

National Cooperative Highway Research Program

NCHRP Synthesis 190

Criteria for Qualifying Contractors for Bidding Purposes

A Synthesis of Highway Practice

Transportation Research Board
National Research Council

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National Cooperative Highway Research Program

Synthesis of Highway Practice 190

Criteria for Qualifying Contractors for Bidding Purposes

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Systematic, well-designed research provides the most effective approach to the solution of many problems facing highway administrators and engineers. Often, highway problems are of local interest and can best be studied by highway departments individually or in cooperation with their state universities and others. However, the accelerating growth of highway transportation develops increasingly complex problems of wide interest to highway authorities. These problems are best studied through a coordinated program of cooperative research.

In recognition of these needs, the highway administrators of the American Association of State Highway and Transportation Officials initiated in 1962 an objective national highway research program employing modern scientific techniques. This program is supported on a continuing basis by funds from participating member states of the Association and it receives the full cooperation and support of the Federal Highway Administration, United States Department of Transportation.

The Transportation Research Board of the National Research Council was requested by the Association to administer the research program because of the Board's recognized objectivity and understanding of modern research practices. The Board is uniquely suited for this purpose as it maintains an extensive committee structure from which authorities on any highway transportation subject may be drawn; it possesses avenues of communications and cooperation with federal, state, and local governmental agencies, universities, and industry; its relationship to the National Research Council is an insurance of objectivity; it maintains a full-time research correlation staff of specialists in highway transportation matters to bring the findings of research directly to those who are in a position to use them.

The program is developed on the basis of research needs identified by chief administrators of the highway and transportation departments and by committees of AASHTO. Each year, specific areas of research needs to be included in the program are proposed to the National Research Council and the Board by the American Association of State Highway and Transportation Officials. Research projects to fulfill these needs are defined by the Board, and qualified research agencies are selected from those that have submitted proposals. Administration and surveillance of research contracts are the responsibilities of the National Research Council and the Transportation Research Board.

The needs for highway research are many, and the National Cooperative Highway Research Program can make significant contributions to the solution of highway transportation problems of mutual concern to many responsible groups. The program, however, is intended to complement rather than to substitute for or duplicate other highway research programs.

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The members of the technical committee selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and, while they have been accepted as appropriate by the technical committee, they are not necessarily those of the Transportation Research Board, the National Research Council, the American Association of State Highway and Transportation Officials, or the Federal Highway Administration of the U.S. Department of Transportation.

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PREFACE

A vast storehouse of information exists on nearly every subject of concern to highway administrators and engineers. Much of this information has resulted from both research and the successful application of solutions to the problems faced by practitioners in their daily work. Because previously there has been no systematic means for compiling such useful information and making it available to the entire highway community, the American Association of State Highway and Transportation Officials has, through the mechanism of the National Cooperative Highway Research Program, authorized the Transportation Research Board to undertake a continuing project to search out and synthesize useful knowledge from all available sources and to prepare documented reports on current practices in the subject areas of concern.

This synthesis series reports on various practices, making specific recommendations where appropriate but without the detailed directions usually found in handbooks or design manuals. Nonetheless, these documents can serve similar purposes, for each is a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems. The extent to which these reports are useful will be tempered by the user's knowledge and experience in the particular problem area.

FOREWORD

*By Staff
Transportation
Research Board*

This synthesis will be of interest to administrators, contracting officers, engineers, and contractors, as well as bonding firms and sureties or others involved with highway construction and the procurement process for these services. Information is provided on the current practices used by state highway agencies to qualify contractors for performing competitively bid contract work.

Administrators, engineers, and researchers are continually faced with highway problems on which much information exists, either in the form of reports or in terms of undocumented experience and practice. Unfortunately, this information often is scattered and unevaluated, and, as a consequence, in seeking solutions, full information on what has been learned about a problem frequently is not assembled. Costly research findings may go unused, valuable experience may be overlooked, and full consideration may not be given to available practices for solving or alleviating the problem. In an effort to correct this situation, a continuing NCHRP project, carried out by the Transportation Research Board as the research agency, has the objective of reporting on common highway problems and synthesizing available information. The synthesis reports from this endeavor constitute an NCHRP publication series in which various forms of relevant information are assembled into single, concise documents pertaining to specific highway problems or sets of closely related problems.

The synthesis covers the evolution of the various practices of qualifying contractors by public agencies and private sureties for public construction, discusses the surety industry perspective, and addresses the areas of overlap between them, as well as the important differences. Specific advantages and disadvantages of prequalification and postqualification practices are highlighted. This report of the Transportation Research Board also

describes the bonding process, methods used by public agencies to determine the contractor's bonding capacity, and the extent to which only bonding is required by states.

To develop this synthesis in a comprehensive manner and to ensure inclusion of significant knowledge, the Board analyzed available information assembled from numerous sources, including a large number of state highway and transportation departments. A topic panel of experts in the subject area was established to guide the researcher in organizing and evaluating the collected data, and to review the final synthesis report.

This synthesis is an immediately useful document that records practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As the processes of advancement continue, new knowledge can be expected to be added to that now at hand.

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The Principal Investigators responsible for the conduct of this synthesis were Sally D. Liff, Manager, Synthesis Studies and Stephen F. Maher, Senior Program Officer. This synthesis was edited by Linda S. Mason.

Valuable assistance was also provided by Scott A. Sabol, Program Officer, National Cooperative Highway Research Program, Transportation Research Board.

Information on current practice was provided by many highway and transportation agencies. Their cooperation and assistance were most helpful.

CRITERIA FOR QUALIFYING CONTRACTORS FOR BIDDING PURPOSES

SUMMARY

The practice of qualifying contractors to bid on highway construction projects began in the mid 1920s and increased significantly in the 1930s. Today, more than 75 percent of state departments of transportation (DOTs) rely on some form of review of a prospective contractor's financial and managerial strength. This practice complements the Miller Act, which in 1935 required all contractors on direct federally funded projects to secure a performance bond. The Miller Act does not apply to the direct federal grants program.

The power of states to apply competitive bidding and select the lowest responsible and responsive bidder is well grounded in the law. The objectives are to protect public funds, prevent contractor defaults, and ensure the quality of construction. Determining contractor responsibility is the main focus of the qualification process. Where the awarding agency has employed an honest and fair review process relative to qualifications, courts will not interfere with its decision. This synthesis lists a number of court decisions dealing with the issue of contractor responsibility.

This synthesis also summarizes contractor qualification practices of state DOTs. Agencies generally rely on four techniques in the review process: prequalification, postqualification, bonds, and licensing. Licensing does not seem to be a reliable approach to ensuring responsible contractors because licensing procedures do not address many items that are of concern to state officials. Thus, the states rely primarily on two approaches: the bond-only approach and the active evaluation or qualification approach. Those states that review contractor qualifications will evaluate contractor portfolios of either all potential bidders (prequalification) or the low bidder only (postqualification).

Although several attempts have been made to bring uniformity to the critique of a contractor's financial status and the calculation of a capacity factor, many variations exist. All agencies begin with an audited financial statement. Beyond that point, each agency uses a unique worksheet to extract selected assets and liabilities. There is little uniformity in this process. Capacity factors are further adjusted by multipliers and ability factors. Thus, it is unlikely that a contractor will have the same capacity factor for two adjacent states.

The evaluation of managerial and technical experience is typically an informal determination using a questionnaire. A debarment determination is most often done using a debarment list maintained by the Federal Highway Administration (FHWA).

This synthesis also describes the role of the surety and discusses several relevant observations. While the procedures used by states and sureties may appear similar, the surety methodology is more qualitative, whereas the state DOT methodology is much more quantitative. The surety tends to be more flexible in what facts are considered. A surety is likely to provide a yes or no answer to a bond request, whereas a state DOT is likely to provide a dollar value for work allowed. Although a bond is not an insurance

policy, there is an element of risk involved in the calculation; that is, a small number of contractor defaults is assumed. This risk factor may be acceptable to a surety but not to a state DOT.

Several relevant issues arose during the development of this report. The most significant was the value to the state DOT of the qualification process. Information gathered from a survey of state DOTs and from a literature search indicates that qualification provides a means for the state DOT to manage the construction process and contractors. It also gives the state a way to bring problems to the attention of the contractor. The mere suggestion that the bidding capacity may be reduced was generally sufficient to ensure contractor accountability.

A glossary defining terms as they are used in this document follows the references.

CHAPTER ONE

INTRODUCTION

Qualification of construction contractors is a widely accepted procedural requirement of the public construction procurement system. Qualification of contractors, as interpreted in this synthesis of practice, includes a review of qualifications by the contracting agency and private qualification through a surety.

This synthesis summarizes the current practices used by state highway agencies to qualify contractors for performing competitively bid contract work. Specific advantages and disadvantages of prequalification and postqualification practices are highlighted.

Qualification practices have evolved slowly since the 1930s into the systems currently employed by the majority of state highway construction agencies. Although some states require a formal qualification process, all states require contractors to provide some form of performance and payment bonds. The performance bond indicates that a bondable contractor should be capable of performing the work for the agreed-upon price. The purpose of the payment bond is to assure the owner that all labor, material suppliers, and subcontractors will be paid for their services under the contract. Often, performance and payment bonds are combined as a contract bond.

The various practices of qualifying contractors by public agencies and private sureties have many similarities as well as important differences. This synthesis briefly covers the evolution of these two contractor qualification systems for public construction, reviews the current philosophy and practices at the state agency level, discusses the surety industry perspective, and addresses areas of overlap between them.

BACKGROUND

In the evolution of public construction procurement systems in the United States, several federal legislative efforts have formed the foundation for the procurement systems that are currently used. These legislative efforts have had widespread influence on state procurement activities. The earliest qualification activity required contractors to post performance and payment bonds. It was assumed that a contractor who could obtain a bond would not default during the project because of financial problems or lack of experience.

However, the bonded contractor concept always requires that a contract be signed and executed before the contractor's capability to perform is known. Apparently, contract defaults were enough of a problem that public agency review of contractor qualifications was begun to prevent contractors from bidding more work than they could physically, monetarily, or capably handle. The concept of work classifications also evolved. "Physically or capably handle" was defined to mean that the contractor had to have the equipment and personnel to perform a certain type of work. Contractors claiming broad capabilities without the resources to back up their assertions were not judged to be qualified to perform all types of work. The underlying assumption was that surety industry

agencies did not always review their clients in an unbiased fashion, even though they were at risk if the contractor failed to perform. The evaluation of the contractor by the owner ensued, and the resultant bifurcated qualification system is still commonly used. Bonds are mandated by federal legislation, whereas the qualification of contractors is usually developed within state agencies through administrative rulings.

Legislation

Earlier suretyship issues are summarized elsewhere (1). The earliest legislated requirement for providing a bond on a public construction project was the Heard Act of 1894 (28 Stat. 278). The Heard Act was initiated as a substitute for mechanics' and materials liens on federal contracts. The Heard Act required a payment bond from the prime contractor that guaranteed payment of labor and material claims on federal contracts. That was needed on federal contracts because the doctrine of sovereign immunity prohibited liens from being filed against the federal government. Under the Heard Act, a subcontractor could sue before the contract was completed, but the potential existed for the contractor and surety to default because their resources were consumed by multiple legal actions. However, a 1905 amendment to the Heard Act limited the filing of multiple claims to a single action.

The Miller Act of 1935 required that contractors with direct federal contracts for construction, alteration, or repair of any public facility in excess of \$2,000 be covered by a performance bond and a payment bond. The Miller Act effectively replaced the requirements of the Heard Act for bonding projects. Eventually, most states enacted legislation or administrative rulings covering public construction work that required bonding of the prime contractor.

Qualification

The first recorded use of a formal contractor qualification system is attributed to a state engineer in central California in 1923. (1) However, qualification of contractors was not an overnight success story. In 1925, Wisconsin began to qualify all contractors; in 1927, the Iowa Highway Commission adopted qualification for its contracted work. California, where the idea began, adopted the system in 1929. In 1930, six states adopted qualification procedures, and several others rejected their use. By 1946, 36 of 48 states operated with qualification requirements. Currently, most state agencies use qualification procedures. The procedures among the states are not uniform and many variations exist in the format and types of information reviewed.

Early qualification practices were such that the state official relied heavily on personal knowledge about the contractor and the

firm's ability to perform work. According to one 1930 highway official, the process was highly informal:

Qualifications must be considered in their entirety. There is no set formula for rating the different elements. Character, experience, and the type of organization and suitable equipment are important. Financial condition is determined by the difference between quick assets and liabilities. Real estate must sometimes be appraised. The record of the contractor with the Bureau of Public Roads and with state highway engineers is carefully scrutinized. It is found that equipment also needs special scrutiny. Unsuitable equipment is a liability. (1)

By the end of the 1930s, the most pressing problem was how to make the process (standards and procedures) more uniform among the states using qualification. By 1940, a committee of the American Association of State Highway Officials, Associated General Contractors (AGC), and Bureau of Public Roads developed tentative uniform standards for qualification, including a suggested classification of assets and liabilities and a series of standard ratings and premium ratings. However, for unknown reasons, those standards were not implemented.

As recently as 1986, a joint committee of the American Association of State Highway and Transportation Officials (AASHTO), the AGC, and the American Road and Transportation Builders Association recommended that "AASHTO consider including in the *AASHTO Guide Specifications*, under Section 102.01, a single uniform format such as the AGC prepared *Contractor's Qualification Statement* as the recommended form of experience questionnaire to be used by those states which require bidders to be prequalified." (2) However, because of questions regarding copyrights, the recommended form was dropped from the 1988 update of the *Guide Specifications* (3) and no uniform system for collecting contractor qualification data has been formulated.

Other pertinent information regarding contractor qualifications and bonding requirements are included in the *Code of Federal Regulations* (CFR) at 23 CFR 635.110 and 49 CFR 18.36 (a & h). These are included in Appendices A and B, respectively.

How Did State Agencies Become Qualifiers?

Few records exist of the deliberations with which state personnel were involved during the developmental years of qualification systems. The early development of public agencies desiring to qualify contractors was likely the result of bonded contractors failing to deliver projects in a satisfactory manner. If bonded contractors were unable to deliver the project as planned, another method of evaluating the capability of a contractor was needed. A portion of a report prepared in 1954 for the Connecticut Department of Transportation provides some insight into the opinions and thoughts that encouraged adoption of an agency process for contractor qualification.

