Educational</td>
<td>1</td>
<td>0.2</td>
<td>0-5%</td>
</tr>
<tr>
<td>Office</td>
<td>8</td>
<td>6</td>
<td>near 0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>0.1</td>
<td>4</td>
<td>near 0</td>
</tr>
<tr>
<td>Transportation (air, land, water)</td>
<td>12</td>
<td>6</td>
<td>5-10%</td>
</tr>
<tr>
<td>Health care</td>
<td>-1</td>
<td>3</td>
<td>0-5%</td>
</tr>
<tr>
<td>Retail</td>
<td>5</td>
<td>-24</td>
<td>-15 to -20%</td>
</tr>
<tr>
<td>Warehouse</td>
<td>16</td>
<td>-0.2</td>
<td>near 0</td>
</tr>
<tr>
<td>Lodging</td>
<td>10</td>
<td>6</td>
<td>near 0</td>
</tr>
<tr>
<td>Sewage &amp; waste disposal</td>
<td>4</td>
<td>9</td>
<td>0-5</td>
</tr>
<tr>
<td>Other* (13% of 2019 total)</td>
<td>6</td>
<td>1</td>
<td>0-5</td>
</tr>
</tbody>
</table>

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

Annual total, 2008–17; monthly, Jan. ‘18–Dec. ’19
(seasonally adjusted annual rate); billion $

<table>
<thead>
<tr>
<th>Highways (99.7% public in 2019)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$120</td>
</tr>
<tr>
<td>$90</td>
</tr>
<tr>
<td>$60</td>
</tr>
<tr>
<td>$30</td>
</tr>
<tr>
<td>$0</td>
</tr>
</tbody>
</table>

Dec ‘18–Dec ‘19: 14%

<table>
<thead>
<tr>
<th>Transportation (70% public in 2019)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$60</td>
</tr>
<tr>
<td>$40</td>
</tr>
<tr>
<td>$20</td>
</tr>
<tr>
<td>$0</td>
</tr>
</tbody>
</table>

Dec ‘18–Dec ‘19: 5% (air 5%; other 5%)

<table>
<thead>
<tr>
<th>Sewage/waste &amp; water (2019 public shares: sewage 97%; water 98%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$30</td>
</tr>
<tr>
<td>$20</td>
</tr>
<tr>
<td>$10</td>
</tr>
<tr>
<td>$0</td>
</tr>
</tbody>
</table>

Dec ‘18–Dec ‘19: sewage/waste 7%, water 34%

<table>
<thead>
<tr>
<th>Conservation and development (99.7% public in 2019)</th>
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<tbody>
<tr>
<td>$30</td>
</tr>
<tr>
<td>$20</td>
</tr>
<tr>
<td>$10</td>
</tr>
<tr>
<td>$0</td>
</tr>
</tbody>
</table>

Dec ‘18–Dec ‘19: 17%

Source: U.S. Census Bureau construction spending report

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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

• Ongoing high level of airport projects; record level of transit construction/reconstruction

• Water & sewer/wastewater spending are at or near record levels after large drop in 2016-17; little long-term new funding likely

• Federal $ for conservation have increased; Corps of Engineers is struggling to award and manage additional projects

Source: Author
Construction spending: industrial, heavy

Annual total, 2008-17; monthly, Jan. ‘18–Dec. ‘19 (seasonally adjusted annual rate); billion $

- **Power** (94% private in 2019)
  - Dec ‘18–Dec ‘19: 8% (oil & gas 10%; electric 7%)

- **Manufacturing** (99.7% private in 2019)
  - Dec ‘18–Dec ‘19: 6% (chemical 5%; other 7%)

- **Amusement & recreation** (51% private in 2019)
  - Dec ‘18–Dec ‘19: -2% (private -14%; public 11%)

- **Communication** (99.4% private in 2019)
  - Dec ‘18–Dec ‘19: -5%

Source: U.S. Census Bureau construction spending report
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 recovery likely to stall as tariffs, foreign retaliation, sluggish global economy lead to project cancellations
• 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
Annual total, 2008-17; monthly, 1/18-12/19 (seasonally adjusted annual rate); billion $

**Education** (81% public in 2019)

- Total
- State/local preK-12
- State/local higher ed
- Private

Dec ‘18–Dec ‘19: 1% (state/local preK-12 6%; state/local higher ed -3%; private -10%)

**Health care** (80% private in 2019)

- Total
- Hospital
- Medical building
- Special care

Dec ‘18–Dec ‘19: 1% (hospital -4%; medical building 0%; special care 32%)
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 special-care facilities (urgent care, surgery, rehab, hospices) and doctors’ offices

Source: Author
Construction spending: developer-financed

Annual total, 2008–17; monthly, Jan. ‘18–Dec. ’19 (seasonally adjusted annual rate); billion $

Source: U.S. Census Bureau construction spending report

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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 sensitive to interest rates and travel disruptions (e.g., coronavirus)
• Data centers remain a strong niche but data is not reported separately (most are included in office total)
Private residential spending levels and change
(seasonally adjusted annual rate)

Spending put in place (billion $)

