

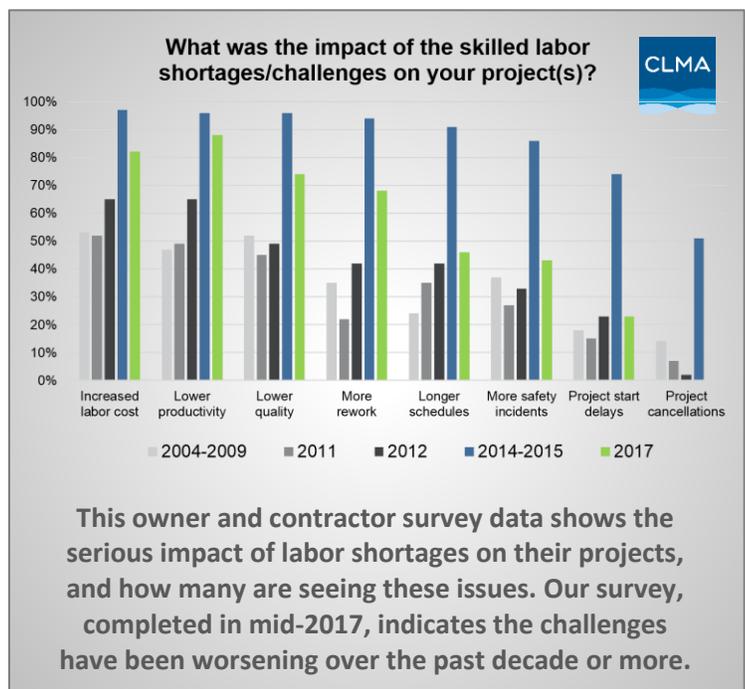


## Leading Indicators Help You Anticipate & Avoid Risk

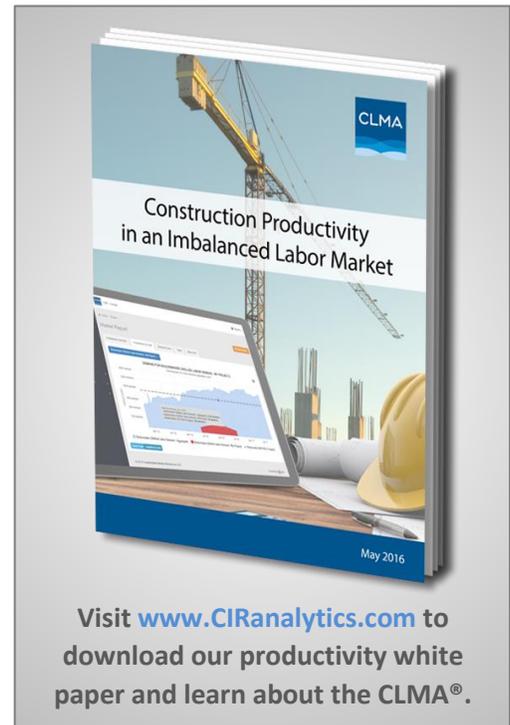
When the experiences of owners and contractors are understood in the real world of construction projects being executed in a skilled labor shortage environment, the data indicates that labor availability, cost, schedule, safety, productivity decline and other risks go hand-in-hand. Unfortunately, the United States appears destined to experience escalating shortages as the labor pipeline continues to empty.

Here we examine very real scenarios for projects ill-prepared and/or expecting severe skilled craft shortages:

