

What does contingency mean to you?*R. Craig Finley, P.E.*

According to my dictionary, a "contingency" is "something that may happen." Exploring the word further, it is "an event that may occur in the future, especially a problem, emergency, or expense that might arise unexpectedly, needs to be dealt with, and therefore must be prepared for." An excellent definition (thank you, Encarta Dictionary) that thoroughly illustrates the big-picture view of the word.

When applied to real life in a design-build project, however, this definition may be too broad. Is your contingency a problem, an emergency, or an expense? Many in our industry would describe it simply as an uncertainty or risk of some kind. Our definition also says the key to addressing contingencies is to be prepared. But if it's an unexpected risk, who is responsible for it and how should they prepare? Who determines this?

In our work on design-build bridge projects, we've found that "contingency" often means different things to different team members. The owner's contingency is far different from the contractor's, whose interpretation is completely different from the engineer's. This is a problem because when one party does not comprehend what the other sees as a contingency, it is unlikely that either party's expectations are going to be met. When expectations are not met, problems develop.

So how do the key players in a bridge project perceive the word "contingency"?

Owner—The owner's contingency is focused on delivery of the product (the big-picture view). More specifically, the time it takes, what it costs, and the issues or problems that arise. The savvy owner plans for it by including an adequate contingency budget—usually 5 percent to 10 percent of the overall budget.

In the Tacoma Narrows Bridge design-build project, for example, the Washington State Department of Transportation (WSDOT) budgeted \$54.7 million for contingencies in a \$760 million total budget. WSDOT explained it this way: "The project contingency budget allows TNB project managers to aggressively address unanticipated costs, such as community requests, and cover WSDOT risk elements such as project scope changes. The costs are projected to be 7 percent at project completion, in the high range when compared to 4.9 percent for the I-15 Corridor Mega project and 9 percent for the Florida St. Johns River Bridge project." (Source: Tacoma Narrows Bridge Legislative Oversight Committee Report, Jan. 15, 2004) WSDOT included both planned expenditures not included in the design-build contract and unplanned expenditures caused by contract changes. Planned expenditures include right-of-way settlement costs and removal of contaminated soils. Unplanned expenditures include scope changes resulting from community requests, permits, and other unanticipated project needs.

Problems occur when the owner's contingency budget is underfunded or the risk is delegated to someone else. It's always easier to get money from an existing contingency budget than it is to add money to cover unexpected events after the fact.

Engineer—For engineers, there seems to be a difference in what the contingency should be and what it often is. The engineer's contingency should reflect a realistic level of flexibility with respect to the accuracy of assumptions in the design. This usually entails a reasonable amount of padding for quantities and unit costs for man-hours.

We've seen engineers get into trouble when they take the concept of contingency too far. They will deliver insufficient accuracy in their design and write it off to conceptual design, assuming that someone else (the contractor) has a way to quantify their "risk allowance."

Lloyd Ferguson of Dufferin Construction put it this way in an interview with Canada's Daily Commercial News: "Either you trust your design or you don't—step up on warranty contingency and share the risk. Otherwise, we (contractors) might over-assess it and lose the project (bid)."

Engineers, like their owner and contractor counterparts, need to manage the portion of the risk that they control. They need to establish a reasonable margin of error in their design—typically somewhere between 5 percent and 10 percent, in our experience—and provide that information openly and honestly to the contractor.

Contractor—Contingency to the contractor means changes in material costs or availability, along with unforeseen weather conditions, resource availability, or production capacity. While this has always been an issue, it has never been more prevalent than in the last few years amid the escalating cost of certain materials, the severe weather in certain parts of the country, and the shortage of qualified construction personnel and technical staff.

Contractors typically use a "pooled" approach to contingency. They assign a value to the multiple risks and uncertainties of the project, knowing that not all will occur and many will balance out.

The level of risk will dictate the amount of a contractor's contingency. For example, the amount built in as contingency is likely to be greater if it's the contractor's first time working with an owner or designer than if there is a long track record of success with one or both.

The bottom line is that problems occur when one entity attempts to cover its own risks and responsibilities with someone else's money. This is prevalent in design-build projects because shifting responsibilities within a single contracting entity is common. This only adds to the confusion over the meaning of contingency and how it should be handled.

If everyone would remember and communicate to each other that contingency means different things to an owner, engineer, and contractor—and try to understand where each is coming from—we could alleviate many project problems and bear the risk at the best level. Too much conservatism (contingency) won't win bids, and too little creates a problem for everyone.

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