"Does a surety bond fully protect the interest of the state?" is the opening question in the development of a lengthy discussion favoring the adoption of qualification. This report makes the following points (4):

1. The bond may protect the owner to the amount of the contract, but it does not cover the cost of delays and public inconvenience. The state is only in the position to claim liquidated damages that do not include overhead costs.

2. The prevailing assumption among all branches of government is that anyone supplied with a surety bond is a responsible bidder. This assumption was never justified.
3. From a past record of contractor failures, it would appear that surety companies are not as careful as they might be. Three prime reasons for irresponsible bidders obtaining bonds are: (1) the average salesperson for an insurance agency is more concerned with making a sale than with protecting the home office; (2) sales agents are not well versed in engineering and the technical difficulties of a particular project; and (3) some companies are not fully appraising the ability of those they bond.
4. The report points out that personal contacts with surety bond agents and their company officers indicate that they see prequalification as added protection.
6. Three principal reasons public officials have put off the decision about prequalification are (1) the hope that a questionable bidder will not be the low bidder, (2) possible political repercussions, and (3) lack of a fair means to judge responsible contractors.
7. Objections to prequalification include concerns that (1) it would shut out new competitors or beginners; (2) it would reduce competition; (3) it would increase political or personal favorites; and (4) it would be an invasion of private affairs.

Although some practitioners may disagree with some of those points and other points may be no longer relevant, current discussions would address most of the findings of the report. A study performed by the Comptroller General of the United States, published in 1975, was concerned with improving the use of bonds on federal construction: "In the absence of comparable quantitative data, we could not develop measurable evidence supporting either elimination or retention of the current bonding system." (5) One finding in this report states: "Most of the preaward survey work done by agencies to determine a contractor's responsibility is an unnecessary duplication of the underwriting work done by surety companies." The report recommended that preaward survey of responsibility (prequalification) be restricted to projects requiring unique construction expertise or when the contracting official has information indicating that the contractor may not be responsible. Although the Veterans Administration endorsed the concept, the U.S. Department of Transportation was concerned that a contracting officer should not rely solely on the surety because of compliance with other government requirements, such as minority employment. The Comptroller General's office simply noted that compliance with these requirements was built into the contract and not into preaward surveys. That would appear to still be the case with respect to all government compliance requirements. (5)

OBJECTIVES

The background section in this chapter highlighted some of the current issues surrounding the qualification of contractors. Based on these issues, the objectives of this synthesis are as follows:

- To consolidate the body of knowledge regarding qualification as it relates to state DOT practice,
- To characterize the practices of most state DOTs, and
- To identify the unresolved issues related to the qualification of contractors.

This review does not include licensing procedures and certification of disadvantaged contractors. Licensing requirements are not consistently reported as a requirement for prequalification and certification is not a qualifying procedure related to contract performance ability. In states that qualify subcontractors, disadvantaged contractors are qualified as subcontractors.

METHODOLOGY

Preparation of this synthesis required information from several sources. A literature search yielded limited public documentation on qualification practices. A request for information was transmitted to each state regarding its qualification practices. The informa-

tion from the responses to this request was used for a preliminary characterization of the responding agency's qualification practice. Interviews were conducted with officials of selected states that were geographically scattered and whose qualification processes represented the range of practice. States included in the visitation and interview process were Maine, New York, Idaho, Indiana, Kentucky, and Montana. These states were selected because Maine and New York qualify the low bidder only, Idaho and Montana are bond-only states, and Kentucky and Indiana have interesting contractor performance evaluation procedures. In addition, representatives of the surety industry were interviewed.

Additionally, information from a 1985 study on qualification practices was used. This information was developed from visits to Florida, Michigan, New York, Ohio, Oregon, and Pennsylvania. (6)

CHAPTER TWO

ISSUES OF AUTHORITY

OBJECTIVES OF COMPETITIVE BIDDING

A brief overview of the competitive bidding process may enhance the discussion of contractor qualification. In the mid 19th century, the concept of competitive bidding was institutionalized for public agencies to curb corruption, inefficiency, and mismanagement by government officials. (7) As stated by Netherton, competitive bidding safeguards the public interest by fulfilling three basic objectives: (1) protection of public funds, (2) prevention of contractor default, and (3) assurance of the quality of public construction. (1) These sometimes conflicting objectives have been widely discussed and occasionally criticized. (8)

Protection of Public Funds

The statutes that authorize and govern the letting of public construction contracts through competitive bidding are primarily designed to protect public funds from improvidence and extravagance, the excessive costs of which would needlessly be passed on to the taxpayer. The desire of the public agency is to get the most construction value for the lowest possible price.

In a truly competitive environment, a number of bidders will participate and the lowest price would be obtained. With more bidders, contractors are more likely to do a thorough job of estimating project costs and reducing contingency funds. But although a large number of bidders increases competition, too many bidders may discourage competent contractors from bidding because their chances of winning seem more remote.

Prevention of Contractor Default

The competitive bidding process serves the best interests of the public by protecting public funds, however, the possibility of contractor default is a constant concern. To safeguard states from contractor defaults, statutes require that the public investment of funds be protected by suretyship. Bid bonds provide that the direct costs incurred by an agency in the preparation and advertisement of a project can be recovered, up to the face value of the bid bond, if the lowest bidder fails to enter into a contract with the agency. The added overhead expenses in rebidding the project and inconveniences to the public may not be recoverable. Performance and payment bonds protect the agency if the contractor does default on the contract. However, the administrative, engineering and other indirect costs may not be recoverable. Related costs, such as attorney fees, cannot be recovered by the public agency.

Assurance of Quality

Responsible investment of public funds demands high-quality construction for the tax dollar. State agencies are under constant

pressure to award public construction contracts to only those contractors capable of providing projects that meet or exceed the specified requirements. The ability to meet the specifications ensures that a minimum level of quality has been provided.

FOCUS ON THE COMPETITIVE BIDDING PROCESS

Power to Contract

States have the power to regulate any business, trade, or occupation that protects the public health, morals, and welfare. As stated by the 1943 decision in the case of *State of North Dakota v. Cromwell*:

In the exercise of its police powers . . . a large discretion is necessarily vested in the legislature, to determine not only what the interests of the public require, but what measures are necessary for the protection of such interests. (9)

Within reasonable limits, a state's police power authorizes the imposition of regulatory provisions upon persons who engage in public works construction. Thus, the determination of the qualifications of a contractor engaged in public works construction is within the police powers of a state. (10)

Authority and Discretion of the Awarding Agency

Contracts for state highway work must be executed on behalf of the government by an authorized official of the awarding agency. State statutes place well-defined limitations on governmental officials empowered to execute contracts.

Although statutory provisions clearly define the scope and authority of the awarding official, the evaluation of a contractor's qualifications is largely judgmental. Accordingly, the process places great emphasis on the discretion of the awarding official. The determination must be based on sound methodology and must treat each contractor on a case-by-case basis. It is important that the awarding official be fair to all contractors and show no favoritism to any one bidder. (11,12) For instance, in one Louisiana court decision, the awarding official was allowed to be wrong, but not unfairly or arbitrarily wrong. (13) In general, the prevailing judicial attitude is that except for cases involving fraud, collusion, favoritism, or arbitrary discrimination, courts will seldom interfere; the determination of a contractor's competence is the duty of the awarding official and not the courts. (14,15) As stated in *Mississippi State Building Commission v. Becknell Constr., Inc.*:

Public boards are vested with a sound discretion in determining who is the "lowest and best bidder," and their decision, when based on an honest and reasonable exercise of the vested discretion will not be interfered with by the courts. . . . When the discretion is

properly exercised, the courts will not interfere with the judgement of a public board. (15)

Right to Reject Bids

In its information to bidders, an awarding agency reserves the right to reject any and all bids, and any bidder on a state highway contract, even if that bidder proposes the lowest dollar amount, has no legal right to compel the awarding agency to accept the bid. (16) Further, the awarding agency is specifically authorized to reject the bid of any contractor it feels cannot perform the contract. (17) However, the rejection of a low bidder must be based on reasonable grounds. (18) As stated in *Sellitto v. Cedar Grove Township, New Jersey*:

[To] reject the bid of the lowest bidder, there must be such evidence of the irresponsibility of the bidder as would cause fair-minded and reasonable men to believe that it was not in the best interest of the municipality to award the contract to the lowest bidder. (19)

Other reasons for rejecting a bid include a lowest bid higher than the engineer's estimate, an unbalanced bid, or technical errors by either the state or the contractor.

Review of the Awarding Agency's Action

An awarding official enjoys wide discretion when both evaluating the qualifications of a contractor and determining the lowest bidder. As long as the decision is based on an honest and reasonable exercise of discretion, founded on facts, exercised in good faith for the public interest, and void of favoritism, fraud, collusion, or conflict of interest, the courts will not interfere. (20)

Conflict of Interest

An awarding official must exercise discretionary powers in a consistent and reasonable manner. Although price is the decisive feature of the competitive bidding process, the awarding official must also evaluate the qualifications of a contractor to complete the work. To reject the low bidder and award the contract to the second-lowest bidder could appear to be arbitrary and capricious or an act of favoritism. The unsuccessful low bidder also will likely be unsuccessful in contesting an award of a contract to the next-lowest bidder unless it can be shown that the original low bid was rejected arbitrarily.

To preclude capricious or arbitrary conduct, states have enacted laws specifically prohibiting public officials from having any financial interest in the award of a contract. Contracts involving the private interests of public officials will likely be rendered null and void. (21) The interest or gain need not be financial. The legal test is whether the public official's "interest" in the awarding of the contract was such that it tended to affect his or her proper judgment. (22) Based on the principle that no one can faithfully serve two masters, public officials cannot make contracts with themselves in their official capacity. (23)

A public official's interest must be definable in exact terms. An example is the case of *People v. Simpkins* (24), in which the interest of a public official's wife in a contract was not held to be

necessarily the official's interest so as to disqualify him from executing a contract.

THE COMPETITIVE BIDDING PROCESS FOR A SPECIFIC PROJECT

The Advertisement

The initial step in the competitive bidding process is the advertisement for bids. The advertisement for bids presents a solution to a problem as determined by the agency and defines the scope of the work required. Public advertisement is one method by which a bidder is placed on a "plane of equality" with other bidders. (25) All bidders are afforded the opportunity to bid on the same terms and conditions.

Selecting a Responsible and Responsive Contractor

In competitive bidding, a contract is typically awarded to the lowest responsible and responsive bidder. (26) Responsibility refers to the contractor's ability to perform the work. Responsibility can be evaluated prior to the submission of the bid and additional information can be requested before a determination is made. Responsiveness refers to the promises made by a contractor in the proposal, which should be the promises exactly as articulated in the request for proposals (RFPs). Responsiveness is determined at the time of the bid and additional information is not permitted.

Legal Test of Responsibility

The central issue of responsibility is to decide if the contractor has the capability to satisfactorily perform the proposed work. The 1896 case of *Reuting v. City of Titusville, Pennsylvania* determined that being responsible "is not to be construed as meaning pecuniary responsibility, but extends to the judgment and skills of the bidder." (27) Current thinking defines a responsible contractor as one who is financially responsible and possesses the judgment, skill, ability, capacity, and integrity to perform a public contract. (28) According to Netherton, the lowest responsible bidder is the one who adequately responds in quality, fitness, and capacity to the particular requirements of the work that is desired by the agency at the lowest cost. (1) Furthermore, if contractors have failed to complete previous projects in a timely manner or have been uncooperative, that is sufficient grounds to determine that they are not responsible. (29)

Contractors may also be declared not responsible for the reason of integrity. For example, in one case a contractor was not allowed to bid on a public works project because a person convicted of bribery owned or controlled the business. Also, the contractor was not allowed to be a subcontractor or to furnish materials. (30)

Specific instances, most from the highway sector, where the contractor was declared not responsible include the following:

- Where there are applicable statutes, a state was justified in refusing to contract with persons and businesses involved in bribing state officials. (31)
- A contractor who engaged in an illegal scheme with a govern-

ment official to obtain government contracts was not entitled to payment for work performed under the contracts. (21)

- A contractor who admitted to wrongful bidding practices and paid a \$100,000 fine may still be debarred from bidding on state DOT projects. (32)
- A contractor may be debarred for repeated failure to pay minimum wages. (33)
- The South Dakota Supreme Court affirmed a DOT decision not to contract with a firm whose president was also a legislator, an action that would have been contrary to the state constitution. (34)
- The State of Florida was justified in suspending for 204 days a contractor's right to bid on state projects because the contractor was delinquent in completing a construction contract. (35)
- A contractor who failed to furnish the necessary financial information for the contracting entity to evaluate intelligently his financial ability was found not responsible. (36)
- A New Jersey court ruled that financial weakness is akin to incompetence. (37)
- A small corporation in West Virginia (incorporated within the same year) was declared not responsible because of poor business judgment; the contractor proposed to furnish products and services to all state agencies from a single base of operation in one county. (38)
- The subcontractors a prime contractor had proposed to perform plumbing and heating work were not licensed; because the prime could not prove that the subcontractor possessed the requisite skill, the prime contractor was found to be not responsible. (11)
- A corporation that pleaded guilty to submitting false federal income tax returns was declared to be not responsible. (39)
- On a prior identical project, a contractor who intentionally deviated from the contract specifications by not removing window caulking was determined to be not responsible. (40)
- A contractor was declared not responsible based on previous delays, lack of cooperation, and poor performance on prior State of New York contracts. (41)
- A federal court applying Mississippi law upheld rejection of a bidder because of a reputation for poor quality work. (42)
- Officers connected with an apparent low bidder had also been connected with other firms who had done unsatisfactory work and were consequently declared not responsible. (43)

However, specific instances where states may not disqualify contractors include the following:

- The lowest bidder could not be found not responsible merely because the contractor employed nonunion labor. (44)
- A provision requiring that bidders provide evidence of previous experience with a design configuration of a proposed floating bridge exceeded a state DOT's authority. (45)
- The mere change of a contractor's name did not constitute fraud or render the contractor not responsible. (46)

Legal Test for Responsiveness

The instructions to bidders and applicable state laws establish the ground rules for evaluating bids. Contractors are required to submit their bids on the proposal form provided by the state. This ensures that all contractors are bidding on the same scope and terms of work. (47)

The bid evaluation process begins with a careful examination of the bid proposals to ensure that they conform to the terms and conditions as specified in the bid documents and that they are free of technical defects or irregularities. But states reserve the right to waive certain irregularities. The authority to do so is based on the premise that "the public should not be denied the benefit of a low bid on a public contract for every minor technical defect that does not affect the substance of the bid." (48) To require stricter compliance would tend to stifle the purpose of competitive bidding. Additionally, if the agency did not have the authority to waive minor technicalities, a contractor might be afforded the opportunity to back out of an otherwise unprofitable contract after seeing competitors' bids.