1. The project starts with a standard plan for recruiting labor to the project based on current competitive wages and benefits and expecting to use the contractor's normal methods for recruiting workers. Normal communications such as advertisements, emails and texts are used to connect with workers from past projects.
2. As the project team builds up their workforce and start requiring more skilled workers, particularly in the mechanical trades, they find it more difficult to recruit. More workers are not available because they are already committed to their current project. Some will not change jobs because their current projects are paying per diems or working overtime or have bonus incentives in place to retain workers.
3. Eventually, the issue of recruiting workers becomes a more serious project issue and extra advertising and recruiting efforts are put in place. The contractor's corporate resources are involved. The project team starts talking about the need for per diems or expanded per diems, incentive bonuses or even higher wages to attract skilled workers to the project. On union projects, the contractors start meeting with the union leadership about travelers.
4. Meanwhile, on the project, absenteeism and turnover is a growing issue as workers are being recruited to other projects. There is a clear shortage of good foremen, lead craft workers and journeymen to maintain the schedule. Missing workers and turnover reduce the productivity.
5. With fewer skilled workers available, the contractors try to maintain their workforce by accepting foremen and workers with lower skills. Work continues but there are issues with lower productivity, lower quality and more rework and, frequently, more accidents.
6. Eventually the challenge becomes a significant project issue. The contractors formally share their concerns with the owner. Additional data about other projects is collected. They start talking about the need for significant wage increases to compete. Aggressive per diems and incentive bonus plans are implemented to increase worker income.
7. As the work pace declines because of inadequate worker supply and lower productivity, the issue becomes how the project will meet the project completion schedule objective. Increasing the workforce to achieve a faster pace is not possible due to the inability to find workers. Increasing productivity is not possible because the current workforce is insufficiently trained and skilled.



8. Sometimes contractors propose doing work out-of-sequence with a focus on the work where they have adequate skilled labor. This usually leads to lower productivity because the originally planned optimum sequence has now been altered or abandoned.
9. Subcontractors are also impacted by a skilled craft labor shortage. They also have difficulty staffing projects and meeting schedules. Frequently, they have to stop bidding on any new projects because they have limited resources. When that happens, quotes for any new work will be higher than the budget as more subcontractors decline to bid or submit high courtesy bids. In some cases, when staffing risks are too high, subcontractors will only work on time & material contracts.
10. Eventually, extended overtime is proposed to achieve the schedule. Extended overtime increases labor costs with premium overtime payments and data demonstrates also reduces productivity further.
11. Most projects with skilled worker shortages experience higher accident rates. Lower skilled workers, more turnover and extended overtime are all probable causes of increased accidents.
12. Labor cost forecasts continue to increase when the contractor implements higher wages, per diems, incentive bonuses and overtime premiums increasing the cost per hour. On the other hand, more hours are required resulting in lower productivity caused by lower-skilled workers, more rework, extended overtime, more accidents and increased absenteeism and turnover. Ironically, more hours means the project needs more skilled workers than originally expected to complete the project.
13. When project leadership has to focus on the impact of the labor shortage, they are distracted from their normal responsibilities for planning and managing the project. This leads to more daily issues in the field, and the work is not executed at the same level of performance as a normal project.
14. Project morale is now low. Everybody knows the project is behind schedule and exceeding project costs. Quality and safety issues are recognized.
15. If the startup is delayed, then the construction contractor's organization will be kept on the project longer which increases project overhead costs above the original budget.
16. At some point, the extra cost will exceed the contingency allowances for the project and it is no longer possible to achieve the cost and schedule objectives. The owner's project manager is required to request additional project funding and schedule relief.
17. While some projects get cancelled, most projects eventually do complete. By then, the contractor and owner's project management's credibility is damaged.



While this may seem extreme, anyone who has experienced any of these circumstances or this entire scenario can attest to the chaotic environment produced by unexpected risks and low productivity. Yet parts or all of this sad, avoidable scenario occurs regularly on projects during craft labor shortages. It doesn't need to be this way.

The Construction Labor Market Analyzer® (CLMA®) tools and services can help you, as we help many other owners, labor suppliers and stakeholders effectively measure, mitigate and manage project risk and productivity.

The CLMA® can't solve the labor problem, in the same way your Google Maps or Waze application can't guarantee you'll get to your travel destination on time and without problems. But similar to those tools, the CLMA® can help you anticipate problems like the kinds of challenges described above and visualize realistic alternatives. The more effectively informed you are, the more capable you are of choosing the best possible path for your project.

**Let us help you navigate labor risk challenges and execute successful projects.**