GUIDELINES ON PREPARING ENGINEER'S ESTIMATE,
BID REVIEWS AND EVALUATION

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1. PURPOSE

a. To outline recommended procedures for preparing engineer's estimates and for reviewing bids prior to concurrence in award.

b. To provide guidance for improving pre-bid, bid review and evaluation policies and procedures.

c. To improve competitive bidding procedures.

2. BACKGROUND

A State Transportation Agency's (STA's) procedures for soliciting and awarding construction contracts are an important part of the competitive bidding process. To

ensure a competitive contracting environment, STAs should develop effective prequalification programs and other procedures to ensure fairness in the pre-bid solicitation process and post award review of construction bids. In addition, the STA's procedures for developing a reliable engineer's estimate are critical to the success of such programs. The engineer's estimate should reflect a fair and reasonable cost of the project in sufficient detail to provide an accurate estimate of the financial obligations to be incurred by the State and FHWA and permit an effective review and comparison of the bids received.

This guideline replaces Technical Advisory "T5080.4 - Preparing Engineer's Estimate and Reviewing Bids", dated December 29, 1980 and Technical Advisory "T5080.6; Guidelines on Contract Procedures with Emphasis on Bid Reviews and Evaluation", dated December 17, 1982.

3. PRE-BID CONSIDERATIONS

a. *Contractor Prequalification* In general, contractor prequalification is used to help determine the quantity and type of work a firm is capable of undertaking. Normally the firm's resources, its financial assets, work experience, and its staffing capability must all be identified for it to become prequalified. Some States that do not require prequalification find it necessary to collect some information via a financial statement or some other abbreviated process. These States do not specify the type of work or limit the size of project a firm may bid upon because they feel prequalification may restrict competition unduly. Other States do not prequalify but instead rely on the contractor's ability to provide a performance bond. The FHWA does not require prequalification, but if a STA elects to prequalify contractors, such procedures must not restrict competition.

Prequalification has been identified by some of the States as a useful tool for gathering pertinent information on the intricate management details of a contractor's firm. In the event of a conviction of a crime such as bid rigging, such information proves useful as an aid in determining the appropriate sanctions for the firm and/or the individuals involved. Another possible use would be to determine the relationship of firms bidding on any one project.

Specific information that should be collected from a firm includes the following: financial resources, principal individuals in the firm (anyone having a 10 percent or more interest in the firm), all affiliates or subsidiary companies including material sources, available equipment, work experience, individuals and organizations that have control or influence over the firm's bidding procedures, and whether the firm has ever been suspended or debarred from bidding and the related circumstances.

The instructions for completing the work experience section (of the pre-qualification form) should require that the firm identify all projects for which it was the prime contractor and those on which it worked as a subcontractor during at least the past two

years as well as the contracting agency for those projects. Also, the contracting agency should describe the penalties for making false statements in the pre-qualification process.

b. *Anti-collusion Statement* A sworn anti-collusion statement should be included as part of the bid proposal package. Under the 23 CFR 635.112(f), the STAs are required to include provisions in the bidding proposals that require all bidders to include a non-collusion statement with their bids. The FHWA in consultation with the DOJ has concluded that non-collusion statement may be either an un-sworn declaration made under penalty of perjury under the laws of the U.S., or a sworn affidavit executed and sworn before a person who is authorized to administer oaths by laws of the State. All non-collusion certifications shall be retained by the STA in accordance with the retention policy of 49 CFR 18.42. These certifications could serve as important evidence in the event that collusion or bid rigging is discovered at a later date. If any bidder submits a false statement, sanctions could then be taken against the firm.

c. *Standard Specifications* All States should have standard specifications that address the issue of evidence of collusion among bidders. Those State specifications that currently address this item generally specify that the STA may determine that the bidder is not responsible and reject his/her proposal based on evidence of collusion. In addition to rejection of a firm's proposal, the specification should advise that collusive bidding is a violation of the law and could result in criminal prosecution, civil damage actions, and State and Federal administrative sanctions.

d. *Bidders List* Confidentiality of the bidders' list (those firms that have taken out plans and a bid proposal document) has both advantages and possible disadvantages.

