U.S. Construction Spending, Labor & Materials Outlook

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## AGC members’ expectations for 2020 vs. expectations for 2019

<table>
<thead>
<tr>
<th>Category</th>
<th>2020 Expectation</th>
<th>2019 Expectation</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water/Sewer</td>
<td>25%/14%</td>
<td>16%/11%</td>
<td>Higher Education</td>
</tr>
<tr>
<td>Bridge/Highway</td>
<td>20%/16%</td>
<td>11%/5%</td>
<td>Multifamily Residential</td>
</tr>
<tr>
<td>K-12 school</td>
<td>20%/16%</td>
<td>11%/12%</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Hospital</td>
<td>20%/16%</td>
<td>10%/17%</td>
<td>Public Building</td>
</tr>
<tr>
<td>Transportation (e.g., transit, rail, airport)</td>
<td>20%/14%</td>
<td>10%/15%</td>
<td>Retail, Warehouse, Lodging</td>
</tr>
<tr>
<td>Power</td>
<td>17%/10%</td>
<td>8%/13%</td>
<td>Private Office</td>
</tr>
<tr>
<td>Federal (e.g., VA, GSA, USACE, NAVFAC)</td>
<td>17%/15%</td>
<td>17%/21%</td>
<td>Other</td>
</tr>
</tbody>
</table>

Source: AGC 2020 Outlook Survey, Dec 2019
Outlook 2020: Firms plan to add workers but expect continued difficulty finding them

- % of firms planning to add workers: 79% (2019) vs. 75% (2020)
- % reporting difficulty hiring: 78% (2019) vs. 81% (2020)
- % who expect as much or more difficulty in coming year: 68% (2019) vs. 65% (2020)

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

- Costs have been higher than we anticipated: 44% (2019), 44% (2020)
- We have put higher prices into our bids or contracts: 41% (2019), 40% (2020)
- Projects have taken longer than we anticipated: 40% (2019), 40% (2020)
- We have put longer completion times into our bids or contracts: 23% (2019), 23% (2020)
- Completion times or costs have been lower than we anticipated: 2% (2019), 2% (2020)
- No impact/Stay the same: 17% (2019), 17% (2020)

Source: AGC 2020 Outlook Survey, Dec 2019
Construction spending, 1/06-11/19

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

Source: U.S. Census Bureau

<table>
<thead>
<tr>
<th>11/19 Change from 11/18</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.1%</td>
</tr>
<tr>
<td>Private Residential</td>
<td>2.7%</td>
</tr>
<tr>
<td>Private Nonresidential</td>
<td>0.2%</td>
</tr>
<tr>
<td>Public</td>
<td>12.4%</td>
</tr>
</tbody>
</table>
Private residential spending levels and change
(seasonally adjusted annual rate)

Spending put in place (billion $)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Residential Peak: 02/06</th>
<th>Single-Family Peak: 02/06</th>
<th>Improvements Peak: 02/18</th>
<th>Multifamily Peak: 05/19</th>
</tr>
</thead>
<tbody>
<tr>
<td>'06</td>
<td>$100</td>
<td>$300</td>
<td>$200</td>
<td>$100</td>
</tr>
<tr>
<td>'07</td>
<td>$150</td>
<td>$350</td>
<td>$250</td>
<td>$150</td>
</tr>
<tr>
<td>'08</td>
<td>$200</td>
<td>$400</td>
<td>$300</td>
<td>$200</td>
</tr>
<tr>
<td>'09</td>
<td>$250</td>
<td>$450</td>
<td>$350</td>
<td>$250</td>
</tr>
<tr>
<td>'10</td>
<td>$300</td>
<td>$500</td>
<td>$400</td>
<td>$300</td>
</tr>
<tr>
<td>'11</td>
<td>$350</td>
<td>$550</td>
<td>$450</td>
<td>$350</td>
</tr>
<tr>
<td>'12</td>
<td>$400</td>
<td>$600</td>
<td>$500</td>
<td>$400</td>
</tr>
<tr>
<td>'13</td>
<td>$450</td>
<td>$650</td>
<td>$550</td>
<td>$450</td>
</tr>
<tr>
<td>'14</td>
<td>$500</td>
<td>$700</td>
<td>$600</td>
<td>$500</td>
</tr>
<tr>
<td>'15</td>
<td>$550</td>
<td>$750</td>
<td>$650</td>
<td>$550</td>
</tr>
<tr>
<td>'16</td>
<td>$600</td>
<td>$800</td>
<td>$700</td>
<td>$600</td>
</tr>
<tr>
<td>'17</td>
<td>$650</td>
<td>$850</td>
<td>$750</td>
<td>$650</td>
</tr>
<tr>
<td>'18</td>
<td>$700</td>
<td>$900</td>
<td>$800</td>
<td>$700</td>
</tr>
<tr>
<td>'19</td>
<td>$750</td>
<td>$950</td>
<td>$850</td>
<td>$750</td>
</tr>
</tbody>
</table>

