



SUGGESTIONS FOR THE DETECTION AND PREVENTION
OF CONSTRUCTION CONTRACT BID RIGGING

Prepared by:

The Interdepartmental Bid Rigging
Investigations Coordinating Committee

Joseph P. Welsch
Inspector General
U.S. Department of Transportation
Cochairman

Helmut F. Furth
Deputy Assistant Attorney General
Antitrust Division
U.S. Department of Justice
Cochairman

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INTRODUCTION

This paper was prepared by the Interdepartmental Bid Rigging Investigations Coordinating Committee, which was formed in August 1982 to refine the joint investigative efforts of the Department of Transportation and the Department of Justice in the area of highway and airport construction contract bid rigging.

The paper addresses the detection and prevention of bid rigging, and is designed primarily for procurement and contract specialists and for investigative and audit personnel. It provides suggestions for steps to be taken to identify evidence of collusion and to improve state procurement procedures with a view to stimulating competition and inhibiting anticompetitive behavior. The suggestions offered are derived from successful detection and prevention methodologies developed during past investigations.

While the paper specifically deals with the letting of highway construction contracts, most of the recommendations are readily adaptable to other categories of procurements.

SECTION 1 - DETECTION

Purpose. The object of this portion of the paper is to present a methodology that can be utilized to detect collusion in highway construction contracts. This methodology has been utilized successfully in previous bid rigging investigations. It is intended to disclose various bidding practices and patterns which might indicate that bid rigging is occurring. This will focus any subsequent investigation as well as allow you to gain background information on contractor activity within a particular state.

When feasible, the use of electronic data processing equipment should be considered to assist in this effort. The Department of Transportation, Office of Inspector General, and the Department of Justice, Antitrust Division's Information Systems Support Group can provide guidance and assistance in this regard.

We suggest that this analysis be conducted by a team composed of an investigator, an auditor, an attorney, and a state department of transportation engineer. This mix will be extremely beneficial as the analysis progresses, especially if the determination is made to proceed to the investigative phase.

A. INITIAL SCREENING

The initial screening consists of reviewing all bid tabs and selecting those projects that involved five or fewer bidders and where the low bid exceeded or was within 5 percent of the state engineer's estimate.

1. On These State and Federally-funded Contracts, Perform the Following Analysis:
 - a. Compute the percentage difference between the second place bidder and the winning bid,
 - b. Compute the percentage difference between the third place bidder and the winning bid, and
 - c. Compute the percentage difference between the first and last place bidder.
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If the difference between the winning bidder and the second place bidder is within 6 percent, and the difference between the winning bidder and the third place bidder is less than 9 percent, and there is no more than 17 percent difference between the first and last place bidders, there is a significant possibility that the bids were rigged.*

2. The Contracts That Meet the Percentage Difference Criteria Should Be Considered Suspect and Should Be Examined in More Detail. This examination will, in most instances, require additional information which should be available in the state department of transportation. This information would include at a minimum:
 - a. A list of all prequalified bidders and their capabilities.
 - b. Line item prices on suspect jobs.
 - c. Identity of all subcontractors on suspect jobs.
 - d. A list of each company that received bid packages on the suspect jobs.
 - e. Location and capacity of each contractor's asphalt plants.

R. SECONDARY ANALYSIS

Having determined that the potential for bid rigging may exist, a closer examination should be made to determine if any of the following bidding practices are present. These practices have, in the past, indicated collusion:

1. Failure of Qualified Bidders to Bid;
2. Certain Contractors Repeatedly Bid Against One Another or, Conversely, Certain Contractors Do Not Bid Against One Another;
3. The Successful Bidder Repeatedly Subcontracts Work to Companies That Submitted Higher Bids on the Same Projects or That Picked Up Bid Packages But Did Not Submit Bids;
4. different Groups of Contractors Appear to Specialize in Federal, State, or Local Jobs Exclusively;

*Note that, with the wide distribution of this paper, it is conceivable that the information concerning these percentage criteria may become known among contractors. Colluding contractors might arrange to have future bids fall outside the specified ranges. Therefore, the percentage criteria presented in this paper may not be valid for bids received after February 1983.