(1) With the availability of bid tabulation information and bidders lists on the Internet, the potential for bid collusion is higher than in previous years when such information was not readily available. In an effort to create the most competitive environment for potential bidders, a firm should not be aware of the identity of the other potential bidders. An advantage of keeping the bidders' list confidential is that bidders will submit what is believed to be a realistic competitive bid based upon the company's own individual circumstances. This is especially important for projects where there would be limited competition.

(2) A possible disadvantage of keeping the bidders' list confidential would be that potential material suppliers and subcontractors would not be informed of what firms to contact for upcoming projects. Therefore, a material supplier may fail to inform a potential bidder of its current prices. However, by the very nature of competitive bidding and the last-minute quotes traditionally provided contractors, it is felt both contractors and suppliers will continue to have adequate communication. Further, since the bidder must perform the contract work with his/her own firm and/or subcontract it, the burden actually lies with the bidder to determine what other firm he/she wants to work with on a project. Unless the project has new or unusual material or construction requirements, it is believed most contractors are aware of the available subcontractors and potential

material suppliers. Therefore, it is believed the bidder is generally the one seeking potential subcontractors, especially if Disadvantaged Business Enterprise goals are included in the proposal. During court testimony, defendants have stated the bidders' list was used to identify other potential prime contractors to be contacted to rig the project bids. Although there are other ways to find out who plans on bidding, i.e., from material suppliers, bonding companies, etc., at least the contracting agency is not providing this information when it keeps the bidders list confidential. It is recognized that State freedom of information or similar statutes may, however, preclude keeping the bidders' list confidential.

e. *Competition* Competition for projects by bidders is an integral part of a successful construction program. An effort should be made by the contracting agency to maximize the competition by a number of methods.

(1) Advertisement should be widespread enough to advise those potential bidders interested in the type of work and size of project involved. Based on the complexity of the project, extended advertisement periods are encouraged.

(2) Consideration should be given to the project's estimated cost/size to maximize the number of bidders. The size normally varies in each State depending on the makeup of the construction industry. In some situations, it may be desirable to divide the project into several smaller contracts to foster competition.

(3) Jobs should be allowed to be bid individually or in combination.

f. *Multiple Bid Requirements* If a State law or regulation exists which requires that more than one bid be submitted before award can be made, efforts should be made to revise or repeal it. There is evidence that in those cases where only one contractor was interested in a project and the multiple bid requirements existed, the firm actually contacted other contractors to submit a complementary bid so award could be made. If only one bid is submitted and it far exceeds the estimate, it should be rejected; but if it is at or below the estimate, it should be considered for award.

g. *Escrow of Bid Documents* The STAs should consider escrowing bid documents where it is administratively feasible to do so. Section 103.08 – “Escrow of Bid Documentation” of the AASHTO Guide Specifications for Highway Construction provides a sample specification for this requirement.

4. PREPARING ENGINEER’S ESTIMATE

The critical review of any bid depends on the reliability of the estimate it is being compared to. Therefore, State Transportation Agencies (STAs) are strongly urged to devote sufficient attention to preparation of estimates using the same level of detail as the contracting industry. The engineer’s estimate should reflect the amount that the

contracting agency considers fair and reasonable and is willing to pay for performance of the contemplated work. Under-estimating causes project delay while additional funding has to be arranged to meet the contract costs. On the other hand, over-estimating causes inefficient use of funds that could be used for other projects. In addition, the engineer's estimate serves as the benchmark for analyzing bids and is an essential element in the project approval process. There are three basic approaches to estimating: actual cost, historic data, and a combination of historic data and actual cost. One of the most important factors in obtaining a good engineer's estimate is the experience of the estimator. While documented estimating procedures are helpful, contracting agencies are encouraged to provide sufficient training opportunities for their staff.

a. Estimating Methods

(1) *Actual Cost Approach* The actual cost approach takes into consideration factors related to actual performance of the work (i.e. the current cost of labor, equipment, and materials; sequence of operations; production rates; and a reasonable value of overhead and profit). This approach requires the estimator to have a good working knowledge of construction methods and equipment. Also the estimator should have resources available for determining production rates from actual work performed by the contracting industry on similar type projects as well as resources for determining current construction methods and equipment. While adjustments for current market conditions may be required, this approach typically produces an accurate estimate and is useful in the bid review process in aiding the decision to award or reject the project. However, this method may be more time consuming and may not be practical for all projects.

