

Report To The Mississippi Legislature



A Review of the Use of Private Construction Engineering and Inspection Firms by the Mississippi Department of Transportation

January 11, 1999

From FY 1996 through FY 1998, the Mississippi Department of Transportation (MDOT) awarded seven construction engineering and inspection (CE&I) consultant contracts totaling \$18,893,354 to two private engineering firms. These seven CE&I contracts accounted for eleven percent of MDOT's total construction contract expenditures during this period.

MDOT's efforts to achieve economy by privately contracting CE&I services have fallen short because CE&I fees (averaging 16.7 percent of construction contract costs) exceed the maximum federal reimbursement limits of 15 percent of total contract cost, the 14.1 percent average cost in other states, and the 10 percent cost of performing the CE&I function internally.

MDOT is limited in its ability to procure professional engineering services competitively because federal law prohibits and state law and regulations restrict the use of competitive bidding for such contracts. MDOT is limited to using competitive negotiation, which requires initial selection of firms based on qualifications; however, this process is weak because it is based on inconsistently applied evaluation criteria and non-uniform rating practices. MDOT does not use available mechanisms for negotiating economical contracts (e.g., benchmarking proposals against an estimate of performing the CE&I service internally or seeking a competitive price by considering a firm other than the first on the list).

The PEER Committee

PEER: The Mississippi Legislature's Oversight Agency

The Mississippi Legislature created the Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER Committee) by statute in 1973. A standing joint committee, the PEER Committee is composed of five members of the House of Representatives appointed by the Speaker and five members of the Senate appointed by the Lieutenant Governor. Appointments are made for four-year terms with one Senator and one Representative appointed from each of the U. S. Congressional Districts. Committee officers are elected by the membership with officers alternating annually between the two houses. All Committee actions by statute require a majority vote of three Representatives and three Senators voting in the affirmative.

Mississippi's constitution gives the Legislature broad power to conduct examinations and investigations. PEER is authorized by law to review any public entity, including contractors supported in whole or in part by public funds, and to address any issues which may require legislative action. PEER has statutory access to all state and local records and has subpoena power to compel testimony or the production of documents.

PEER provides a variety of services to the Legislature, including program evaluations, economy and efficiency reviews, financial audits, limited scope evaluations, fiscal notes, special investigations, briefings to individual legislators, testimony, and other governmental research and assistance. The Committee identifies inefficiency or ineffectiveness or a failure to accomplish legislative objectives, and makes recommendations for redefinition, redirection, redistribution and/or restructuring of Mississippi government. As directed by and subject to the prior approval of the PEER Committee, the Committee's professional staff executes audit and evaluation projects obtaining information and developing options for consideration by the Committee. The PEER Committee releases reports to the Legislature, Governor, Lieutenant Governor, and the agency examined.

The Committee assigns top priority to written requests from individual legislators and legislative committees. The Committee also considers PEER staff proposals and written requests from state officials and others.

**A Review of the Use of Private Construction Engineering and
Inspection Firms by the Mississippi Department
of Transportation**

January 11, 1999

**The PEER Committee
Mississippi Legislature**

The Mississippi Legislature

Joint Committee on Performance Evaluation and Expenditure Review

PEER Committee

SENATORS
WILLIAM CANON
Vice-Chairman
HOB BRYAN
Secretary
BOB M. DEARING
EZELL LEE
JOHNNIE E. WALLS, JR.



REPRESENTATIVES
TOMMY HORNE
Chairman
WILLIAM E. (BILLY) BOWLES
ALYCE G. CLARKE
HERB FRIERSON
MARY ANN STEVENS

TELEPHONE:
(601) 359-1226

FAX:
(601) 359-1420

Post Office Box 1204
Jackson, Mississippi 39215-1204

Max K. Arinder, Ph. D.
Executive Director

OFFICES:
Professional Building
222 North President Street
Jackson, Mississippi 39201

January 11, 1999

Honorable Kirk Fordice, Governor
Honorable Ronnie Musgrove, Lieutenant Governor
Honorable Tim Ford, Speaker of the House
Members of the Mississippi State Legislature

On January 11, 1999, the PEER Committee authorized release of the report entitled **A Review of the Use of Private Construction Engineering and Inspection Firms by the Mississippi Department of Transportation.**

A handwritten signature in cursive script, reading "Tommy Horne", written over a horizontal line.

Representative Tommy Horne, Chairman

**This report does not recommend increased
funding or additional staff.**

Table of Contents

Letter of Transmittal.....	i
List of Exhibits	v
Executive Summary.....	vii
Introduction	1
Authority	1
Scope and Purpose.....	1
Method	1
Overview	2
Background	4
Organization of MDOT’s CE&I Management Function	4
MDOT’s Use of Private Engineering Firms.....	7
Basis of MDOT’s Decision to Contract for CE&I Services.....	8
Conclusions	9
Analysis of Private Firm CE&I Cost.....	9
Comparison with Federal Guidelines.....	9
Comparison with Other States.....	10
Comparison with MDOT’s In-House CE&I Management Cost	11
Limitations on Competitive Procurement of CE&I Firms.....	12
Federal Requirements.....	12
Regulations of the State Board of Registration for Professional Engineers and Land Surveyors.....	13
Other Weaknesses in MDOT’s Evaluation and Selection Process.....	15
Standard Operating Procedures for Selecting Engineering Consultants.....	15
Negotiation.....	19
Recommendations.....	22
Agency Response.....	25

List of Exhibits

1. Proportion of Let Construction Contracts Managed by MDOT Versus Private Firms (For Fiscal Years 1996 through 1998)2
2. Construction and CE&I Costs for Contracts Managed by Private Firms (For Period FY 1996 through FY 1998)5
3. Mississippi Department of Transportation Organizational Chart.....6
4. CE&I Costs as a Percentage of Construction Costs in Southeastern Region States.....10
5. Private Firm Versus MDOT In-House CE&I Cost.....11
6. Diagram of Private CE&I Firm Selection Process.....16

A Review of the Use of Private Construction Engineering and Inspection Firms by the Mississippi Department of Transportation

January 11, 1999

Executive Summary

Introduction

In response to a legislative request, the PEER Committee conducted an economy and efficiency review of the Mississippi Department of Transportation's (MDOT's) construction engineering and inspection (CE&I) contracts with private firms. The review was conducted in accordance with MISS. CODE ANN. Section 5-3-57 (1972).

In conducting this review, PEER sought to determine the types of engineering contracts used by MDOT and identify construction engineering and inspection contracts and associated costs. PEER sought to determine whether MDOT's use of private CE&I firms is an economical and efficient use of department resources and whether contract engineering fees for MDOT construction contracts represent excessive shares of the total project cost. PEER also sought to determine federal and state limitations on competitive procurement of professional engineering services.

Overview

Prior to November 1995, MDOT used in-house engineering staff to perform CE&I management services for all construction projects. In Fiscal Year 1996, MDOT began contracting with private engineering firms to provide CE&I services. CE&I management of the construction process requires that the private firm perform all aspects of project engineering and inspection necessary to insure that constructed highways meet specifications and are completed in a timely fashion. MDOT awarded seven construction engineering consultant contracts totaling \$18,893,354 to two private engineering firms during fiscal years 1996 through 1998. Average management fees amounted to 16.7 percent of actual construction contract costs of \$113,198,543. These seven construction contracts account for eleven percent of the total \$1,036,271,497 in construction contracts awarded by MDOT during these years.

Although MDOT recognized a need to begin contracting CE&I services to private firms, its efforts

to achieve economy have fallen short when gauged against several benchmarks. Average MDOT CE&I costs (16.7 percent) have exceeded maximum federal reimbursement limits of 15 percent of total contract cost. MDOT private CE&I costs are high in comparison to average costs of approximately 14.1 percent experienced in other states and the average 16.7 percent cost for private firm management exceeds the cost by which MDOT could perform the CE&I function internally—i.e., about 10 percent of the construction contract cost.

External limitations placed on its ability to procure competitively professional engineering services further weaken MDOT efforts to achieve economy. Federal law prohibits and state law and regulations restrict the use of competitive bidding for such contracts, disallowing the award of contracts based on price considerations. On projects that do not involve federal funding, state law does not prohibit MDOT from using competitive bidding for engineers' and architects' contracts for highway construction; however, professional regulations restrict its use. Instead, MDOT is limited to using competitive negotiation, which first requires selection of firms based on qualifications, then negotiations of services provided and price. The firm selection process is weakened because the MDOT selection committee bases its decisions on inconsistently applied evaluation criteria and does not insure that firms are rated uniformly. Given these limitations and weaknesses, MDOT does not effectively conduct negotiations in the interest of achieving economy because it does not take advantage of the mechanisms available (e.g., benchmarking the proposals against an estimate of performing the CE&I service internally and seeking a competitive price by considering a firm other than the first on the list).

