2020 Construction Outlook Survey Results
National Results

Total Responses: 956. Responses varied for some questions. Percentages are based on responses to each question and may not sum to 100 due to rounding.

1. Compared to 2019, do you expect the available dollar value of projects you compete for in 2020 to be (answer for all market areas in which your business operates):

<table>
<thead>
<tr>
<th>Markets</th>
<th>Higher</th>
<th>Lower</th>
<th>Same</th>
<th>Net*</th>
<th>2019 Net*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water/Sewer</td>
<td>36%</td>
<td>11%</td>
<td>53%</td>
<td>25%</td>
<td>14%</td>
</tr>
<tr>
<td>Bridge/Highway</td>
<td>36%</td>
<td>15%</td>
<td>49%</td>
<td>20%</td>
<td>16%</td>
</tr>
<tr>
<td>K-12 School</td>
<td>35%</td>
<td>15%</td>
<td>51%</td>
<td>20%</td>
<td>16%</td>
</tr>
<tr>
<td>Hospital</td>
<td>34%</td>
<td>14%</td>
<td>52%</td>
<td>20%</td>
<td>16%</td>
</tr>
<tr>
<td>Transportation (e.g., transit, rail, airport)</td>
<td>33%</td>
<td>14%</td>
<td>53%</td>
<td>20%</td>
<td>14%</td>
</tr>
<tr>
<td>Power</td>
<td>29%</td>
<td>12%</td>
<td>59%</td>
<td>17%</td>
<td>10%</td>
</tr>
<tr>
<td>Federal (e.g., VA, GSA, USACE, NAVFAC)</td>
<td>30%</td>
<td>13%</td>
<td>56%</td>
<td>17%</td>
<td>15%</td>
</tr>
<tr>
<td>Higher Education</td>
<td>30%</td>
<td>14%</td>
<td>55%</td>
<td>16%</td>
<td>11%</td>
</tr>
<tr>
<td>Multifamily Residential</td>
<td>33%</td>
<td>21%</td>
<td>46%</td>
<td>11%</td>
<td>5%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>28%</td>
<td>17%</td>
<td>55%</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td>Public Building</td>
<td>28%</td>
<td>18%</td>
<td>54%</td>
<td>10%</td>
<td>17%</td>
</tr>
<tr>
<td>Retail, Warehouse, Lodging</td>
<td>28%</td>
<td>18%</td>
<td>53%</td>
<td>10%</td>
<td>15%</td>
</tr>
<tr>
<td>Private Office</td>
<td>27%</td>
<td>19%</td>
<td>53%</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>Other</td>
<td>27%</td>
<td>10%</td>
<td>63%</td>
<td>17%</td>
<td>21%</td>
</tr>
</tbody>
</table>

*Net equals difference between number of “Higher” and “Lower” responses as percent of total.

2. What numerical change do you expect in your headcount in 2020?

3. What percentage change do you expect in your headcount in 2020?
4. How would you describe your current situation in filling salaried and hourly craft positions?

- We are having a hard time filling some or all positions: 81%
- We are having no difficulty filling any positions: 8%
- We have no openings for positions: 11%

5. Do you expect any changes in the availability of hourly craft or salaried personnel over the coming 12 months?

- It will continue to be hard to hire: 43%
- It will become harder to hire: 22%
- No change: 30%
- It will become easier to hire: 3%
- It will continue to be easy to hire: 1%

6. Did your firm increase pay or benefits for salaried or hourly craft personnel in 2019 because of difficulty filling positions? (mark all that apply)

- Yes, our firm increased base pay rates more in 2019 than in 2018: 54%
- Yes, our firm provided similar or smaller increases in 2019 than in 2018: 19%
- Yes, our firm provided incentives/bonuses: 23%
- Yes, our firm increased our portion of benefit contributions and/or improved employee benefits: 14%
- No, not at this time: 19%
- We did not seek to fill any positions: 3%
7. If your firm is experiencing staffing challenges, how would you describe the impact on your projects? (mark all that apply)

- Costs have been higher than we anticipated: 44%
- We have put higher prices into our bids or contracts: 41%
- Projects have taken longer than we anticipated: 40%
- We have put longer completion times into our bids or contracts: 23%
- Completion times or costs have been lower than we anticipated: 2%
- No impact: 17%
- Other (please specify): 0%

8. In the last year, what has your firm done to invest in the training and development of skilled labor/qualified workers?

- Revamped initiatives to recruit labor: 42%
- Increased funding or money allocated to technical education: 32%
- Restructured or changed programming for current skilled labor recruits: 29%
- We have not done anything: 25%
- Other (please specify): 9%

9. Has your firm adopted or increased use of the following to replace workers or skills? (mark all that apply)

- 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%
- No changes: 51%
10. What are your biggest concerns for 2020 (mark all that apply)?

