**2020 Construction Outlook Survey Results**

**Union**

*Total Responses: 186 (out of 956 total). 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>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>33%</td>
<td>13%</td>
<td>54%</td>
<td>20%</td>
</tr>
<tr>
<td>Water/Sewer</td>
<td>29%</td>
<td>14%</td>
<td>57%</td>
<td>15%</td>
</tr>
<tr>
<td>Transportation (e.g., transit, rail, airport)</td>
<td>31%</td>
<td>16%</td>
<td>53%</td>
<td>15%</td>
</tr>
<tr>
<td>Bridge/Highway</td>
<td>32%</td>
<td>17%</td>
<td>51%</td>
<td>14%</td>
</tr>
<tr>
<td>Hospital</td>
<td>32%</td>
<td>20%</td>
<td>48%</td>
<td>12%</td>
</tr>
<tr>
<td>Higher Education</td>
<td>33%</td>
<td>21%</td>
<td>47%</td>
<td>12%</td>
</tr>
<tr>
<td>K-12 School</td>
<td>33%</td>
<td>24%</td>
<td>43%</td>
<td>9%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>24%</td>
<td>19%</td>
<td>57%</td>
<td>5%</td>
</tr>
<tr>
<td>Public Building</td>
<td>26%</td>
<td>23%</td>
<td>51%</td>
<td>3%</td>
</tr>
<tr>
<td>Federal (e.g., VA, GSA, USACE, NAVFAC)</td>
<td>17%</td>
<td>20%</td>
<td>63%</td>
<td>-3%</td>
</tr>
<tr>
<td>Multifamily Residential</td>
<td>24%</td>
<td>28%</td>
<td>48%</td>
<td>-5%</td>
</tr>
<tr>
<td>Private Office</td>
<td>19%</td>
<td>28%</td>
<td>53%</td>
<td>-8%</td>
</tr>
<tr>
<td>Retail, Warehouse, Lodging</td>
<td>14%</td>
<td>26%</td>
<td>59%</td>
<td>-12%</td>
</tr>
<tr>
<td>Other</td>
<td>11%</td>
<td>14%</td>
<td>75%</td>
<td>-4%</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: 75%
- We are having no difficulty filling any positions: 11%
- We have no openings for positions: 14%

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: 39%
- It will become harder to hire: 26%
- No change: 32%
- It will become easier to hire: 2%
- 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: 34%
- Yes, our firm provided similar or smaller increases in 2019 than in 2018: 22%
- Yes, our firm provided incentives/bonuses: 18%
- Yes, our firm increased our portion of benefit contributions and/or improved employee benefits: 8%
- No, not at this time: 33%
- We did not seek to fill any positions: 2%
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: 46%
- We have put higher prices into our bids or contracts: 35%
- Projects have taken longer than we anticipated: 28%
- We have put longer completion times into our bids or contracts: 12%
- Completion times or costs have been lower than we anticipated: 1%
- No impact: 25%
- Other (please specify): 10%

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: 38%
- Increased funding or money allocated to technical education: 32%
- Restructured or changed programming for current skilled labor recruits: 26%
- We have not done anything: 29%
- Other (please specify): 14%

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): 31%
- Methods to reduce onsite worktime (e.g., lean construction, virtual construction such as BIM, offsite fabrication): 30%
- Added specialists (e.g., architects, BIM or lean construction personnel, drone or other equipment operators, data or IT personnel): 19%
- No changes: 50%
10. What are your biggest concerns for 2020 (mark all that apply)?

- Worker quality: 80%
- Worker shortages: 68%
- Rising direct labor costs (pay, benefits, employer taxes): 54%
- Safety: 46%
- Subcontractor availability or quality: 45%
- Increased competition for projects: 39%
- State and local regulations: 33%
- Materials costs: 33%
- Inadequate construction career education and training: 29%
- Impact of trade policy on materials cost, availability or on...: 23%
- Inadequate funding for infrastructure: 23%
- Other costs (e.g., trucking, insurance, services): 23%
- Not enough private sector work: 22%
- Federal regulations: 19%
- Relations with owners, subs and/or vendors: 13%
- Inadequate funding for public building projects: 12%
- Impact of immigration policy on labor supply: 10%
- Other (please specify): 3%