- B. An Unusual Disparity in Front-end or Lump Sum Payment Items Among the Bidders;
- 6. A Particular Contractor Always Winning in a Certain Geographical Area;
- 7. Contractors Who Bid Frequently, Rut Never Win;
- R. Identical Bid Amounts on a Contract Line Item by Two or More Contractors. Some instances of identical line item bids are explainable, as suppliers often quote the same prices to several bidders. Rut a large number of identical bids, or identical bids on any service-related item, should be viewed critically.
- 9. Contractors Previously Convicted of Bid Rigging in Other States Who Are Operating in the State Under Review;
- iN. Joint Venture Bids Where Either Contractor Could Have Bid Individually as a Prime;
- 11. Failure of Original Bidders to Rebid, or an Identical Ranking of the Same Bidders upon Rebidding, Where Original Bids Were Rejected for Being Too Far Over Estimate; or
- 12. Discrepancies in Similar Line Items Bid by a Given Firm on Different Projects in the Same General Area at the Same Letting or on Comparable Projects at different Lettings Within a Relatively Short, Time Period.

Additional insight on bidding patterns/activities can be gained by:

- 1. Plotting Suspect Contracts in Relation to Fixed Asphalt Plants. This can be accomplished by assigning each vendor a different color and making the appropriate notation on a state map. This can be useful in detecting the existence of territorial divisions by contractors, provided due recognition is given to the fact that there are natural limits (usually 20 to 40 miles) to the transport of hot-mix asphalt.
 - 2. Preparing a Competition Matrix by Year for a 5-year Period. This matrix would include the major contractors, the number of contracts they were awarded during the period, the dollar volume these contracts represented, the percentage of the total contracts and the total dollar volume won by each vendor, and the ranking of the contractors based on the above. Additional information may be included in the matrix but it should, at this point in time, be kept simple enough so that it can be manually compiled in the shortest period of time. A more complex matrix can be developed once a determination has been made as to whether to proceed to the investigative stage.
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3. Reviewing the State's Prequalified Bidders List, which Indicates the Extent of a Contractor's Capabilities (i.e., design, Grading, Total Project, etc.). When reviewing bids, it is important to note the qualifications of each of the bidders, not merely the low bidder. Cases have been recorded where the low bidder was fully qualified, but some of the other bidders were not capable of performing the entire project even though they bid on it.
4. Analyzing Changes in the Financial Position of Companies Over the Last 5 Years. In several states, it has been noted that companies winning contracts during the 1977-1980 time frame are currently experiencing financial difficulty. This may be attributable to the companies' inability to operate successfully in a truly competitive marketplace.
5. determining the Degree of Influence That Suppliers (e.g., Liquid Asphalt, Aggregate, Prestressed Concrete, Pipe, etc.) Have on Contract Awards. Investigations have indicated that prices quoted (or not quoted) for materials can be the determining factor in the eventual low bid. A supplier's refusal to quote material prices to potential bidders, or to quote substantially higher prices to some potential bidders, can have a significant impact on the degree of competition on a particular contract.

D. DETERMINATION

Having completed the foregoing, the team members should be in a position to make a determination as to the potential for bid rigging in the state and a determination as to whether an investigation should be initiated.

While the indicators and analyses described above have proven to be valuable in successful bid rigging investigations, they are not sufficient to prove collusion. They merely suggest where to look. They provide the background information and marketplace knowledge which enables investigators to conduct detailed interviews and ask specific questions of contractors. It must be remembered that successful prosecutions have resulted principally from the testimony of individuals who were directly involved in the bid rigging schemes. This analysis can lead you to those individuals.

SECTION 2 - PREVENTION

Purpose. This section focuses on three areas: Bidding/contracting procedures; Data collection/retention; and Utilization of computers. The administrative and technical suggestions presented herein can serve as effective deterrents to bid rigging and other forms of contractor collusion.

A. SUGGESTIONS CONCERNING STATE AGENCY BIDDING AND CONTRACTING PROCEDURES.

State agency procedures for soliciting competitive bids on road construction projects are generally designed to assure that the work is done by responsible bidders at the lowest available price. However, we have found that in many cases existing procedures are inadequate to deal with collusion among contractors. In light of the high incidence of collusive activity, we believe that state agencies should review their bidding and contracting procedures and consider modifying them to provide better protection against the submission of rigged bids. We believe that the suggestions set out below could significantly narrow the opportunities for collusion among contractors and assist Federal and state agencies in pinpointing instances of unlawful conduct.

