Construction spending & employment, 2006-16

**Total spending, Feb. '06 (peak)-Dec. '16**
- Billion $, seasonally adjusted annual rate (SAAR)
  - $1.21 trillion
  - $1.18 trillion (2% below peak)

**Total employment, Apr. '06 (peak)-Dec. '16**
- Thousands, seasonally adjusted
  - 7.7 million
  - 6.7 million (13% below peak)

**December 2015-December 2016:**
- Total 4.2%
  - Private res. 4%
  - Private nonres. 9%
  - Public -2%
- Residential 4%
- Nonresidential 0%

Source: Spending--U.S. Census Bureau; Employment--Bureau of Labor Statistics
Policy possibilities & uncertainties affecting construction

• Infrastructure: How much? How soon? What types? Funding source?
• Immigration: Impact on new & current workers? Wall construction?
• Trade: Higher materials costs? Shortages? Less or more factory const.?
• Regulatory relief: Which ones? How soon?
• Fiscal: Lower taxes? For whom? Bigger deficits? Implications for construction demand, labor supply?
• Monetary: Higher interest rates? Implications for construction costs?
AGC members’ expectations for 2017 (1281 total responses)

Compared to 2016, do you expect the available dollar volume of projects you compete for in 2017 to be higher/lower/same?

<table>
<thead>
<tr>
<th>Category</th>
<th>% Higher</th>
<th>% Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>All projects</td>
<td>36%</td>
<td></td>
</tr>
<tr>
<td>Hospital; Retail, warehouse, lodging</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>Private office</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Highway; Public building</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Higher education; K-12 school; Water/sewer</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Multifamily; Other transportation (e.g., transit, rail, airport)</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Federal (e.g., VA, GSA, USACE, NAVFAC)</td>
<td>7%</td>
<td></td>
</tr>
</tbody>
</table>

### Nonresidential segments: 2014-16 change, 2017 forecast

<table>
<thead>
<tr>
<th>Nonresidential total (public+private)</th>
<th>2015 vs. 2014</th>
<th>2016 vs. 2015</th>
<th>2017 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (incl. oil &amp; gas field structures, pipelines)</td>
<td>-16</td>
<td>3</td>
<td>5-10</td>
</tr>
<tr>
<td>Highway and street</td>
<td>6</td>
<td>2</td>
<td>2-5</td>
</tr>
<tr>
<td>Educational</td>
<td>5</td>
<td>6</td>
<td>3-7</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>33</td>
<td>-4</td>
<td>&lt;0</td>
</tr>
<tr>
<td>Commercial (retail, warehouse, farm)</td>
<td>6</td>
<td>11</td>
<td>0-5</td>
</tr>
<tr>
<td>Office</td>
<td>18</td>
<td>25</td>
<td>8-13</td>
</tr>
<tr>
<td>Transportation</td>
<td>8</td>
<td>-6</td>
<td>0-5</td>
</tr>
<tr>
<td>Health care</td>
<td>5</td>
<td>2</td>
<td>0-5</td>
</tr>
<tr>
<td>Lodging</td>
<td>30</td>
<td>25</td>
<td>~0</td>
</tr>
<tr>
<td>Sewage &amp; waste disposal</td>
<td>5</td>
<td>-9</td>
<td></td>
</tr>
<tr>
<td>Other--amusement; communication; religious; public safety; conservation; water: 6% of total</td>
<td>9</td>
<td></td>
<td>-1</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau construction spending report; Author’s forecast
Construction spending: industrial, heavy
annual total, 2008-13; monthly, SAAR, 1/14-12/16; billion $

Power (91% private in 2016)

- Electric
- Oil & Gas

Dec. '15-Dec. '16 change: 0% (oil & gas -20%; electric 7%)

Manufacturing (99% private)

- Chemical
- Other

Dec. '15-Dec. '16 change: -6% (chemical -5%; other -7%)

Amusement & recreation (54% private)

- Public
- Private

Dec. '15-Dec. '16 change: 13% (private 25%; public 0%)

Communication (99% private)

Dec. '15-Dec. '16 change: 3%

Source: U.S. Census Bureau construction spending report
Key points: power, manufacturing, recreation

- Solar, wind power are growing again; expect more gas-fired plants, natural gas pipelines into ‘18
- Mfg decline led by completion or delay of chemical plants (fertilizer, ethane crackers, petrochemicals, LNG) and transportation equipment (cars, trucks, jets, railcars)
- Amusement & recreation spending is very “lumpy”—a few big stadiums at irregular intervals; but funding for local, state, federal parks keeps eroding

Source: Author
Construction spending: public works
annual total, 2008-13; monthly, SAAR, 1/14-12/16; billion $

