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Bridges in fantasyland

R. Craig Finley, P.E.

There's a disturbing new trend in the bridge industry. Owners and engineers are estimating project costs and schedules based on historical information that has no connection with present reality, and it's adding millions of dollars and months of time to some bridge projects.

In one well-documented case, the owners of the Woodrow Wilson Bridge let the project with a bid estimate of approximately \$500 million. They received only one bid and it was nearly 80 percent above their estimate. Using a combination of value engineering, innovative contracting (most notably by splitting the job into three, separate contracts), and improved understanding of construction issues and limitations, the Woodrow Wilson project team was able to recover and get the job done within their original budget and with only a six-month loss of time.

We're currently dealing with a similar situation on a major bridge project in the Southeast. We were retained after the lowest bid on the job came in nearly \$100 million above the estimate of \$154 million. It was one of only two bids the project drew.

Why is this type of thing happening? The simple answer is that many people in our industry are stuck in the past. They don't take the time or make the effort to fully understand the variables that influence the cost and schedule of a major bridge project. They also seem to think that contractors are so desperate for work that they'll bid on anything and do the job for whatever price they're handed.

The world doesn't work that way. Not anymore.

There was a time when historical pricing would work, but all that has changed in the last few years.

Prices fluctuate wildly depending on the state of the global economy, fuel prices, labor availability, natural disasters, labor costs, post-9/11 security, and other factors. At the same time, contractors have grown more selective about the projects they bid. They've been burned too many times to take on anything where risk outweighs possible reward. They've become accustomed to using certain equipment, labor, and materials and they'll often steer clear of a project if it appears that they can't capitalize on that experience and efficiency.

On the Southeast project, we were brought in to develop a "contractor's style" estimate and schedule.

We also recommended changes to the contract documents that improved constructability and reduced cost. Finally, we "polled" the construction industry on difficulties they had with the project and changes they would like to see made.

The project has been repackaged and is being advertised in phases for a re-bid.

This is just another example of why our industry needs to rethink how we do these things. It's not enough to throw a jumble of design alternatives into the bid package. Instead, it's the engineer's and the owner's responsibility to ensure that the plans are simple and straightforward.

We also can't expect contractors to show up in droves to bid on projects loaded with penalty clauses and disincentives. Instead, we should take a positive tack and build in rewards for performance. The bottom line is that owners and engineers need to consider the contractor before creating their estimates and soliciting bids. This just isn't happening enough these days.

In one recent project, for example, the peaks and valleys of the proposed schedule would have required the contractor to ramp his workforce up and down drastically and repeatedly in an area where labor availability is tight. Not only might contractors think twice before bidding with that kind of restriction, but also the pricing failed to reflect the cost associated with such fluctuations. In this case, we adjusted the schedule to minimize the impact on the contractor's staff, making it a more attractive project for bidders.

This new way of thinking should be extended to entire bridge programs as well. Many owners have more projects than they have money to build them, so a misstep on one project can hurt the entire program.

For the benefit of everyone involved, you need to take all facets of a bridge project into account before sending it out to bid. Look at what's happening around you in the here and now, not just what happened in the past. Give some thought to the challenges and motivations of all members of the project team, especially the contractor that has to get it built.

These days, just saying you're going to build it is no guarantee that they will come.

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