12-month % change, Jan. 2018-Dec. 2019

-20% -15% -10% -5% 0% 5% 10% 15% 20% 25%

2018 2019

Total Residential Peak: 02/06
Single-Family Peak: 02/06
Improvements Peak: 02/18
Multifamily Peak: 05/19

Source: U.S. Census Bureau construction spending report
2020 Residential spending forecast: 3 to 7% (-5% in 2019; 3% in 2018)

- Single-family: 5-10% (-6% in 2019; 7% in 2018); low interest rates, rising income & wealth will boost home buying, but builders face challenges getting permits and finding workers

- Multifamily: 0-5% (3% in 2019; -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 apartments than previous generations
  - nearly all multifamily construction is rental, not condo; more high-rises

- Improvements: 5-10% (3% in 2019; -2% in 2018); additions and renovations should track homebuying closely but data is unreliable

Source: Author
Population change by state, July 2018–July 2019 (U.S.: 0.48%)

**Top 5**
- ID: 2.1%
- NV: 1.7%
- AZ: 1.7%
- UT: 1.7%
- TX: 1.3%

**Bottom 5**
- WV: -0.7%
- AK: -0.5%
- IL: -0.4%
- NY: -0.4%
- HI: -0.3%
Population change: implications for construction

- Important determinant over time of: demand for housing, several types of nonresidential construction; public funding; labor supply
- 2019 U.S. growth of 0.48% was slowest in 101 years
- 10 states lost population; growth slowed in 32 states, DC
- Growth rate slowed the most from ‘18 in DC, FL, CO, MA
- CA growth was 300,000/year in ‘11-’15; 51,000 in ‘19

Source: Author
State construction employment change (U.S.: 2.0%)  
12/18 to 12/19: 34 states and DC up, 16 states down

Top 5
- Maine: 11.5%
- New Mexico: 10.8%
- Utah: 8.6%
- Texas: 7.4%
- New Hampshire: 7.4%

Bottom 5
- Wyoming: -9.5%
- West Virginia: -7.2%
- Connecticut: -5.5%
- Louisiana: -4.8%
- Vermont: -4.1%
Construction workforce indicators
(not seasonally adjusted)

Construction openings: near all-time high despite increased hiring
(December data, 2001-19) 12/19

- Hires: 278,000
- Openings: 239,000

Pay not accelerating despite high job openings rate
(December data, 2010-19) 12/19

- Job openings rate in construction: 3.1%
- 12-mo % change in construction average hourly earnings: 2.3%
Outlook 2020: Firms plan to add workers but expect continued difficulty finding them

- 75% of firms planning to add workers
- 81% reporting difficulty hiring
- 65% who expect as much or more difficulty in coming year

Source: AGC 2020 Outlook Survey, Dec 2019
Outlook 2020: Firms with staffing challenges face higher costs and delays

- Costs have been higher than anticipated: 44%
- Projects took longer than anticipated: 40%
- Putting higher prices into bids or contracts: 41%
- Putting longer completion times into bids or contracts: 23%

Source: AGC 2020 Outlook Survey, Dec 2019
Outlook 2020: Firms adopt labor-saving methods to replace workers or skills

**Labor-saving equipment** (e.g., drones, robots, 3-D printers, laser-or GPS-guided equipment)
- 32%

**Methods to reduce onsite worktime** (e.g., lean construction, virtual construction such as BIM, offsite fabrication)
- 28%

**Added specialists** (e.g., architects, BIM or lean construction personnel, drone or other equipment operators, data or IT personnel)
- 17%

Source: AGC 2020 Outlook Survey, Dec 2019
Producer price index for key inputs
12-month % change, not seasonally adjusted

Source: Bureau of Labor Statistics
Cumulative changes in bid prices vs. materials & labor costs, 1/16–12/19

Source: Bureau of Labor Statistics
## Summary: 2018 & 2019 actual; 2020 forecast

<table>
<thead>
<tr>
<th></th>
<th>2018 actual</th>
<th>2019 actual</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total spending</td>
<td>3%</td>
<td>-0.3%</td>
<td>1-5%</td>
</tr>
<tr>
<td>Private – residential</td>
<td>3%</td>
<td>-4.7%</td>
<td>3-7%</td>
</tr>
<tr>
<td>– nonresidential</td>
<td>4%</td>
<td>-0.0%</td>
<td>0-4%</td>
</tr>
<tr>
<td>Public</td>
<td>4%</td>
<td>7.1%</td>
<td>0-4%</td>
</tr>
<tr>
<td>Goods &amp; services inputs PPI</td>
<td>4.0%*</td>
<td>1.5%**</td>
<td>3-4%</td>
</tr>
<tr>
<td>Wages &amp; salaries</td>
<td>3.8%*</td>
<td>2.3%**</td>
<td>3.5-4.5%</td>
</tr>
</tbody>
</table>

AGC economic resources
(email ken.simonson@agc.org)

• **The Data DIGest**: weekly 1-page email (subscribe at [http://store.agc.org](http://store.agc.org))

• Monthly press releases: spending; producer price indexes; national, state, metro employment with ranking

• Yearly employment & outlooks surveys, state and metro data, fact sheets: [www.agc.org/learn/construction-data](http://www.agc.org/learn/construction-data)