



## Public-private partnerships

By understanding the various risks associated with P3s and taking appropriate steps to manage them, A/E firms can put themselves in advantageous positions.



**Michael  
Herlihy**

**GUEST  
SPEAKER**

**A**s our nation turns to the urgent need to repair, replace, and rebuild our aging infrastructure with limited government financial resources, more and more public agencies are turning to public-private partnerships as a possible solution.

Though still in the early stages in the U.S., P3s are growing as a means of project delivery. So far, 33 states have enacted P3 facilitating legislation. Most of the projects to date have been highways, bridges, and tunnels with toll revenue used as the means of paying back the private investment.

Generally, P3s use design-build as the project delivery method. Most include financing as well as post-construction operation and maintenance. For example, on a highway built through a design-build-finance-operate-maintain P3, all aspects of a project from financing through post-construction are transferred to a single private-sector partner or concessionaire.

The concessionaire uses projected revenue streams, such as tolls, or pre-determined payments from the public owner, to obtain private financing. The concessionaire is compensated

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for the upfront costs of construction, financing and maintaining the roadway over a period of years with a profit, through the collection of toll revenue. At the end of the contract period, the road is turned over to the public-sector owner.

**A/E FIRMS AND P3.** In P3 projects, engineers can play

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a variety of key roles, which involve different levels of risk. They include:

- **Consultant to project owner.** Engineers assume a greater level of risk as they formulate and present the P3, define the preferred P3 model, advise on process, or serve as overall program manager to owner.
- **Engineer on P3 team.** Engineers take on a normal level of project risk in serving as a consultant to the contractor, providing design/construction phase services, or developing the operations and maintenance plan.
- **Advisor to the investor(s).** This involves the greatest degree of risk as generally the investor(s) are seeking projections and forecasts from the engineer in order to determine the financial viability of the project.

Engineering data may be used for forecasting, which in turn is used to obtain financing. A 2005 study examined 183 completed highway projects in 14 countries and found that in more than half of the projects, actual traffic varied by 20 percent from the forecasted volume and 25 percent had more than a 40 percent variance, according to the meticulously researched piece, “How (In)accurate Are Demand Forecasts in Public Works Projects?,” published in the *Journal of the American Planning Association* in 2005.

For design firms making projections, accuracy is often a challenge and overly optimistic forecasts can be disastrous. The Australian unit of one global design firm paid \$200 million to settle a claim for a toll road bankruptcy. The road cost more than \$2 billion to build, but sold for just over \$600 million. Another firm in Australia was sued for \$2.2 billion when the actual revenue of an airport toll road fell 94 percent short of the initial revenue forecasts.

Over-estimating also can trigger allegations of a conflict of interest for the engineer. In one P3 case, a court determined an engineering firm’s estimates to be intentionally rosy as the engineering firm was hoping to be selected to perform portions of the design as the project proceeded.

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To address potential exposures, A/E firms might take the following precautions:

- Know the parties that will rely on a forecast and how they will use it. Clearly, when investors or lenders are involved, there’s a higher degree of risk.
- Limit the parties that can rely on the forecast. In contracts consider inserting wording such as: “No third party shall have any right to rely upon this study or its findings without the engineer’s formal written consent.” Be sure the engineering reports contain similar language.
- Negotiate a limitation of liability. Engineers typically receive a

relatively small fee for forecasting, so they should seek a contractual limit to their liability.

- Perhaps considering the study cited above, adjust forecasts downward by 20 percent to minimize risk of overly optimistic projections.
- Refrain from bidding on any other phase of the project to avoid the appearance of a conflict.
- Maintain adequate professional liability insurance limits to address potentially elevated exposures associated with these services.
- Use a value for money analysis to compare the cost of P3 against a benchmark for traditional contracting for public sector projects. Known as the public sector comparator, the benchmark is a hypothetical risk-adjusted estimate of the cost of a publicly financed owned and operated project.

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**P3 IN PROJECT DELIVERY.** In P3 contracts, the owner shifts design risks to the design-build prime. There’s generally enhanced collaboration between design and construction with BIM model sharing, which facilitates constructability input into the design, as well as design input into the construction. Because costs are known earlier, there’s greater potential for cost savings. There also may be financial incentives for accelerated delivery and enhanced quality.

At the same time, the design builder may be working under a guaranteed maximum price and won’t be able to charge more for the job. Without room for contingencies, A/E firms may need extra time to prepare designs with greater detail and accuracy before they can be released to the contractor. However, not releasing the designs until they are nearly completed could affect the bid price.

When contractors press to receive designs sooner, A/E firms either have to push back or explain the need to build in an adequate contingency to account for different variables and factor this into the bid. Design firms also should insert language into the contract that delegates any quantity risk (the amount of materials needed to complete the project) to the contractor.

In assessing P3 contractual risk, A/E firms need to engage outside counsel. Risks and rewards should be equitable and A/E firms seek to accept liability only for risks within their control. In performing their duties, they should stay within contractually agreed upon scope and try to amend the contract if the nature of their services changes.

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MICHAEL HERLIHY is executive vice president of Ames & Gough. He can be reached at [mherlihy@amesgough.com](mailto:mherlihy@amesgough.com).