(2) *Historic Data Approach* The use of historic data from recently awarded contracts is a cost-effective method to develop the engineer's estimate, however, solely relying on historic data may not be appropriate when the data is based on a non-competitive bidding environment. A file of previous unit bid prices should be maintained according to type, size, and location of project. Upcoming projects should be matched to the most recent projects to develop base prices for estimating the value of the unit prices. Under this approach, bid data are summarized and adjusted for project conditions (i.e., project location, size, quantities, etc.) and the general market conditions.

This approach requires the least amount of time and personnel to develop and produces an adequate estimate for use in budgeting/programming, as long as competitive bid prices are used to build the estimate. Non-competitive bidding and unbalanced practices are the least recognizable using the historic data approach to estimating. Further adjustment of the base prices should be considered based upon the ages of the similar projects, but past inflation rates should not be projected into the future unless based on circumstances which can be reasonably expected to occur, such as labor rate increases through labor negotiations and known material price increases.

Where the magnitude and timing of future increases are uncertain and would have a major effect on critical unit prices, price adjustment clauses may be a better alternative.

(3) *Combination Approach* This approach combines the use historic bid data with actual cost data. Most projects contain a small number of items that together comprise a significant portion (e.g. 75 percent) of the total cost. These major contract items may include Portland cement concrete pavement, structural concrete, structural steel, asphalt concrete pavement, embankment, or other major items of work within the contract. To the extent practical, STAs should collect information on local market prices of materials, equipment manufacturers, dealers, and rental companies, and material suppliers to obtain current cost information on a regular basis. Davis-Bacon prevailing wage rates on Federal-aid contracts could be easily incorporated to provide labor costs as determined by Department of Labor. Current material costs are obtained from local approved sources. Equipment costs can be obtained through rental companies or equipment dealers based on a reasonable depreciation schedule. The remaining items are estimated based on historical prices and adjusted as appropriate for the specific project.

b. Confidentiality of the Engineer's Estimate

Procedures and policies concerning confidentiality range from including the total estimated construction cost in the bid proposal to keeping the estimate confidential from the public even after the project has been constructed and opened to traffic. Benefits of making the total estimate public include eliminating the possibility of only one or some of the bidders knowing what the State believes the project is worth plus removing any pressure from State employees to release the estimated cost secretly. One disadvantage of making the estimated cost public is that firms desiring to rig bids can use the engineer's estimate as a basis for determining the low-bid amount to be submitted. This is especially important in cases where the contracting agency anticipates minimal competition and/or a single bid for construction.

While confidentiality of the estimate obviously will not by itself successfully deter a firm from conspiring with other bidders, it does prevent bidders from knowing what approximate amount the contracting agency is willing to accept. For those agencies that believe total secrecy from the public is not realistic in their State, as a minimum attempt of confidentiality, a range for the estimated project cost could be provided and included in the bid proposal document. For example, a range could be established as follows:

Project Classification	Project Cost
A	$ 0 - $100,000
B	$100,000 - $250,000
C	$250,000 - $500,000

D	$500,000 - $1,000,000
E	$1,000,000 - $2,500,000
F	$2,500,000 - $5,000,000
G	$5,000,000 - $10,000,000
H	$10,000,000 - $15,000,000
I	$15,000,000 - $25,000,000
J	$25,000,000 or greater

A policy of providing a specified dollar amount for a bid bond could indicate the amount of the estimate. This procedure should be revised to specify a percentage of the bid submitted, thus maintaining the confidentiality of the estimate.

c. Accuracy of Engineer's Estimate

The estimate must have credibility if the bid review process is to be effective. Estimate accuracy should be judged by comparing the estimate against the low bid (%). Estimate accuracy relies on the estimator using all the available resources to create a fair and reasonable value for the work given all particular job conditions and evaluating these conditions accurately to establish a credible estimate. It is realized that estimate preparation is not an exact science; however, it is felt the engineer's estimate should be within ±10 percent of the low bid for at least 50 percent of the projects. If this degree of accuracy is not being achieved over a period of time, such as one year, confidence in the engineer's estimates may decline. Further, if estimated total costs are made available to the public, even after the letting, and are consistently running well above the low bid (say 15-20 percent) when a sufficient workload is available, bidders may be cognizant of the higher estimates and may submit higher bids accordingly.

