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**Nebraska Department of Roads:**  
**Use of Consultants for Preconstruction Engineering**

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# EXECUTIVE SUMMARY

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## ***Introduction***

The program evaluation described in this report was undertaken by the Legislative Program Evaluation Unit (unit) on behalf of the Legislative Program Evaluation Committee (committee). The unit evaluated the Nebraska Department of Roads' (department's) use of consultants for preconstruction engineering—the planning and design work that goes into a road project before construction bidding begins. Specifically, we addressed when, why, and how often the department uses consultants; whether the use of consultants is cost effective; whether the use of consultants is justified; and how the department monitors consultant work.

The department is a very large state agency with 2,200 employees and a budget that has exceeded \$500 million in recent fiscal years. It is responsible for designing, constructing, and maintaining the state highway system in Nebraska—approximately 10,000 miles of highways. To complete these tasks, the department relies, in part, on outside help: consultants, who help design roads, and contractors, who build them. This evaluation focused only on consultants and did not address how the department uses contractors. This is significant because consultant costs (approximately \$8 million in FY1999-00) pale in comparison to construction costs (approximately \$380 million in FY1999-00).

## ***The Department's Use of Consultants***

Approximately one-third of the department's design work is contracted out to consultants. The department uses consultants when it does not have adequate staff to meet its design goals, it needs design work completed quickly,

or a project requires expertise that the department does not have.

We found that the department's level of and reasons for consultant use were reasonable. According to the department, consultants can be an effective tool for managing its workload. Consultants enable the department to cope with peak demand without having to hire and fire employees as the workload ebbs and flows. Consultants can also be used effectively in emergency situations, allowing the department's routine work to continue uninterrupted. Finally, consultants can provide expertise in areas that the department deals with infrequently.

The department expects consultants to provide an independent professional service and it monitors their work accordingly. The department tracks progress on the designs, but provides little technical oversight. If a consultant design is flawed, the consultant can be held liable under the contract it negotiates with the department.

## ***Comparing Costs***

One of the central issues in this evaluation was how expensive consultant designs are compared to department designs. To analyze this, we looked at a sample of 97 consultant projects from the past three fiscal years and estimated what the department's costs would have been had it designed each project in house. We then compared the actual consultant cost and the estimated in-house cost.

Estimating the department's costs was difficult and, we must note, allowed us to arrive at only an approximation of actual cost differences. Nevertheless, even the approximation allowed us to conclude that, on average, designs completed by consultants are more

costly than designs completed by the department. Based on our analysis of FY1997-98 through FY1999-00, the department would have saved an average of 39, 32, and 25 percent per project per year (respectively), had it designed each project in house.

### ***Conclusion***

Despite the enhanced cost of consultant designs, we found that the department's use of consultants was justified. The department articulated reasons for consultant use that were sensible and consistent with the way consultants are used in other states. Furthermore, if the department did not use consultants, its own design costs would increase. The potential savings referenced above might not have been realized if the department had to increase staff and overhead to complete those designs. The most we can say is that the department must remain vigilant to ensure that preconstruction-engineering consultants continue to be used effectively.

The findings and recommendations made by the committee relative to this evaluation are found in Part III of this report.