A minor technicality or irregularity is defined as a minor variance from that specified in the RFP and instructions to bidders. Any material (major) variance in the low bidder's proposal requires rejection of the proposal, whereas a minor variance may be waived. A variance is material "if it gives the bidder a substantial advantage over other bidders, and therefore restricts or stifles competition." (18) The implication of waiving irregularities can be far-reaching, because to do so may encourage carelessness and create opportunities for favoritism. (48) But in one instance, the court required that all bids be rejected and the project be rebid because not all contractors received an addendum changing the time of completion requirements. (49)

The creation of an unfair advantage is not always readily apparent. For example, in a 1983 New Jersey case, the listing of qualified subcontractors was determined to be a material requirement that could not be waived. (11) The court apparently felt that it was unfair to create an opportunity for the contractor to shop for lower subcontractor bids after submittal. In two other cases, the time of contract completion and the submission of the required bid bond were also determined to be material variances that could not be waived. (50,51)

Other examples of nonresponsiveness include the following:

- Failure of a bidder to give assurances of nondiscriminatory employment practices was lawful grounds for rejection of the bid. (52)
- A general contractor's bid was the lowest only because one of his subcontractor's bids was for acoustical plaster mechanically applied rather than for acoustical tile as specified in the contract. The contractor was judged to be not responsive. (53)
- In Arkansas, an awarding agency declared the third-lowest bidder to be the lowest responsive bidder because it proposed to use ductile iron pipe for construction of a 3-mile water line; this was in the best interest of the city because ductile iron pipe was a proven material and the city had considerable experience with it. The two lower bidders were declared non-responsive. (54)

CHAPTER THREE

CONTRACTOR QUALIFICATION PRACTICES

The objectives of qualifying contractors for bidding purposes are to ensure that contractors: (1) have adequate financial resources; (2) have adequate technical and managerial skills, thus reducing the likelihood of contractor default and increasing the likelihood of a quality product; and (3) are reputable contractors.

To achieve these objectives, state DOTs rely on four strategies:

- Qualification of all contractors before the bid is submitted (prequalification),
- Qualification of the lowest responsive bidder only after the bid is submitted (postqualification),
- Requirement of a performance bond, and
- Contractor licensing.

The general practices of the state DOTs are summarized in Table One, which is based on a 1990 survey of all states and a follow-up survey in 1992. As can be seen, all states require performance bonds. Many use one or more additional techniques.

CLASSIFICATIONS

Contractors are qualified to perform various categories of work. Typical categories are general construction, bridges, paving, signalization, landscape, and so on. In each category, contractors are qualified to perform different contract volumes. The number of categories generally ranges from 10 to 20. Arkansas and Nevada prequalify for an aggregate amount of work only and do not classify contractors by work type. Alabama uses three classifications—grading, paving, and bridges—whereas New Jersey defines more than 60 classifications of work. Oregon requests that an applicant provide information about the maximum dollar amount of work it is capable of performing, the maximum dollar amount of work the applicant is qualified to perform in other states, the states where the rating was determined, and the years of experience the applicant has had within that classification.

ADVANTAGES OF PRE- AND POSTQUALIFICATION

The majority of states qualify contractors using one of two primary approaches: prequalification or postqualification. As is noted later, the key issue for the agency is administrative burden because the attributes that are examined are essentially the same for pre- and postqualification.

Prequalification

All contractors that may potentially bid on agency projects are prequalified annually. The qualification process is typically performed at the beginning of the contractor's accounting year. The

prequalification determination is valid for 1 year plus a grace period. Thus, the financial statement may be valid for as long as 18 months. Some agencies are going to a 2-year renewal period. Agencies typically prequalify 200 to 1,000 contractors, which, in most agencies, requires one or two full-time persons.

The advantages of prequalification compared to postqualification include the following:

- All contractors are qualified at once and not during the contract acceptance period.
- Contractors that are not qualified to perform the work will know in advance and do not go through the unnecessary expense of preparing a bid.
- The state can limit the class of work to a known expertise of the contractor.
- In theory, a state with a prequalification system can initiate a contract faster than postqualification systems because the application and review are performed before the contractor submits a bid.

The disadvantages include the following:

- Unless the prequalification effort is staggered, the administrative burden is intense during certain times of the year and not at other times.
- Contractor financial statements may be out of date by the time a bid is submitted, however, some states require an updated status report to be submitted with the bid.

Postqualification

Agencies employing the postqualification practice qualify the lowest bidder and no others; that is, the low bidder only is examined. If the low bidder is not qualified, the next lowest bidder is examined, and so forth until a responsible and responsive bidder is identified. Thus, the burden of qualifying contractors occurs during the acceptance period, but contractors that have been qualified previously need not be requalified.

The advantages of postqualification are:

- In theory, the administrative burden should be less because fewer contractors need to be qualified.
- The administrative workload is more evenly distributed throughout the year because qualification is done after each bid letting, although this advantage depends on the bid letting schedule. As with prequalification, contractors that have been previously qualified need not be qualified again, although they may need to update parts of their qualification documents.
- Postqualification encourages more open bidding. The lack

TABLE ONE
COMPARISON OF STATE PRACTICES

| State | Prequalification | Post Qualification | Performance Bond | License (1) |
|----------------------|------------------|--------------------|------------------|-------------|
| Alabama | X | | X | X |
| Alaska | | | X | |
| Arizona | X | | X | X |
| Arkansas | X | | X | |
| California | | | X | |
| Colorado | X | | X | |
| Connecticut | X | | X | |
| Delaware (2,3) | | | X | |
| District of Columbia | X | | X | |
| Florida | X | | X | |
| Georgia (4) | X | | X | |
| Hawaii | | | X | |
| Idaho (2) | X | | X | |
| Illinois | X | | X | |
| Indiana | X | | X | |
| Iowa | X | | X | |
| Kansas | X | | X | |
| Kentucky | X | | X | |
| Louisiana | | | X | (3) |
| Maine | | X | X | |
| Maryland | | (5) | X | |
| Massachusetts | X | | X | |
| Michigan | X | | X | |
| Minnesota | | X | X | |
| Mississippi | | | X | |
| Missouri | X | (5) | X | |

of restrictions on who may bid creates a more competitive system.

The disadvantages include the following:

- There is no mechanism to discourage unqualified bidders from submitting a bid.
- The agency must complete all qualification steps during the contract acceptance period.
- There are occasional difficulties associated with finding the lowest bidder to be not qualified.

ATTRIBUTES OF QUALIFICATION INQUIRIES

The following attributes are usually examined when evaluating responsibility:

Financial Capability

- Financial strength of the contractor at the time of qualification, and
- Ability to obtain a bid, performance, and payment bond for a specific project.

Managerial and Technical Ability and Past Experience

- Ownership of equipment or the ability to rent or lease equipment needed to perform the project,
- Managerial ability to provide the required labor and material

TABLE ONE
COMPARISON OF STATE PRACTICES (continued)

| State | Prequalification | Post Qualification | Performance Bond | License (1) |
|----------------|------------------|--------------------|------------------|-------------|
| Montana | | | X | X |
| Nebraska | X | | X | |
| Nevada | X | | X | X |
| New Hampshire | X | | X | |
| New Jersey | X | | X | |
| New Mexico | | | X | |
| New York | | X | X | |
| North Carolina | (6) | | X | X |
| North Dakota | X | | X | |
| Ohio | X | | X | |
| Oklahoma | X | | X | |
| Oregon | X | | X | X |
| Pennsylvania | X | | X | |
| Rhode Island | | | X(7) | |
| South Carolina | X | | X | |
| South Dakota | X | | X | |
| Tennessee | | | X | |
| Texas | X | | X | |
| Utah | X | | X | X |
| Vermont | X | | X | |
| Virginia | X | | X | |
| Washington | X | | X | |
| West Virginia | | | X | |
| Wisconsin | X | | X | |
| Wyoming | X | | X | |

Notes to Table One

1. License requirements are only noted where they are specifically an item required in prequalification literature. Other states may have license requirements required by other legislation or administrative rulings.
2. Uses prequalification only for highly specialized projects.
3. Applies to projects over \$750,000.
4. Separate filing requirements for subcontractor prequalification.
5. Submit an equipment and experience questionnaire 10 days after bid.
6. A nonfinancial review of experience and equipment availability.
7. Experience questionnaire for low bidder only.

and the experience of key supervisory personnel (This evidence is provided through resumes and evidence of projects completed by these personnel),

- Technical ability to perform in accordance with the contract provisions,
- Documented skill (resumes) of key contractor personnel on similar projects, and
- Overall experience in the construction industry.

Performance Evaluation (on Projects for the Evaluating DOT)

- Attitude, cooperation, and performance on state DOT projects, and
- Previous performance on state DOT projects with respect to quality of construction and ability to complete the project in a timely manner.

Business Practices

- Business practices of the principals to ensure that they or the company have not been involved in previous wrongdoing or crimes or infractions against agency policy.

The practices of the state DOTs in qualifying contractors are compared next using those four areas.

Details of Financial Capability

There are numerous variations in the approaches used to evaluate the financial capability of a contractor to successfully execute a construction contract. A financial reporting statement from the State of Arkansas is included in Appendix C as an example. Standard accounting terms are used in the reporting of a contractor's financial resources; however, beyond this point, the process is very much tailored to the preferences of each agency. Agencies selectively identify assets and liabilities and include these in calculating capacity factors. For example, the following provision from Florida is representative of those from many other states: "The value allowed for real estate and any other property not used in road or bridge construction shall not exceed 25 percent of the net equity, and no allowance shall be given for homesteads or personal property." Worksheets such as the one from Arkansas shown in Figure 1 are common. Notice that only selected items from Appendix C are included in the worksheet. There is no standardization in the worksheets used by the states.

Responses to the survey of state DOTs indicate that methods of calculating capacity factors can be organized into five categories based on the detail of the investigation: multiplier of net worth or working capital, use of ability factors, detailed financial analysis, financial ratio approach, and other approaches.

Multiplier of Net Worth or Working Capital

A number of states use the multiplier of net worth or working capital approach, probably because of its simplicity. The financial

capacity factor of a contractor is determined by the following equation:

$$CF = A \times NW \quad (1)$$

where

CF = capacity factor in dollars

A = a multiplier based on numerous factors

NW = net worth in dollars derived from the contractor's financial statement or the agency's worksheet.

Some states substitute working capital for net worth. Other terms used are net assets and net adjusted working capital. Net worth is the difference between assets and liabilities, and working capital refers to readily available assets. Because the values of net worth and working capital are typically adjusted values from the worksheet (see Figure 1), the outcome may not conform to strict accounting definitions.

The determination of the multiplier, *A*, is of considerable interest. Some agencies use a single number for all contractors, and this value can vary widely from agency to agency. Representative values of *A* are detailed in Table Two.

Some states use a range of values. Typical ranges are shown in Table Three. The value chosen may be discretionary or may be codified as illustrated below for Arizona.

Inexperienced Firms: Capacity factor \leq \$300,000 equals *NW*

New Firms: Capacity factor equals 5 times *NW*

Unknown Firms: Capacity factor equals 5 times *NW* or largest project completed, whichever is greater

Known Firms: Capacity factor equals 10 times *NW*, unlimited if *NW* is more than \$30,000,000

In most cases, the value of *A* is based on previous experience, quality, and performance with the awarding agency. Reductions are usually made informally at the discretion of the DOT and can last for a period of 5 years, as is the case in Massachusetts.

Adjustments to the value of *A* are usually discretionary, although some guidance may be provided. For example, in Wisconsin, a value of *A* = 5 is normally used. However, this value may be

TABLE TWO
TYPICAL VALUES OF *A* APPLIED TO NET
WORTH

| State | Value of <i>A</i> |
|-----------------------------------|-------------------|
| Arkansas ¹ | 20 |
| District of Columbia | 4 |
| District of Columbia ² | 10 |
| North Dakota ¹ | 5 |
| South Dakota ² | 10 |
| Texas ³ | 20 |

¹ Applied to net assets or net ratable (adjusted) assets.

² Applied to working capital.

³ Applied to net adjusted working capital.

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONTRACTOR PREQUALIFICATION (AHTD FORM)

Work Sheet

Contractor _____

Address _____

Date Received _____ Date of Statement _____

Assets

1. Cash \$ _____
2. Notes Receivable: Due within one year _____
3. Accounts Receivable from completed contracts,
exclusive of claims not approved for payment _____
4. Sums earned - incompleted cont. - as shown by estimate
 - (a) Amount receivable after deducting retainage _____
 - (b) Retainage to date - due upon completion of
contracts _____
5. Accounts Receivable - not from construction contracts _____
6. Deposits for bids or other guaranties _____
7. Other Current Assets _____
8. Stocks and Bonds
 - (a) Listed - present market value _____
9. Materials in stock and not included in Item 4, Assets:
 - (a) For use on uncompleted contracts (present value) _____
11. Equipment at book value _____

Total Assets \$ _____

Liabilities

14. Notes Payable
 - (a) To Banks Regular - Current \$ _____
 - (b) To All Others Exclusive of
Equipment Encumbrances - Current _____
15. Due Subcontractors
 - (a) Account of retained percentage _____
 - (b) Current Estimates _____
16. Accounts Payable
 - (a) Not past due _____
 - (b) Past due _____
17. Real Estate Encumbrances due in 1 year _____
18. Equipment Encumbrances due in 1 year _____
19. Other Liabilities due in 1 year _____
26. Contingent Liabilities (if applicable) _____

Total Liabilities \$ _____

Net Rateable Assets \$ _____

X _____

Amount Qualified \$ _____

Figure 1 Worksheet used by Arkansas DOT.

