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Performance-Based Contractor Prequalification as an Alternative to Performance Bonds

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This document is a technical summary on a Federal Highway Administration (FHWA) project that will be fully documented in a separate report under the same title (FHWA-HRT-14-034) and will be published in early 2014.

Introduction

State transportation departments must rely on private industry construction contractors to build, rehabilitate, and replace their infrastructure assets. The FHWA is interested in ensuring that State transportation departments select contractors that can complete projects cost-effectively. One potential method to help select qualified contractors is to use a performance-based contractor prequalification process. FHWA commissioned this study to evaluate the wisdom of expanding the use of this process. This report presents the results of this study, which examined relevant literature, evaluated the benefits and costs of performance bonds and performance-based contractor prequalification, and recommended a model performance-based prequalification approach.

In the highway industry, one of the main methods of prequalifying a contractor is determining whether or not a performance bond can be secured. The current performance bonding system does not differentiate between a high-performing and marginally-performing contractor, as long as the two companies have the same level of financial assets. This gives both companies the same opportunity to bid on a project, regardless of performance. In a low-bid environment, a transportation department concedes marginal performance, which in turn reduces the incentive for top performers to continue superior performance. This research project—which consisted of a detailed literature review; surveys of contractors, State transportation departments, and sureties; and State transportation department case studies—analyzes the benefits and costs of

performance bonds and performance-based contractor prequalification and creates a performance-based contractor prequalification model. The research suggests that the minimum contract value that requires a performance bond should be raised to somewhere between \$1 million and \$10 million and that the cost of performance-based prequalification is low compared to the cost of the premiums for performance bonds. Last, a three-tiered, performance-based contractor prequalification model was developed to prequalify a contractor based on performance and financials, which rewards good performance and encourages improvement of marginal performance. The model is general enough so that an individual transportation department will be able to adapt the model to its own specific conditions.

This TechBrief presents a performance-based prequalification model for the transportation industry that includes incentive for good performers and encourages marginal performers to improve. This model is intended to guide State transportation departments in making their existing systems more robust and to take into account the performance of the contractor in the awarding of projects. A brief description of the model and its three tiers is included in this technical brief, as well as some guidance on implementation through the identification of the business decisions for each tier.

Proposed Performance-Based Contractor Prequalification Model

The proposed performance-based prequalification model combines elements of the processes in use by the Florida Department of Transportation, Ohio Department of Transportation, and Ontario Ministry of Transportation and borrows concepts and terminology from each. It consists of a two-tiered process that is applicable to design-bid-build projects and an optional third tier for project-specific qualification for design-bid-build-best value, design-build, construction manager/general contractor,

public-private partnerships, and other alternate project delivery methods.

State transportation departments need to undertake the following business actions in order to implement this phase of the process:

- Establish a project performance evaluation system if one does not already exist.
- Develop an appeals process.

Tier 1: Administrative Prequalification

The first tier of the performance-based contractor prequalification model consists of administrative prequalification, which is already used, to varying degrees, by most State transportation departments. Administrative prequalification consists of the following components:

- Financial analysis conducted by the agency, including analysis using audited financial statements, bank statements, etc.
- An optional records check to determine whether the contractor has committed any major contractual infractions, such as breach, failure to complete a punch list, failure to make good on a warranty, etc. An agency may also choose to include citations by outside enforcement agencies for failure to comply with safety or environmental standards.
- Assembly of optional external documentary information such as bonds, surety verification of the ability to furnish bonds, required insurances in the proper amounts, etc., as required by law or as desired by the agency to validate information developed by the contractor.

The result of tier 1 administrative prequalification is the final contractor financial capacity. If the final contractor financial capacity meets the minimum required by State transportation departments and if the minimum external requirements are met, then the contractor moves on to tier 2 prequalification; otherwise, the contractor is disqualified.

State transportation departments need to undertake the following business actions to implement this phase of the process:

- What external validation, if any, is to be included in the administrative prequalification? If so, what are the minimum requirements?
- Are contract infractions to be included in the administrative prequalification? If so, what is the infraction factor scale to be used for evaluation?
- What capital modifier or capital modifier scale is to be used for the calculation of the net working capital?
- What is the minimum final contractor financial capacity required to move on to tier 2 qualification?

Tier 2: Performance-Based Prequalification

Tier 2 (performance-based prequalification) qualifies contractors to bid on a specific project based on the contractor's available bidding capacity. For a given project, the contractor's available bidding capacity is its bidding capacity minus the value of current ongoing contracts. The bidding capacity is the result of the final contractor financial capacity (determined in tier 1) multiplied by the performance modifier or, depending on the scale used for the performance modifier, a financial factor. This is similar to the bonding system except that in place of a financial risk factor, a performance factor is used to determine the bidding capacity.

The performance modifier is calculated using the contractor's performance rating for the past 3 years, as determined by the agency's performance-based contractor evaluation system. The latest year's average performance rating carries the most weight, and the oldest year's performance rating carries the least weight. This creates an objective mathematical process to reward a marginal contractor who is committed to improving its

performance by gradually reducing the impact of a year with an adverse rating to the point where, after 3 years, it disappears.

A contractor is qualified if the resulting available bidding capacity value exceeds the project contract value estimate requirement established by the State transportation department for the given contract, which is equal to a current engineer's estimate for the project in question.

State transportation departments need to undertake the following business actions to implement this phase of the process:

- Develop and implement a contractor performance evaluation system.
- Establish how the performance modifier is calculated if a performance evaluation system has not been in place for at least 3 years.
- Determine how the contractor performance evaluation system integrates with the prequalification system.
- Determine the scale for the performance modifier and how it is applied to calculate the bidding capacity; find out whether a financial factor is determined based on the performance modifier.

Tier 3: Project-Specific Prequalification

Tier 3 is a project-specific prequalification tier that is designed to closely evaluate a contractor's qualifications and experience in terms of the specific needs of a given project. This final tier is an optional portion of the prequalification process and is intended for use only on projects delivered by alternative project delivery methods or projects having specific requirements such as experience.

To implement this phase of the process, State transportation departments need to determine what project criteria would trigger the use of tier 3 project-specific prequalification, such as delivery method, technical experience, size, etc.

Conclusion

First, performance bonds are not insurance. They do not guarantee against non-completion of a contract under all conditions, as insurance would (if insurance companies made such a product available). Instead, performance bonds come into play only when the contractor has defaulted on completion of the contract and is in financial default (i.e., is unable to provide the funds to remedy the situation). Performance bonds are more a form of credit than insurance in that they are priced like credit and sureties have the same rights to monitor and intervene in the affairs of their contractors as do other creditors. However, the advanced evaluation and intervention capabilities are limited by the nature of performance bonds themselves; performance bonds do not guarantee the quality of work, nor do they guarantee that the full costs to complete a project in default will be covered by the performance bond.

Finally, and most relevant to the objective of improving the quality of contracted construction work through the prequalification of contractors, performance bonds provide no protection against mediocre work. Generally, the system does not evaluate contractors in terms of the completion of timely, high-quality work that satisfies State transportation department expectations. Today, data are not readily available from State transportation departments about contractor performance, and even if they could be collected, the low rates of default limits obligations or incentive to raise the costs of performance bonds in order to incorporate contractor performance evaluations. The recently completed FHWA research presents a performance-based prequalification methodology that could be an alternate approach.

Researchers— This study was led by Bill Dye, Dr. Elizabeth Kraft, and Peter Mills of Dye Management Group, Inc., and Dr. Douglas Gransberg of Iowa State University.

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Key Words— Performance bonds, contractor prequalification, contractor performance, construction, default, performance-based prequalification.

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