PERFORMANCE AUDIT

Oklahoma Department Of Transportation

For the period July 1, 2008 through June 30, 2013

Oklahoma State
Auditor & Inspector
Gary A. Jones, CPA, CFE

Performance Audit Report of the Oklahoma Department of Transportation: Engineering Consulting Process

For the Period July 1, 2008 through June 30, 2013

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June 30, 2015

TO THE OKLAHOMA TRANSPORTATION COMMISSION:

This is the audit report of the Oklahoma Department of Transportation for the period July 1, 2008 through June 30, 2013. The goal of the State Auditor and Inspector is to promote accountability and fiscal integrity in state and local government. Maintaining our independence as we provide this service to the taxpayers of Oklahoma is of utmost importance.

We wish to take this opportunity to express our appreciation for the assistance and cooperation extended to our office during our engagement.

This report is a public document pursuant to the Oklahoma Open Records Act (51 O.S. § 24A.1 et seq.), and shall be open to any person for inspection and copying.

Sincerely,

GARY A. JONES, CPA, CFE
OKLAHOMA STATE AUDITOR & INSPECTOR

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Introduction and Agency Background

Pursuant to the request of the Oklahoma Secretary of Transportation and now former executive director of the Oklahoma Department of Transportation (ODOT), and in accordance with 74 O.S. § 213.2.B, we conducted a performance audit of ODOT for the period July 1, 2008 through June 30, 2013.

Management requested an evaluation of the engineering consulting process that could ensure the process was conducted in accordance with internal policies and state statutes and regulations, offer any relevant recommendations for improvement, and address the concerns of state legislators who had questions about the process.

The Engineering Consulting Process

Generally, once an ODOT department determines, and management agrees, there is a need to outsource engineering duties, a statement of services is developed and a quarterly (four times per year) solicitation of interest is released to all interested engineering consultants. Interested consultants submit letters of interest, and the field of qualified candidates is narrowed down through a lengthy selection process. A selection committee comprising relevant ODOT engineering staff ranks and interviews consultants, and then fee negotiations are conducted with the selected consulting firms.

Each solicitation includes a variety of projects and results in one or more contracts, as multiple consultants are often selected for each project. Contract administrators and internal engineers have contact with the consultants during the project, and personnel from the pertinent internal division receive deliverables and review consultant invoices. At the close of the contract, the consultant is evaluated.

The engineering consulting process is guided by detailed rules contained in the ODOT Guidelines for Administration of Consultant Contracts. These rules are crafted to conform to state and federal laws, rules, and regulations, and are approved by a representative of the Federal Highway Administration (FHWA). The FHWA is involved on many Federal-aid projects, providing additional oversight and approvals.

According to management, outsourcing of engineering duties has increased in recent years, as the need for engineering services has grown while staff size has decreased. This appears to be a common phenomenon in state transportation departments.[1] States choose to outsource engineering functions not only due to staffing and financial concerns but more significantly due to factors such as time constraints, a need for specific expertise or equipment, and a desire for innovation.[2]

Scope and Methodology

This audit covers the period July 1, 2008 through June 30, 2013. Our process included reviewing pertinent guidelines, project and financial records, and other relevant documents, interviewing various personnel and external parties, visiting certain ODOT facilities, and testing selected project documentation and transactions. Additional information regarding our methodology is included throughout the report as applicable.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusion based on our audit objective.

We also utilized sampling to achieve our audit objectives. To ensure the samples were representative of the population and provided sufficient evidential matter, the random sample methodology was used. We identified specific attributes for testing each of the samples and when appropriate, we projected our results to the population.

Objective	Evaluate certain aspects of ODOT's consulting engineering process.

As discussed in the background section, management requested we evaluate certain aspects of the engineering consulting process, including solicitation and selection of engineering firms as well as payments for services rendered. We first considered performing a high level examination of the agency's ratio of engineering work outsourced to that performed in-house, but determined it would not be possible, due to the lack of detailed overhead cost data at the agency and the difficulties inherent in such an examination, as established in similar audits from other states. See our first observation for a more detailed discussion.