TABLE THREE
TYPICAL RANGES OF THE VALUE OF A APPLIED
TO NET WORTH

| State | Range of Values of A |
|----------------------------|------------------------|
| Alabama | $0 \leq A \leq 10$ |
| Kansas ¹ | $1 \leq A \leq 20$ |
| Massachusetts | $0 \leq A \leq 12$ |
| New Hampshire ² | $0 \leq A \leq 10$ |
| Washington ³ | $5 \leq A \leq 7.5$ |
| Wisconsin | $1 \leq A \leq 10$ |
| Wyoming | $5 \leq A \leq 22$ |

¹ An amount of \$500,000 is added to A multiplied by NW to calculate CF

² Applied to total assets less current liabilities

³ The value of A is increased by 0.5 for each satisfactory year up to a maximum value of 7.5

increased if there is a high percentage of current assets and the contractor performance has been satisfactory. The maximum value is 10.

Ability Factors

In the previous grouping of states, determining the value of the multiplier, A , is an informal matter based on the agency's assessment of a contractor's experience, past performance, timeliness, quality, and so forth. A comparatively smaller group of states relies on systematic measure of performance, the ability factor. The ability factor is a codified form of multiplier. Three examples illustrate how this parameter is calculated and applied.

Ohio In Ohio, the capacity factor is calculated as follows:

$$CF = 10 \times WC \times AF \quad (2)$$

where

CF = capacity factor in dollars

WC = working capital in dollars (called the net current assets)

AF = ability factor, which is a informal determination as a function of organization, plant and equipment, experience, credit relations, and performance.

New Jersey The calculation of capacity factor in New Jersey relies on two formal determinations. The equation is as follows:

$$CF = NLA \times M \times AF \quad (3)$$

where

CF = capacity factor in dollars

NLA = net liquid assets

M = a multiplier in the range $6 \leq M \leq 10$ based on liquid assets

AF = ability factor, called an efficiency factor, based on quality, schedule, and performance.

Florida In a somewhat more complicated version of equations (2) and (3), the Florida DOT relies on two determinations from the contractor's financial statement:

$$CF = AF \times CRF \times ANW \quad (4)$$

where

CF = capacity factor in dollars

AF = ability factor

CRF = current ratio factor

ANW = adjusted net worth in dollars.

The determination of the ability factor is very detailed and complicated and deserves further mention.

For new applicants, the ability factor is a compilation of scores in the three categories shown in Table Four. Although the score is formally calculated, the individual category scores are informally determined.

For active contractors, a past performance report is used for work completed within the last 5 years. The detailed report showing how the scoring is done is in Appendix D. A minimum of three reports is required to determine an ability score.

Detailed Financial Analyses

Some states rely on a detailed analysis of the contractor's financial statement to extract exacting information to use in seemingly complicated formulae. These formulae are deemed to be an effort to better assess the other contractor assets and liabilities such as stocks, equipment, and credit. In reality, the approaches differ little from the previous ones because the respective agencies have simply formalized the variations in the worksheets into the capacity

TABLE FOUR
CATEGORIES CONSIDERED IN CALCULATING ABILITY
FACTOR BY THE FLORIDA DEPARTMENT OF
TRANSPORTATION

| CATEGORY | MAXIMUM SCORE |
|--|------------------|
| <u>Organization and Management</u> | |
| Experience of Principals | 15 |
| Experience of Superintendents | 15 |
| <u>Work Experience—Completed</u> | |
| <u>Contracts</u> | 25* |
| Highway and Bridge-Related | 10 |
| Nonhighway and Bridge-Related | |
| <u>Work Experience—Ongoing Contracts</u> | |
| Highway and Bridge-Related | 25* |
| Nonhighway and Bridge-Related | 10 |

* The maximum value may be increased to 35 if the contractor's experience is exclusively in highway and bridge construction.

factor equation. The following are representative examples of some of the less complicated approaches.

Connecticut The Connecticut equation is as follows:

$$CF = AF \{SNW + CSPU + PIC + 0.5 (PC - BV)\} \quad (5)$$

where

CF = capacity factor in dollars

AF = ability factor (a base value of 10 is usually used)

SNW = surplus net worth

$CSPU$ = capital stock paid up

PIC = paid in capital

PC = equipment market value or purchase price

BV = equipment book value.

As can be seen, experience and past performance are not used in this approach except as an informal assessment in the ability factor. The initial input for calculating the ability factor originates from the project level.

Georgia Several states, Hawaii and Virginia among them, use an equation similar to that used by Georgia. The Georgia approach is as follows:

$$CF = AF \{C + 0.60 (DA - DL)\} \quad (6)$$

where

CF = capacity factor in dollars

AF = ability factor (very similar to the one used by Florida)

C = current assets less current liabilities, plus plant and equipment used for road and bridge construction only

DA = deferred assets (property, plant, and equipment not used for road and bridge construction)

DL = deferred liabilities (those maturing beyond 1 year).

Indiana In Indiana, the following equation is used:

$$CF = 10 NCA + 8 NBV + 2 NFA \quad (7)$$

where

CF = capacity factor in dollars

NCA = net current assets

NBV = net book value of equipment

NFA = net fixed and other assets.

There are limitations on the terms in equation (7). A contractor's capacity is not reduced based on performance.

Michigan A variation of the Indiana approach is the one used in Michigan. It is as follows:

$$CF = 9 WC + 1.5 AD + 4 NBV \quad (8)$$

where

CF = capacity factor in dollars

WC = working capital

AD = allowable depreciation

NBV = net value of construction and transportation equipment.

A numerical rating table and performance evaluation form are used.

Iowa A unique feature in Iowa is that a contractor's capacity is increased by its line of credit. This seeming bonus is offset by allowing only half the difference between the net assets and liabilities and can be further reduced by the ability factor (informally determined). The calculation is made using equation (9).

$$CF = AF \left\{ CA - CL + \frac{(NCA - NCL)}{2} \right\} + LC \quad (9)$$

where

CF = capacity factor in dollars

AF = ability factor in the range $1 \leq AF \leq 9$

CA = current assets

CL = current liabilities

NCA = net current assets

NCL = net current liabilities

LC = line of credit.

Pennsylvania Pennsylvania permits 50 percent of the line of credit amount, but does not reduce the capacity, except through the ability factor.

$$CF = AF (C + 0.5 L + 0.5 EBV) \quad (10)$$

where

CF = capacity factor in dollars

AF = ability factor in the range $1 \leq AF \leq 15$

C = net working capital

L = line of credit

EBV = equipment book value.

A numerical performance rating scheme and an experience questionnaire are also used.

Financial Ratio Approach

One state, Colorado, relies on an analysis approach based on financial ratios. In Colorado, there is no determination of a maximum volume of work on which a contractor can bid. Rather, a contractor will be awarded a contract if the following four conditions are met:

$$\frac{\text{Total assets}}{\text{Total liabilities}} \geq 1.0 \quad (11)$$

$$\frac{\text{Cash and accounts receivable}}{\text{Total current liabilities}} \geq 1.0 \quad (12)$$

$$\frac{\text{Net fixed assets}}{\text{Net worth}} \leq 2.3 \quad (13)$$

$$\frac{\text{Total liabilities}}{\text{Net worth}} \leq 4.0 \quad (14)$$

Other Approaches

Three other approaches are described below because of their uniqueness. They are also characterized by their lack of a capacity factor.

South Carolina In South Carolina, responsibility is on a per-job basis and is not related to the aggregate amount of work in progress. A contractor is responsible if

$$CA \times 0.15 \leq NLA \quad (15)$$

where

CA = contract amount in dollars

NLA = net liquid assets.

Utah In Utah, input into the determination of bidding capacity is received from multiple sources. First, a numerical scheme is used to judge past project performance. Next, another numerical scheme is used by the construction division to assess the contractor's experience. The comptroller's office provides the next factor, which is a measure of the contractor's financial strength. Last, a prequalification board provides a further evaluation of the contractor's experience. These four factors are applied to the adjusted equity from the financial statement and worksheet in the following way:

$$CF = AE \times A \times (B + C + D) \quad (16)$$

where

CF = capacity factor in dollars

AE = adjusted equity

A = factor based on past performance

B = factor based on contractor experience

C = factor based on contractor's financial records

D = another factor based on experience.

Vermont The Vermont procedure for determining bidding capacity is very simple. The contractor's revenues are averaged for the previous 4 years. This average revenue value is then used in the following equation:

Maximum Capacity Factor =

$$\text{Average Revenue} \times \frac{\text{Total Current Year Assets}}{\text{Assets for the Previous Year}}$$

Vermont also limits the number of projects that a contractor may have under contract at any one time in light of the following factors:

- Average annual number of projects over \$100,000 for the previous 5 years
- Number of qualified foremen employed
- Equipment inventory
- Scope of services (e.g., paving contractors would be allowed more projects than roadway contractors).

Synopsis of Capacity Factor Calculations

The practices of individual states range from simple to complex. As seen in Figure 2, although states that qualify contractors begin with standard accounting procedures, the use of worksheets, multipliers, and ability factors leads to quite varied results. A contractor qualified in several adjoining states may have very different capacity factors, even though the same audited financial statement is

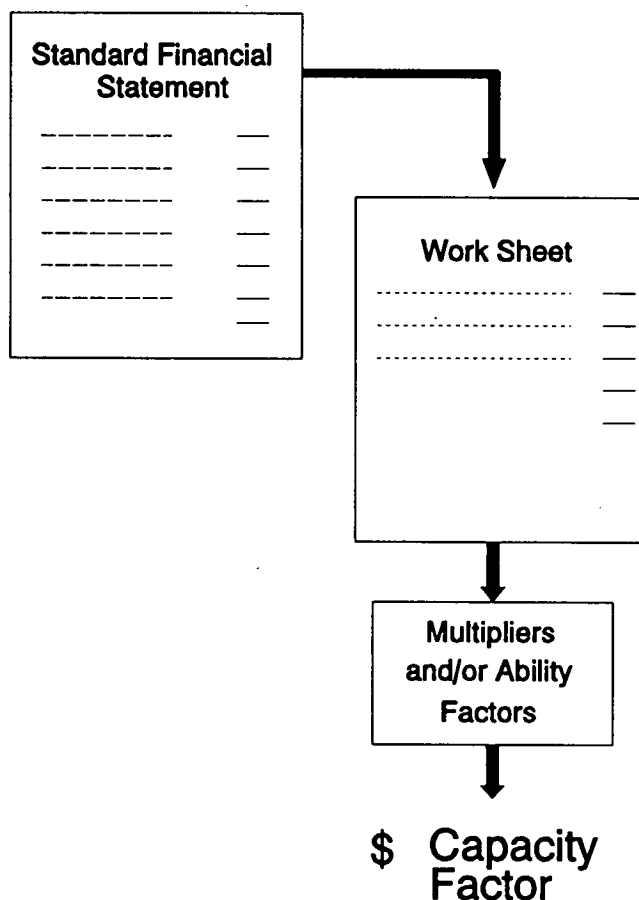


Figure 2 Conceptual process of determining capacity factor.

used. There is a limited base of knowledge regarding the use of the various capacity factor equations. Most seem to have been in use for many years, and the rationale behind the equations has often been obscured. Many procedures covering financial strength are probably 40 years old or older.

Managerial Technical Ability and Past Experience

Management and technical ability and past project experience are assessed in most states via an experience questionnaire. The material in Appendix E is typical of the questions asked. Most of the inquiries relate to previous projects, manager qualifications, and equipment inventory. Some states ask for the names and qualifications of lower-level supervisors. Resumes of key contractor personnel may also be required.

Performance Evaluation

A significant part of qualifying a contractor is trying to confirm the contractor's ability to perform the types of work required by the DOT after the contract is awarded. Among the states that qualify contractors, 13 evaluate the contractor's field performance on the agencies' own projects and, through formal or informal analyses, may use the evaluation to modify the contractor's qualifi-

cation rating. Those states that simply search for evidence of past performance problems, without a formal documentation system, are not included in this group.

Project performance evaluation questionnaires are generally initiated by the project or field engineer responsible for the project. In some cases, a second rating is completed by a district engineer. The second evaluation acts as a screen or buffer in the situations where personality conflicts may bias the project engineer's responses. Several evaluation systems require the resident engineer to meet with the contractor if an unusually low rating is being reported. Individual project ratings are generally averaged to develop an overall rating. The primary factors considered for performance evaluation are attitude and cooperation, equipment, organization and management, and work performance.

Attitude and Cooperation

All 13 states identify attitude and cooperation in some fashion as a performance criterion, but the measurement systems are not consistent. The major elements of the ratings are consideration of the traveling public, cooperation with agency instructions, cooperation with field personnel, cooperation with adjacent land owners, and other public relations issues. Some states also evaluate cooperation on safety issues, attitude toward equal employment opportunity compliance, attitude toward minority business enterprise requirements, dispute resolution, cooperation among project contractors, and cooperation within the contractor's labor force.

Equipment

All 13 states consistently measure equipment as a performance criterion. The main focus is on the adequacy of the equipment assigned to the project.

Organization and Management

The contractor's organization and site management skills are commonly assessed by performance reports. Typical items for review are the adequacy of the contractor's management staff (caliber), their knowledge of the contract requirements (competency), efficient use of equipment and availability of materials (resource utilization), and timeliness of correspondence and other submission requirements.

Work Performance

Major categories measured under work performance are timely starting of the project, systematic work completion, compliance with plans and specifications, timely completion of the project, quality of finished work, proper installation and maintenance of erosion control facilities, and satisfactory cleanup procedures.

Other Criteria

Other performance rating criteria identified among the 13 field performance evaluation systems are safety compliance, traffic and

pedestrian protection, recognition and use of proper chain of authority, and efforts to use minority business enterprises. Safety was listed as a major rating factor in field performance evaluations on 6 of the 13 performance evaluation questionnaires. The remaining criteria were identified on only one or two performance rating systems.

Use of Performance Evaluation Systems

Performance evaluations are applied to modify the ability factors or multipliers used to determine maximum capacity factors. In states where a range of multipliers is possible, the performance evaluations are used either indirectly or directly to modify the multiplier value.

