Meanwhile, businesses and individuals who would have built cancel or defer projects that they can’t afford/don’t need; public $ is reallocated. Possible storm/flood impacts on construction:

- Immediate demand for plywood, wallboard, laborers, trucks
- Increased demand for new single- and multifamily housing; reconstruction of commercial, public buildings, infrastructure
- But most rebuilding will take years to get funding, design, regulatory approvals
- Meanwhile, businesses and individuals who would have built cancel or defer projects that they can’t afford/don’t need; public $ is reallocated
- Net: selectively higher materials, labor costs; little change in spending
Key points: power & energy, mfg, amusement & recreation
- Solar, wind power are growing again; expect more gas-fired plants, natural gas pipelines into ‘18
- Manufacturing construction recovery in ‘18 depends on policy impacts, especially trade and tax
- Amusement & recreation spending is very “lumpy”—a few big stadiums at irregular intervals; but funding for local, state, federal parks keeps eroding

Key points: roads, transportation, sewer/water
- State highway funding and P3s gradually increasing but federal funding likely to be flat through 2018
- Many new and ongoing airport projects but no net increase likely in public funding for port, passenger rail or transit construction
- Huge declines in water & sewer spending in 2017: hard to explain and unlikely to be repeated

Key points: education & health care
- Rising house & commercial property values are supporting school district tax receipts & bond issues for preK-12 projects
- Higher-ed enrollment declined 21% from 2011 to 2016, so colleges need fewer dorms & classrooms; apts. (multifamily) replacing dorms (educational construction)
- Rising stock prices help private school & college capital campaigns
- Health care spending is shifting from hospitals to special care facilities (standalone urgent care, surgery, rehab, hospices)
Key points: retail, warehouse, office, hotel, data centers

- Retail now tied to mixed-use buildings & renovations, not standalone stores or shopping centers; massive store closings imply downturn in ’18
- Warehouse growth is still benefiting from e-commerce; more local than huge regional distribution centers likely in future; self-storage is booming
- Office growth is slowing; employment still rising but space per worker is shrinking; more urban & renovation work than suburban office parks
- Hotel: more competition from Airbnb; fewer foreign visitors?
- Data centers remain a strong niche but no data available on how strong

Private residential spending forecast—2017: 7-9%; 2018: 6-9%

- SF: 8-10% in 2017 & 2018; ongoing job gains add to demand; but student debt and other credit impairments, limited supply of lots and labor will limit growth
- MF: 3-5% in 2017; near 0 in 2018
  - occupancy rates, rents have leveled off; starts, permits are down from 2016
  - millennials are staying longer in cities and denser suburbs where MF construction is bigger share of market than in outer suburbs
  - nearly all MF construction is rental, not condo; more high-rises
- Improvements: 15-20% in 2017 & 2018, unpredictable because Census lacks reliable data source; post-storm reconstruction may boost totals

Hardest positions to fill

<table>
<thead>
<tr>
<th>% of respondents who are having trouble filling</th>
</tr>
</thead>
<tbody>
<tr>
<td>All hourly craft positions</td>
</tr>
<tr>
<td>39%</td>
</tr>
<tr>
<td>Project mgr/supervisors</td>
</tr>
<tr>
<td>60%</td>
</tr>
</tbody>
</table>
How contractors are coping with worker shortages

- Increasing contributions/benefits 20%
- Providing incentives/bonuses 24%
- Raising base pay 50%
- Hourly workers 19%

Construction workforce indicators (not seasonally adjusted)

- Unemployment, Aug. 2001-Aug. 2017
- Job openings, Aug. 2001-Aug. 2017

Source: Bureau of Labor Statistics

Producer price indexes for key inputs, 1/15-9/17 (Jan. 2015=100)

- Diesel fuel
- Steel mill products
- Copper & brass mill shapes
- Aluminum mill shapes
- Gypsum products

Source: Bureau of Labor Statistics

Change in costs for buildings, material inputs and wages

- 12-month % change, not seasonally adjusted: Jan. 2015 - Sep. 2017

Source: Bureau of Labor Statistics

2016 summary, 2017-18 forecast

- Total spending
- Private – residential
- Public
- Goods & services inputs PPI
- Employment cost index

Source: actuals: Census, BLS; forecasts: Author's estimates

Change in costs for buildings, material inputs and wages

- 12-month % change

Source: Bureau of Labor Statistics
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