Where confidence in the estimate has been established by the contracting agency, it follows that to be an effective tool, the agency must show that confidence by rejecting those low bids that are not within a reasonable percentage above the estimate. Adjustments to the estimate for projects to be re-advertised should not be made to correspond to the previous bids submitted without adequate justification.

Attachment A provides a review guide for assessing a contracting agency's procedures for developing the engineer's estimate.

5. BID ANALYSIS AND CONTRACT AWARD

In 1983, the Office of the Inspector General (OIG) performed a review of the STA's preparation of the engineer's estimate. They found that: 1). Estimates were overstated and unreliable for bid evaluation, and 2) The FHWA had not adequately reviewed the

STA's estimating procedures to assure that contracts were awarded at the lowest reasonable rates. In response to the OIG's findings and recommendations, the FHWA established criteria to support and assist the STAs to improve their estimating procedures. In addition, the FHWA Division Offices were advised to review their STA's procedures.

The engineer's estimate should be a fair and reasonable value for the work to be performed. It should be within plus or minus 10% of the low bid for at least 50% of the projects awarded. Specialized highway construction work should be evaluated on a case-by-case basis. The following guideline discusses circumstances where an apparently excessive bid may be justified as a basis for award:

a. *Assessing Competition* Competition should be considered excellent when there are six or more bids within 20 percent of the low bid, including the low bid. Fewer competitive bids should require evaluation to determine whether competition was adequate, and whether additional competition or better prices could be obtained. As a guideline to this determination, the following is offered as a suggestion for determining whether adequate competition was obtained:

Number of competitive bids * (*Range = low bid + 20 percent)	Competition May be considered adequate when low bid does not exceed **
5	120 percent of engineer's estimate
4	115 percent of engineer's estimate
3	110 percent of engineer's estimate
2	105 percent of engineer's estimate
1	The engineer's estimate

**(Exceptional types of projects should be identified where competition has been historically poor, and when the prospects of increased competition are not apparent. Such projects should be reviewed independently of this or any alternative guideline.)

b. *Considering Re-Advertisement* Few projects are considered so essential that deferral (even for 60 days to solicit re-advertised bids) would not be in the public interest. However, projects that are considered essential are of the following:

(1) Safety projects which are to correct extremely hazardous conditions where the traveling public may be in danger.

(2) Emergency repair or replacement of damaged facilities.

(3) Projects to close gaps in otherwise completed facilities to allow opening to traffic.

(4) Projects that are critical elements in a staged or phased construction schedule, where a delay would mean substantial impact on the completion date of the facility.

It is difficult to justify that re-advertising would likely result in higher cost without concluding that all practical anti-inflation measures have been employed to the maximum extent possible.

Estimating errors should not be considered unless the magnitude of the error is significant and procedures are modified to attempt to prevent the occurrence of similar errors. Some errors are merely mistakes that can be corrected easily once discovered, while others are “errors of judgment” which cannot be as easily explained.

States are encouraged to track projects that are re-let and tabulate either savings or higher cost for each calendar year. If higher costs are found in the re-let projects, a thorough review of the current estimates and procedures should be performed. Also, current bid collusion detection techniques should be employed to identify potential bid rigging/collusion.

The analysis and award process for a project should be thorough even when the low bid is below or at a reasonable percentage above the engineer's estimate. It is reasonable, however, to expect that larger projects will receive a more thorough review than very small projects. The STA should have written procedures for justifying the award of contract, or rejection of the bids, when the low bid appears excessive or rejection is being considered for other reasons.

c. *Bid Review Factors*

(1) Factors that should be considered in reviewing the bids received for a project include the following:

(a) Comparison of the bids against the engineer's estimate;

(b) Number of bids submitted;

(c) Distribution or range of bids received;

(d) Identity and geographic location of the bidders;

(e) Potential for savings if the project is re-advertised;

(f) Bid prices for the project under review versus bid prices for similar projects in the same letting;

(g) Urgency of the project;

(h) Current market conditions/workload;

(i) Any unbalancing of bids;

(j) Which unit bid prices differ significantly from the estimate, and from other bids?

(k) If there is a justification for the difference; and

(l) Any other factors the contracting agency has determined to be important.