1. The State Engineer's Estimate Should Not Be Disclosed Prior to the Award of the Job.

Some state agencies include their engineer's cost estimate for a project among the materials furnished to prospective bidders. The agency may provide either an estimate for each line item on the bidding form or a lump sum estimate for the entire project.

We suggest that state agencies maintain all such estimates as confidential until after the bids are received and a contract is awarded. Releasing this information earlier encourages and facilitates bid rigging by permitting prospective bidders to gauge what the state agency would consider to be a reasonable price for the project and to decide how far a rigged bid may exceed the estimate without jeopardizing the award of a contract.*

We are not aware of any compelling business reason for making the state engineer's estimate available to prospective bidders. It is not necessary to help them estimate the cost of materials, since bidders are intimately familiar with these costs. Relying on past experience, bidders can readily determine their own mobilization and labor costs. We are advised that state engineers in some cases obtain the data on which their estimates are based from the same contractors who later bid on the job.. We are persuaded, therefore, that the bidding process would not be impaired if the state engineer's estimates were withheld from prospective bidders prior to the letting of construction contracts.

*In some states, if the lowest bid exceeds the state estimate by 10 percent, the bidding process is repeated and the project is re-let.

2. Contractors Should Be Prequalified for Road Construction Work.

A number of states require contractors who wish to bid on state road construction jobs to be prequalified by the state agency having responsibility for the work. Based largely on information supplied by each contractor, the agency determines prior to soliciting bids for a particular job which contractors would be acceptable bidders.

We suggest that this procedure be followed uniformly by state agencies as to road construction contractors, and that contractors seeking prequalification be required to submit to the state agency information that will prove useful in conducting audits and investigating bidding practices. Such information includes (i) the identity of the officers and directors of the firm, the person in the firm having final bidding authority, and its chief estimator; (ii) a statement disclosing whether or not the firm or any of its officers or directors is affiliated with any other contractor, and, if so, providing the pertinent details; (iii) a statement of the assets of the firm, including a brief description of plants and heavy equipment that it owns or leases; and (iv) a brief description of the firm's prior work experience, if any, or other basis qualifying it for the type of work in question.

We also suggest that each prequalified contractor be required to update this information annually.

3. The State Agency Should Seek Line Item Bids Rather Than Lump Sum Bids.

Some states require that bidders submit their bids on a line item basis, i.e., the bidder must submit separate figures covering each of the principal cost elements of the project, such as materials, direct labor, and mobilization. Other state agencies require only the submission of a lump sum bid covering the entire work.

We believe that the former procedure is preferable. By obtaining bids on a line item basis, it is possible for the state agency to make a meaningful comparison of the submitted bids with the agency's own internal cost estimates. The disclosed fact that line item bids on a particular project deviate significantly from line item bids made on other, similar projects in the same geographic area will alert the state agency to the desirability of further investigation. Colluding contractors frequently increase the mobilization expense item to secure extra profits on the rigged job or to defray the costs of payoffs to coconspirators. Once an investigation is commenced, a comparison of the contractor's internal work sheets with his line item bids may reveal the arbitrary or unusual price changes that are indicative of bid rigging.

4. Bidders Should Identify Joint Venturers, Partners, and Major Subcontractors and Suppliers.

Collusion among contractors often takes the form of agreements whereby competitors become joint venturers or partners on a project, or assign subcontracts to each other. We recognize that such arrangements can serve entirely legitimate functions; it would be undesirable to prohibit them across-the-board. Nevertheless, it is advisable that the state contracting agency be informed of them at the time bids are submitted. The agency can then make its own determination as to whether or not to accept a particular bid. For example, if the state agency is informed that the lowest bidder proposes to utilize one of his principal competitors as a subcontractor, and on further inquiry no adequate justification for doing so is provided, the state agency could decide to disqualify the bid and either accept the next lowest bid or to invite a new round of bids.

The very fact that the rules of the state agency call for disclosure of this type of information will, we believe, inhibit the use of joint venture, partnership, subcontracting, or supplier arrangements among competitors as a means of implementing bid rigging schemes. Such information will also be useful for subsequent investigations if the state agency decides to award the bid to the party making the disclosure. Further, should a successful bidder fail to disclose the required information, the state agency would have a basis for later canceling the award of the contract, withholding payments, or imposing other penalties.