Recommendations

1. MDOT should evaluate the need for private CE&I services by conducting a documented analysis of costs and benefits associated with privately contracting this function. This should include an analysis of:

- all costs and benefits of performing the function internally;
 - costs and benefits of performing the function using private CE&I firm, including internal costs of overseeing firm performance;
 - historical and projected workload levels in comparison to in-house resources; and,
 - types and levels of in-house expertise needed to perform CE&I services and projected costs of maintaining desired staffing levels.
2. MDOT should follow federal guidelines which require the development of detailed cost estimates relative to CE&I contacts which show a breakdown of specific labor requirements, work hours, and an estimate of the fees to be paid a private firm.
- MDOT should develop detailed cost estimates that specify the type of staffing needed to manage effectively the project being let. These estimates should be compiled independent of proposals submitted by outside firms. Additionally, the estimate should provide the type of employees, number of hours per day, rate of pay for each employee, overtime rate, and an estimate of the time it should take to complete the project.
3. MDOT should ensure that the consultant selection committee evaluates expressions of interest consistently. Additionally, the committee should apply uniform evaluation criteria when rating proposals.

- MDOT should revise the Consultant Selection and Administration of Consultant Contracts standard operating procedures to reflect current practices and procedures.
 - MDOT should develop evaluation criteria to further define the factors used by the committee when selecting qualified firms for a particular project.
 - MDOT should establish procedures for checking inter-rater reliability and identifying potential areas of inconsistency among raters. By doing so, the department could improve the reliability (and therefore the fairness) of a rater's evaluations. Inter-rater reliability policies should address the following two issues:
 - training of the selection committee to acceptable performance levels; and,
 - monitoring ratings to determine whether raters are consistently evaluating firms to determine whether the selection process is reliable.
4. In order to promote competition in the awarding of construction and CE&I contracts on state funded projects, the Mississippi Legislature should consider amending MISS. CODE ANN. Section 73-13-15 to remove restrictions on competitive bidding by professional engineers and architects.

For More Information or Clarification, Contact:

PEER Committee
 P. O. Box 1204
 Jackson, MS 39215-1204
 (601) 359-1226
<http://www.peer.state.ms.us>

Representative Tommy Horne, Chairman
 Meridian, MS (601) 483-1806

Senator William Canon, Vice-Chairman
 Columbus, MS (601) 328-3018

Senator Hob Bryan, Secretary
 Amory, MS (601) 256-9989

A Review of the Use of Private Construction Engineering and Inspection Firms by the Mississippi Department of Transportation

Introduction

Authority

In response to a legislative request, the PEER Committee conducted an economy and efficiency review of the Mississippi Department of Transportation's (MDOT's) Construction Engineering and Inspection (CE&I) contracts with private firms. The review was conducted in accordance with MISS. CODE ANN. Section 5-3-57 (1972).

Scope and Purpose

In conducting this review, PEER sought to determine the types of engineering contracts used by MDOT and identify construction engineering and inspection (CE&I) contracts and associated costs. [Throughout this report, PEER uses the acronym "CE&I" to refer to the management of a highway construction project by private firms.] PEER sought to determine whether MDOT's use of private CE&I firms is an economical and efficient use of department resources and whether contract engineering fees for MDOT construction contracts represent excessive shares of the total project cost. PEER also sought to determine federal and state limitations on competitive procurement of professional engineering services.

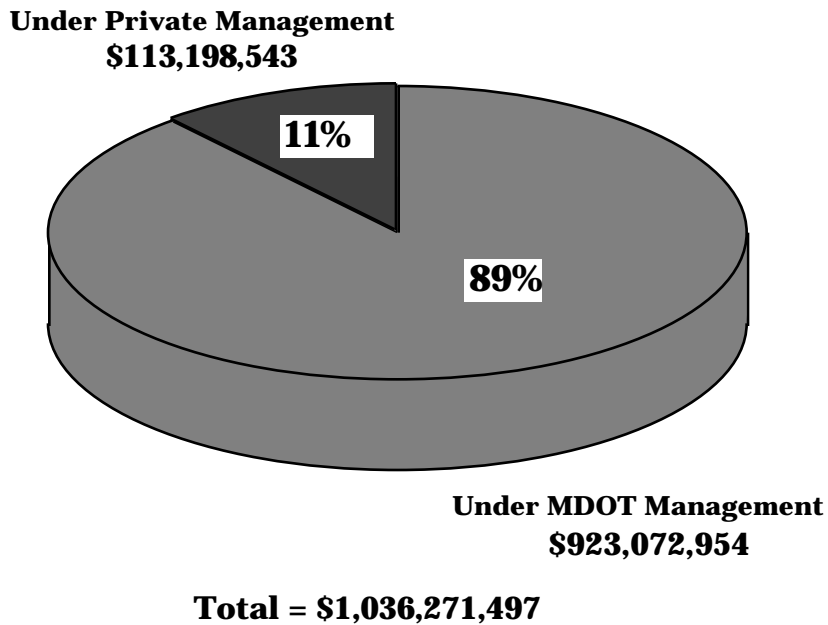
Method

PEER reviewed state law and regulations governing construction engineering consultants and the contract selection process and interviewed representatives of MDOT and the Federal Highway Administration. PEER examined MDOT Standard Operating Procedures for Consultant Selection and Administration of Consultant Contracts which establish policy and procedures for the selection and employment of consultants to perform contractual services for MDOT. PEER reviewed construction engineering consultant contracts to determine both MDOT's and private costs for CE&I management for the period FY 1993 to FY 1998. For comparison purposes, PEER contacted other states in the southeast region to determine their CE&I management costs relative to total construction costs.

Overview

In Fiscal Year 1996, MDOT began contracting with private engineering firms to provide CE&I services. CE&I management of the construction process requires that the private firm perform all aspects of project engineering and inspection necessary to insure that constructed highways meet specifications and are completed in a timely fashion. Until 1996, MDOT construction program personnel located within the district and central offices performed this function. MDOT awarded seven construction engineering consultant contracts totaling \$18,893,354 to two private engineering firms during fiscal years 1996 through 1998. Average maximum management fees amount to 16.7 percent of actual construction contract costs of \$113,198,543. These seven construction contracts account for eleven percent of the total \$1,036,271,497 in construction contracts awarded by MDOT during these years (see Exhibit 1, below).

Exhibit 1
Proportion of Let Construction Contracts
Managed by MDOT Versus Private Firms
(For Fiscal Years 1996 Through 1998)



SOURCE: Compiled by PEER.

MDOT's efforts to achieve economy by privately contracting CE&I services have fallen short when gauged against several benchmarks. Average maximum MDOT CE&I costs (16.7 percent) have exceeded maximum federal reimbursement limits of 15 percent of total contract cost. MDOT's private CE&I costs are high in

comparison to average costs of approximately 14.1 percent experienced in other states. Also, the average 16.7 percent cost for private firm management exceeds the cost by which MDOT could perform the CE&I function internally--i.e., about 10 percent of the construction contract cost.

External limitations placed on its ability to procure professional engineering services competitively further weaken MDOT efforts to achieve economy. Federal law prohibits and state law and regulations restrict the use of competitive bidding for such contracts, disallowing the awarding of contracts based on price considerations. On projects that do not involve federal funding, state law does not prohibit MDOT from using competitive bidding for engineers' and architects' contracts for highway construction; however, professional regulations restrict its use. Instead, MDOT is limited to using competitive negotiation, which first requires selection of firms based on qualifications, then negotiations of services provided and price. The firm selection process is weakened because the MDOT selection committee bases its decisions on inconsistently applied evaluation criteria and does not insure that firms are rated uniformly. Given these limitations and weaknesses, MDOT does not effectively conduct negotiations in the interest of achieving economy because it does not take advantage of the mechanisms available (e.g., benchmarking the proposals against an estimate of performing the CE&I service internally and seeking a competitive price by considering a firm other than the first on the list).

Background

MDOT uses the services of CE&I firms to conduct inspections and management services of construction projects on behalf of the department. Management of the construction process requires the private CE&I firm to assume the duties and responsibilities of MDOT for construction engineering, contract administration, inspection, material sampling and testing, and engineering control of the contracted construction project. The firm is also responsible for handling all construction administration, including furnishing survey crews, inspectors, materials testing laboratory equipment and staff, project engineer, office clerical staff, field office, vehicles and all equipment, and supplies, as required by the contract. Prior to November 1995, MDOT used in-house engineering staff to perform CE&I management services for all construction projects.

MDOT let its first construction management contract during November 1995. As of June 30, 1998, MDOT has let a total of seven construction management contracts. The total engineering cost of the seven CE&I projects for management and inspection services is \$18,893,354, or 16.7% of total construction project costs of \$113,198,543 (see Exhibit 2, page 5).

MDOT officials contend that due to an increase in state road building programs and the availability of more federal highway funding they have encountered a personnel shortage. Therefore, they are utilizing the expertise of private engineering firms to assist during this temporary increase in road construction.

Organization of MDOT's CE&I Management Function

The Mississippi Department of Transportation (MDOT) is organized and functions under the statutory requirements of Title 65 of MISS. CODE ANN. (1972). The Operations Bureau, under the administrative control of the Operations Assistant Chief Engineer, administers all aspects of work performed by the five divisions: Materials, Construction, Contract Administration, Maintenance, and Traffic Engineering. Exhibit 3, page 6, shows the department's organizational structure.