Through risk assessment and initial interviews, we determined it would be most appropriate and useful to review the engineering consulting process from an internal control perspective, ensuring controls are in place and operating effectively to prevent or detect irregularities or noncompliance within the engineering consulting process. We documented the detailed processes related to outsourcing justification; consultant solicitation and selection; contract negotiation, approval, and administration; invoice payment; and evaluation. We then identified several key risks and identified and tested significant controls in place to address those risks.

Conclusion

Based on procedures performed, it appears adequate documentation was retained and controls were operating effectively related to ODOT's engineering consulting process, with the isolated exception of documentation that was not completed or not retained during the February 2012 solicitation period. As a result the agency's documentation does not reflect compliance with Administrative Code 730:30-5-1 for that period.

Management may want to consider computing detailed overhead costs in order to perform an overall cost comparison of in-house versus outsourced engineering work, although such a comparison may be difficult. Retaining and analyzing more detailed records of outsourcing justification may also be beneficial.

OBSERVATIONS AND RECOMMENDATIONS

Analysis of In-House versus Outsourced Engineering Costs

Many analyses of engineering consulting processes attempt to compare the value and cost of in-house resources to those of outside consultants. We reviewed numerous audit reports released by other states and governmental entities addressing transportation engineering consulting and similar types of contracting. While some attempted this comparison of in-house to outsourced costs, with varying results,[3] others took a broader view and noted that the comparison itself is difficult and rarely feasible, as it requires often unavailable overhead cost information from the entity being studied and does not always factor in long-term internal costs such as pensions.[4] These financial comparisons also appear to be limited in usefulness, as cost effectiveness is typically *not* the driving factor in making outsourcing decisions; issues such as the timeliness of project completion, internal resource availability, the need for specialized skills and equipment, and the desire for innovation are commonly more important to transportation agencies.[5]

Despite the potential complexity of the process, we did consider comparing ODOT's internal engineering costs to the cost of outside consultants. However, as in many states[6], ODOT does not have readily calculated internal overhead rates to be used in such a comparison.

As discussed in our next observation, the Agency currently uses a very general form to document the justification for outsourcing as outlined in Oklahoma Administrative Code 730:30-5-1. Keeping in mind the non-financial factors that impact outsourcing decisions, ensuring that all outsourcing needs are clearly documented and sufficiently detailed may be essential not only for proper recordkeeping but for higher level analysis.[7] For example, if outsourcing data shows that consultants are often used for projects that require a specific type of expertise, management could perform further analysis related to bringing such expertise in-house. If the skills are needed often, this could result in cost savings, but if they are only needed on occasion or consultants with narrow expertise can perform the work more efficiently, they may be better outsourced.

Overall, any analysis comparing in-house to outsourced engineering work should take into account not only short-term and long-term financial factors but qualitative factors and the Agency's specific needs driving outsourcing.

Recommendation

Management may want to consider computing the appropriate overhead rate and related long-term cost information to perform a true analysis of in-house costs versus outsourced engineering costs. This could aid in determining whether the amount of work currently being outsourced is appropriate and whether internal staffing is ideal for present workloads.

The Agency should also consider documenting the justification for outsourcing decisions in greater detail. These detailed records could provide valuable data to aid the Agency in determining what issues most drive its needs for consultant use, and could lead to more useful, detailed analyses of potential in-house improvements. Data related to outsourcing justification could also provide accountability, allowing management to show how the use of outside consultants is necessary and beneficial.

Views of Responsible Officials

Prior to each contract negotiation, Department engineers or professionals, in their respective areas of expertise, prepare a detailed estimate of projected hours and cost for each component of the project based on experience with projects of similar scope and size. The estimate serves as a comparison and reasonableness for each cost component and is used during the negotiation process as a basis for examining variances between it and the firm's proposal. The detailed estimate and comparison is documented and retained.