(2) The influence of any one of the above factors may not be too meaningful. However, when considered in combination, the results could be significant. Although the number of bids received is a measure of bidder interest, by itself the number does not indicate the degree of competition. For example, one would not normally expect a firm that is located near a project to be underbid by a firm located a distance from the project and having extensive mobilization and materials transportation costs if both firms are bidding truly competitively. A number of other factors enter into a particular firm's bid such as workload or the size of project, but a bidder's geographic location is a significant factor.

d. *Comparison of Bid Prices* A comparison of project unit bid prices should be made at each letting to determine if the contractors are submitting consistent prices on the different projects they bid. In general, there will be an adequate number of projects in each letting to make a comparison except for the large or very specialized jobs. Although the projects being compared may not be in the same geographic area, the reviewers should be aware of any geographic price differences, which normally remain constant between areas even when the overall market conditions change.

e. *Unbalancing of Unit Bid Prices* The unbalancing of unit bid prices by a contractor is difficult to assess in that it is quite normal for different contractors to place their costs such as overhead or their expected profit for the project in the unit cost of different items. Normally these costs will be in those items, which the individual contractor has determined will not be eliminated or significantly under run. The main concern of the contracting agency should be to assure itself that the bids have not been materially unbalanced in order to take advantage of errors in the plans or specifications. Unbalancing of bids may also occur on those lump-sum items that can be performed in the early stages of the project.

The distinction between a mathematically unbalanced bid and a materially unbalanced bid is often difficult. The State of Wisconsin utilizes a bid analysis procedure that was developed with the assistance of the contracting industry to identify materially unbalanced bids. The State examines significant items that are mathematically unbalanced (as identified by a certain percentage over or under the engineer's

estimated unit price for that item). If it appears that a quantity error may have caused a contractor to unbalance, the State will examine all significant bid items for quantity errors. If quantity errors are found, the State will examine the impact on the bidder ranking if corrected quantities had been used. A change in the ranking is an indicator of a materially unbalanced bid. See Attachment B.

f. *Review Committee* A multi-disciplined review committee should be used to analyze the bids received so that the various perspectives within the contracting agency are represented and are provided with technical and managerial input. This approach can also be used to readily identify the effects of awarding the contract or rejecting the bids. If a review committee is not utilized for analyzing bids, as a minimum, the estimating section should be involved. The estimating section is normally familiar with the project. Any major differences in the unit bid prices and the estimate will be readily identifiable and evaluated. Also, it keeps the estimating section apprised of any trends in the market conditions so the engineer's estimates can be kept current.

g. *General Guidelines* It may be beneficial for a contracting agency to develop general guidelines to be used in determining whether to award the contract or to reject all bids. However, each project should be considered on its own merits, as some will normally have a higher priority to begin construction than others. If guidelines are developed, consideration should be given to the use of a "sliding scale" approach for low bids over the estimate. A low bid 15 percent above the engineer's estimate of $50,000 should not necessarily be treated the same way as a low bid 15 percent above an engineer's estimate of $5,000,000. Also, if guidelines are used, it is recommended that the specifics be kept confidential from the general public so as not to influence contractors who are preparing bids.

h. *Submission of Bids* If a significant number of firms take out a set of plans and a bidding proposal but only a small percentage, less than 30 percent, actually submit a bid, an effort should be made to determine the reasons for the lack of interest. If the cause for lack of interest can be identified, appropriate steps should be taken to improve the situation.

6. POST-AWARD REVIEWS

a. *Evaluation Period* A conscientious effort should be made to determine if bid rigging is currently ongoing or has occurred in the recent past. To make this determination, an adequate number of projects awarded over a sufficient time period must be evaluated. A time period of approximately 5 years should be selected for the initial evaluation to determine if any abnormal competitive bid patterns exist.

b. *Review Considerations* The following information should be considered in a post-award review for abnormal bid patterns: (1) number of contract awards to a specific firm; (2) project bid tabulations; (3) firms that submitted a bid and later became a

subcontractor on that project; (4) rotation of firms being the low bidder; (5) a consistent percentage differential between the various firms' bids; (6) a specific percentage of the available work in a geographic area to one firm or to several firms over a period of time; (7) a consistent percentage differential between the low bid and the engineer's estimate; (8) location of the low bidder's plant versus location of the second and third low bidders' plants; (9) variations in unit bid prices submitted by a bidder on different projects in the same letting; (10) type of work involved; (11) number of firms that took out a set of plans and a proposal versus the number actually submitting a bid; and, (12) any other items discovered in the review that may indicate noncompetitive bidding. Re-advertised projects should be checked to determine if the eventual low bidder was also low in the first letting.