Exhibit 2
Construction and CE&I Costs for Contracts Managed by Private Firms
(For Period FY 1996 through FY 1998)

<u>Num.</u>	<u>FY</u>	<u>County</u>	<u>Total Miles</u>	<u>Construction Cost</u>	<u>Private CE&I Firm</u>	<u>CE&I Cost</u>	<u>CE&I Percent of Construction</u>
1	1996	Bolivar	11.16	\$11,143,936	A	\$1,879,900	16.9%
2	1996	DeSoto	7.91	\$38,461,386	B	\$5,193,414	13.5%
3	1997	Oktibbeha	7.66	\$10,989,520	B	\$2,608,631	23.7%
4	1998	Yazoo/ Humphreys	19.80	\$17,733,819	A	\$3,580,581	20.2%
5	1998	Oktibbeha	4.89	\$17,782,013	B	\$2,641,109	14.9%
6	1998	Webster	6.53	\$4,927,925	B	\$1,025,031	20.8%
7	1998	Bolivar	11.76	\$12,159,944	A	\$1,964,688	16.2%
			69.71	\$113,198,543		\$18,893,354	16.7%

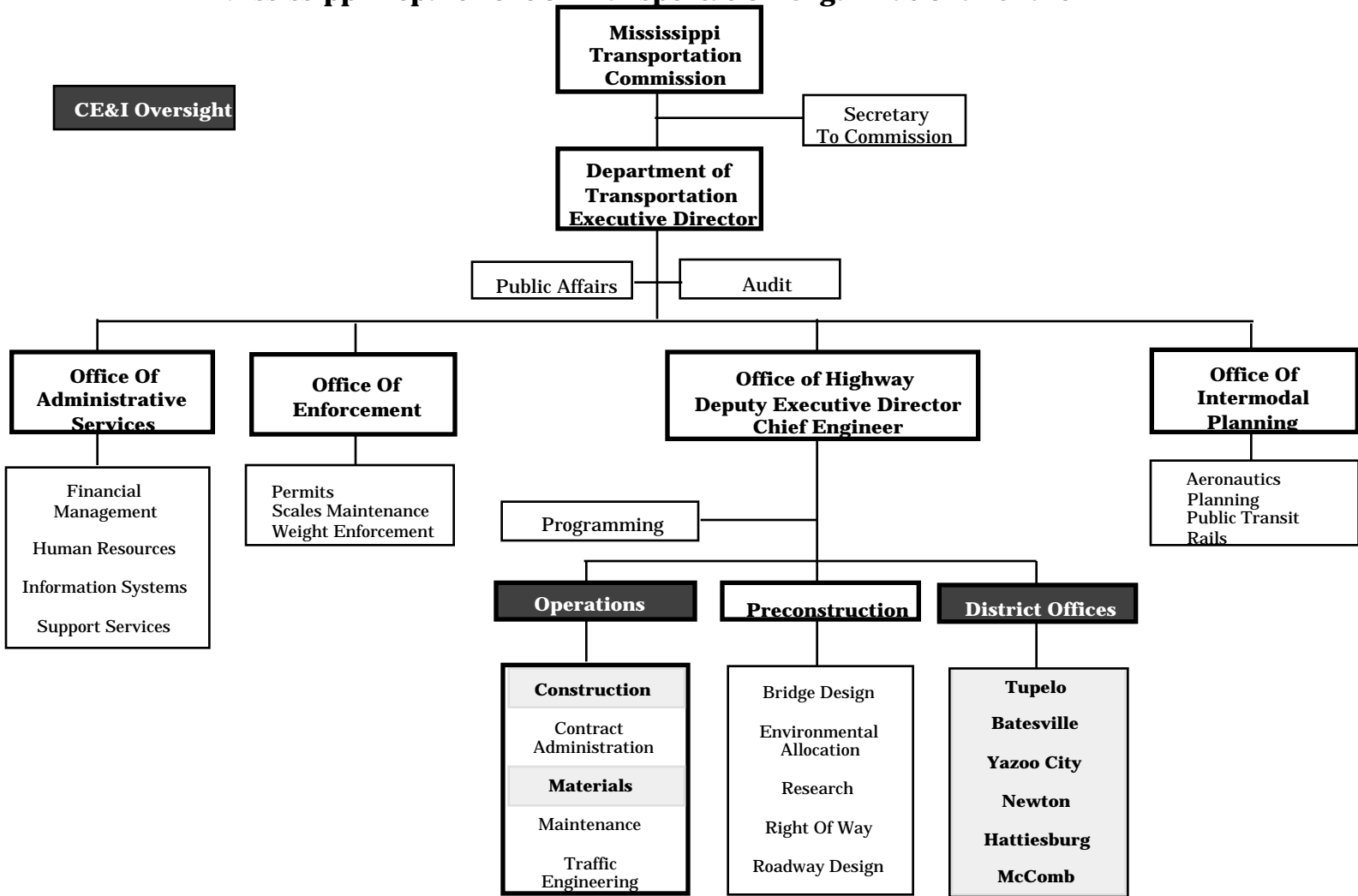
A= Neel-Schaffer, Inc.

B= Michael Baker, Jr.

SOURCE: Compiled by PEER from MDOT data.

Exhibit 3

Mississippi Department of Transportation Organizational Chart



SOURCE: MDOT FY 2000 Budget Request

Construction program personnel located in MDOT's six district offices are responsible for day-to-day oversight and monitoring of CE&I firms, while central office personnel are responsible for periodic oversight. The Construction Division is involved in contracting and managing all active highway construction projects in the state. The division is responsible for the preparation and interpretation of the *Mississippi Standard Specifications for Road and Bridge Construction* (Red Book) and all contract documents for highway construction projects for the monthly letting. Additionally, the division is responsible for selecting and overseeing private CE&I firms throughout the construction project. Other divisions within the bureau are responsible for the functions summarized in the table below.

Responsibilities of Divisions within the MDOT Operations Bureau

<u>Division</u>	<u>Responsibilities</u>
Materials	conducting field and laboratory operations including sampling, testing and inspection
Contract Administration	processing of MDOT construction contracts
Maintenance	overall maintenance of bridges and roadway, including maintenance budgeting and reporting
Traffic Engineering	addressing problems of efficient traffic movement, traffic safety, and roadway capacity

MDOT's Use of Private Engineering Firms

MDOT's use of private engineering firms has increased significantly since implementation of the 1987 highway program. MDOT uses private firms to provide services in all phases of the program from inception to completion. Such services are not only occur during the construction phase but can occur in the design or pre-construction phase of project development. These include roadway design, bridge design, right-of-way survey and acquisition, traffic engineering, transportation planning, and material research and testing.

Private firms that provide the construction engineering and inspection services are responsible for management of the construction project. MDOT contracts the following tasks and responsibilities to the CE&I firms:

Supervision of construction projects. The consultant is required to assume the duties and responsibilities of MDOT for construction engineering, contract administration,

inspection, material sampling and testing, and engineering control of the contracted construction project.

Construction administration. This includes furnishing survey crews, inspectors, materials testing laboratory equipment and staff, project engineer, office clerical staff, field office, vehicles, and all equipment and supplies, as required by the contract.

Record maintenance. This includes maintaining separate and distinct records and filing for the project, including all necessary inspection diaries, log books, survey staking records, material tests reports, and documentation necessary to justify payments as prescribed by MDOT standards.

Communication with affected parties. This includes handling all contracts with property owners, utility companies, and other individuals regarding project questions and problems. The consultant is the only authorized contact with the contractor during construction. The transportation commission sends all information and requests to the contractor through the consultant.

Cooperation with MDOT. The consultant makes its staff available when required by the commission to give testimony or otherwise assist in any claim, arbitration proceeding, or lawsuit arising out of the project.

Basis of MDOT's Decision to Contract for CE&I Services

MDOT managers contend that increases in construction activities beginning in FY 1996 led to their decision to contract with private firms for CE&I services. MDOT officials contend that the state road building program has continued to increase due to legislative initiatives to spur development of the state's highway system--i.e., the 1987 four-lane program and subsequent 1994 gaming road program. They cite staffing shortages in the construction program as contributing to the need to use private CE&I firms to manage construction projects.

MDOT also states that mandated reductions in personnel have limited the agency's ability to add engineering staff to manage additional construction activities. From July 1, 1993, through June 30, 1997, all state agencies were mandated to comply with Section 30, Chapter 419, *Laws of 1992*, whereby state agencies were directed to reduce authorized positions in state government by ten percent by July 1, 1997. MDOT contends that since this law became effective, the department's inability to add engineering positions and personnel has placed an additional burden on remaining staff. According to MDOT, this led to the decision to meet increased construction workload.

Conclusions

Although MDOT recognized a need to begin contracting CE&I services to private firms, the estimated average cost of these seven contracts negotiated represent an excessive share of the total cost of construction projects in comparison to several benchmarks. MDOT efforts to achieve economy are further limited because of federal and state law restrictions on use of competitive bidding, weaknesses in the department's firm selection process, and because the department does not take advantage of mechanisms available to achieve economy.