Nov vs. Peak vs. 11/18-11/19

-20% 3%
-41% -0.3%
-10% 10%
-7% -4%

Source: U.S. Census Bureau construction spending report
Residential spending forecast—

2019: -5 to -6%; 2020: 2 to 7% (3% in 2018)

• Single-family—2019: -6 to -7%; 2020: 5-11% (7% in 2018); low interest rates, rising income & wealth will boost home buying, but builders face challenges getting permits and finding workers

• Multifamily—2019: 3-4%; 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 apartments than previous generations
  • nearly all multifamily construction is rental, not condo; more high-rises

• Improvements—2019: -5 to -7%; 2020: 5-11% (-2% in 2018); additions and renovations should track homebuying closely but data is weak

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

<table>
<thead>
<tr>
<th>Segment</th>
<th>2018 vs. 2017</th>
<th>Jan-Nov 2019 vs. Jan-Nov 2018</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonresidential total (public+private)</strong></td>
<td>3.7%</td>
<td>2.5%</td>
<td>0-4%</td>
</tr>
<tr>
<td>Educational</td>
<td>1</td>
<td>0.4</td>
<td>0-5%</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>Office</td>
<td>8</td>
<td>6</td>
<td>near 0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>0.1</td>
<td>3</td>
<td>near 0</td>
</tr>
<tr>
<td>Transportation (air, land, water)</td>
<td>12</td>
<td>7</td>
<td>5-10%</td>
</tr>
<tr>
<td>Retail</td>
<td>5</td>
<td>-25</td>
<td>-15 to -20%</td>
</tr>
<tr>
<td>Health care</td>
<td>-1</td>
<td>3</td>
<td>0-5%</td>
</tr>
<tr>
<td>Warehouse</td>
<td>16</td>
<td>-1</td>
<td>near 0</td>
</tr>
<tr>
<td>Lodging</td>
<td>10</td>
<td>7</td>
<td>near 0</td>
</tr>
<tr>
<td>Sewage &amp; waste disposal</td>
<td>4</td>
<td>10</td>
<td>0-5</td>
</tr>
<tr>
<td>Other* (13% of 2018 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

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Construction spending: education, health
Annual total, 2008-17; monthly, 1/18-11/19 (seasonally adjusted annual rate); billion $

**Education (78% public in 2018)**

Nov ‘18–Nov ‘19: 7% (state/local preK-12 16%; state/local higher ed 5%; private -12%)

**Health care (78% private in 2018)**

Nov ‘18–Nov ‘19: 5% (hospital 3%; medical building -1%; special care 40%)
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-Nov. ’19
(seasonally adjusted annual rate); billion $

Retail (private)

Warehouse (private)

Office (86% private in 2018)

Lodging (private)

Nov ‘18–Nov ‘19: -14%
Nov ‘18–Nov ‘19: 4%
Nov ‘18–Nov ‘19: 8% (private 6%; public 20%)
Nov ‘18–Nov ‘19: 1%
Key points: retail, warehouse, office, hotel, data centers

- Massive # of store closings implies retail downturn will continue
- E-commerce is still driving warehouse construction 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 data is not reported separately (most are included in office total)

