U.S. Construction Spending, Labor & Materials Outlook

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| US Net % who expect dollar value of projects to be higher (2020 survey/2019 survey) |  |
|---|---|---|
| 25%/14% Water/Sewer | 16%/11% Higher Education |
| 20%/16% Bridge/Highway | 11%/5% Multifamily Residential |
| 20%/16% K-12 school | 11%/12% Manufacturing |
| 20%/16% Hospital | 10%/17% Public Building |
| 20%/14% Transportation (e.g., transit, rail, airport) | 10%/15% Retail, Warehouse, Lodging |
| 17%/10% Power | 8%/13% Private Office |
| 17%/15% Federal (e.g., VA, GSA, USACE, NAVFAC) |  |

Note: Net = % who expect dollar value to increase - % who expect decrease
Construction spending, 1/06–11/19
trillion $, seasonally adjusted annual rate; not inflation-adjusted

Peak: 02/18
Peak: 02/06
Peak: 09/18
Peak: 04/19

11/19 Change from
11/18  Peak
Total 4.1%  -0.8%

Private Residential 2.7%  -20.9%
Private Nonresidential 0.2%  -2%
Public 12.4%  -0.2%

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

**Highways** (99.7% public in 2018)

Nov ‘18–Nov ‘19: 8%

**Transportation** (68% public in 2018)

Nov ‘18–Nov ‘19: 5% (air 3%; other 6%)

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

Nov ‘18–Nov ‘19: sewage/waste 18%, water 30%

**Conservation and development** (99.7% public in 2018)

Nov ‘18–Nov ‘19: 22%

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
- 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 $ 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–Nov. ‘19 (seasonally adjusted annual rate); billion $

**Power** (94% private in 2018)
- Nov ‘18–Nov ‘19 6% (oil & gas 12%; electric 5%)

**Manufacturing** (99.4% private in 2018)
- Nov ‘18–Nov ‘19: 2% (chemical -3%; other 6%)

**Amusement & recreation** (56% private in 2018)
- Nov ‘18–Nov ‘19: -3% (private -14%; public 10%)

**Communication** (99.3% private in 2018)
- Nov ‘18–Nov ‘19: -3%

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, 1/18-11/19 (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%)

Source: U.S. Census Bureau construction spending report
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)**

Nov ‘18–Nov ‘19: -14%

**Office (86% private in 2018)**

Nov ‘18–Nov ‘19: 8% (private 6%; public 20%)

**Warehouse (private)**

Nov ‘18–Nov ‘19: 4%

**Lodging (private)**

Nov ‘18–Nov ‘19: 1%

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 downturn will continue
- 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 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 $)

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

| 12-month % change, Jan. 2018-Nov. 2019 |
|--------------------------------brero |
| Private Residential Total | Nov vs. Peak | 11/18-11/19 |
| Single-family | -41% | -0.3% |
| Improvements | -10% | 10% |
| Multifamily | -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
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%)

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%

Note: Shading based on unrounded numbers
Source: BLS
Construction workforce indicators (not seasonally adjusted)

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

Hires 493,000
Openings 311,000

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

Job openings rate in construction 3.9%
12-mo % change in construction average hourly earnings 2.4%

Source: Bureau of Labor Statistics
Outlook 2020: Firms plan to add workers but expect continued difficulty finding them

% of firms planning to add workers: 75%

% reporting difficulty hiring: 81%

% who expect as much or more difficulty in coming year: 65%

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%)
- Putting higher prices into our bids or contracts (41%)
- Projects took longer than anticipated (40%)

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)

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

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

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

December 2017 – December 2018
- Copper & brass mill shapes: -6%
  - Aluminum mill shapes: 0%
  - Diesel fuel: 4%
  - Steel mill products: 19%

December 2018 – December 2019
- Lumber & plywood: -5%
  - Gypsum products: 4%
  - Ready-mixed concrete: 3%
  - Paving Mixtures: 11%

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 actual, 2019 year-to-date & forecast

<table>
<thead>
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<th>2018 actual</th>
<th>Jan-Nov 2019 vs. Jan-Nov 2018</th>
<th>2020 forecast</th>
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<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>1.5%**</td>
<td>3-4%</td>
</tr>
<tr>
<td>Wages &amp; salaries (avg. hourly earnings)</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)

• 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