Analysis of Private Firm CE&I Cost

PEER analyzed CE&I cost estimates, comparing them to federal reimbursement levels, average CE&I costs in other states, and MDOT's internal cost of performing CE&I. MDOT's average CE&I costs (16.7 percent) exceed maximum federal reimbursement limits of 15 percent of total contract cost. MDOT's private CE&I costs are high in comparison to average costs of approximately 14.1 percent in other states. Also, the average 16.7 percent cost for private firm management exceeds the 10 percent cost for which MDOT could perform the CE&I function internally.

Comparison with Federal Guidelines

- *MDOT authorized CE&I fees that exceed (by an average of 1.7 percent) the federal reimbursable rate of 15 percent for engineering management services.*

From 1991 through June 1998, federal guidelines imposed a spending limit of fifteen percent annually on construction engineering costs for federal-aid construction projects. According to the Federal Highway Administration (FHWA), for all projects financed within the boundaries of the state with federal-aid highway funds, CE&I costs could not exceed 15 percent of the total estimated construction cost. Federal law did not impose penalties for states that exceeded the 15 percent guideline. However, the FHWA only reimbursed CE&I costs up to the established federal rate of 15 percent as stated in 23 CFR Section 140.205.

During June 1998, the law was revised by passage of the Transportation Equity Act for the 21st Century (TEA-21). The act removed the fifteen percent limitation requirement on construction engineering consultants, only requiring that the cost be "reasonable." The FHWA will now reimburse state transportation departments for all construction engineering costs relative to federal-aid construction projects as long as the cost is reasonable.

PEER used the federal reimbursement rate of fifteen percent as a guide to establishing an acceptable fee for the use of construction engineering consultants, including payment of fees to private CE&I firms. Average MDOT CE&I contract

costs of 16.7 percent are 1.7 percent above this limit, which raises the question of whether all incurred costs will qualify for reimbursement from the federal highway authorities.

Comparison with Other States

- *MDOT's average CE&I costs of 16.7 percent are consistently higher than the 14.1 percent found in comparable southeastern states.*

Of four southeastern states from which comparable data was available, CE&I costs averaged 14.1 percent of total project cost. PEER collected information from state highway construction agencies in Arkansas, Florida, Georgia, and Louisiana concerning their experience with CE&I costs. Other southeastern states either did not provide documentation or did not contract CE&I services to private firms. Due to environmental characteristics and other factors, some variation in proportionate CE&I costs is expected from state to state and project to project. CE&I data collected from other states tended to range between 6.8 and 14.6 percent of construction contract costs, averaging 14.1 percent (see Exhibit 4, below). While Mississippi's CE&I costs range from 13.5 to 23.7 percent, the average, 16.7 percent, is consistently higher than the experience of comparable states.

Exhibit 4
CE&I Costs As A Percentage of Construction Costs
in Southeastern Region States

State	Fiscal Years	Number of Contracts	Construction Cost	CE&I Costs	Average CE&I % of Construction
Arkansas	1996	1	\$37,100,237	\$3,773,683	10.2%
Florida	1996-1998	239	\$1,563,376,947	\$227,855,768	14.6%
Georgia	1996	2	\$84,360,016	\$5,748,394	6.8%
Louisiana	1995-1999	8	\$10,991,622	\$1,343,297	12.2%
TOTAL		250	\$1,695,828,822	\$238,721,142	14.1%

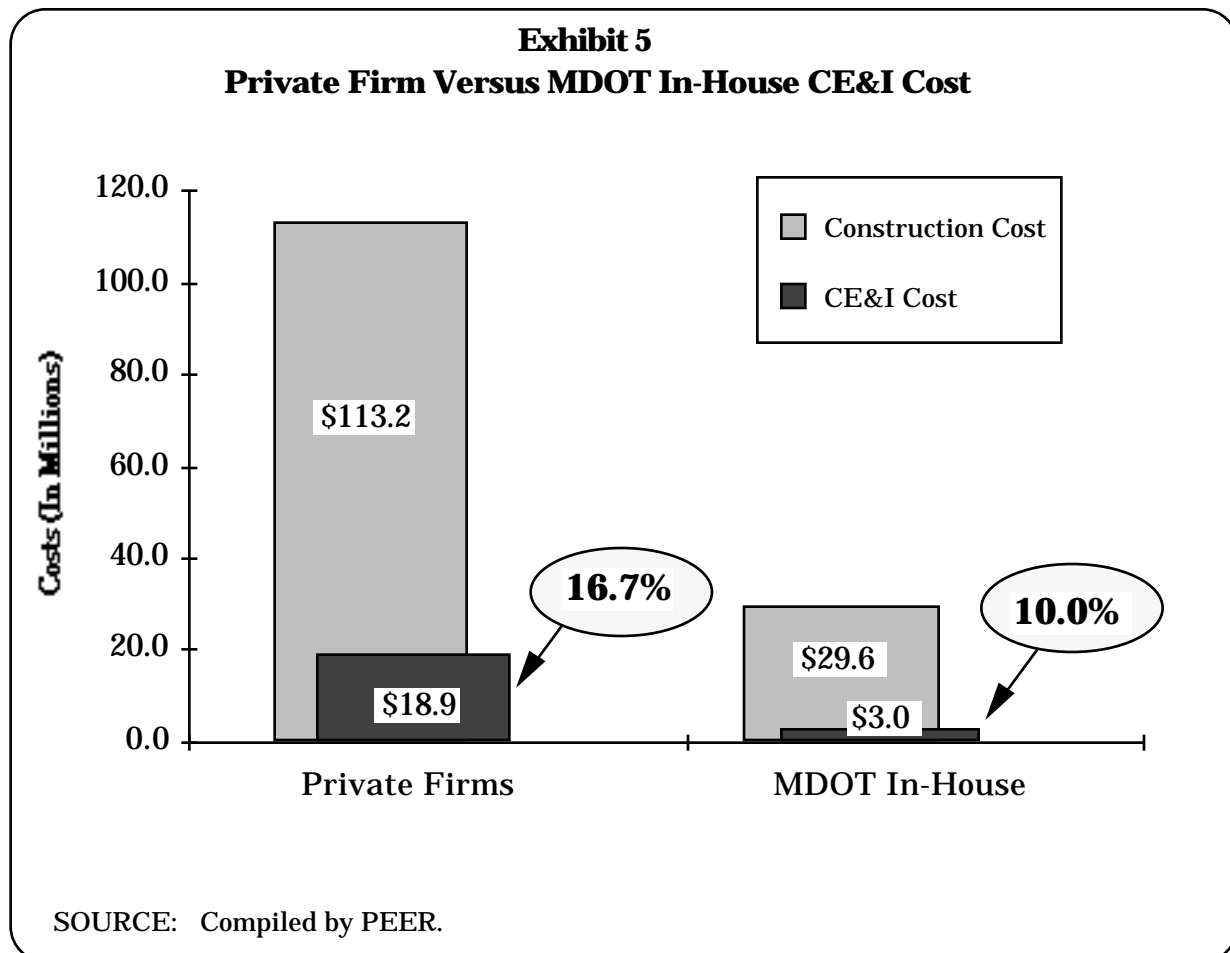
SOURCE: Compiled by PEER.

Comparison with MDOT's In-House CE&I Management Cost

- Whereas MDOT's costs for CE&I services provided by private firms average 16.7 percent, costs for the department to perform the CE&I function internally average 10 percent.

PEER compiled and examined MDOT's in-house CE&I costs for managing construction projects completed within the past five years and compared those costs to those of projects contracted to private firms. PEER selected projects most comparable to those contracted to private CE&I firms by examining the type of construction, project length, and construction cost. The selected project comparables ranged from one to ten miles in length and the total project costs ranged from \$1 to \$10 million.

PEER compiled actual cost data on in-house departmental CE&I expenses (provided by MDOT) charged to projects between 1991 and 1998. PEER identified projects initiated and completed during this period to insure inclusion of all CE&I costs. Departmental CE&I costs for comparable projects averaged 10 percent (see Exhibit 5, below), which compares unfavorably to the average 16.7 percent experience of private CE&I firm contracts.



PEER believes the 10 percent estimate to be conservative because the MDOT in-house comparables included smaller contracts where CE&I costs would be proportionately larger part of total construction contract cost. Total construction costs of three contracts where CE&I was contracted ranged from \$17 million to \$38 million.

Limitations on Competitive Procurement of CE&I Firms

MDOT's method of selecting CE&I firms is limited because federal and state law and regulations prohibit or restrict the use of competitive bidding to procure professional engineering services. In general, federal laws require that states use a system of competitive negotiation for selecting engineers and architects. This system does not allow for the use of competitive sealed bidding as a means of obtaining a competitive price. While state law does not specifically prohibit the use of bidding on such projects, it does authorize the State Board for the Registration of Professional Engineers and Land Surveyors to restrict the use of competitive bidding for engineers' services. The board's regulations restrict the use of these procedures. As a result of the prohibitions in federal law, MDOT is limited to using competitive negotiation to procure professional engineering services, which first requires selection of firms based on qualifications, then negotiations of price.