Highways (99.7% public in 2016)
Dec. '15-Dec. '16 change: 1%

Sewage/waste (98% public)
Dec. '15-Dec. '16 change: -18%

Transportation facilities (71% public)
Dec. '15-Dec. '16 change: -6% (private -9%; public -5%)

Water supply (99% public)
Dec. '15-Dec. '16 change: 0%

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

• Highway funds benefit from more travel, hence fuel purchases; gradual pick-up in state funding & P3s; higher federal funding unlikely before ‘18
• Railroads slashing investment; pickup in airport projects but no increase likely in port, transit construction funding
• Eastern & Midwestern cities under orders to make long-term upgrades to sewer systems that should boost spending; water utilities hurt by drought, conservation but may get money for lead abatement

Source: Author
Construction spending: education, health care
annual total, 2008-13; monthly, SAAR, 1/14-12/16; billion $

**Education:** state/local K-12, S/L higher; private

Dec. '15-Dec. '16 change: 5% (state/local preK-12 6%; state/local higher ed -5%; private 19%)

**Health care:** (private hospital, S/L hospital, other)

Dec. '15-Dec. '16 change: 7% (private hospital 13%; S/L hospital -19%; other: special care, med. office, federal 8%)

Source: U.S. Census Bureau construction spending report
Key points: education & health care

• Bond issues passed in 2014-16 should boost preK-12 projects in 2017
• Higher-ed enrollment declined 21% from 2011 to 2016, so colleges need fewer dorms & classrooms; apts. (multifamily) replacing dorms (educational construction)
• Hospitals face more competition from standalone urgent care, outpatient surgery, clinics in stores; also, renewed uncertainty about utilization and reimbursement rates if Affordable Care Act is repealed/modified/replaced
Construction spending: developer-financed
annual total, 2008-13; monthly, SAAR, 1/14-12/16; 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 standalone stores or shopping centers
• Warehouse market still benefiting from e-commerce; more local than huge regional distribution centers likely in future
• Record employment each month but office space per employee keeps shrinking; more urban & renovation work than suburban office parks
• Hotel construction likely to drop as revenue per available room slows
• Data centers remain a strong niche but no data available on how strong

Source: Author
Private residential spending: MF continues to outpace SF


Multifamily (MF)
(Nov. ’16: $64 B)

Single-family (SF)
(Nov. ’16: $250 B)

Improvements
(Nov. ’16: $153 B)

12-month % change: Jan. 2011 (-5.3%)-Dec. 2016 (3.7%)

Multifamily: 11.7%
Improvements: 6.6%
Total: 3.7%
Single-family: 0.3%

Source: U.S. Census Bureau construction spending reports
Private residential spending
2016: 5%; 2017 forecast: 5-10%

• SF: 4% in 2016, **6-11% in 2017**; ongoing job gains add to demand; but student debt and other credit impairments, limited supply will limit growth
  - occupancy rates, rents have leveled off or dipped in some markets
  - millennials are staying longer in cities, denser suburbs where MF construction is bigger share of market than in outer suburbs
  - nearly all MF construction is rental, not condo

• MF: 16% in 2016, **5-10% in 2017**; growth slowing but should last till 2018
  - occupancy rates, rents have leveled off or dipped in some markets
  - millennials are staying longer in cities, denser suburbs where MF construction is bigger share of market than in outer suburbs
  - nearly all MF construction is rental, not condo

• Improvements: 3% in 2016, **0-10% in 2017**; Census data is not reliable and shows only a loose relationship to SF spending
Population change by state, July 2015-July 2016 (U.S.: 0.70%)
State construction employment change (U.S.: 1.5%) 
12/15 to 12/16: 32 states up, 18 + DC down

Shading based on unrounded numbers

Source: BLS state and regional employment report
Construction Employment Change from Year Ago
1/08-12/16 (not seasonally adjusted)

Source: BLS
## Change in construction employment, 12/15-12/16

<table>
<thead>
<tr>
<th>Metro area or division</th>
<th>12-mo. empl. change (NSA)</th>
<th>Rank (out of 339)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statewide (Construction only)</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Statewide* (Const/mining/logging)</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Bellingham*</td>
<td>-5%</td>
<td>314</td>
</tr>
<tr>
<td>Bremerton-Silverdale*</td>
<td>-2%</td>
<td>267</td>
</tr>
<tr>
<td>Kennewick-Pasco-Richland*</td>
<td>0%</td>
<td>184</td>
</tr>
<tr>
<td>Longview*</td>
<td>0%</td>
<td>184</td>
</tr>
<tr>
<td>Mount Vernon-Anacortes*</td>
<td>0%</td>
<td>184</td>
</tr>
<tr>
<td>Olympia*</td>
<td>8%</td>
<td>26</td>
</tr>
<tr>
<td>Seattle-Bellevue-Everett, Div.</td>
<td>7%</td>
<td>33</td>
</tr>
<tr>
<td>Spokane*</td>
<td>6%</td>
<td>42</td>
</tr>
<tr>
<td>Tacoma, Div.</td>
<td>4%</td>
<td>70</td>
</tr>
<tr>
<td>Walla Walla*</td>
<td>0%</td>
<td>184</td>
</tr>
<tr>
<td>Wenatchee-East Wenatchee*</td>
<td>0%</td>
<td>184</td>
</tr>
<tr>
<td>Yakima*</td>
<td>3%</td>
<td>95</td>
</tr>
<tr>
<td>Lewiston, ID-WA</td>
<td>9%</td>
<td>20</td>
</tr>
<tr>
<td>Portland-Vancouver-Hillsboro, OR-WA</td>
<td>12%</td>
<td>8</td>
</tr>
</tbody>
</table>