Source: Author
Construction spending: industrial, heavy

Annual total, 2008-17; monthly, Jan. ’18-Nov. '19
(seasonally adjusted annual rate); billion $

**Power** (94% private in 2018)

- Total
- Electric
- Oil & gas

Nov ‘18–Nov ‘19: 6% (oil & gas 12%; electric 5%)

**Manufacturing** (99.4% private in 2018)

- Total
- Other
- Chemical

Nov ‘18–Nov ‘19: 2% (chemical -3%; other 6%)

**Amusement & recreation** (56% private in 2018)

- Total
- Private
- Public

Nov ‘18–Nov ‘19: -3% (private -14%; public 10%)

**Communication** (99.3% private in 2018)

- Total
- Public
- Private

Nov ‘18–Nov ‘19: -3%
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 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: public works
Annual total, 2008-17; monthly, Jan. ‘18-Nov. '19 (seasonally adjusted annual rate); billion $

Highways (99.7% public in 2018)

Sewage/waste & water (2018 public shares: sewage 98%; water 98%)

Transportation (68% public in 2018)

Conservation and development (99.7% public in 2018)

Source: U.S. Census Bureau construction spending report
Key points: roads, transportation, sewer/water

• State **highway** funding and toll projects are growing but federal infrastructure spending increase won’t occur until 2021 or later

• Many new and ongoing public & private **airport** projects; **transit** construction/reconstruction is at record levels

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

• Federal **conservation** funding has increased but the Corps of Engineers is struggling to award and manage additional projects

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 0.42% was slowest in 101 years
• 10 states lost population; growth slowed in 32+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%)

11/18 to 11/19: 39 states and DC up, 12 states down, 0 unchanged

Top 5
Nevada 13.4%
New Mexico 11.3%
New Hampshire 9.3%
Utah 8.6%
Texas 7.5%

Bottom 5
Louisiana -6.2%
Wyoming -5.6%
Connecticut -4.8%
Ohio -3.5%
Tennessee -3.1%
Metro construction employment change \((U.S.: \textbf{2.0\%})\)

11/18 to 11/19: 226 (63\%) of 358 metros \textbf{up}, 55 unchanged, 77 (21\%) \textbf{down}

**Top 3**
- Las Vegas-Henderson-Paradise, NV \(17\%\)
- Auburn-Opelika, AL \(15\%\)
- Omaha-Council Bluffs, NE-IA \(15\%\)

**Bottom 3**
- Danville, IL \(-17\%\)
- Fairbanks, AK \(-12\%\)
- Hartford-West Hartford-East Hartford, CT NECTA \(-11\%\)
Construction workforce indicators (not seasonally adjusted)

Construction openings: all-time high despite increased hiring (October data, 2009-19)

Pay not accelerating despite high job openings rate (October data, 2009-19)

Source: Bureau of Labor Statistics

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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, 1/16-11/19

Source: Bureau of Labor Statistics
### Summary: 2018 actual, 2019 year-to-date & forecast

<table>
<thead>
<tr>
<th></th>
<th>2018 actual</th>
<th>Jan-Nov 2019 vs. Jan-Nov 2018</th>
<th>2020 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total spending</td>
<td>3%</td>
<td>-0.8%</td>
<td>1-5%</td>
</tr>
<tr>
<td>Private – residential</td>
<td>3%</td>
<td>-5.6%</td>
<td>3-7%</td>
</tr>
<tr>
<td>– nonresidential</td>
<td>4%</td>
<td>-0.4%</td>
<td>0-4%</td>
</tr>
<tr>
<td>Public</td>
<td>4%</td>
<td>6.8%</td>
<td>0-4%</td>
</tr>
<tr>
<td>Goods &amp; services inputs PPI</td>
<td>4.0%*</td>
<td>0.2%**</td>
<td>3-4%</td>
</tr>
<tr>
<td>Wages &amp; salaries (avg. hourly earnings)</td>
<td>3.8%*</td>
<td>2.7%**</td>
<td>3.5-4.5%</td>
</tr>
</tbody>
</table>

* Dec. 2017-Dec.2018
** Nov 2018- Nov 2019

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