Federal Requirements

- *Federal law prohibits the state from using competitive bidding to select consulting engineers (e.g., CE&I firms) on federally funded highway projects.*

Federal law providing funds to states for highway programs requires that states use competitive negotiation procedures in selecting architects and engineers. Title 23, USC Section 112(b), requires that states award their engineering and architectural design contracts in conformity with the provisions of Title IX of the Federal Property and Administrative Services Act of 1949, as amended, known commonly as the Brooks Architects and Engineers Act, 40 USC 541 et seq.

The fundamentals of competitive negotiation as required by this act are:

- selection of engineers and architects on the basis of their competence and qualifications at a fair and reasonable price (see 40 USC 542, statement of policy);
- evaluation of engineers on the basis of qualifications with the three most qualified engineering firms being selected for competitive negotiations (see 40 USC 543); and,
- negotiation with the three firms in order of their rank. If the government cannot conclude an agreement with the most qualified firm at a fair and reasonable price, it must move to the second most qualified firm. If the government cannot conclude an

agreement with the second most qualified firm at a fair and reasonable price, it must move on to the third firm (see 40 USC 544).

Thus competitive negotiation does not allow a common feature found in competitive bidding: open price competition. A state may not ask the three firms to offer their best price and then select the lowest and best price. The state must negotiate with the three firms in order of their rank. A state may not move on to the second firm until it has completed negotiations with the first firm and has decided not to further negotiate with that firm.

While states may not ask the firms for sealed price bids, the states are required to develop a detailed cost estimate for the project for use during negotiations. Thus the state can negotiate with some idea of a fair and reasonable price for the work.

- *On projects that do not involve federal funding, state law does not prohibit MDOT from using competitive bidding for engineers' and architects' contracts for highway construction; however, professional regulations restrict its use.*

While state law requires that state agencies contracting for services with a value of more than \$100,000 use the competitive procedures required by the Personal Services Contract Review Board, MDOT has a specific legislative exclusion from these requirements (see MISS. CODE ANN. Section 25-9-120). Further, Section 65-1-141, which authorizes the department to hire engineers, does not require the use of competitive bidding or any other particular form of method for contracting (see Opinion of the Attorney General to R. K. Hunter, January 3, 1986).

Regulations of the State Board of Registration for Professional Engineers and Land Surveyors

Although state law does not prohibit the use of competitive bidding regarding the selection of engineering consultants, the State Board of Registration for Professional Engineers and Land Surveyors' Rules and Regulations restricts selection of an engineering firm based on a price component. MISS. CODE ANN. Section 73-13-15 grants the board authority to "adopt and amend all regulations and rules of procedure, not inconsistent with the Constitution and laws of this state, which may be reasonably necessary for the proper performance of its duties and the regulations of the proceedings before it." This statute grants the board further power and authority to:

- (a) Establish standards of conduct and ethics;*
- (b) Institute proceedings in its own name;*
- (c) Promulgate rules restricting competitive bidding;***
- (d) Promulgate rules limiting or restricting advertising. . . .*

- *Regulations of the State Board of Registration for Professional Engineers and Land Surveyors do not prohibit the use of competitive bidding when projects are state funded. However, board regulations restrict engineers from submitting a price for services until they are selected on the basis of qualifications and competence.*

As noted above, state law authorizes the board to restrict, but does not prohibit, the use of competitive bidding for professional engineers. Board policy only allows the use of competitive price proposals from registered engineers when certain criteria are met. Section 17.05(6) of the board's policy states that:

*The Professional Engineer is encouraged to seek professional employment on the basis of qualifications and competence for proper accomplishment of the work. **This procedure restricts the engineer from submitting a price for services until the prospective client has selected, on the basis of qualifications and competence, one engineer or firm for negotiations; however, competitive price proposals may be submitted or solicited for professional services only if all the following restrictions are met:***

- a. The prospective client has first sought statements of qualifications from interested registrants, and*
- b. Those registrants chosen by the client on the basis of qualifications and competence for proper accomplishment of the work (not to exceed five) have received in writing a comprehensive and specific Scope of Work, and*
- c. When the scope of work has been prepared, signed and sealed by a registered professional engineer who has attested to the completeness and adequacy of the Scope of Work assuring that it fully identifies and describes the factors affecting the required engineering services, and*
- d. Assurances have been given by the prospective client that factors in addition to price were considered in selecting the professional engineer, and*
- e. The engineer that sealed the Scope of Work, or his firm, will not be allowed to submit a price proposal.*

The thrust of this regulation is that there are some conditions under which one may use competitive price proposals, but that procedures used in procuring engineering services must result in the selection of at least three engineering firms on the basis of competence before any sealed price proposals can be considered. Clients must also give assurances that factors other than price were considered in selecting an engineer.

The board's authority to restrict the use of competitive bidding was the subject of an Attorney General's opinion written in 1986 (see Opinion to R. K. Hunter, January 3, 1986). In that opinion, the Attorney General concluded that

the board has no authority to completely bar competitive bidding or any consideration of price with respect to the selection of engineering contractors. Current regulations restrict, but do not prohibit, the submission of competitive price proposals in all cases.

Other Weaknesses in MDOT's Evaluation and Selection Process

PEER also found that while MDOT is limited to using competitive negotiation, the department has not acted to take advantage of the competitive mechanisms available in the process. PEER found MDOT's selection process to be weak because it does not insure uniformity in applying rating criteria and consistency in scoring firm qualifications. Although federal and state law limit MDOT's ability to seek economy through competitive bidding, the department does retain some discretion over how it conducts the competitive negotiation process. MDOT does not effectively conduct these negotiations in the interest of achieving a competitive price because they do not benchmark the proposals against an estimate of performing the CE&I service internally. Also, MDOT has not sought economy by advancing beyond the first (highest-rated) firm on the list of qualified firms.

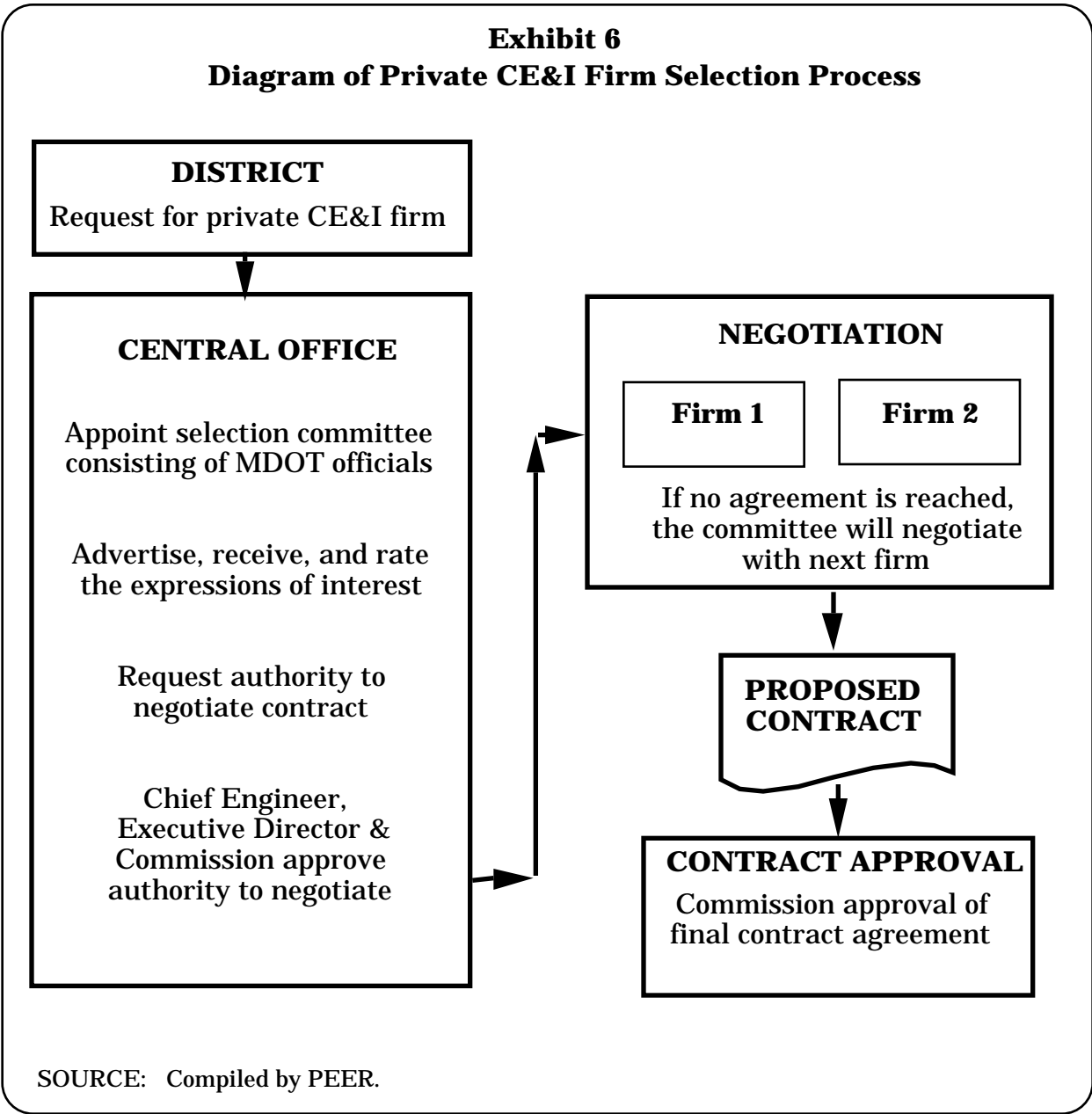
Standard Operating Procedures for Selecting Engineering Consultants