*The Bureau of Labor Statistics reports employment for construction, mining and logging combined for metro areas in which mining and logging have few employers. To allow comparisons between states and their metros, the table shows combined employment change for these metros. Not seasonally adjusted statewide data is shown for both construction-only and combined employment change.

Source: AGC rankings, calculated from BLS state and area employment reports.
Construction employment change by WA metro, 12/15-12/16

Source: BLS state and regional employment report
Metro construction employment change

12/15 to 12/16: 183 metros up (51%), 65 unchanged, 109 + DC down (31%)
Hardest positions to fill

% of respondents who are having trouble filling

- All hourly craft positions: 69%
- Carpenters: 60%
- Electricians: 53%
- Plumbers, roofers: 50%
- Concrete workers: 49%
- Salaried field/office positions: 38%/33%
- Project mgrs/supervisors: 50%
- Estimators: 31%
- Engineers: 28%

Source: AGC Member Survey, August 2016
How contractors are coping with worker shortages

- Raising base pay: 43% (Hourly), 48% (Salaried)
- Providing incentives/bonuses: 20% (Hourly), 27% (Salaried)
- Increasing contributions/benefits: 22% (Hourly), 21% (Salaried)
- In-house training: 48%
- Overtime hours: 47%
- Subcontractors: 39%
- Engage w/ career-building prog.: 37%
- Staffing company: 24%
- Labor-saving equip., tools, mach.: 21%
- Unions: 18%
- Lean construction: 15%
- Offsite prefabrication: 13%
- Building information modeling (BIM): 7%
Construction workforce indicators (not seasonally adjusted)

**Construction hires, Dec. 2001-Dec. 2016**


**Avg. hourly earnings, 12-month % change, Dec. 2001-Dec. 2016**

Source: Bureau of Labor Statistics
Producer price indexes for key inputs, 1/11-1/17 (Jan. 2011=100)

- **Diesel fuel**: Latest 1-mo. change: 2.2%, 12-mo.: 35%
- **Steel mill products**: Latest 1-mo. change: 1.6%, 12-mo.: 11%
- **Copper & brass mill shapes**: Latest 1-mo. change: -1.1%, 12-mo.: 20%
- **Aluminum mill shapes**: Latest 1-mo. change: 0.9%, 12-mo.: 5%
Producer price indexes for key inputs, 1/11-1/17 (Jan. 2011=100)

- **Gypsum products**: Latest 1-mo. change: 0.8%, 12-mo.: 3%
- **Paving mixtures**: Latest 1-mo. change: 7.5%, 12-mo.: -1%
- **Flat glass**: Latest 1-mo. change: 0.2%, 12-mo.: 2%
- **Concrete products**: Latest 1-mo. change: 0.4%, 12-mo.: 3%

Source: Bureau of Labor Statistics
## 2015-16 summary, 2017 forecast

<table>
<thead>
<tr>
<th></th>
<th>2015 actual</th>
<th>2016 actual</th>
<th>2017 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total spending</td>
<td>11%</td>
<td>4%</td>
<td>2-7%</td>
</tr>
<tr>
<td>Private – residential</td>
<td>17%</td>
<td>5%</td>
<td>5-10%</td>
</tr>
<tr>
<td>– nonresidential</td>
<td>8%</td>
<td>8%</td>
<td>2-7%</td>
</tr>
<tr>
<td>Public</td>
<td>5%</td>
<td>-1%</td>
<td>0-3%</td>
</tr>
<tr>
<td>Goods &amp; serv. inputs PPI</td>
<td>-2%</td>
<td>2%</td>
<td>2-4%</td>
</tr>
<tr>
<td>Employment cost index</td>
<td>2.2%</td>
<td>2.2%</td>
<td>3-4%</td>
</tr>
</tbody>
</table>

Source: actuals: Census, BLS; forecasts: Author’s estimates
AGC economic resources
(email simonsonk@agc.org)

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

• monthly press releases: spending; PPI; national, state, metro employment

• yearly employment & outlook surveys, state and metro data, fact sheets: www.agc.org/learn/construction-data