<table>
<thead>
<tr>
<th>Concern</th>
<th>Major Challenge</th>
<th>Minor Challenge</th>
<th>No Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker quality</td>
<td>75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worker shortages</td>
<td>72%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rising direct labor costs (pay, benefits, employer taxes)</td>
<td>57%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subcontractor availability or quality</td>
<td>44%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td>39%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased competition for projects</td>
<td>35%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate construction career education and training</td>
<td>33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials costs</td>
<td>31%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other costs (e.g., trucking, insurance, services)</td>
<td>27%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State and local regulations</td>
<td>26%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate funding for infrastructure</td>
<td>22%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact of trade policy on materials cost, availability or on...</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal regulations</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact of immigration policy on labor supply</td>
<td>18%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not enough private sector work</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate funding for public building projects</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relations with owners, subs and/or vendors</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. What challenges, if any, do you see regarding the safety and health of your firm’s workers? (mark all that apply)

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Major Challenge</th>
<th>Minor Challenge</th>
<th>No Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inexperienced skilled labor/workforce shortage</td>
<td>57%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor subcontractor safety and health performance</td>
<td></td>
<td>45%</td>
<td>32%</td>
</tr>
<tr>
<td>Safety hazards created by 3rd parties (e.g. motorist crashes into work zones)</td>
<td>22%</td>
<td></td>
<td>38%</td>
</tr>
<tr>
<td>Lack of cooperation from government agencies or regulators</td>
<td></td>
<td></td>
<td>39%</td>
</tr>
<tr>
<td>Low quality of available safety and health training</td>
<td></td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td>77%</td>
</tr>
</tbody>
</table>

Legend: □ Major challenge  △ Minor challenge  □ No challenge
12. What change do you expect in 2020 in the number of your firm’s projects that involve Building Information Modeling (BIM)?

- Increase: 18%
- Stay the same (+ or -10%): 39%
- Decrease: 0%
- We do not expect to use BIM: 42%

13. What is your firm using BIM for? (mark all that apply)

- Clash detection: 25%
- Constructability input into the design process: 21%
- Construction means and methods: 19%
- Visually communicate project scope to clients: 18%
- Design of 3D model: 16%
- 3D model-based takeoff for cost estimating: 15%
- Scheduling and workforce planning: 13%
- Safety (identify safety issues, safety by design, safety training, etc.): 7%
- We do not use BIM: 61%

14. Does your firm use any of the following to collaborate with project partners? (mark all that apply)

- File-sharing sites such as Dropbox: 70%
- Online project collaboration software: 47%
- BIM: 27%
- None: 15%
- Home-grown project web site: 14%
- Don't know: 6%
- Other (please specify): 3%
15. What business or IT functions does your firm outsource or plan to outsource to a technology provider? (mark all that apply)

- Backup and disaster recovery
- Voice over IP (phone service over the internet)
- Desktop (light maintenance)
- Network management
- Payroll
- Subcontractor insurance processing
- Lien waiver processing
- Accounts payable automation
- Prequalification
- Inventory
- Accounts receivable payment automation
- Other business or IT functions
- Our firm doesn’t currently outsource or plan to outsource any business or IT functions

16. Approximately what percent of your firm’s gross annual revenue is spent on IT?

- Less than 1%
- 1 to 1.9%
- 2 to 2.9%
- 3% or more
- Don’t know
17. Compared to 2019, how will your firm’s 2020 investment in IT change?

![Bar chart showing the distribution of investment changes: Increase 46%, Stay the same 44%, Decrease 2%, Don’t know 9%]