MDOT standard operating procedure ADM-24-01-00-000 governs selection of construction engineering consultants. This procedure requires the presence of one of three general conditions that make it necessary for MDOT to procure construction engineering consultants rather than provide such services in-house:

- *magnitude of the work involved on a project*--when the magnitude of the work involved in a particular project may so tax the department's available staff power that it would be necessary to defer other essential work if the work were performed by the department's own staff
- *complexity of the work involved in a project*--the work required in a project may be of such a specialized nature that the department must go outside its own staff for experts in appropriate fields to accomplish the work
- *time required to perform the work on a project*--the time frame within which the work must be accomplished may be such that the department cannot undertake the work and maintain its program on schedule

The procedure provides that the Chief Engineer, Assistant Chief Engineer, and the division and/or district involved agree that consulting services will be required to meet the department's construction schedule. The Chief Engineer requires the division and/or district submit a request stating the need and reasons, including a detailed description of the scope of services required and an estimate of the cost of the work to be performed. Next, the Chief Engineer

appoints a consultant selection committee to make the necessary selection. (See Exhibit 6, below.)



The following sections describe how MDOT conducted its contractor selection procedures in awarding the seven CE&I projects reviewed by PEER.

The Consultant Selection Committee

- *The MDOT selection committee does not ensure that the expressions of interest (qualifications) are evaluated uniformly. The use of limited evaluation criteria does not ensure that applications are consistently rated.*

For the CE&I projects that MDOT awarded, the selection committee consisted of MDOT's Assistant Chief of Operations, State Construction Engineer, Materials Engineer, District Engineer, and the Title IV Coordinator for MDOT. The selection committee meets and prepares the Request for Proposals (RFP) and advertises it in a newspaper of statewide circulation. MDOT advertises request for proposals monthly or as a construction project becomes available.

According to MDOT Standard Operating Procedure ADM-24-01-00-000, the selection committee should consider eight factors in evaluating proposals to determine the most appropriate and qualified firms for a particular project:

- professional reputation of the firm;
- **experience of the firms in performing specific services related to the project;**
- **qualification and experience of the principals of the firms;**
- **size and experience of the firm's professional and technical staff with respect to the magnitude of the project;**
- the extent of in-house capabilities of the firms to perform specialized services required by the project;
- quality of workmanship and performance of the firm;
- depending on the nature of the project, the location of the firms with respect to the project site may be important; and,
- financial standing of the firm.

For the CE&I projects that MDOT awarded, the selection committee used only three of the above factors (noted in bold type) to evaluate the seven firms awarded contracts. No sub-factors or additional criteria were provided to assist the selection committee in evaluating the expressions of interest uniformly. A scoring system of 100 points is distributed to each of the three factors to determine the highest qualified firm (see the table below). MDOT provided no documentation of how weights were derived, so applying and rating firms based on the three evaluation factors is not defensible. Firms are initially rated in accordance with the following weighted criteria:

Evaluation Criteria For CE&I Firms

<u>Criteria</u>	<u>Weight</u>
Experience of the firm	30%
Qualification and experience of the principals	20%
Size and experience of the firm's professional and technical staff	50%
TOTAL	100 %

- *MDOT does not insure that the selection committee uniformly scores proposals by defining the set of rating values used and comparing scores of individual members.*

After determining whether firms meet the three evaluation criteria, MDOT uses a four-step process to score the proposals (expressions of interest) submitted by firms. Based on individual professional judgment, each member of the selection committee independently ranks the “expressions of interest” received. Each selection committee member reviews a firm’s proposal, judging its quality by:

- (1) assigning a rank of 1 to 10 for each of the three evaluation criteria;
- (2) multiplying the rank by the evaluation criteria weight to compute a criterion score; and,
- (3) summing the three criterion scores to compute a composite score for the proposal, and
- (4) ranking the firms according to the composite scores.

In the first step of assigning a rank of 1 to 10 to each of the evaluation criteria, members of the committee arbitrarily select a value (rank) to be used in calculating the firm’s score. MDOT has not predefined the descriptions which equate to each of the values between 1 and 10; therefore, raters have no guide to insure that members uniformly score each of the three evaluation criteria. Without such a guide, the values assigned are subject to the interpretation of each rater, and could erroneously indicate desirable or undesirable characteristics of firms.

Also, in compiling the scoring of proposals, MDOT does not compare scores of raters to insure that raters are interpreting criteria consistently and that scores are reliable. One possible reason that inter-rater reliability is not checked is that MDOT selection policies and procedures do not require that such controls be in place. Checking inter-rater reliability is important because, by identifying

potential areas of consistency among raters, the department can improve the reliability (and therefore the fairness) of the evaluation process. The absence of reliability checks is significant because any failure on the part of MDOT to apply evaluation criteria consistently could result in elimination of a qualified firm or certification of an unqualified firm.

Any adequate method of maintaining inter-rater reliability should address at least two issues:

- training of the selection committee to acceptable performance levels; and,
- monitoring of ratings to determine if raters are consistently evaluating firms and the selection process is reliable.

At the conclusion of the rating process, the Assistant Chief of Operations, on behalf of the consultant selection committee, sends a letter to the Chief Engineer indicating that all expressions of interest have been received and rated pursuant to the advertised project. A group ranking of all expressions of interest is computed by adding the ranking of individual members. Also, a copy of the proof of publication is attached. The letter provides the names of all firms submitting an expression of interest. Further, it outlines who received the highest rating and recommends who should be contacted for negotiations.

Negotiation

After evaluating firms and ranking them based on qualifications, MDOT initiates negotiations with the top-rated firm in the group. Under negotiation procedures, MDOT is allowed to advance to consideration of the proposal of the second qualified firm if it finds the first unacceptable and no agreement can be reached. MDOT can continue this process until it reaches an acceptable proposal or re-advertise the project and solicit new submissions of expressions of interest. However, MDOT has never sought competition by advancing to the second firm on the list. Not taking advantage of available competitive mechanisms limits MDOT's ability to achieve economy in contracts that are competitively negotiated.

- *MDOT has not sought economy by using formal estimates of CE&I costs (as required by federal guidelines) in evaluating proposals of private firms, and pursuing negotiations beyond the highest rated firm.*

MDOT efforts to achieve economy throughout the competitive negotiation process are weakened because MDOT does not use methods authorized under federal guidelines and at its disposal. Federal guidelines require the state highway construction authorities to compile an independent cost study for construction contracts as a benchmark for evaluating proposals. Similar guidelines apply to contract negotiations for CE&I services. MDOT currently does not collect or analyze in-house information to attempt to develop an estimate of CE&I costs. Instead, MDOT relies on cost estimates of firms submitting proposals.

Federal guidelines outlined in 23 CFR 172.7 state that the contracting agency (MDOT, in this case) is responsible for preparing a detailed cost estimate, except for contracts awarded under small purchase procedures, with an appropriate breakdown of specific types of labor required, work hours, and an estimate of the consultant's fixed fee (considering the risk and complexity of the project) for use during negotiations. Although development of such an estimate is a requirement, federal officials do not monitor it. Such estimates are needed in order for the contracting agency to know in advance the required labor force and expertise needed to complete the project, instead of using the consultant-suggested labor work force estimates as the official guide.

- *MDOT relies on detailed cost estimates provided by the private firm submitting a proposal rather than agency estimates required by federal guidelines.*

MDOT officials rely on cost estimates provided by the engineering firm(s) selected for negotiations. Such estimates provide detailed estimated labor costs as well as a description of the type of labor needed to complete the project successfully. Additionally, the consultant's cost estimates include fees relative to the rental of field office space, material testing equipment, office furniture, machines and equipment, utility charges, supplies, and other items associated with the management responsibilities of a construction project. The MDOT consultant selection committee is responsible for analyzing the proposed contract as to the correctness and/or reasonableness of staff-hours of effort, overall time required to complete various phases, rate of pay for each position, personnel assigned, and direct and indirect costs.

Although MDOT prepares no formal CE&I cost estimates of labor and equipment costs, officials stated that an overall cost estimate is obtained by calculating fifteen percent of the construction project estimate to derive an estimated CE&I cost. Federal guidelines state that the "state estimator" should derive a reasonable construction estimate that is based on past construction project cost experience, equipment cost, and historical information. Although fifteen percent is used as a basis for CE&I estimates, this benchmark is not formalized in MDOT policy. MDOT provided no documented justification for using the construction estimate as a basis for evaluating proposals of private CE&I firms. If in-house detailed cost estimates were developed, MDOT officials would know in advance the type of staff and equipment needed as well as an estimate of the time needed to complete such a project. A detailed cost estimate would allow the consultant selection committee access to projected labor and equipment costs prior to meeting with the consultant for negotiations.