In regard to a long term cost analysis comparing outsourcing versus using in-house design staff, we have experienced several factors which restrict our ability to accomplish our overall project design requirements by adding additional personnel. The Department, in recent years, has aggressively attempted to recruit and hire additional engineers and technicians with limited success due to our salary ranges compared to the private sector. In many cases our personnel, after gaining experience in the Department, are being hired by firms at significantly higher salaries.

Also, with the growth in our 8 Year Construction Work Plan, from additional funding provided since 2006, there are significantly more projects being designed. The number of projects in the plan has grown from 834 in 2003 to 1,947 in 2015, an increase of 133%. Consequently, we believe without the increase in private sector resources the design and project delivery schedule in the plan could not have been accomplished.

We will continue to pursue a means for further documenting the cost comparisons as recommended.

Control Deficiencies Related to Recordkeeping and Potential Non-Compliance with Administrative Code

An effective internal control system provides for accurate and reliable records and adequate review of supporting documentation.

In addition, Oklahoma Administrative Code 730:30-5-1 requires that ODOT "will contract for professional services when one or both of the following conditions exist: (1) The inability to complete the required work within the desired time frame with available resources. (2) The work requires specialized experience or expertise that is not available within the agency." This language is reflected in the Agency's Guidelines for Administration of Consultant Contracts section 3.01 and corresponding

form 3.01, which the chief engineer signs attesting that certain projects have met these conditions and should be outsourced. It is the agency's process to complete one copy of the form for each quarterly consultant solicitation, and though the form does not list the specific projects included in the solicitation, it can be tied to the solicitation by the signature date.

We performed detailed testwork related to 20 randomly selected contracts solicited during fiscal years 2012 and 2013. We noted no outsourcing justification form 3.01 was signed in relation to the quarterly solicitation issued by the Agency on February 29, 2012. Through discussion with staff we determined this approval oversight may have been due to a clerical error by an inexperienced contract administrator. As a result, outsourcing justification was not recorded for 53 total contracts that were eventually created as a result of this solicitation, including four of the 20 contracts in our testwork sample: 1401H, 1405F, 1409D, and 1414G. Failure to document this approval also results in a lack of evidence that the agency is in compliance with Administrative Code 730:30-5-1.

We noted two other key controls that do not appear to be operating effectively due to insufficient recordkeeping:

- We noted two of the three names listed on the consultant selection committee approval form 4.01.a.01 did not agree to the names on the signed non-disclosure forms completed by the consultant selection committee members for contract 1405F. Discussions with staff again indicated that this occurred due to a clerical error. However, as a result there is no record of the chief engineer's or director's approval of the selection committee for project 1405 (under which eight contracts were created).
- The agency was unable to provide a non-disclosure form 4.01.a.02 for one member of the consultant selection committee for project 1414. As a result, there is no record of his independence from the consultants considered, nor his agreement to keep contract discussions confidential, for selected contract 1414G or the other seven contracts created under this project.

It appears the issues reported here occurred during a limited time span related to the February 2012 solicitation, likely due to clerical recordkeeping issues. However, management should keep in mind small errors could be indicative of greater systemic problems, and control deficiencies such as these could potentially contribute to situations in which bias exists on the consultant selection committee or projects are improperly outsourced.

Recommendation

Management should discuss the errors noted with the authorities responsible for key approvals and with contract administrators to ensure detailed reviews of documentation are performed as appropriate and the

completeness of project documentation is maintained throughout the project.

We also recommend the outsourcing justification form 3.01 be modified to specify the related solicitation, or list the projects included in that solicitation, in order to provide a clear indication of what is being approved. This form should be completed consistently to ensure compliance with OK Administrative Code 730:30-5-1. Additional information regarding outsourcing justification could also be incorporated, as discussed in our first observation.

Views of Responsible Officials

We concur that the identified documents for the February 2012 solicitation were either not obtained or available in the retained files. Based on a thorough review of solicitation document files since 2008, we believe this is an isolated incident and is not indicative of the processes in place.

As recommended, the Professional Services Contract Justification, Form 3.01, is being revised to specifically list all contract numbers included in the solicitation, providing added assurance that they were approved in accordance with Administrative Code 730:30-5-1.

