

A Review of

Cost Accounting Methodology At The Texas Department Of Transportation



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Key Points Of Report

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Key Facts And Findings

- Management at the Texas Department of Transportation has not taken steps to balance the use of **construction engineering** services between Department employees and private sector professionals. The Department has spent essentially no money on construction engineering with private consultants.
- The Department appears to be in overall compliance with the statute for **preliminary and design engineering**; however, there may be additional opportunities to use private contractors for certain types of preliminary engineering projects. The Department spent \$56,900,000 (26.7 percent of all preliminary and design engineering) between November 1991 and October 1994 on private sector engineering services.

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This audit was conducted in accordance with Government Code, Sections 321.013, 321.014, and 321.032.

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Background and Related Criteria

Article 6674g-1, V.T.C.S. became effective September 1, 1991. It states,

“The policy of the department regarding the regular use of private sector professional services for preliminary and construction engineering and engineering design shall achieve a balance between the use of department employees and the use of private contractors, provided that the costs are equivalent. Relevant costs to be considered shall be determined by the office of the state auditor. The Commission may provide for hearings at which private sector complaints relating to the selection process shall be heard.”

Department Minute Order 86882 of January 27, 1988, established policy for preliminary engineering and construction engineering projects let to private sector professionals. In summary, the Department’s policy is to use private engineering firms primarily for meeting peak workloads, specialty work, controversial projects, or for time-critical projects.

Issues and Recommendations

Section 1:

The Department Should Look For Opportunities To Use Private Sector Professionals For Construction Engineering

Department management informed us that it has been their policy to use only Department employees for construction engineering services. This was confirmed by our review of past data in the Department’s Financial Information Management System’s cumulative Manager Summary Project Ledger, which indicates private sector professional services have done essentially no construction engineering.

Recommendations:

The Department should look for opportunities to seek a balance between in-house and private sector professional services for construction engineering in the future.

As new opportunities for use of private construction engineering firms are identified, a formal tracking system should be developed to identify the exact cost of construction engineering done by the Department and private sector professionals to facilitate comparison of cost.

Management’s Response:

The Department has significantly increased private sector professional services in fiscal years 1994 and 1995. Between fiscal years 1985 and 1993, the Department

averaged \$20.2 million in professional service contracts. Most of these dollars were expended to expand the Department's capacity to increase construction lettings. The Department has significantly increased professional service contracts in fiscal year 1994 to \$48,907,438 and by February of fiscal year 1995 to \$47,296,518. Another \$40,100,000 in professional service contracts are pending under negotiation for fiscal year 1995. Currently, the Department is pursuing options in using professional services in construction engineering. A joint task force has been formed which includes members of Texas Department of Transportation staff, Texas Society of Professional Engineers, the Consulting Engineers Council, and the Association of General Contractors. The purpose of this task force is to study the feasibility of using private firms to provide project management or project management support on Texas Department of Transportation construction projects. As the Department increases activity in construction engineering contracts, the monitoring of construction engineering costs similar to the Preliminary Engineering Efficiency Report will be needed. The Department's Financial Information Management System will be used to produce reports similar to the Preliminary Engineering Efficiency Report.

Section 2:

The Department Appears To Meet 1991 Legislation On The Use Of Private Contractors For Preliminary And Design Engineering But Opportunities May Exist Where Greater Use Could Be Achieved

The information in Figure 1 reveals that the Department's overall in-house cost for preliminary engineering averaged 4.6 percent of construction dollars while the private sector's costs were significantly more at 6.9 percent of construction dollars. Of the 13 preliminary engineering categories tracked in the Department's Financial Information Management System's Preliminary Engineering Efficiency Report, 11 show the Department's costs are lower than the private sector. However, the Department's costs are equal to or higher than the private sector for road rehabilitation and interchanges. No evidence exists to show that the Department has attempted to "achieve a balance between the use of Department employees and the use of private contractors" in these areas. The Department performed \$21.2 million in preliminary engineering for road rehabilitation versus only \$1.4 million for private contractors.

Figure 1

Construction Contracts Let	Construction Dollars	Preliminary Engineering Costs	Preliminary Engineering % of Construction Dollars	Preliminary Engineering % of Total Statewide Work
Pure In-house	\$3,378,600,000	\$156,000,000	4.6	73.3
Consultants	\$824,600,000	\$56,900,000	6.9	26.7
Total Statewide	\$4,203,200,000	\$212,900,000	5.1	100.0

The costs were 4.2 percent of total construction for both the Department and private contractors. The Department performed \$9.8 million in preliminary engineering for interchanges versus \$8.3 million for private contractors. The costs were 5.5 percent of total construction for private contractors and 5.8 percent for the Department.

Recommendations:

- When costs are equivalent, the Department should attain a balance between the use of private contractors and Department employees for preliminary and engineering design and construction engineering. When private sector costs appear lower than in-house costs, the Department should determine if in-house costs can be lowered or if the private sector should be used in that particular area.
- When the Department determines that opportunities exist, they should establish relevant goals and performance measures.

Management's Response:

The Department concurs that in-house preliminary engineering costs are overall significantly less than private sector professional service costs when compared to all Preliminary Engineering Efficiency Report project classes, but cost averages do not reflect the many factors associated with an individual project's engineering requirements. The Department's primary need, to increase professional service contracts to assist in-house staff in maintaining lettings, is being achieved. In addition, the Department's secondary need is to maintain a consistent level of professional service usage that will result in a responsive and stable consultant industry that can minimize engineering as well as construction costs. With a stable consultant industry, Texas Department of Transportation management would be able to make better management decisions over efficient consultant usage as well as provide more timely delivery of plans for letting. Setting a target number for a Preliminary Engineering Efficiency Report project classification would inhibit the attainment of the above noted needs as well as hinder objective decision making at the project management level.

Appendix

Objective, Scope, And Methodology

The objective of this audit was to perform a limited review of the control systems that ensure compliance with Article 6674g-1, V.T.C.S. The scope of the audit was limited to the information system used to monitor compliance, which is primarily the Preliminary Engineering Efficiency Report and the Department's use of that information. Our methodology consisted of:

- A review of all preliminary engineering costs for the three-year period between November 1991 and October 1994.
- Interviews with key members of the Department's management and staff.
- A review of management controls and policy environment over selecting sources for preliminary engineering and construction engineering.

The review was conducted in accordance with generally accepted government auditing standards.

Copies of this report have been distributed to the following:

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