Indirect modification occurs when the qualification committee or qualification manager uses the performance rating to adjust the contractor's multiplier without a defined technique. A sample report, from Indiana, is provided in Appendix F. The form provides for contractor prequalification limits. Generally, in systems such as Indiana's, no action is taken on the contractor's prequalification rating unless the performance reviews show a consistent pattern of below-average performance.

Direct use of the performance evaluations can be found in systems used in Georgia and Virginia. They have developed performance rating scales that determine the contractor's multiplier value based on the performance rating score. Although each system provides a scale rating system, the states' approaches to developing the ratings are unique. Georgia's documents for determining ability factors are provided in Appendix G for further study. The advantage of Georgia's system is that it provides uniform application of the performance evaluation system to all contractors. Special circumstances can be accommodated, and generally the technique does not penalize the contractor unless performance is below average.

Performance evaluations provide the reviewing agency with a technique to measure contractor qualification beyond the limited scope of financial statements and documented data. While direct application of the evaluations has the advantage of a uniformly applied process, the informal analysis provides greater flexibility in considering the overall picture of a contractor's qualification.

Business Practices

All states surveyed will refuse to contract with a firm employing a principal who has given gifts or gratuities contrary to state policy, or has been convicted of bribery, conflicts of interest, or bid rigging within a specified time period, generally within the past 5 years. The evaluation of integrity varies considerably. Many states rely on the published list of debarred contractors from FHWA.

PERFORMANCE BONDS

All states require performance bonds, but the amount of coverage varies. Table Five shows the minimum coverage required. A detailed treatment of bonding availability has been prepared by Hancher. (55)

In the last 10 to 20 years, a few states decided only to require performance bonds instead of using a qualifying procedure. (See

TABLE FIVE
MINIMUM COVERAHE OF PERFORMANCE BOND

| 50% of Contract Amount | 75% of Contract Amount | 100% of Contract Amount | |
|------------------------------|------------------------------|-------------------------|----------------|
| Alaska | Iowa | Alabama | Nevada |
| California | | Arizona | New Hampshire |
| | | Arkansas | New York |
| Louisiana | | Colorado | North Carolina |
| New Mexico | | Connecticut | North Dakota |
| | | Delaware | Ohio |
| | | District of Columbia | Oklahoma |
| | | Florida | Oregon |
| | | Georgia | Pennsylvania |
| | | Hawaii | South Carolina |
| | | Idaho | South Dakota |
| | | Illinois | Tennessee |
| | | Indiana | Texas |
| | | Kansas | |
| | | Kentucky | Utah |
| | | Maine | Vermont |
| | | Massachusetts | Virginia |
| | | Michigan | Washington |
| | | Mississippi | West Virginia |
| | | Missouri | Wisconsin |
| | | Montana | Wyoming |
| | | Nebraska | |

Table One for states that currently require only performance bonds. The data in Table One, however, do not reflect states that formerly had qualification procedures as well as performance bonds.) In a few instances, it was possible to compare the number of contractor defaults before and after. There was no noticeable increase in defaults over approximately 10 years of experience. In fact, defaults seem to be a rare occurrence, even where states qualify contractors.

LICENSING REQUIREMENTS

Licensing requirements vary widely. Generally, the requirement does not seem to be an effective screen for ensuring a qualified contractor because of the general nature of the questions on a license application. In many instances, the license is not issued by the DOT. In other states it is not clear that the intent of requiring a license is to ensure competent contractors.

CHAPTER FOUR

SURETY

Many . . . ideas are embryonic when they come to the attention of the bond underwriter, who often must assume the guise of a Philadelphia lawyer to know what is wanted. The fact that the parties needing the bond don't know exactly what they want covered in the bond, only makes the underwriter's job more interesting, or depressing, depending on the age of the underwriter and the condition of his liver.

—H.F.Gee, *Agent's Bonding Guide*(56)

The quotation reflects one writer's view of the surety industry in the 1930s and 1940s, although it may be appropriate for today as well. The mid 1980s were a difficult time for the surety industry, whose losses, from contractor defaults on other than state contracts highlighted the overall economic problems facing the construction industry during this time.

The focus of this synthesis is on state DOT procedures for determining contractor qualifications for bidding and performing contract work. However, the ability to be bonded is a sufficient qualification for some state DOTs; therefore, a review of the surety bond process is appropriate. Because a bonding company sells the bond to the contractor, and not to a state DOT, few references to "state practices" can be provided here. Because all states require a bond or the equivalent of a bond at some stage of the qualification process, state DOTs should be familiar with the surety industry and how it functions.

NCHRP Report 341: Bond and Insurance Coverages for Highway Construction Contractors (55)

NCHRP Report 341 is a current and comprehensive evaluation of the issues affecting the availability of bonds and insurance for highway construction contractors. In determining the factors affecting the availability of bonds to contractors, the report identifies several factors that directly relate to the state DOT qualification practices.

State highway officials responding to a survey, by a wide margin, endorsed the current practice of requiring bonds on highway projects. No alternate to bonding is acceptable to them as a group. The cost of the bonds ranged from 1 percent for older established firms to 3 percent of the performance bond value for less-experienced firms.

Three findings of the study relate to the topic studied here and are consistent with the discussion and data collected for this synthesis: (1) more than 75 percent of the respondents used a form of prequalification, (2) fewer than 1 percent of performance bonds were invoked, (3) safety factors are not emphasized in prequalification.

WHAT IS A BOND?

A bond is an unusual form of credit created by a contract among three parties. The surety (guarantor) promises to the owner (obli-

gee) that the contractor (principal) will perform on a specific project. If the contractor has difficulty completing the contract, the surety will be called on for completion of the work. The surety may decide to assist the contractor in finishing the work, relet the contract to another contractor, or let the owner select a completion method and reimburse the owner up to the bond limit. When the surety finances the completion by the original contractor or relets to another contractor, it retains control of the project. If the surety decides to allow the owner to finish the project, it is no longer in control of the final project cost. (57) The cost of providing the protection of a bond is passed on to the state DOT by including the cost of the performance and payment bond in the contractor's bid.

The surety, when it issues a bond for a contractor, is extending a form of credit. A bond is not insurance. One key difference between bonds and insurance is that the fee for a bond is not based on the expectation that the contractor will default or based on loss history. Rather, the fee depends on the contractor successfully completing the project. If the contractor defaults, the surety will recover its losses from the contractor's remaining assets, which may require liquidating the contractor's assets. Insurance does not provide for this type of loss recovery.

TYPES OF BONDS

Three basic types of bonds are used in the bonded competitive bid system: bid, performance, and contract bonds. The bid bond and the performance bond indicate the surety believes the contractor has the necessary resources and capability to complete the contract and "qualifies" for the job. Contract bonds for labor and material assure the owner that the craft labor, suppliers, and vendors will be paid.

According to *The Basic Bond Book* (57),

A bid bond is provided as the basic instrument of prequalification. Prequalification in this context means that the surety has investigated the contractor sufficiently so as to be convinced that it can safely issue a bid bond on a given project. The bid bond states that the contractor will enter into a contract, if one is offered, and that [the contractor] will furnish whatever additional bonds are specified.

The bid bond represents another check point for the qualification system. Even though a contractor may have been prequalified, the purpose of a bid bond is to assure the state DOT that no significant financial or managerial changes have occurred in the contractor's organization since the last review and that the bidder will enter into a contract with the DOT if the bid is accepted. In some cases, this may not be true. The bond may reflect the surety's willingness to accept a higher risk with the contractor. The surety, in the case of a default on the bid bond, may be liable (up to the limit or face value of the bond) for the difference between the withdrawn bid and the bid ultimately used for the contract.

A performance bond will require that the contractor faithfully perform the obligations of the contract. The more conservative approach is for the bond to contain language that ensures the contractor performs in accordance to the plans, specifications, and conditions of the contract or similar specific language to prevent interpretation problems with the term faithful performance. The performance bond does not guarantee that the state DOT will have a finished project, only that the cost of completion, up to the face value of the bond, will be covered. The surety, as described earlier, has several alternatives to arrange completion of the contract or can pay up to the bond limit. The surety generally selects the least costly alternative.

Table Five, which listed the various performance bond coverage percentages for state DOTs, shows that most states favor 100 percent performance bonds. (61) Where the bond requirement was expressed as "the full contract amount" or was similarly stated, the requirements were interpreted to mean a 100 percent bond.

Contract bonds combine both payment and performance provisions. Generally, the contract bond obligation requires faithful performance of all provisions of the contract and payment of all claims for labor and material furnished to the contractor.

DETERMINING CONTRACTORS' BONDING CAPACITY

Although many state DOTs determine contractor bidding capacity on the basis of formulae, the bonding capacity determined by sureties is not obtained by such a well-defined deterministic approach. Mackall discussed the need to evaluate a contractor in three broad categories: (58)

1. Ability and experience: Given the project requirements, do the personnel have the "know-how" to get the job done under the conditions proposed?
2. Plant and equipment: Does the contractor have the proper amount and types of equipment necessary to perform the work?
3. Financial resources: Are the contractor's financial resources adequate to finance the work and provide a suitable margin for the surety?

In addition, Mackall discussed three key contractor qualifications: character, capacity, and capital. "Character" referred to personal traits of the applicant firm's employees and their record of "faithful performance to the trusts reposed" in them. "Capacity" referred to the skill and ability required for the performance of the project. The company track record for completing similar work was important in this evaluation as well as the qualifications of the personnel. "Capital" referred to the financial condition of the contractor that justified taking the risk on the particular project. The modern versions of these qualification yardsticks are character, capability, and cash.

A company requesting a bond may submit a wide range of documentation, including:

- Company history
- Completed project list (track record)
- Resumes of key management and supervisory personnel
- Credit references
 - Line of bank credit

- Trade references
- Financial statements prepared by a CPA
 - Auditor's certificate
 - Balance sheet
 - Profit and loss sheet
 - Work in progress
 - General and administrative expenses
- Business plan (future goals)
- Continuity plan
- Personal financial statements of the company principals
- Information regarding the specific project being bonded.

This list is fairly extensive and the entire range of documentation would only be required for the first-time bond applicant for a particular surety. For contractors previously bonded by a surety, only revisions and update information are needed. The surety reviews documents on the basis of what the applicant contractor has accomplished in the recent past and what the contractor's future capabilities look like. Because most contractors work with the same surety over a long period, the surety's agent is generally familiar with the current status of a contractor and needs only current information regarding work in progress and the proposed project.

Not all surety companies are as strict as others in their reporting and contractor investigation requirements. The surety industry, like many other industries, is stratified by experience and clientele. Most older surety companies have a regular group of contractor clients and are able to provide preferred rates to these highly reliable contractors and do not need to take higher risks with less-experienced contractors. Other companies issue bonds in the less-secure market covering less-experienced contractors. This segment has greater risks relative to financial default and higher bond rates are charged to contractors in this group. The larger sureties generally have more detailed requirements for offering preferred rates. The surety will not provide a bond to a client if it believes that the project exceeds the contractor's capabilities. *NCHRP Report 341* indicated that financial ratios have become less important to sureties because agents screen clients very closely, and the surety only deals with firms whose financial status is acceptable. (55)

CONTRACTOR DEFAULTS

If the contractor defaults, the surety has several courses of action available. Typically, the surety will first try to ascertain the cause of the default and determine the status of the project. The basic information the surety representative wants when the surety is notified of a contractor default is as follows:

- A copy of all contract documents
- An up-to-date financial statement of the contractor
- A breakdown of the status of each contract
- Names of subcontractors and the status of their payments
- The status of all taxes, financial arrangements, etc.

Once the remaining work of the project has been adequately defined, the surety can prepare estimates for completion. There are several avenues for completion of the contract. The choice is greatly influenced by the accuracy of the information evaluated. The surety may retain the original contractor and finance completion of the contract using the existing personnel and plant; or, the

surety may secure a contract with another contractor to finish the project. If the surety decides that completion is more expensive than the outstanding contract value, it may elect to remove the contractor and leave the completion problem entirely to the state DOT. If this occurs, the surety is responsible for the cost of completion up to the amount of the bond. The option selected is the prerogative of the surety and will depend on the specific project and contractor.

Suppose a 100 percent contract bond is required on a project where the contract amount is \$1 million. This means that the face value of the bond is \$1 million. If the contractor defaults after receiving \$200,000 in progress payments and the state secures another contractor to complete the project for \$1.5 million, the total project cost is \$1.7 million. The bond is not provided for the state to make a profit, so the state is still responsible for the first \$1 million. The surety is obligated for the remaining \$700,000, up to the face value of the bond. Had the requirements been for a 50 percent bond, then the face value would be \$500,000. The surety would have been obligated for \$500,000, and the state would have been responsible for the remaining cost, or \$1.2 million.

The problem of contractor default was evaluated in *NCHRP Report 341*. On an annual basis, 59 percent of the DOTs reported a default rate less than 1 percent. Ninety-four percent of the respondents indicated that less than 3 percent of their contracts defaulted. (55) The results further indicated that, although contractor defaults are inconvenient and delay the completion of the project, they do not appear to be a significant impediment among the state DOTs that responded to the survey. This finding was supported by state DOT and contractor associations interviewed in preparation of this synthesis. Each indicated that none or only one default had occurred in the previous year.

PREQUALIFICATION VERSUS SURETY

From a surety industry viewpoint, the prequalification versus surety comparison can be described as follows:

Prequalification by a government agency is fine as far as it goes but it seldom goes far enough. In most cases government employees will look at resumes, lists of equipment, and financial information. It will determine that people are available, that projects in a certain price range have been completed, that equipment is available, and factors will be assigned to assets and liabilities. From that empirical analysis they will arrive at a monetary range of contracts on which a contractor may bid.

This may be a reasonable preliminary step in the total prequalification process, but it lacks the in-depth treatment generally given a contractor by a surety. There is generally little knowledge of the people employed by the contractor nor is there a forward looking analysis made of the figures or an intimate knowledge of a contractor's problems. (57)

Though there may be other issues, that description identifies the tendency of agency administrators to focus on quantitative evaluations that can be used to decrease or increase a contractor's bid volume capacity rating and perhaps to more effectively manage their construction program, whereas, the surety has a financial risk in evaluating the contractor's likelihood of completing a project successfully.

STATES REQUIRING ONLY A BOND

The philosophy of the states that do not qualify contractors is that they have a more open competition among the contractors and that the surety industry prequalifies contractors by issuing bonds. These state DOTs do not have any "control" over the contractor by limiting the workload performed by the contractor. The bond-only states are California, Delaware, Idaho, Mississippi, and Montana.

