

## Infrastructure Study Finds Inefficiencies & Opportunities for Design-Build

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Travelers, the second-largest writer of United States commercial property casualty insurance and the largest writer of surety bonds in North America, has released the findings of a new infrastructure study that followed 224 heavy civil construction projects from 2004 to 2020.

The study reveals glaring inefficiencies across public private partnerships (PPP), which have shown to be a losing procurement method for design-build (DB) contractors. What can we learn from the study and what does it mean for the future of heavy civil projects? CBO spoke with Stan Halliday, chief underwriting officer for construction surety at Travelers. Halliday has over 34 years of experience in the underwriting field at Travelers. Below, Halliday shares his insights into the results of the nearly decades-long study, and how these findings may affect the construction industry moving forward.

### **CBO: WHAT HAVE YOU LEARNED FROM THIS 17-YEAR STUDY?**

SH: Several things stand out. Many of the contractors in the study appear to have significantly underestimated the costs and risks associated with DB heavy construction work. In fact, they seem to have bid lower initial margins on larger and more risky work. As a result, contractors have often been unable to achieve their initial margin or make money on this portfolio of work. On average, contractors would have needed to more than



double their initial margin estimates to achieve an adequate return on DB and design-build-finance-operate-maintain (DBFOM) work overtime.

Procurement type plays the biggest role in predicting a job's success. PPP have been a losing procurement and ownership methodology for the DB contractors and joint ventures in this study. Large highway and bridge projects have performed the worst on average of all the work types we reviewed; 42% of traditional DB projects over \$250 million in contract value and 48.6% of DBFOM projects of a similar size failed to earn any profit for the contractors performing the work.

### **CBO: WHAT IN THE STUDY SURPRISED YOU?**

SH: We had a pretty good idea that the results were not good before the study was completed. But we learned that the odds of making money on a PPP project were about the same as flipping a coin. We also learned that poor project performance

was more closely correlated with the DB procurement type than with the size of the project. Travelers believe a major reason for the poor results is that contractors are being asked to provide firm fixed-price proposals based on designs that are roughly 30% complete. Our data clearly shows that they have not been able to do this accurately and the result has been significant operating losses.

### **CBO: WHY IS THE INFRASTRUCTURE STUDY SO IMPORTANT?**

SH: More and more construction owners seem to be considering larger procurements and they are under a lot of pressure to use DB or DBFOM procurement methods to complete the work more quickly. Yet, the owners don't realize that the current DB and DBFOM procurement structure on PPP and other large civil projects appears to be fundamentally broken and does not provide contractors with a reasonable opportunity to earn an adequate return on their work in order to earn a profit.

As mentioned previously, it's highly unlikely that a contractor can provide an accurate, fixed price to a construction owner on a civil construction contract more than \$250 million when the design is only 30% complete and so many variables remain unknown – the Travelers' data clearly shows this, which is why we're seeing so many mega-claims (\$100 million and more) on this class of work and why many contractors are choosing either to no longer pursue this kind of work or to limit opportunities to owners with whom they have a proven track record of success.

Travelers believes that procurement methods need to change and that the construction manager, general contractor (CM/GC) and/or progressive design-build models are better alternatives for all stakeholders. These methods allow the contractor to provide pricing based on a more complete design, which brings greater cost certainty. Construction business owners get the benefit of a more certain and predictable project budget, and our data also shows that these models greatly reduce – if not eliminate – the disputes and claims between the contractor and owners we often see on DB and PPP work.


Many of these claims are for hundreds of millions of dollars, with several more than \$500 million. And now that Congress has approved the Infrastructure Investment and Jobs Act (IIJA) to further stimulate the economy over the next five years, work should now be procured in a manner that minimizes project disputes, maximizes timely project completion and gives contractors a reasonable chance of achieving an acceptable financial return for their work.

### **CBO: WHAT SHOULD THE CONSTRUCTION INDUSTRY KNOW ABOUT THIS STUDY?**

SH: Contractors are not alone in the struggle to consistently perform mega-civil projects profitably. Almost every firm in this marketplace has struggled to complete work profitably and to avoid major claims and disputes. Bottom line, the industry can't keep pursuing these types of jobs without substantive changes in how they are procured.

Travelers has enough data examples to demonstrate that trying to provide a guaranteed fixed price based on a 30% design and other uncertainties is simply too risky. For example, a project was bid on and awarded more than four years ago, yet the major bridge component's design is still not complete and authorized by the owner for construction. It's not realistic to think that any firm could accurately price that type of delay into their initial risk assessment.

The time for change is now. The procurement philosophy for these major civil works projects must become more collaborative, with contractors and owners working together to discuss options, properly allocate risk and ultimately establish a realistic, achievable budget and timeline for proposed work.

The construction manager or general contractor at risk and/or progressive design-build methodologies have proven to be more reliable options that so far have resulted in nearly all projects being completed on time, on budget, and without dispute. The contractor still must perform, but now its risks are based on a much more complete design with known quantities factored in. 



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## About the Article

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