- *MDOT has not sought economy by pursuing negotiations beyond the first (highest-rated) firm on the list.*

For the seven CE&I contracts awarded from FY 1996 through FY 1998, MDOT has never sought economy by advancing to the second firm on the list. In all seven cases, MDOT awarded the contract to the first firm on the list. Although this practice may be justified based on the merits of the first proposal, MDOT's unwillingness to pursue a better proposal limits what available competitive mechanisms are available under the "competitive negotiation" restrictions imposed under federal and state law.

By examining only the first firm's proposal, MDOT limits its ability to seek economy. Since MDOT has not developed any internal cost estimates of the CE&I services required, it has no benchmark for comparison. For this reason, taking advantage of this mechanism (and gathering comparable data from other firms) becomes more important in order to promote economy.

Recommendations

1. MDOT should conduct a documented analysis of costs and benefits associated with privately contracting private CE&I services. This should include an analysis of:
 - all costs and benefits of performing the function internally;
 - costs and benefits of performing the function using a private CE&I firm, including internal costs of overseeing firm performance;
 - historical and projected workload levels in comparison to in-house resources; and,
 - types and levels of in-house expertise needed to perform CE&I services and projected costs of maintaining desired staffing levels.

2. MDOT should follow federal guidelines which require development of detailed cost estimates relative to CE&I contracts which show a breakdown of specific labor requirements, work hours, and an estimate of the fees to be paid a private firm.

MDOT should develop detailed cost estimates that specify the type of staffing needed and desired to manage effectively the project being let. These estimates should be compiled independent of proposals submitted by outside firms. Additionally, the estimate should provide the type of employees, number of hours per day, rate of pay for each employee, overtime rate, and an estimate of the time it should take to complete the project.

3. MDOT should ensure that the selection committee evaluates expressions of interest consistently. Additionally, the committee should apply uniform evaluation criteria when rating proposals.
 - MDOT should revise the Consultant Selection and Administration of Consultant Contracts standard operating procedures to reflect current practices and procedures.
 - MDOT should develop evaluation criteria to define further the factors used by the committee when selecting qualified firms for a particular project.
 - MDOT should establish procedures for checking inter-rater reliability and identifying potential areas of inconsistency among raters. By doing so, the department could improve the reliability (and therefore the fairness) of a rater's evaluations. Inter-rater reliability policies should address the following issues;

- training of the selection committee to acceptable performance levels; and,
 - monitoring ratings to determine if raters are consistently evaluating firms to determine whether the selection process is reliable.
4. In order to promote competition in awarding construction and CE&I contracts on state-funded projects, the Legislature should amend MISS. CODE ANN. Section 73-13-15 to remove restrictions on competitive bidding by professional engineers and architects.

Zack Stewart
Northern District Commissioner

Wayne O. Burkes
Central District Commissioner

Ronnie Shows
Southern District Commissioner



Kenneth I. Warren
Executive Director

James H. Kopf
Deputy Executive Director/
Chief Engineer

Mississippi Department of Transportation / P.O. Box 1850 / Jackson, Mississippi 39215-1850 / Telephone (601) 359-7001 / FAX (601) 359-7110

January 20, 1999

Ms. Joyce McCants
Senior Analyst
PEER
Post Office Box 1204
Jackson, MS 39215-1204

RE: Revised PEER Committee Executive Summary Report

Dear Ms. McCants:

Attached please find MDOT's response to the revised PEER Committee Executive Summary of the MDOT's construction engineering and inspection (CE&I) contracts with private firms.

The Mississippi Department of Transportation (MDOT) appreciates the opportunity to respond to the revisions made by the PEER Committee.

Sincerely,



Kenneth I. Warren
Executive Director

KIW:SLM/TCR:clp

Attachment

pc: Chief Engineer
Assistant Chief Engineer-Operations
State Construction Engineer

SUBJECT: MDOT RESPONSE TO PEER COMMITTEE EXECUTIVE SUMMARY OF ITS REVIEW OF MDOT'S CONSTRUCTION ENGINEERING AND INSPECTION (CE&I) CONTRACTS WITH PRIVATE FIRMS

MDOT was afforded the opportunity to review the Peer Committee Executive Summary and Report on Monday afternoon, January 4, 1999 and was requested to submit a response by Friday, January 8, 1999. In light of the MDOT response the Peer Committee Executive Summary was modified. On January 15, 1999, MDOT reviewed the revised Peer Summary. MDOT was required to submit a revised response by January 20, 1999.

The response contained herein is submitted with the understanding that a short time frame was allowed for preparation.

The following items are offered in response to the Revised Executive Summary Overview.

The need for MDOT to contract with private firms for Construction Engineering and Inspection (CE&I) services beginning in Fiscal Year 1996 is documented by the graph on Attachment No. 1, which represents payments to contractors for Fiscal Years 1991 - 1998. As can be seen, payments to contractors for Fiscal Year 1996, which represents actual work performed by contractors and requires construction inspection, increased by 94.5 million dollars over Fiscal Year 1995. Therefore, it is not by coincidence that the use of private firms for CE&I services began in 1996.

MDOT engineering personnel resources have remained relatively steady since 1987 when the 1987 AHEAD Road Program that mandated 1,077 miles of 4-lane roadway be let to contract by June 1999 was passed by the Mississippi Legislature. It is evident that without an increase in MDOT engineering personnel the increase in work performed by contractors could not be adequately managed internally. This fact necessitated that CE&I be contracted to private firms.

It was stated that "MDOT CE&I costs (16.7 percent) have exceeded maximum federal reimbursement limits of 15 percent of total contract costs." We would like to point out that 16.7 percent represents the estimated average maximum amount payable in consultant fees compared to the original construction contract amounts. It is further important to note that these CE&I contracts are based on cost plus fixed fee, with the amounts paid to private firms based on actual costs. The maximum amount payable contained in the contract does not represent a guaranteed payment to the private firms. In fact, these estimates were based on construction schedules that allowed for a lot of float time in which consultant services will not be necessary. Since MDOT is diligent about checking for proper staffing levels on these projects, we anticipated that the final values of these contracts would be significantly below their maximum amount payable.

MDOT Attachment No. 2 represents payments-to-date for CE&I services from private firms compared to construction amounts paid to the contractor. Based on these actual costs, the average CE&I fees equal 10.6 percent of actual construction amounts paid to date. Rates for

each project vary from 6.72 to 16.99 percent. The variations result from projects being in different phases of construction and that some of the higher figures are associated with some of the first contracts that were negotiated before we refined our negotiating tools, e.g., accepting only field overhead rates instead of full overhead rates. Additionally, the firm that holds the first four contracts on the list has projected that these contracts will average around 10 percent of total construction costs. These 10.6 and 10 percent figures are well within the former maximum Federal reimbursement limits of 15 percent (this regulation was rescinded in the TEA-21 legislation).

The executive summary states that "MDOT private CE&I costs are high in comparison to average costs of approximately 14.1 percent experienced in other states." The information from Arkansas, Florida, Georgia and Louisiana used in determining the 14.1 percent average is not representative since Arkansas only had one (1) large contract; Georgia had two (2) large contracts and Louisiana had eight (8) small contracts. Florida has a more representative sample with 239 contracts and a 14.6 percent average. It also was not stated whether the information from the other four (4) states were actual construction costs and actual CE&I costs or costs based on original contract amounts. Anyway, it can be seen that the current MDOT average cost of 10.6 percent compares favorably with the 14.1 percent average from the other four (4) states. Additionally, MDOT actual 10.6 percent private CE&I cost is also within range of the (estimated) 10 percent cost for MDOT to perform the CE&I internally. The MDOT also questions the accuracy of the cost of 10% for the Department to perform CE&I internally. The Department furnished approximately 1200 projects for review along with actual internal CE&I costs associated with those projects and only a very few of these projects were used as a basis for the internal cost of MDOT to perform CE&I work.

Rule 17.05, Part 6 of the Mississippi State Board of Registration for Professional Engineers and Land Surveyors Rules and Regulations of Procedures states that the Professional Engineer is encouraged to seek professional employment on the basis of qualifications and competency for proper accomplishment of the work. MDOT concurs with this regulation and believes that for the sake of public safety, qualifications and competency should be the basis for selection of private firms to perform CE&I services. Although current regulations restrict, but do not prohibit, the submission of competitive price proposals in all cases, MDOT contends that the lowest bidder is not always the best bidder; especially, when public safety is involved.

The following items are offered in response to the Revised Executive Summary Recommendations.

1. The need for MDOT to contract with private firms for CE&I services is very real. Even before the increase indicated in Attachment No. 1 for Fiscal Year 1996, the Project Offices in several Districts had as many as 12 active projects at one time. This work load was handled with a staff of 30-35 employees. Needless to say these Project Offices were loaded past capacity. With the increased construction activity of Fiscal Year 1996 it was impossible for some Project Offices, with their limited staff, to handle the required inspection necessary to properly oversee construction on additional projects.