CONCLUSIONS AND RECOMMENDATIONS

The preceding chapters have summarized how each state responds to the need to contract with qualified, financially stable contractors. Table One showed that every state relies on performance bonds. Beyond the inquiries made by sureties before issuing bonds, many variations of qualification exist, and no two states are alike.

PREQUALIFICATION VERSUS POSTQUALIFICATION

The majority of states qualify all potential contractors in advance, although a few states qualify only the lowest responsive bidder. The principal issue for the agency is the administrative effort required. When prequalification is used, there may be as many as 1,000 contractor portfolios to process in a relatively compressed period. In theory, by qualifying only the lowest bidder, fewer contractors have to be examined, the workload should be more evenly distributed, and the financial records should be more current. The downside of post-qualification is that it may be more difficult to get a contract signed in a timely manner.

Does the Qualification Process Duplicate Surety?

Figure 3 shows the general process relied on by the surety and the state DOT. Although each process begins with an audited financial statement, the use of worksheets, multipliers, and ability factors makes it highly improbable that the capacity factors calculated by the state will be the same as the bonding capacity calculated by the surety. Each is concerned with different elements of the financial statement. Therefore, it appears that the processes serve two different objectives using similar methodologies.

Does the Qualification Process Reduce Contractor Defaults?

The states surveyed or interviewed for this report did not indicate that the qualification process significantly reduces the likelihood of contractor defaults. Most stated that they have had no defaults, and where defaults have occurred, it was believed that the existing qualification process would not have prevented the contractor from being awarded the contract.

Does the Qualification Process Ensure Quality?

Clearly, the state can, through the qualification process, prevent an unscrupulous or incapable contractor from being awarded a contract. However, it also appears that the contractor would be unlikely to receive bonding. Far more effective measures to ensure

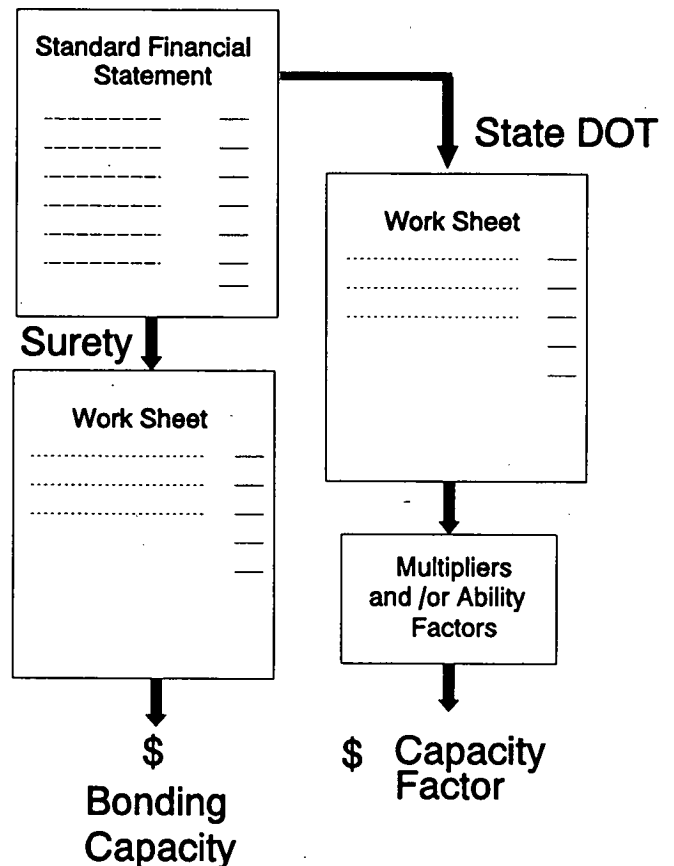


Figure 3 Comparison of state DOT and surety financial evaluation processes.

a quality product are well-designed contract documents, careful process control, and effective inspection.

Some states explicitly include capabilities adjustments for proven performance or quality.

What Does the Qualification Process Really Do?

Contractor qualification provides powerful leverage for the states. On a number of occasions, it was indicated that the mere suggestion that the bidding capacity might be reduced would "get the contractor's attention." Qualification gives the state agency more control over its construction program.

CONCLUSIONS

Based on the survey of practices, the following conclusions can be formulated:

- No comprehensive study has actually examined the effectiveness of bonding or qualification systems for reducing contractor defaults or for preventing less-than-qualified contractors from obtaining contracts or bonds.
- DOTs and sureties duplicate efforts in collecting, distributing, and evaluating similar financial data.
- A contractor working in several states will be subject to a wide range of terms and variability in its capacity rating largely because of the various state DOT evaluation practices.
- Contractor work quality, performance, timeliness, and cooperation are informally factored into most state DOT qualification systems, although state DOTs give considerable attention to assessing these factors.
- No reciprocity mechanism was found by which a contractor's prequalification in one state automatically qualified the contractor in another state. This was true for simple state agreements among adjacent states as well as wider coalitions formed by trade associations.
- It is likely that contractor default can occur more quickly than either the public or private systems can predict. Therefore, the

systems should be considered safeguards and not foolproof protection from default.

RECOMMENDATIONS

From the analysis of the surveys and site visits, several recommendations emerged:

- A uniform financial data format and submission process should be developed to reduce the repetitive workload on contractors. This would enable states to use modifiers of their own choosing but reduce one level of repetitive work.
- A procedure should be developed that will modify contractor capacity ratings using contract performance ratings that reflect safety, quality, timeliness, and conformance to design.
- An evaluation of the causes of contractor defaults on competitively bid bonded work should be undertaken to determine the effects of qualification systems on contractor defaults. The identification of factors leading to defaults might provide an alternative set of factors for evaluating contractor success potential.

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GLOSSARY

Ability factor—a qualification component based on a contractor's past performance and technical and managerial experience.

Bid bond—security that guarantees the contractor, on being declared the successful bidder, will enter into a contract for the amount of the bid and will provide the appropriate contract bonds.

Capital stock—shares of the proprietorship of a company sold to raise operating capital for the firm (can be sold at par value, above par value, or below par value).

Capacity factor—a qualification component representing the financial capabilities of the contractor to perform a project. It is usually an aggregate factor for the firm rather than for a single project.

Contract bond—a form of bond that combines the features of performance and payment bonds.

Current assets—include cash, government bonds, and other marketable securities, receivables, inventories, and other prepaid expenses.

Current liabilities—monetary obligations that must be paid out of current assets within the current year or operating cycle.

Current ratio—obtained by dividing total current assets by total current liabilities.

Deferred assets—resources that are assets on a balance sheet that are excluded from computation of net worth and do not contribute to the contractor's ability to perform highway construction.

Deferred liabilities—liabilities that are due beyond 1 year or the current operating cycle.

Liens—right created by law to secure payment for material and services furnished for the improvement of land.

Net equity—net worth, consisting of capital stock, capital (or paid in) surplus, earned surplus, and occasionally certain net worth reserves.

Net liquid assets—an asset that can be quickly sold near to its quoted market price is defined as highly liquid (cash, marketable securities, and receivables).

Net worth—the capital and surplus of a firm, capital stock, capital surplus, earned surplus, and occasionally certain reserves (*net equity*, *net worth*, and *common stock* are frequently used interchangeably).

Paid in capital—funds received in excess of par value when a firm sells stock. Paid in capital can increase when a company declares a stock dividend (called *additional paid in capital*).

Par value—nominal or face value of a stock or bond

Payment bond—acts for the protection of third parties to the contract and guarantees payment for labor and materials used or supplied in the performance of the construction.

Performance bond—guarantees that the contract will be performed and the owner will receive the structure built in substantial accordance with the contract documents.

Surety—a party that assumes the liability for the debt, default, or failure in duty of another.

Surplus net worth—capital surplus and earned surplus.

Working capital—the excess of current assets over current liabilities, which is another indication of short-term financial strength.

APPENDIX A

23 CFR 635.110

§ 635.110

in the original proposed construction;
or

(B) When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

(b) The provisions of this section shall be governed by the following:

(1) Where State statute does not permit one or more of the contract clauses included in paragraph (a) of this section, the State statute shall prevail and such clause or clauses need not be made applicable to Federal-aid highway contracts.

(2) Where the State highway agency has developed and implemented one or more of the contract clauses included in paragraph (a) of this section, such clause or clauses, as developed by the State highway agency may be included in Federal-aid highway contracts in lieu of the corresponding clause or clauses in paragraph (a) of this section. The State's action must be pursuant to a specific State statute requiring differing contract conditions clauses. Such State developed clause or clauses, however, must be in conformance with 23 U.S.C., 23 CFR and other applicable Federal statutes and regulations as appropriate and shall be subject to the Division Administrator's approval as part of the PS&E.

[56 FR 37004, Aug. 2, 1991, 57 FR 10062, Mar. 23, 1992]

§ 635.110 Licensing and qualification of contractors.

(a) The procedures and requirements a SHA proposes to use for qualifying and licensing contractors, who may bid for, be awarded, or perform Federal-aid highway contracts, shall be submitted to the Division Administrator for advance approval. Only those procedures and requirements so approved shall be effective with respect to Federal-aid highway projects. Any changes in approved procedures and requirements shall likewise be

23 CFR Ch. I (4-1-92 Edition)

subject to approval by the Division Administrator.

(b) No procedure or requirement for bonding, insurance, prequalification, qualification, or licensing of contractors shall be approved which, in the judgment of the Division Administrator, may operate to restrict competition, to prevent submission of a bid by, or to prohibit the consideration of a bid submitted by, any responsible contractor, whether resident or nonresident of the State wherein the work is to be performed.

(c) No contractor shall be required by law, regulation, or practice to obtain a license before submission of a bid or before the bid may be considered for award of a contract. This, however, is not intended to preclude requirements for the licensing of a contractor upon or subsequent to the award of the contract if such requirements are consistent with competitive bidding. Prequalification of contractors may be required as a condition for submission of a bid or award of contract only if the period between the date of issuing a call for bids and the date of opening of bids affords sufficient time to enable a bidder to obtain the required prequalification rating.

(d) Requirements for the prequalification, qualification or licensing of contractors, that operate to govern the amount of work that may be bid upon by, or may be awarded to, a contractor, shall be approved only if based upon a full and appropriate evaluation of the contractor's capability to perform the work.

(e) Contractors who are currently suspended, debarred or voluntarily excluded under 49 CFR part 29 or otherwise determined to be ineligible, shall be prohibited from participating in the Federal-aid highway program.

§ 635.111 Tied bids.

(a) The SHA may tie or permit the tying of Federal-aid highway projects or Federal-aid and State-financed highway projects for bidding purposes where it appears that by so doing more favorable bids may be received. To avoid discrimination against contractors desiring to bid upon a lesser amount of work than that included in

APPENDIX B

49 CFR 18.36 (a & h)

49 CFR 18.36

§18.36(a): "When procuring property and services under a grant, a State will follow the same policies and procedures it uses for procurements from its non-Federal funds." . . . "Other grantees and subgrantees will follow paragraphs (b) through (i) in this section."

§18.36(h):

(h) *Bonding requirements.* For construction or facility improvement contracts or subcontracts exceeding \$100,000, the awarding agency may accept the bonding policy and requirements of the grantee or subgrantee provided the awarding agency has made a determination that the awarding agency's interest is adequately protected. If such a determination has not been made, the minimum requirements shall be as follows:

(1) *A bid guarantee from each bidder equivalent to five percent of the bid price.* The "bid guarantee" shall consist of a firm commitment such as a

bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.

(2) *A performance bond on the part of the contractor for 100 percent of the contract price.* A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.

(3) *A payment bond on the part of the contractor for 100 percent of the contract price.* A "payment bond" is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

APPENDIX C

FINANCIAL STATEMENT (ARKANSAS)

FINANCIAL STATEMENT

SUBMITTED BY _____

PRINCIPAL OFFICE _____

CONDITION AT CLOSE OF BUSINESS _____ 19 _____ Accounting Year End:

- ☐ Individual
☐ Partnership
☐ Corporation

| ASSETS | | DOLLARS ONLY | |
|---|--|--------------|--|
| 1. Cash: (a) On hand \$ _____ (b) In bank \$ _____ (c) Elsewhere \$ _____ | | | |
| 2. Notes Receivable: (a) Amounts due within one year _____ (b) Past due _____ | | | |
| 3. Accounts receivable from completed contracts exclusive of claims not approved for payment _____ | | | |
| 4. Sums earned on uncompleted contracts as shown by Engineer's or Architect's estimate: (a) Amount receivable after deducting amounts retained _____ (b) Amounts retained to date, due upon completion of contracts _____ | | | |
| 5. Accounts receivable from sources other than construction contracts _____ | | | |
| 6. Deposits for bids or other guarantees: (a) Recoverable within 90 days _____ (b) Recoverable after 90 days _____ | | | |
| 7. Other Current Assets _____ | | | |
| 8. Stocks and Bonds: Current (a) Listed _____ Present Market Value _____ (b) Unlisted _____ Present Value _____ | | | |
| 9. Materials in stock not included in Item 4: (a) For uncompleted contracts _____ (b) Other materials _____ | | | |
| TOTAL CURRENT ASSETS _____ | | | |
| 10. Real Estate: (a) Used for business purposes _____ (b) Not used for business purposes _____ | | | |
| 11. Equipment, at book value _____ | | | |
| 12. Furniture and Fixtures, at book value _____ | | | |
| 13. Other Assets (Non-Current) _____ | | | |
| TOTAL ASSETS _____ | | | |
| LIABILITIES AND EQUITY | | | |
| 14. Notes Payable: (Due within 1 year EXCLUSIVE of Real Estate and Equipment Encumbrances) _____ | | | |
| 15. Due Subcontractors (retained percentage and current estimates) _____ | | | |
| 16. Accounts Payable: (a) Not past due _____ (b) Past due _____ | | | |
| 17. Real Estate Encumbrances due within one year _____ | | | |
| 18. Equipment Encumbrances due within one year _____ | | | |
| 19. Other Liabilities due within one year _____ | | | |
| TOTAL CURRENT LIABILITIES _____ | | | |
| 20. Notes Payable (Amounts due after 1 year EXCLUSIVE of Real Estate and Equipment Encumbrances) _____ | | | |
| 21. Real Estate Encumbrances due after one year _____ | | | |
| 22. Equipment Encumbrances due after one year _____ | | | |
| 23. Other Liabilities due after one year _____ | | | |
| TOTAL LIABILITIES _____ | | | |
| 24. PROPRIETOR'S OR PARTNER'S EQUITY _____ | | | |
| 25. SHAREHOLDERS' EQUITY: Capital Stock paid up — Preferred: \$ _____ — Common: \$ _____ Capital Surplus: \$ _____ Retained Earnings: \$ _____ Less Treasury Stock at cost: \$ _____ SHAREHOLDERS' EQUITY _____ | | | |
| TOTAL LIABILITIES AND EQUITY _____ | | | |
| 26. CONTINGENT LIABILITIES — Listed and Described on Separate Schedule _____ | | | |