c. *Analysis* To consider or to analyze the above information to determine if unusual bid patterns exist. The information for project award must be in a readily accessible form, preferably on a computer. Further, although the analysis can be done manually, the use of a computer to analyze the data and to monitor bidding activity has become very prevalent. While many STAs have their own bid analysis system, the majority of the STAs are using the Bid Analysis and Management System / Decision Support System, (BAMS/DSS), a module within the AASHTOTrns-port® software package. The BAMS is a comprehensive system comprising five modules, which includes the Decision Support System containing the collusion detection capabilities. The use of a computer program is intended only to provide information to indicate whether further investigation is warranted. If for any reason, a person feels that bid rigging or fraud has occurred, they should contact the nearest USDOT/OIG Regional Office http://www.oig.dot.gov/offices.php. This may be based on a suspicion or actual evidence of fraud, waste, and abuse in any project funded by FHWA.

d. *In-depth Post-Award Review* The extent to which an in-depth post-award review should be carried out by FHWA or an SHA will depend upon the circumstances surrounding each particular review. If an FHWA field office believes that irregular bid patterns may exist and further investigation is warranted, any evidence should be furnished to the appropriate Department of Transportation (DOT), Office of the Inspector General (OIG) office and the State. Further, most SHA's should provide any evidence of wrongdoing to its State Attorney General's Office, FHWA, and other appropriate officials. The frequency of the in-depth reviews should be adequate to indicate to the contracting agency that illegal activities are not ongoing or have not occurred in the recent past.

7. Removal from the Bidders List (Debarment)

Suspensions and debarments are discretionary administrative actions taken to protect contracting agencies by preventing persons and / or companies from receiving additional contracts and / or subcontracts. At the Federal Government level, a notice of suspension or debarment ensures that the Federal Government does not conduct

business with a person or a company who has an unsatisfactory record of integrity and business ethics. Suspension and debarment actions are administered government wide; consequently, a person excluded by one Federal agency is excluded from doing business with any Federal agency. The FHWA's suspension and debarment policies are in 49 CFR Part 29 and the General Services Administration's Excluded Parties Listing System (http://epls.arnet.gov/) is a web based list that is updated daily for individuals and firms that are currently suspended or debarred. Contracting agencies may rely on this list to confirm eligibility prior to awarding any Federally assisted contract or subcontract.

It is desirable that each contracting agency has a written policy addressing what action will be taken in instances of contractor irregularities, such as bid rigging. A written policy serves as a deterrent to the contracting industry by advising them, in general terms, what activities the agency considers to be illegal or irresponsible and how it intends to deal with those involved should any wrongdoing be detected. Further, the policy provides a basis for any action(s) that may be taken against the individual or firm involved in the illegal wrongdoing by those responsible for enforcing the policy.

Many States have their own procedures for suspension, debarment or procedures for limiting future business dealings with non-responsible firms (see: http://www.fhwa.dot.gov/programadmin/contracts/sdlinks.htm). .

Attachment A –

REVIEW OF ENGINEER'S ESTIMATE PREPARATION

1. Are any State laws or regulation in effect regarding release or protection of the engineer's estimate?

2. Are any State laws or administrative regulations in effect for determination of whether a contract award is proper, based on estimate overrun, competition, or other factors?

3. Review and attach any copies of any procedures or instructions the State may have pertaining to preparation, revision, checking, and use of the engineer's estimate?

4. Briefly describe the intended process for preparation of estimates. Verify the actual method used in comparison with intended process and note any differences?

5. Does the State have an estimating section? Which other portions of the agency become involved in preparing, checking, or approving the estimate?

6. Briefly describe the personnel resources available for preparing, etc., estimates and note any workload changes vs. personnel available over the past 3 years.

7. What is the primary basis for establishing estimated unit prices?

8. What methods are used to identify and incorporate anticipated changes in cost of labor, equipment, and material?

9. Are upcoming labor negotiations considered in the process?

10. Are material suppliers contacted for anticipated material costs?

11. Are adjustments made for individual project conditions? In what way?

12. What other factors are used to adjust the primary basis to determine the estimated prices for the project?

13. In typical cases, how far in advance of the letting date is the estimate prepared?

14. How often is the estimate revised during the advertising period? Discounting addenda and quantity changes, what are the usual reasons for revising estimated prices?