Accordingly, we suggest that state agencies require each bidder to identify his partners, joint venturers, and major subcontractors or suppliers on the project with respect to which bids are being solicited. To limit the possible burdensomeness of this requirement, the rules of the agency might define a "major" subcontractor or supplier as one who is responsible for not less than a specified minimum (e.g., 5 percent) of the project work, stated as a percentage of total costs. The term "joint venturer" should be defined to include all persons who will share in the profits or expenses of the work or provide capital for the work (other than regular lending institutions or investors not directly engaged as contractors in road construction work). The term "subcontractor" should be defined to include not only contractors handling a portion of the work directly but also lessors of equipment used by the bidder for the work (other than persons engaged principally in the business of leasing equipment and not directly engaged in road construction work).

Following the award of a contract, the successful bidder should be required periodically to update the information furnished at the time of the bid, and to promptly identify every person who at any time after the original submission of the bid has become a joint venturer, partner, or major subcontractor or supplier of the bidder on the project.

5. Review State Engineers' Estimating Techniques.

State engineers' estimating procedures vary from state to state, and often within a state from one estimator to another. The accuracy of the state engineering estimate is important for at least two reasons. First, it provides an approximate dollar amount for development of the state budget. Second, it serves as a benchmark for evaluating contractor bids.

Investigations in several states have disclosed weaknesses in estimating procedures. The most common fault lies in the use of historical estimates or bid prices as a basis for current estimates. This can have the effect of compounding an earlier erroneous estimate, particularly where prior data are based in whole or in part on rigged contracts. Even in situations where historical data have not been used in constructing the estimates, there have been wide swings in estimates for the same item, where quantities, letting dates, job sites, and other factors have remained essentially constant. These occurrences are normally attributable to different estimators, which further underscores the need for a consistent approach to estimating.

In the development of estimates for upcoming projects, states should rely on continuously updated material price and labor rate information. This information should be centrally recorded and readily retrievable for use by all state estimators.

Pricing data for many items will vary due to economies of scale, project location, and other factors. These variables should be noted in the central record so that equivalency can be determined. The resultant record will reflect a range of prices for an item. State estimates and bid amounts should normally fall within this established range; any variations beyond the range should be critically reviewed prior to contract award.

61j States Should Require Antitrust Audits.

States should conduct periodic antitrust audits to look for evidence of collusion or bid rigging. The focus should be on groups or types of contracts awarded through the competitive bidding process. Such audits should involve purchasing officials familiar with the industry and investigators familiar with the antitrust laws. These audits would serve both as a detection mechanism and as a deterrent.

7. All Bidders Should Execute an Affidavit of Non-Collusion.

A detailed discussion of this suggestion, including a sample affidavit, is currently under development and will be distributed at a later date following review by program management.

R. Additional Suggestions.

- a. States should consider withholding the names of prospective bidders until after the letting date.

The pre-letting release of the names of contractors and suppliers who picked up bid packages on a particular project offers no advantage to the state, and can provide colluding bidders with useful information concerning the universe of competition.

- b. States should consider increasing the frequency of bid lettings.

Many states open bids once a month or less frequently. During peak construction periods, when many projects are being bid, this facilitates collusion among contractors by requiring only one meeting per month, where they could set up several jobs at the same time. More frequent lettings during peak bidding periods would at a minimum make these meetings less convenient. This inconvenience could result in more overt collusive behavior, which might be more easily detected.

- c. States should consider dividing large projects into smaller segments when feasible.

Large volume contracts limit the number of bidders to large companies or those that have substantial excess capacity. Division of large contracts whenever possible, while perhaps administratively more cumbersome for the state, can result in a net savings due to increased competition.

R. SUGGESTIONS CONCERNING THE MAINTENANCE OF RECORDS AND DATA.

In many cases, the successful investigation and prosecution of unlawful collusion and bid rigging depends on the availability to Federal and state authorities of a substantial body of bidding and other job records and data. Set out below are our observations concerning the types of records and data that state contracting agencies should maintain. We believe that all of the items listed are relevant to the investigation and prosecution of bid riggers and the recovery of overcharges, and their unavailability to Federal and state investigators may, in some instances, bar any effective legal action against the guilty parties. The items to be retained should be indexed and filed or stored in a manner that will allow ready access and retrieval.