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

- Inexperienced skilled labor/workforce shortage: 58%
- Lack of cooperation from government agencies or regulators: 22%
- Safety hazards created by 3rd parties (e.g. motorist crashes into work zones): 20%
- Poor subcontractor safety and health performance: 20%
- Low quality of available safety and health training: 5%
- Other: 58%

- 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: 20%
- Stay the same (+ or -10%): 43%
- Decrease: 1%
- We do not expect to use BIM: 37%

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

- Clash detection: 33%
- Constructability input into the design process: 24%
- Construction means and methods: 24%
- Visually communicate project scope to clients: 20%
- Design of 3D model: 19%
- 3D model-based takeoff for cost estimating: 18%
- Scheduling and workforce planning: 16%
- Safety (identify safety issues, safety by design, safety training, etc.): 7%
- We do not use BIM: 50%

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

- File-sharing sites such as Dropbox: 75%
- Online project collaboration software: 57%
- BIM: 35%
- Home-grown project web site: 14%
- None: 13%
- Other (please specify): 2%
- Don’t know: 2%
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: 49% (Currently outsource), 5% (Plan to outsource)
- Voice over IP (phone service over the internet): 40% (Currently outsource), 2% (Plan to outsource)
- Network management: 37% (Currently outsource), 1% (Plan to outsource)
- Desktop (light maintenance): 36% (Currently outsource), 0% (Plan to outsource)
- Payroll: 14% (Currently outsource), 3% (Plan to outsource)
- Lien waiver processing: 6% (Currently outsource), 0% (Plan to outsource)
- Prequalification: 5% (Currently outsource), 1% (Plan to outsource)
- Accounts payable automation: 4% (Currently outsource), 1% (Plan to outsource)
- Subcontractor insurance processing: 4% (Currently outsource), 1% (Plan to outsource)
- Accounts receivable payment automation: 2% (Currently outsource), 1% (Plan to outsource)
- Inventory: 2% (Currently outsource), 0% (Plan to outsource)
- Other business or IT functions: 31% (Currently outsource), 1% (Plan to outsource)
- Our firm doesn’t currently outsource or plan to outsource any business or IT functions: 13% (Currently outsource), 2% (Plan to outsource)

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

- Less than 1%: 39% (Currently outsource)
- 1 to 1.9%: 25% (Currently outsource)
- 2 to 2.9%: 12% (Currently outsource)
- 3% or more: 6% (Currently outsource)
- Don’t know: 17% (Currently outsource)
17. Compared to 2019, how will your firm’s 2020 investment in IT change?