15. Is every estimate routinely evaluated by anyone other than preparer? If so, when?

16. If possible, determine how often further study and/or revision is believed desirable but not accomplished due to workload restriction.

17. Is any information released publicly, which may indicate the actual or approximate value of the estimate prior to opening bids? Is the estimate released after opening bids?

a. When?

b. Is it published and where?

c. Who receives copies, if published?

d. In detail or only giving total cost?

18. Is any other information regarding the estimate available to contractor on request?

19. Review the State's experience during the past calendar year for Federal-aid contract for up to 100 randomly selected projects if the contract volume exceeds 100 projects.

a. Determine the percentage of projects sampled where the low bid fell within ± 10 percent of the estimate, and plot the distribution of low bids above and below the estimate.

b. Determine the percentage of projects with zero, one, two, three, four, etc., bids. Are there any project size trends noted?

c. Prepare graphs with percent above or below estimate for each project vs. cumulative percent of number of low bids for three separate groups of projects, single bids, two or three, and four or more bids. (Each group should be arranged in ascending order to facilitate preparing these graphs.) Are any trends noted?

20. Review the Contracting agency's procedure for evaluating bids received prior to recommending award or rejection.

a. Is there an established policy on, or apparent pattern of, awards or rejections of bids at a set level above the engineer's estimate?

b. In the case of poor competition or excessive difference between the estimate and the low bid, does the Contracting agency contact the bidders and non-bidders who checked out proposal forms?

c. Are there any "ground rules" for adjusting estimates after receipt of bids? Is such action taken on its own merits or may it be prompted by pressure to award an apparently excessive bid?

Attachment B

Wisconsin DOT Unbalanced Bid Analysis

(Excerpt from the Wisconsin DOT Construction and Materials Manual, Section 2.1.2.1.1, revised 10/98)

1. A unbalanced bid analysis will be performed under two circumstances:

• If the Department becomes aware of an error in a quantity of an item shown in the bidding documents.

• If an item is found to be both significant to the contract and significantly unbalanced.

2. An individual item will be considered s significant to the contract if an bidder has an item included in the proposal where the difference between the total cost of the item and the estimate, expressed as a percent of the estimated total contract cost, is greater than or less than 0.50% for contracts less than $2,000,000 and greater than or less than 0.25% for contracts $2,000,000 and larger.

3. An item will be considered significantly unbalanced if the difference between the low bidder's unit price and the estimate, expressed as a percent of the estimate, is greater than +50% or is less than -75%.

4. The Unbalanced Bid Analysis shall consist of the following steps:

A. The estimated unit price for all items identified as being significantly unbalanced will be reviewed for correctness. Corrections will be made as needed and the low bidders unit price will reevaluated to determine if the item remains significantly unbalanced (see item #3).

B. Quantities for all items found to be significant to the contract will be checked and verified. Quantities will be determined based upon the bidding documents and the construction methodologies depicted in the plan. These quantities will be used only for the purpose of performing the Unbalanced Bid Analysis.

C. Corrected quantities for items known to be in error (see item #3) plus corrected quantities for all items significant to the contract will then be multiplied times the unit price bid for each contractor and a gross sum for the contract for each bidder will be calculated.

D. A comparison of the calculated gross sum totals will be made. If the calculated gross sum for the contract low bid is found to be higher than the

calculated gross sum of another bidder, the low contract bid proposal shall be determined to be materially unbalanced. If the calculated gross sum of the contract low bid proposal is found to be less than the calculated gross some of all other bidders, that bid shall be determined to be not materially unbalanced.

E. Step D will be repeated as necessary using the next low contract bid proposal until a contract bid is found to be not materially unbalanced.

5. If the initial contract low bid proposal is found to be not materially unbalanced, the contract will be considered for award at the bid contract amount in accordance to the Standard Specifications. The contract will be based upon the bid amount and the quantities shown in the bidding documents.

6. If the initial low bid contract proposal is found to be materially unbalanced it will be considered irregular and will be rejected as nonresponsive as reasonable doubt exists that the bid does not represent the lowest cost to the Department.

7. If the initial low bid contract proposal is found to be materially unbalanced and rejected, the Department may award to the next low bid contract proposal at the bid contract amount or may elect to reject all bids and relet. Decisions will be made in the public interest and will consider consequences of reletting the project.