We suggest a minimum retention period of 5 years. Five years is the statutory period of limitations for :prosecutions under the Federal antitrust laws.* Although transactions occurring earlier than 5 years before the event in question will at times be relevant, experience indicates that it is seldom possible to establish the existence of an unlawful conspiracy if no evidence of collusion has surfaced within 5 years after the event. All things considered, therefore, we believe that a 5-year across-the-board retention period would be adequate. Presumably, where the state agency has reason to suspect bid rigging on a particular project, it would take steps to retain the relevant records even after the expiration of the normal retention period.

Many states currently retain some of the records and information listed below; other states either do not collect this type of information or do not retain it. Due to the disparity of state procedures, it may be necessary for some state agencies to develop a document retention program; to redraft or modify existing forms; or to develop new forms and applications that contractors will be required to submit during the bidding process. In most cases, the burden of modifying existing forms and developing new ones should be minimal.

We believe that the following documents and data should be retained:

1. Basic Information Concerning Each Project Let for Bidding:
 - a. Project number or identification,
 - b. Description of the project (type of work),
 - c. Location of the project (road or road segments involved),
 - d. Identification of the agency responsible for supervision of the project, and
 - e. Bid and award dates.
2. A List of Names and Addresses of Each Company Invited to Bid.
3. A List of Each Company Requesting Bid Specifications.
4. The hate-stamped Bid Proposal Submitted By Each Contractor.** This document should include the following information, whenever possible:

*Civil actions under the Federal antitrust laws to recover overcharges must ordinarily be brought within 4 years after the date of injury; this time period may be extended by the court in cases where the guilty parties have fraudulently concealed their collusive activities.

**Mailing envelopes used by bidders to submit bids, information, and non-collu-sion affidavits should be retained. Proof of mailing is necessary to establish a mail fraud violation under Federal law.

- a. Bid prices, including all line item prices;*
 - b. The identity of subcontractors whose quotations were used to formulate the bid, their addresses, and a description of the work to be performed by each;**
 - c. The identity of suppliers to be used, their addresses, and the quantity and value of materials or services to be provided by each;**
 - d. The identity of all joint venturers and partners involved in or underwriting the performance of work on the project;** and
 - e. A non-collusion affidavit.***
5. The State Engineer's Estimate Covering All Work To Be Performed on the Project. This estimate should disclose the following information:
- a. All line item price estimates,
 - b. Total project estimate,
 - c. Source of cost data used to formulate line item price estimates, and
 - d. Identification of the person preparing the estimate.
6. Memoranda of All Pre-award Conferences. These memoranda, should disclose the following information:
- a. Date and place of the conference,
 - b. Identity of all persons present,
 - c. Summary of subject matters discussed, and
 - d. Results of the conference.
7. All Documentation Relating To the Award of the Project.
8. All Documentation Concerning the Source of Materials Used on the Project.

*Whenever possible, line item prices should be requested instead of a lump sum bid (see paragraph A.3.).

**The successful bidder should be required to update this information following the submission of his bid (see paragraph A.4.).

***(See paragraph A.7.)

9. All Financial Records Concerning the Project, Including the Following:
- a. Progress reports;
 - b. All invoices submitted by contractors;
 - c. All payment records, dates, and warrant numbers of checks issued; and
 - d. All change orders.

1R. Information and All Documentation Concerning the Expenditure of Federal Funds in Connection with Each Project, Including the Following:

- a. Each disbursement of Federal funds, together with warrant numbers and dates of checks issued; and
- b. Total amount of Federal funds expended.

11. A List of All Prequalified Bidders. This list should be updated annually, and should provide the following information:

- a. The name and address of each company;
- b. The names of all officers and directors of the company;
- c. The names of all employees authorized to submit bids on behalf of the company;
- d. The names of the person having final bidding authority, and of the chief estimator of the company;
- e. A description of all affiliations between the company or any of its officers or directors with other firms in the road construction industry; and
- f. Identification by description, location, and capacity of each production facility or plant (hot-mix, surface treatment, portable, stone crushing, etc.) owned or leased and operated by the bidder.

C. SUGGESTIONS CONCERNING THE MAINTENANCE OF INFORMATION IN COMPUTER-RETRIEVABLE FORM.

Due to the great number of road construction projects let each year around the country, it is not feasible for either Federal or state authorities to investigate every project as to possible collusion or bid rigging. Tools must be developed for identifying a select number of situations that may warrant further inquiries. To this end, the computer programming of key data is essential.