SHOW MONEY VALUE IN DOLLARS

DETAILS RELATIVE TO ASSETS

| | | | | | | | |
|--|--|--------------------|--------------------|-------------------|--------------------|------------------|-------------------------------|
| 1 | (a) On hand _____ \$ _____ | \$ _____ | TOTAL | | | | |
| | Cash (b) Deposited in banks named below _____ \$ _____ | | | | | | |
| | (c) Elsewhere (state where) _____ \$ _____ | | | | | | |
| | NAME OF BANK | LOCATION | DEPOSIT IN NAME OF | AMOUNT | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 2* | (a) Due within one year _____ \$ _____ | \$ _____ | TOTAL | | | | |
| | Notes receivable (b) Past due _____ \$ _____ | | | | | | |
| | | | | | | | |
| | RECEIVABLE FROM: NAME AND ADDRESS | FOR WHAT | DATE OF MATURITY | HOW SECURED | AMOUNT | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Have any of the above been discounted or sold? _____ If so, state amount, to whom, and reason _____ | | | | | | | |
| 3* | Accounts receivable from completed contracts exclusive of claims not approved for payment _____ | | | \$ _____ | | | |
| | | | | | | | |
| | | | | | | | |
| | NAME AND ADDRESS OF OWNER | NATURE OF CONTRACT | AMOUNT OF CONTRACT | AMOUNT RECEIVABLE | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Have any of the above been assigned, sold or pledged? _____ If so, state amount, to whom, and reason _____ | | | | | | | |
| 4* | Sums earned on uncompleted contracts, as shown by Engineer's or Architect's estimate: (a) Amounts receivable after deducting retainage _____ \$ _____ (b) Retainage to date due upon completion of contract _____ \$ _____ | | | \$ _____ | TOTAL | | |
| | | | | | | | |
| | | | | | | | |
| | DESIGNATION OF CONTRACT AND NAME AND ADDRESS OF OWNER | AMOUNT OF CONTRACT | AMOUNT EARNED | AMOUNT RECEIVED | RETAINAGE WHEN DUE | RETAINAGE AMOUNT | AMOUNT EXCLUSIVE OF RETAINAGE |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Have any of the above been sold, assigned or pledged? _____ If so, state amount, to whom, and reason _____ | | | | | | | |

*List separately each item amounting to 10 percent or more of the total and combine the remainder.

DETAILS RELATIVE TO ASSETS — Continued

| | WHO IN POSSESSION | IF ANY ARE PLEDGED OR IN ESCROW, STATE FOR WHOM, AND REASON | Amount Pledged or in Escrow |
|---|-------------------|---|-----------------------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |

[illegible]

*If two or more items are lumped above, give the sum of their ages.

| | | |
|-----------|--|-----------------|
| 12 | Furniture and fixtures at book value _____ | \$_____ |
| 13 | Others assets (Non-Current). (Include Long Term Investments) _____ | \$_____ |
| | DESCRIPTION | TOTAL AMOUNT |
| | | |
| | | |
| | | |
| | | |
| | | |

Total Assets \$_____

[illegible]

| 17 | Real Estate Encumbrances (17) Current \$ _____ | (21) Long Term \$ _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--------------------------|---------------------------|---|--------------------------|--------------|---|--|----|-----------------------------|--|----|--|--|----|------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | 18 | 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | Equipment Encumbrances | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTALS \$ _____ | | \$ _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 19 | Other Liabilities due within one year (Current) _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 23 | Other Liabilities due after one year (Long Term) _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | | \$ _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 24 | PROPRIETOR'S OR PARTNER'S EQUITY _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | | \$ _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | SHAREHOLDERS' EQUITY _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | | \$ _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Liabilities \$ _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | CONTINGENT LIABILITIES \$ _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 5%;">1.</td> <td style="width: 85%;">Liability on notes receivable, discounted or sold _____</td> <td style="width: 10%;"> </td> </tr> <tr> <td>2.</td> <td>Liability on accounts receivable, pledged, assigned or sold _____</td> <td> </td> </tr> <tr> <td>3.</td> <td>Liability as bondsman _____</td> <td> </td> </tr> <tr> <td>4.</td> <td>Liability as guarantor on contracts or on accounts of others _____</td> <td> </td> </tr> <tr> <td>5.</td> <td>Other contingent liabilities _____</td> <td> </td> </tr> </tbody> </table> | | | 1. | Liability on notes receivable, discounted or sold _____ | | 2. | Liability on accounts receivable, pledged, assigned or sold _____ | | 3. | Liability as bondsman _____ | | 4. | Liability as guarantor on contracts or on accounts of others _____ | | 5. | Other contingent liabilities _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | Liability on notes receivable, discounted or sold _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | Liability on accounts receivable, pledged, assigned or sold _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | Liability as bondsman _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | Liability as guarantor on contracts or on accounts of others _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Other contingent liabilities _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

APPENDIX D

CONTRACTOR PERFORMANCE SCORING GUIDELINE

1. Ability Score.

a. New applicants and applicants whose Certificate of Qualification has been expired for more than two years shall have their ability factor determined from the total ability score resulting from evaluation of the applicant's letters of recommendation, organization, management, and work experience. The maximum values which may be used in the ability score are as follows:

| | Maximum Value |
|------------------------------------|---------------|
| (I) Organization and Management | |
| (A) Experience of Principals | 15 |
| (B) Experience of Superintendents | 15 |
| (II) Work Experience | |
| (A) Completed Contracts | |
| I. Highway and Bridge Related | 25* |
| II. Non-Highway and Bridge Related | 10 |
| (B) On-Going Contracts | |
| I. Highway and Bridge Related | 25* |
| II. Non-Highway and Bridge Related | 10 |
| (III) Total | 100 |

*Maximum value may be increased to 35 if applicant's experience is exclusively in highway and bridge construction.

b. Active Contractors. Prime Contractor Past Performance Reports on work completed for the Department within five (5) years of the application filing date shall be used to determine the ability score. Past Performance Reports may reflect completed, or both completed and ongoing projects. However, each report shall only be used one time for this purpose. A minimum of three valid Prime Contractor Past Performance Reports must be used in determining the ability score. Past Performance reports shall reflect the applicant's organization, management and work performance, including work sublet to others, using maximum values set forth as follows:

(I) Management and Organization of the work.

(A) Effectiveness of supervision in scheduling the work, organizing construction operations and providing quality control.

| | Maximum Score |
|---|---------------|
| I. Preconstruction Conference preparation and presentation. | 10 |
| II. Adequacy in maintaining their proposed work schedule and preventing delays or stoppages in particular phases or overall project completion. | 10 |
| III. Coordination and supervision of subcontractors to insure quality control and contract compliance. | 10 |
| IV. Knowledge of supervisory personnel regarding specifications, plans and special provisions. | 10 |
| V. Supervision of work crews. | 10 |
| VI. Preparation of shop drawing and submittals. | 10 |

| | |
|--|----|
| (B) Negotiation of Contract modifications, project recordkeeping and project documentation. | |
| I. Organization and completeness of data submitted for potential claims, extra work and time extensions. | 10 |
| II. Organization and availability of project records. | 10 |
| III. Furnishing of required certifications of materials, delivery tickets and invoices. | 10 |
| (C) Working relationship with Department personnel responsible for administration of the Contract requirements and inspection of the work. | |
| I. Notifying the Department of problems before work is continued. | 10 |
| II. Effecting changes within the scope of the Contract as instructed by the Department. | 10 |
| III. Informing Department project personnel in advance of scheduled day-to-day items of work. | 10 |
| IV. Responding to correspondence from the Department. | 10 |
| V. Properly Notifying the Department in advance of job changes and shut-down for Holidays, adverse weather, leaving the job, or other circumstances. | 10 |

Section (I)
Total (140)

| | |
|--|----|
| (II) Work Performance. | |
| (A) Prosecution of the work. | |
| I. Effort to complete the work within Contract time plus authorized extensions. | 10 |
| II. Punctuality in starting the work and completing critical intermediate phases. | 10 |
| III. Effort in performing work on all production items available throughout the project. | 10 |
| IV. Manpower commitment in performing the work. | 10 |
| V. Knowledge and competency of work force in performance of assigned job duties. | 10 |
| VI. Accuracy and dependability of Engineering survey layout. | 10 |
| VII. Cooperation in performance of work with other contractors on or adjacent to the project. | 10 |
| VIII. Availability of project superintendent. | 10 |
| (B) Work effort and product quality control. | |
| I. Quality of work completed. | 10 |
| II. Allowance of sufficient time for job site sampling and testing of materials before proceeding with the work. | 10 |
| III. Effort to provide and maintain adequate survey station markers and grades. | 10 |
| IV. Pre-planning on complicated work to assure a smooth operation. | 10 |
| V. Quality of the work with normal inspection. | 10 |

(C) Scheduling and controlling of construction activities to minimize the impact on traffic through the construction zone, access to adjacent property and protection of the general public.

I. Maintenance and lighting of approach warning signs and barricades both day and night. 10

II. Adequacy of traffic flagperson, including training and equipment. 10

III. Response time in correcting jobsite conditions hazardous to the general public. 10

IV. Signing, (information, special detour, lane closure, etc.), including required striping and maintenance. 10

V. Protecting and maintaining required access to adjacent property including use and maintenance of erosion control devices. 10

VI. Securing project at the end of each workday, weekends and holidays. 10

(D) Sufficiency of appropriate equipment to prevent downtime and provide safe production of a quality product.

I. Availability of sufficient equipment for performance of the work. 10

II. Service and repair of equipment to insure a quality product. 10

III. Use of proper equipment on designated work. 10

IV. Operator performance on equipment being utilized. 10

V. Utilization of trained and competent personnel for signaling cranes and other equipment. 10

(E) Compliance with E.E.O., labor, training, and on-site safety.

I. Maintenance of the worksite in a safe and clean condition. 10

II. Employees adherence to Contractor's safety policy. 10

III. Compliance with all requirements of the EEO Contract Administration Manual. 10

IV. Compliance with wage rates and all labor regulations. 10

V. Furnishing of certified payrolls both for contractor and his subcontractors as required. 10

VI. Effort in meeting on-the-job training requirements. 10

(F) Interface with utility companies in adjusting, relocating or installing facilities concurrent with construction.

I. Providing required notice to the Department regarding planned operations affected by utilities. 10

II. Coordination with utility companies in protection of existing facilities. 10

III. Effort to work with utility companies as necessary in correcting unforeseen problems. 10

| | |
|---|----|
| (G) Final Completion of the Project. | |
| I. Effort in expediting project clean-up. | 10 |
| II. Effort in minimizing punch list items. | 10 |
| III. Submission of all final paperwork and documentation. | 10 |
| Section (II) | |
| Total (360) | |

(III) Ability Score Calculation.

Total scores of section (I) and (II) divided by
Maximum Rating Attainable multiplied by 100 equals
Ability Score.

2. Ability Factor

a. The ability score for new and active applicants shall determine the Ability Factor (AF) as follows:

| Ability Score | AF | Ability Score | AF |
|---------------|----|---------------|----|
| 65 to 69 | 2 | 85 to 89 | 10 |
| 70 to 73 | 3 | 90 to 93 | 12 |
| 74 to 76 | 4 | 94 to 97 | 14 |
| 77 to 79 | 6 | 98 to 100 | 15 |
| 80 to 84 | 8 | | |

b. Non Active Contractors.. Any applicant that has been qualified with the Department within the last two years, but has not performed sufficient work with the Department during that time to allow determination of an ability factor shall be given the ability factor from the applicant's last successful application.

APPENDIX E

EXPERIENCE QUESTIONNAIRE (NORTH CAROLINA)

36

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, N. C.