OTHER ITEMS NOTED

Future Analysis of Evaluation Process May Be Beneficial

The Agency has recently formalized its consultant evaluation process. However, according to management only a handful of evaluations had been completed by the end of our audit period due to the great length of most engineering projects. Although a sufficient number of evaluations have not yet been completed to fully evaluate their effectiveness or related controls, evaluations are an important component of the engineering consulting process and may help ensure consultant work quality and successful selection of qualified consultants.

We recommend that in the future, when an adequate number of evaluations have been completed (as determined by management or another qualified entity) and related data is available, procedures should be performed to determine whether the evaluations are completed consistently, the information is relayed to consultants, and the information is also used appropriately by selection committees in evaluating potential consultants.

ADDITIONAL INFORMATION REGARDING PROCESS IMPROVEMENTS

The following information regarding developments since the close of the audit period was provided by management. It is included for informational purposes and has not been audited.

Enhancements to the Engineering Consulting Process Subsequent to the Audit Period

Subsequent to the period under review, the Department has proactively strengthened controls and systems throughout the engineering consulting process. An on-line consultant evaluation process was recently implemented at specific project milestones. Prior to invoice approval, the system requires the completion of the evaluation by an ODOT employee familiar with the services provided and approval by the Director of Engineering. The evaluations will be immediately available to the Firm, on-line, upon approval.

Other implemented enhancements have included on-line solicitations and invoicing. Edits have been built into these systems to provide greater accuracy, control, timely processing, and document retention.

Agency management also recognized deficiencies in the organizational structure of the process and in 2013 transferred the consultant procurement component from Project Management to Purchasing and subsequently the invoice/claim processing component to Engineering. This provided the appropriate segregation of duties between procurement and invoice/claim processing and approval.

Endnotes

[1]1 The United States Government Accountability Office (GAO) found in its January 2008 report, *Federal-Aid Highways* (GAO-08-198, pg. 4), that over half the 50 states surveyed had increased engineering activities contracted out over the past five years.

[2] Motivations for outsourcing are documented by the GAO (as referenced above, pg. 5); the Caltrans Division of Research and Innovation, *Comparing In-House Staff and Consultant Costs for Highway Design and Construction*, July 15, 2011, pg. 2-3; and the Idaho Legislature's Office of Performance Evaluations, *Idaho Transportation Department Performance Audit*, January 2009, pg. 108.

[3] Caltrans (as referenced above, pg. 1-2) and the Reason Public Policy Institute (McCormally, Moore & Segal, *Infrastructure Outsourcing: Leveraging Concrete, Steel, and Asphalt with Public-Private Partnerships*, Policy Study 272, pg. 2) each reviewed a variety of reports and found various results across those reviewed; we also noted a variety of results in the reports we reviewed.

[4] The GAO (as referenced above, pg.5), Caltrans (as referenced above, pg. 1 and 4) and the Reason Public Policy Institute (as referenced above, pg. 2) found this issue across reports reviewed; the Idaho Legislature (as referenced above, pg. 108) found the same across states interviewed; and a Tom Warne and Associates report for California (*A National Assessment of Transportation Strategies and Practices: Lessons for California*, February 2008, pg. 19) discusses this difficulty.

[5] See references in endnote 2.

[6] Caltrans (as referenced above, pg. 2-4) refers to several states with issues computing overhead rates and having generally seen problem this across the literature with no solution; Colorado's Department of Transportation (Colorado State Auditor, *Contract Management Highway Design and Construction Projects*, Performance Audit, May 2004, pg. 37) had not computed its overhead rates at the time the State Auditor's report was issued. The resources in footnote 4 also discuss this general issue.

[7] Colorado's State Auditor (as referenced above, pg. 38) discusses the importance of considering other contributing factors. Arizona's Office of the Auditor General (*Arizona Department of Transportation – Aspects of Construction Management*, Performance Audit, July 2006, pg. 16) and the reports they reviewed found that using criteria when outsourcing is important and recommended tracking and using related data. The Idaho Legislature (as referenced above, pg. 112) made a similar recommendation.

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