- Increase: 51%
- Stay the same: 39%
- Decrease: 9%
- Don't know: 2%

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>35%</td>
<td>54%</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td>Document management software</td>
<td>30%</td>
<td>58%</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td>Fleet tracking/management software</td>
<td>29%</td>
<td>50%</td>
<td>1%</td>
<td>20%</td>
</tr>
<tr>
<td>Tool/asset management/tracking</td>
<td>28%</td>
<td>55%</td>
<td>1%</td>
<td>16%</td>
</tr>
<tr>
<td>Project collaboration software</td>
<td>25%</td>
<td>59%</td>
<td>1%</td>
<td>15%</td>
</tr>
<tr>
<td>Building Information Modeling (BIM)</td>
<td>23%</td>
<td>51%</td>
<td>1%</td>
<td>25%</td>
</tr>
<tr>
<td>Human resources (HR) software</td>
<td>22%</td>
<td>60%</td>
<td>1%</td>
<td>17%</td>
</tr>
<tr>
<td>Estimating software</td>
<td>21%</td>
<td>70%</td>
<td>1%</td>
<td>9%</td>
</tr>
<tr>
<td>Accounting software</td>
<td>19%</td>
<td>77%</td>
<td>1%</td>
<td>4%</td>
</tr>
<tr>
<td>Scheduling software</td>
<td>18%</td>
<td>72%</td>
<td>1%</td>
<td>9%</td>
</tr>
<tr>
<td>Client relationship management (CRM) software</td>
<td>16%</td>
<td>58%</td>
<td>1%</td>
<td>26%</td>
</tr>
<tr>
<td>Payroll software</td>
<td>11%</td>
<td>78%</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td>Subcontractor bid management/ITB software</td>
<td>9%</td>
<td>72%</td>
<td>0%</td>
<td>19%</td>
</tr>
<tr>
<td>Prequalification software</td>
<td>6%</td>
<td>70%</td>
<td>2%</td>
<td>23%</td>
</tr>
<tr>
<td>Service management software</td>
<td>3%</td>
<td>67%</td>
<td>0%</td>
<td>29%</td>
</tr>
<tr>
<td>Other</td>
<td>8%</td>
<td>69%</td>
<td>0%</td>
<td>23%</td>
</tr>
</tbody>
</table>
19. How does your company plan to use mobile software technology? (mark all that apply)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily field reports</td>
<td>77%</td>
</tr>
<tr>
<td>Employee time tracking and approval</td>
<td>71%</td>
</tr>
<tr>
<td>Sharing of drawings, photos and documents</td>
<td>64%</td>
</tr>
<tr>
<td>Access to job cost and project reports from the field</td>
<td>59%</td>
</tr>
<tr>
<td>Access to customer and job information from the field</td>
<td>54%</td>
</tr>
<tr>
<td>Equipment tracking</td>
<td>49%</td>
</tr>
<tr>
<td>RFI/Issue tracking</td>
<td>46%</td>
</tr>
<tr>
<td>Punch lists</td>
<td>45%</td>
</tr>
<tr>
<td>Submittals and commitments</td>
<td>40%</td>
</tr>
<tr>
<td>Change management</td>
<td>38%</td>
</tr>
<tr>
<td>GPS tracking (e.g. fleet tracking)</td>
<td>35%</td>
</tr>
<tr>
<td>Scheduling</td>
<td>33%</td>
</tr>
<tr>
<td>Reports to owners, regulatory compliance reports</td>
<td>26%</td>
</tr>
<tr>
<td>Building Information Modeling (BIM)</td>
<td>23%</td>
</tr>
<tr>
<td>Material acceptance at the job site</td>
<td>16%</td>
</tr>
<tr>
<td>Inventory tracking</td>
<td>14%</td>
</tr>
<tr>
<td>Processing service work orders in the field</td>
<td>13%</td>
</tr>
<tr>
<td>Estimating</td>
<td>13%</td>
</tr>
<tr>
<td>Processing payments in the field</td>
<td>4%</td>
</tr>
<tr>
<td>No plan to use mobile technology software</td>
<td>7%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>1%</td>
</tr>
<tr>
<td>Don't know</td>
<td>3%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>41%</td>
</tr>
<tr>
<td>No</td>
<td>45%</td>
</tr>
<tr>
<td>Don't know</td>
<td>14%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>45%</td>
</tr>
<tr>
<td>No</td>
<td>35%</td>
</tr>
<tr>
<td>Not yet, but plan to in 2020</td>
<td>12%</td>
</tr>
<tr>
<td>Don't know</td>
<td>8%</td>
</tr>
</tbody>
</table>
22. What are your biggest IT challenges? (mark all that apply)

- Time needed to implement and train on new technology: 45%
- Communication between field and office: 44%
- Employee resistance to technology: 39%
- Connectivity to remote job sites: 38%
- Integration between software used inside of our company: 28%
- Keeping software current: 28%
- Keeping company data secure from hackers: 27%
- Keeping hardware current: 27%
- Integration with software used by project partners outside our company: 26%
- Outdated company software and systems: 15%
- Management resistance to technology: 9%
- None: 3%
- Other (please specify): 2%
- Don't know: 7%

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

- Project management: 56%
- Field operations: 40%
- Time tracking: 37%
- Accounting: 31%
- Tool management: 14%
- Other (please specify): 3%
- We do not use the cloud: 24%

24. What best describes your firm?

- General contractor/construction manager: 53%
- Specialty or sub-contractor: 44%
- Supplier/service provider: 1%
- Architect/engineer/designer: 1%
- Owner/developer: 0%
- Other (please specify): 1%
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: 100%
- We primarily operate as a union contractor but not always: 0%
- We primarily operate as an open-shop contractor but not always: 0%
- We always operate as an open-shop contractor: 0%
- We do not self-perform or directly hire craft personnel: 0%

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

- Under $50 million: 52%
- $50.1 million - $100 million: 20%
- $100.1 million - $500 million: 24%
- Over $500 million: 4%

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

- 1-19: 10%
- 20-99: 42%
- 100-499: 34%
- 500 or more: 14%