EXPERIENCE QUESTIONNAIRE
FOR
PREQUALIFICATION

FIRM NAME _____
ADDRESS _____
TELEPHONE NUMBER _____
DATE _____

EXPERIENCE QUESTIONNAIRE

Revised 1-18-90

1. How many years has your firm been in business as a contractor under your present business name? _____
2. How many years has your firm been in the construction business? _____
3. List significant projects recently completed by your firm: (Use Attachments if Appropriate)

| Owner | Contract Amount | When Completed | Type of Work | Location of Work |
|-----------|-----------------|----------------|--------------|------------------|
| (1) _____ | _____ | _____ | _____ | _____ |
| (2) _____ | _____ | _____ | _____ | _____ |
| (3) _____ | _____ | _____ | _____ | _____ |
4. List your significant uncompleted contracts as follows: (Use Attachments if Appropriate)

| Owner | Contract Amount | % Completed | Type of Work | Location of Work |
|-----------|-----------------|-------------|--------------|------------------|
| (1) _____ | _____ | _____ | _____ | _____ |
| (2) _____ | _____ | _____ | _____ | _____ |
| (3) _____ | _____ | _____ | _____ | _____ |
5. Has your firm been indicted, pled guilty, or been convicted of any offense that has resulted in your firm being debarred from bidding or performing work for any State, Local, or Federal Government during the past 5 years? Yes No
If yes, attach a separate sheet(s) to this form giving the details involved.
6. Has any officer, employee, or member of your firm been indicted, pled guilty, or been convicted of any illegal restraints of trade (including collusive bidding), during the past 5 years? Yes No If yes, attach a separate sheet(s) to this form giving the details involved.
7. Has your firm or any officer, employee, or member of your firm been debarred for violation of various Public Contract Acts incorporating Labor Standards Provisions during the past 5 years? Yes No If yes, attach a separate sheet(s) to this form giving the details involved.
8. Is your firm under the protection of the bankruptcy court, has pending any petition in bankruptcy court or have you made an assignment for the benefit of creditors? Yes No
9. List the firm name, and mailing address of persons (Governmental or Private) for whom you have performed work that we might refer to.
 - (1) _____
 - (2) _____
 - (3) _____
10. What type of work do you consider your firm qualified to perform?

| | | | |
|-------------------------|-----------------------|-----------------|------------|
| Grading | Asphalt Paving | Concrete Paving | Structures |
| Utilities | Misc. Concrete | Building | Landscape |
| Pavement Rehabilitation | Bridge Rehabilitation | Other | |

11. List the principal officers of your firm, or if not a corporation, the owners. If there are more than three (3), attach a list. Attach a brief resume for each individual listed.

| Name | Position | Years of Construction Experience | Type of Work Experience |
|-----------|----------|----------------------------------|-------------------------|
| (1) _____ | _____ | _____ | _____ |
| (2) _____ | _____ | _____ | _____ |
| (3) _____ | _____ | _____ | _____ |

12. List the principal members of your firm that are involved in the managerial or policy making decisions of your firm if other than those listed above. If there are more than three (3), attach a list. Attach a brief resume of each individual listed.

| Name | Position | Years of Experience | Type of Work Experience |
|-----------|----------|---------------------|-------------------------|
| (1) _____ | _____ | _____ | _____ |
| (2) _____ | _____ | _____ | _____ |
| (3) _____ | _____ | _____ | _____ |

13. List all owners (including individuals, companies or corporations) owning 10% or more of applicant's firm and the ownership of each, and any successive parent entities. If there are more than three (3), attach a list.

| Name of Individual | Percent of Ownership |
|--------------------|----------------------|
| (1) _____ | _____ |
| (2) _____ | _____ |
| (3) _____ | _____ |

14. Identify each of those listed under 13 who own 10% or more financial interest in any other firm prequalified to bid on highway work in this or another state; name the other company and list the percentage of ownership of each owner listed in 13. If more than three (3), attach a list.

| Name of Individual or Firm | Name of Other Firm | Percent of Ownership |
|----------------------------|--------------------|----------------------|
| (1) _____ | _____ | _____ |
| (2) _____ | _____ | _____ |
| (3) _____ | _____ | _____ |

15. List any officer or member of the firm in a management or policy making position listed in 13 and 14 who also is an officer or serves in the management of any other firm prequalified to do highway work in this state or any other state. List the officer or manager and the firm as well as the position in the other firm. If more than three (3), attach a list.

| Name of Individual | Name of Firm | Position Held |
|--------------------|--------------|---------------|
| (1) _____ | _____ | _____ |
| (2) _____ | _____ | _____ |
| (3) _____ | _____ | _____ |

16. List all affiliates of the applicant including but not limited to (1) joint ventures, (2) subsidiaries, (3) parent company, (4) companies owned or controlled by the parent company, (5) any company or firm having some mutual owners as the applicant which does business with the applicant. If more than five (5), attach a list.

| Name of Firm | Address | Relationship |
|--------------|---------|--------------|
| (1) _____ | _____ | _____ |
| (2) _____ | _____ | _____ |
| (3) _____ | _____ | _____ |
| (4) _____ | _____ | _____ |
| (5) _____ | _____ | _____ |

17. Attach any financial information (financial statements, lines of credit, bonding capacities, etc.) that you wish the Department to consider in judging your application for prequalification.

18. My license number for general contracting in N. C. is _____

19. My Federal Tax Identification Number is _____

20. Is your firm currently certified as a Disadvantaged Business Enterprise (DBE)?
 _____ Yes _____ No (DBE means at least 51% owned & controlled by minorities or women) If yes, attach a copy of current certification notice.

Firm Name

By: _____

Title: _____

STATE OF _____,

County of _____,

On this _____ day of _____, 19____, personally appeared
 before me _____ for _____
 (Official of Firm) (Firm Name)

who signed the foregoing affidavit in my presence and made oath to the truth of the statement herein contained.

(Name of Notary)

My commission expires _____.

APPENDIX F

PERFORMANCE EVALUATION REPORT (INDIANA)

CR-2 State Form 19896 (R4/1-88) INDIANA DEPARTMENT OF HIGHWAYS
REPORT ON CONTRACTOR'S PERFORMANCE OF CONTRACT

CONTRACTOR _____ CONTR. NO. _____

IN CHARGE FOR CONTRACTOR AT SITE _____

Check types of Work Involved

This Contractor is:

Principal Contractor ☐
Sub-Contractor ☐

| Principal | Minor |
|----------------------|-------|
| Concrete Pavement | |
| Bitum. Plant mix | |
| Rd. Mix & Liq. Appl. | |
| Grading Hvy. Lt. | |

| Principal | Minor |
|---------------------|-------|
| R.C. Bridges & STR. | |
| Struct. Stl. Erec. | |
| | |
| | |

RATING BY

P.S. DIST.

(a) ORGANIZATION and PERSONNEL

General supervision: As to knowledge of types of work involved
As to development of well-functioning organization
As to EEO implementation and reporting requirements
As to accuracy and timeliness of paperwork and reporting requirements (other than E.E.O.)
Minor supervision as to adequacy and competence
Operators and skilled labor as to adequacy and competence

(b) PROSECUTION OF WORK

Rate of Progress: On primary operations
On finishing and cleanup
Workmanship and voluntary conformance with specs and standards
Planning and scheduling of job sequences and material deliveries
Safety to the travelling public

(c) CONSTRUCTION EQUIPMENT

Adequacy as to kind, capacity and quantity
Condition as to maintenance and repair (without regard to age)

(d) GENERAL RELATIONSHIPS

Consideration of the travelling public
Dealings with and treatment of adjacent property owners
Relationships with labor employed (only as they affected job progress and the public interest)
Attitude toward the Engineer and Department regulations

GENERAL REMARKS

Final Inspection Date: _____ Have items rated 3 and below been discussed with the contractor? Yes _____ Discussion date: _____ No _____ Reason not discussed: _____

District: _____ Project Supervisor _____ Date _____
Area Engineer _____ Date _____ Construction Engineer _____ Date _____

INSTRUCTIONS FOR PREPARATION OF REPORT ON CONTRACTOR'S PERFORMANCE OF CONTRACT

CONTRACTORS TO BE REPORTED ON:

All principal contractors. Rate principal contractors of a joint venture contract on separate forms unless they share the same contract items.

All sub-contractors who perform work having a value greater than \$5,000.00.

WHEN TO REPORT:

Final report on each contractor or sub-contractor upon substantial completion of his work. It is not necessary to wait for the technical "date of last work". Final report shall be received by the Central Office no later than thirty days after the final inspection.

Interim, preliminary or partial reports as follows:

1. If project engineers are changed and the new engineer is not familiar with prior performance.
2. Concurrent with the issuance of a "ten day notice", or any other formal written notice to the contractor of inadequate performance.
3. Upon substantial completion of the principal work involved if considerable time will elapse before a final report is made.
4. Upon seasonal suspension of work, if no recent report has been made for other reasons.
5. Upon request of Prequalification Engineer.

RATINGS:

Rate each item on the form from one to six by the following standards.

6. Excellent, premium rating (to be used only for exceptional performance).
5. Good performance as desired and expected (a full credit rating).
4. Acceptable, meets minimum standards.
3. Occasionally is not up to minimum standards (Sometimes the work may be unsatisfactory).
2. Unsatisfactory, appropriate remarks are to accompany this low rating.
1. Wholly inadequate, appropriate remarks are to accompany this low rating.

Rate each item on its own and for this contract only without any averaging of one item against another or any tempering up or down because of performance on some other contract. All items and all contracts are not of equal importance and appropriate weighing factors will be applied to the ratings by the Prequalification Engineer.

If different ratings are justified for different types of work involved, rate the principal type and the contract as a whole on the regular form and discuss differences under remarks or make separate report for minor types whichever seems more convenient. Items rated 3 or below should be discussed under remarks.

PREPARATION AND ROUTING:

To be initiated by the Project Supervisor who will enter his own opinion as to ratings, add any appropriate remarks, date, sign and forward to the District Office; the District ratings and remarks to be entered by the District Engineer or his appropriate assistant who will date and sign the report. The Area Engineer and/or the District Construction Engineer should discuss items rated 3 and below with the contractor's General Superintendent or a Principal or Officer of the firm. Provide the date of the discussion, the date of the final inspection, and the reason if no discussion was held. Forward the report directly to the Prequalification Engineer in the Central Office, where it will be considered confidential and not available for promiscuous scrutiny. Occasional embarrassment may be avoided if no copies are retained elsewhere.

The District Office should see that forms are supplied and follow up as necessary to see that reports are initiated and forwarded on all contracts as required. For additional information, please refer to the General Instructions to Field Employees.

DOCUMENTS FOR DETERMINING ABILITY FACTORS (GEORGIA)

COMMENTS:

| | | |
|-------|----|-------------------|
| Total | 25 | <u> </u> |
|-------|----|-------------------|

DEPARTMENT OF TRANSPORTATION
RECOMMENDED CONTRACTOR'S ABILITY FACTOR

WORK PERFORMANCE

| | <u>MAXIMUM VALUE</u> | <u>RATED VALUE</u> |
|--|--------------------------|------------------------|
| 1. Did contractor start on time? | 1 | _____ |
| 2. Did he prosecute work diligently and systematically? | 10 | _____ |
| 3. Did he have equipment available on the project when needed? | 10 | _____ |
| 4. Did he have proper supervision on the project at all times? | 5 | _____ |
| 5. Was quality work obtained with normal inspection? | 5 | _____ |
| 6. Was chain of authority in Department respected by contractor? | 3 | _____ |
| 7. Did contractor cooperate with utility companies and/or other contractors who were involved in work on this project? | 3 | _____ |
| 8. Did he complete project on schedule? | 5 | _____ |
| 9. Was final clean up work satisfactory? | 2 | _____ |
| 10. Did contractor provide the Department with complete list of source of supply of materials and keep list current? If no, explain: | 1 | _____ |
| 11. Did contractor adequately protect the traveling public? (Includes maintenance of traffic throughout work, maintenance of detours, signs, warning lights, and watchmen.) | 5 | _____ |
| Total | 50 | _____ |

REMARKS:

CONTRACTOR: _____ NO. _____

ADDRESS: _____ DATE OF APPLICATION _____

After evaluation of the applicant's statement, experience, work record, and performance, we recommend the following:

| <u>RATING SCORE</u> | | <u>RATING SUMMARY</u> | | |
|-------------------------|--|--|--------------------------------|-------------------------------|
| <u>Rating Score</u> | <u>Ability Factor (Item F)</u> | <u>ITEM</u> | <u>MAX. POINTS ALLOWED</u> | <u>RATING RECOMMENDED</u> |
| 1 to 11 | 1 | Equipment | 25 | _____ |
| 12 to 18 | 2 | Organization and Management | 25 | _____ |
| 19 to 25 | 3 | Work Performance | 50 | _____ |
| 26 to 32 | 4 | Totals | 100 | _____ |
| 33 to 39 | 5 | | | |
| 40 to 46 | 6 | Recommended Ability Factor (Item F from Rating Scale) | | _____ |
| 47 to 53 | 7 | | | |
| 54 to 60 | 8 | | | |
| 61 to 67 | 9 | | | |
| 68 to 71 | 10 | | | |
| 72 to 75 | 11 | | | |
| 76 to 79 | 12 | | | |
| 80 to 83 | 13 | | | |
| 84 to 87 | 14 | | | |
| 88 to 91 | 15 | | | |
| 92 to 95 | 16 | | | |
| 96 to 99 | 17 | | | |
| 100 | 18 | | | |

Submitted _____
Resident Highway Engineer

Recommended _____
District Engineer

Approved _____
State Highway Construction Engineer

Return Executed Copy to:

Prequalification Office
Department of Transportation
Highway Division
2 Capitol Square
Atlanta, Georgia 30334

Construction Engineer
Date _____

THE TRANSPORTATION RESEARCH BOARD is a unit of the National Research Council, which serves the National Academy of Sciences and the National Academy of Engineering. It evolved in 1974 from the Highway Research Board, which was established in 1920. The TRB incorporates all former HRB activities and also performs additional functions under a broader scope involving all modes of transportation and the interactions of transportation with society. The Board's purpose is to stimulate research concerning the nature and performance of transportation systems, to disseminate information that the research produces, and to encourage the application of appropriate research findings. The Board's program is carried out by more than 270 committees, task forces, and panels composed of more than 3,300 administrators, engineers, social scientists, attorneys, educators, and others concerned with transportation; they serve without compensation. The program is supported by state transportation and highway departments, the modal administrations of the U.S. Department of Transportation, the Association of American Railroads, the National Highway Traffic Safety Administration, and other organizations and individuals interested in the development of transportation.

The National Academy of Sciences is a private, nonprofit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. Upon the authority of the charter granted to it by the Congress in 1863, the Academy has a mandate that requires it to advise the federal government on scientific and technical matters. Dr. Bruce Alberts is president of the National Academy of Sciences.

The National Academy of Engineering was established in 1964, under the charter of the National Academy of Sciences, as a parallel organization of outstanding engineers. It is autonomous in its administration and in the selection of its members, sharing with the National Academy of Sciences the responsibility for advising the federal government. The National Academy of Engineering also sponsors engineering programs aimed at meeting national needs, encourages education and research, and recognizes the superior achievements of engineers. Dr. Robert M. White is president of the National Academy of Engineering.

The Institute of Medicine was established in 1970 by the National Academy of Sciences to secure the services of eminent members of appropriate professions in the examination of policy matters pertaining to the health of the public. The Institute acts under the responsibility given to the National Academy of Sciences by its congressional charter to be an adviser to the federal government and, upon its own initiative, to identify issues of medical care, research, and education. Dr. Kenneth I. Shine is president of the Institute of Medicine.

The National Research Council was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and advising the federal government. Functioning in accordance with general policies determined by the Academy, the Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, the public, and the scientific and engineering communities. The Council is administered jointly by both Academies and the Institute of Medicine. Dr. Bruce Alberts and Dr. Robert M. White are chairman and vice chairman, respectively, of the National Research Council.

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