18. Compared to 2019, how will your firm’s 2020 investment in the following technologies change? (mark all that apply)

<table>
<thead>
<tr>
<th>Technologies</th>
<th>Increase</th>
<th>Stay the same</th>
<th>Decrease</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project management software</td>
<td>30%</td>
<td>57%</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td>Document management software</td>
<td>25%</td>
<td>64%</td>
<td>0%</td>
<td>11%</td>
</tr>
<tr>
<td>Fleet tracking/management software</td>
<td>23%</td>
<td>58%</td>
<td>2%</td>
<td>17%</td>
</tr>
<tr>
<td>Estimating software</td>
<td>22%</td>
<td>70%</td>
<td>0%</td>
<td>8%</td>
</tr>
<tr>
<td>Tool/asset management/tracking</td>
<td>21%</td>
<td>61%</td>
<td>1%</td>
<td>16%</td>
</tr>
<tr>
<td>Human resources (HR) software</td>
<td>20%</td>
<td>63%</td>
<td>1%</td>
<td>16%</td>
</tr>
<tr>
<td>Project collaboration software</td>
<td>20%</td>
<td>62%</td>
<td>0%</td>
<td>17%</td>
</tr>
<tr>
<td>Accounting software</td>
<td>20%</td>
<td>74%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>Scheduling software</td>
<td>19%</td>
<td>71%</td>
<td>1%</td>
<td>9%</td>
</tr>
<tr>
<td>Building Information Modeling (BIM)</td>
<td>17%</td>
<td>49%</td>
<td>0%</td>
<td>34%</td>
</tr>
<tr>
<td>Client relationship management (CRM) software</td>
<td>17%</td>
<td>58%</td>
<td>0%</td>
<td>25%</td>
</tr>
<tr>
<td>Payroll software</td>
<td>12%</td>
<td>79%</td>
<td>0%</td>
<td>8%</td>
</tr>
<tr>
<td>Subcontractor bid management/ITB software</td>
<td>10%</td>
<td>71%</td>
<td>0%</td>
<td>19%</td>
</tr>
<tr>
<td>Service management software</td>
<td>7%</td>
<td>66%</td>
<td>1%</td>
<td>26%</td>
</tr>
<tr>
<td>Prequalification software</td>
<td>5%</td>
<td>71%</td>
<td>1%</td>
<td>23%</td>
</tr>
<tr>
<td>Other</td>
<td>14%</td>
<td>59%</td>
<td>2%</td>
<td>25%</td>
</tr>
</tbody>
</table>
19. How does your company plan to use mobile software technology? (mark all that apply)

- Daily field reports: 68%
- Employee time tracking and approval: 61%
- Access to customer and job information from the field: 55%
- Sharing of drawings, photos and documents: 55%
- Access to job cost and project reports from the field: 50%
- Equipment tracking: 41%
- Punch lists: 38%
- RFI/Issue tracking: 36%
- GPS tracking (e.g. fleet tracking): 35%
- Scheduling: 35%
- Submittals and commitments: 34%
- Change management: 26%
- Reports to owners, regulatory compliance reports: 24%
- Building Information Modeling (BIM): 20%
- Estimating: 17%
- Material acceptance at the job site: 13%
- Inventory tracking: 12%
- Processing service work orders in the field: 12%
- No plan to use mobile technology software: 9%
- Processing payments in the field: 5%
- Other (please specify): 1%
- Don't know: 7%

20. Does your firm currently have a mobile security plan in place?

- Yes: 38%
- No: 46%
- Don't know: 17%

21. Does your firm currently have a formal IT plan to support your business objectives?

- Yes: 48%
- No: 34%
- Not yet, but plan to in 2020: 10%
- Don't know: 8%
22. What are your biggest IT challenges? (mark all that apply)

- Time needed to implement and train on new technology: 43%
- Employee resistance to technology: 38%
- Communication between field and office: 36%
- Connectivity to remote job sites: 35%
- Integration between software used inside of our company: 28%
- Keeping software current: 28%
- Keeping company data secure from hackers: 26%
- Keeping hardware current: 25%
- Integration with software used by project partners outside our company: 20%
- Outdated company software and systems: 14%
- Management resistance to technology: 9%
- None: 6%
- Other (please specify): 2%
- Don't know: 8%

23. Does your firm use cloud-hosted technology in any of the following ways (mark all that apply)?

- Project management: 49%
- Field operations: 37%
- Time tracking: 32%
- Accounting: 31%
- Tool management: 11%
- Other (please specify): 5%
- We do not use the cloud: 26%

24. What best describes your firm?

- General contractor/construction manager: 54%
- Specialty or sub-contractor: 35%
- Supplier/service provider: 6%
- Architect/engineer/designer: 1%
- Owner/developer: 1%
- Other (please specify): 4%
25. When you self-perform construction work, do you operate as a union contractor or an open-shop contractor?

- We always operate as a union contractor: 24%
- We primarily operate as a union contractor but not always: 7%
- We primarily operate as an open-shop contractor but not always: 6%
- We always operate as an open-shop contractor: 54%
- We do not self-perform or directly hire craft personnel: 8%

26. Estimate the total dollar amount of work your firm performed in 2019:

- Under $50 million: 62%
- $50.1 million - $100 million: 14%
- $100.1 million - $500 million: 18%
- Over $500 million: 6%

27. How many total employees does your firm employ at all of its locations?

- 1-19: 15%
- 20-99: 42%
- 100-499: 30%
- 500 or more: 13%