MDOT Attachment No. 2 which denotes payments-to-date for CE&I services from consultants compared to amounts paid to highway contractors. Based on these actual costs, the average CE&I costs equals to 10.6% of the actual construction costs. This is well within the 15% maximum that the FHWA used to require. The 15% maximum was rescinded with the TEA 21 legislation. The above 10.6% based on actual costs is more realistic than the 16.7% based on the original bid amount of construction costs and estimated CE&I costs. Also, MDOT would point out that the 10% cost for performing CE&I internally is based on actual final cost to construct the projects.

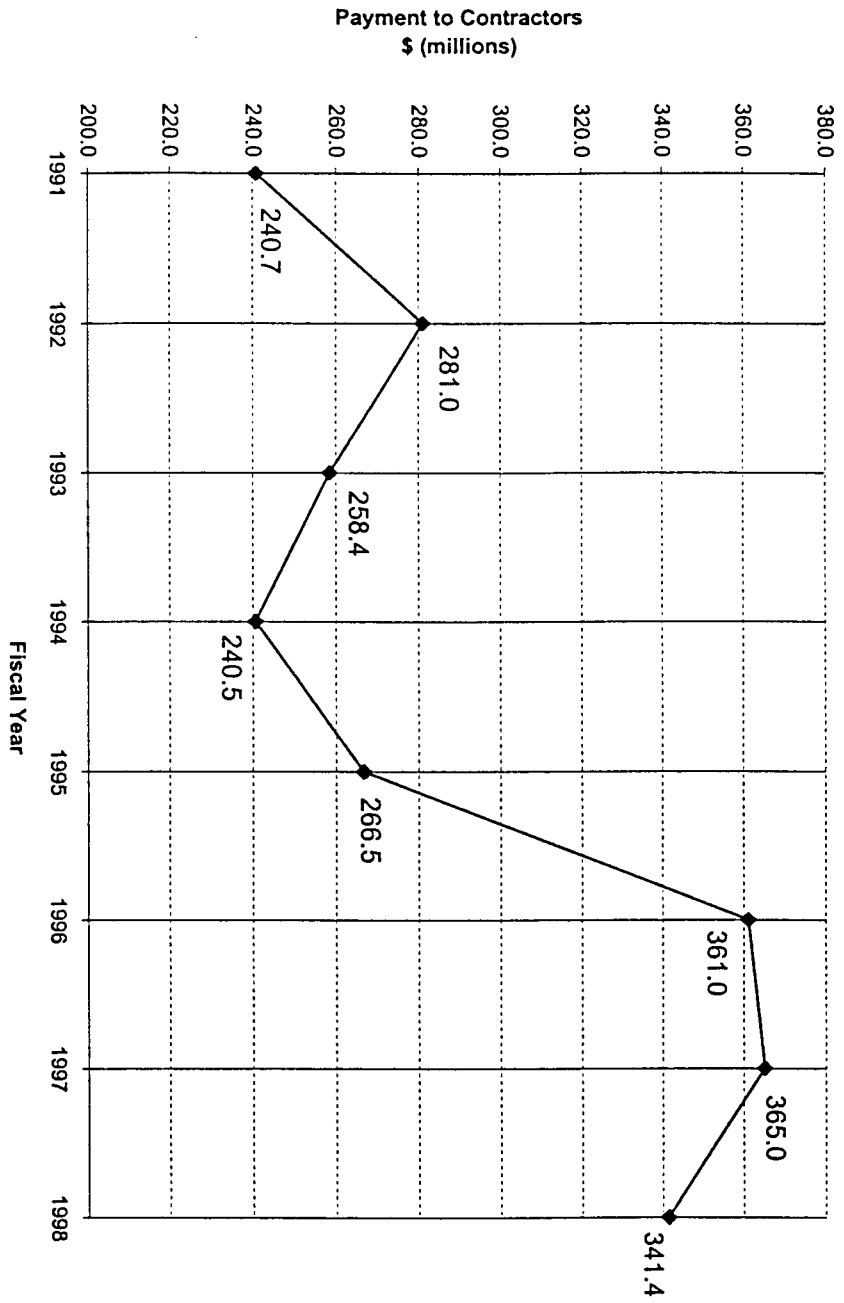
MDOT did not decide to use consultants for Construction Engineering and Inspection (CE&I) because the Department thought that this would be cost efficient. The Department only decided to use consultants for CE&I to meet the 1987 AHEAD Road Program mandate that 1,077 miles of 4-lane roadway be let to contract by June 1999. In 1992, the Mississippi Legislature mandated that the Mississippi Department of Transportation (MDOT) reduce the number of employees by 10 percent. Therefore the Department's only choice was to use consultants or not build the project at that time due to insufficient staff.

- MDOT believes that it is most cost effective to perform CE&I with internal staff but, again, this was not an option. The Department had only two choices, either let the project on time or delay the letting until adequate internal staff became available.
 - Districts currently maintain records of historic and projected workload. These workload factors are considered as new project lettings are planned. When adequate staffing is not available the only options available to MDOT are to let the project using consultants for the CE&I or delaying the letting.
 - Necessary increases of in-house expertise to handle increase construction is not a possibility. As noted above, the Legislative mandate of 1992 did not allow for increased in-house staffing. Also, the use of consultants to perform CE&I work is just for peak workload. Once this peak is passed MDOT will be able to handle the workload internally.
2. MDOT prepared a cost estimate for the first CE&I project. This cost estimate, broken down by labor and hours worked, was compared with the consultant's estimate. Upon negotiating with the firm, MDOT determined that a review of the consultant's cost estimate followed by negotiations with the consultant produced the best results, rather than using the cost estimates. This is because the make-up of the consultant labor force is different from that at MDOT. For instance, consultants can generally conduct the services in fewer man-hours by using highly experienced personnel. MDOT CE&I work is generally conducted with a mix of personnel with varying degrees of professional experience.
 3. MDOT does ensure that the selection committees evaluate expressions of interest as consistently as can be done using a quantitative analysis for a subjective evaluation. MDOT

appoints a highly qualified Selection Committee to insure the selection of the most qualified firm. The Committee is made up of professional engineers, most of whom have served as project engineers on construction projects. Therefore, they are well aware of the qualifications the consultant firm must possess.

- MDOT is in the process of revising the Consultant Selection and Administration of Consultant Contracts Standard Operating Procedures (S.O.P.).
 - The evaluation factors mentioned in the above S.O.P. were originally used to evaluate expressions of interest. It was determined that these factors were not sufficiently addressed. They have since been refined.
 - MDOT does not agree that there is a need to insure that inter-rater reliability is obtained. The ratings themselves are not averaged to determine the most qualified firm, just the ranking. Therefore each rater's rankings are more important than the ratings themselves. As long as each rater is consistent with the way he/she rates expressions of interest the results will always be the same. Again, any quantitative measure of a subjective element will still include variability.
 - MDOT's new Professional Services Contracting (PSC) Unit (which is being created) will furnish guidelines to committee members with each evaluation sheet. This will provide members with guidance as to the meaning of the components and rating scales.
 - The PSC unit is charged with monitoring the selection process for consistency and compliance with standard operating procedures. This should ensure that no significant discrepancies will exist in the selection process.
4. MDOT does not agree that the lowest bid received is necessarily the best bid. The present system, with some refinement, will result in the most effective use of available funds.

Construction Expenditures Payments to Contractors



Attachment No. 2

PROJECT NUMBER	COUNTY	DATE	CONST. AMT. PAID	CE&I FEES PAID	CE&I COST AS A % OF CONST. COST
17-0011-03-062-10	OKTIBBEHA	11/20/98	\$7,814,450	\$1,327,437	16.99%
97-0011-03-064-10	OKTIBBEHA	11/20/98	\$4,784,101	\$324,892	6.79%
97-0011-02-077-10	WEBSTER	11/20/98	\$2,105,641	\$141,462	6.72%
17-0021-01-028-10	DESOTO	11/20/98	\$32,667,386	\$2,539,088	7.77%
97-0009-03-055-10	BOLIVER	12/23/98	\$11,292,670	\$1,918,277	16.99%
97-0072-02-022-10	YAZOO	12/23/98	\$6,591,842	\$582,032	8.83%
97-0072-03-018-10	HUMPHREYS				
97-0009-03-056-10	BOLIVER	12/23/98	\$3,078,841	\$439,078	14.26%
	TOTAL		\$68,334,931	\$7,272,266	10.64%

PEER Staff

Max Arinder, Executive Director
James Barber, Deputy Director
Ted Booth, General Counsel

Evaluation

Sam Dawkins, Division Manager
Linda Triplett, Division Manager
Pamela O. Carter
Katherine Stark Frith
Kimberly Haacke
Barbara Hamilton
Lee Anne Hamilton
Kelly Lockhart
Joyce McCants
Michelle M. Owen
David Pray
John Ringer
La Shonda Stewart
Lynn Watkins
Larry Whiting

Editing and Records

Ava Welborn, Editor and Records Coordinator
Sandra Haller
Pam Sutton

Administration

Mary McNeill, Accounting and Office Manager
Shirley Anderson
Thelisa Chapman
Pat Lockett

Data Processing

Larry Landrum, Systems Analyst

Corrections Audit

Louwill Davis, Corrections Auditor
