



Office of Program Policy Analysis And Government Accountability



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Follow-Up Report on the Florida Department of Transportation's Performance In Controlling Cost Overruns When Building Roads and Bridges

Abstract

- Completing transportation projects on time and within budget continues to be a chronic problem for the Florida Department of Transportation and the problem is worsening.
- The Department initiated steps to implement all our recommendations for improving the quality of transportation construction design plans. The Legislature also implemented our recommendations by amending the law to expand the Department's authority to award innovative road-building contracts.
- However, the effectiveness of these actions in controlling cost and time overruns will not be known for several years until new projects have been completed.
- It will be important for the Legislature to monitor the Department's initiatives and the use of innovative contract methods to assess the impact on reducing cost overruns and time delays.

Purpose

In accordance with s. 11.45(7)(f), F.S., this follow-up report informs the Legislature of actions taken by the Florida Department of Transportation (FDOT) in response to our Report No. 95-30, which we issued January 11, 1996. This report presents our

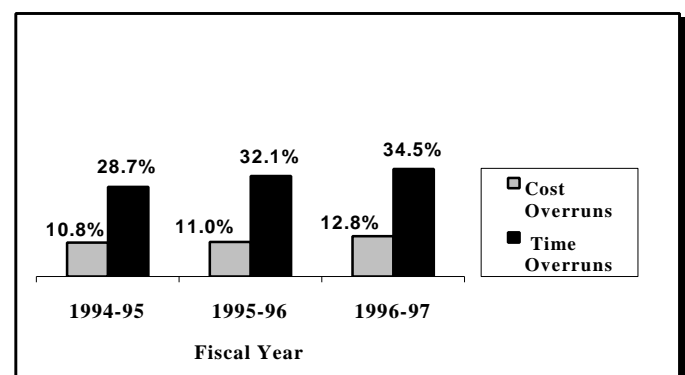
assessment of the extent to which the Department has addressed the findings and recommendations included in our report.

Background

As shown in Exhibit 1, project costs and time to complete projects have increased in each fiscal year from 1994-95 through 1996-97.

Exhibit 1

The Department of Transportation Continues to Have Problems Completing Construction Projects on Time and Within Budget



Source: Florida Transportation Commission.

Chapter 334, F.S., requires FDOT to build and maintain the State Highway System in the most efficient and cost-effective manner. The Department follows a multi-step process in constructing

transportation projects. Through a cooperative planning process that involves state, regional, and local government officials and the public, FDOT identifies transportation needs and develops a Five-Year Work Program. The Work Program, which is updated annually, identifies the transportation projects that will be undertaken during the five-year period and the estimated costs of these projects.

Once a project is approved and placed on the Work Program, FDOT conducts engineering research and develops design plans for the projects. The Department reviews design plans at various stages of completion to ensure accuracy. Depending on available funds and project complexity, the project design stage may take several years to complete.

While design plans are being developed, FDOT acquires needed right-of-way, coordinates the project with local governments, holds public hearings, and acquires necessary permits. Once these steps are completed, FDOT advertises the construction project for competitive bid and awards the job to the responsive bidder offering the lowest price. During construction, FDOT performs material testing and engineering inspections to monitor the contractor's performance.

Although construction contracts specify the price to be paid and the amount of time allowed for a project to be completed, FDOT may agree to changes in contract provisions. These changes are generally made through supplemental agreements to contracts. Cost overruns and time extensions can be either avoidable or unavoidable. Overruns due to design plan or project management problems are avoidable because they could have reasonably been foreseen and prevented. However, some cost overruns are unavoidable because they cannot be reasonably prevented, such as those due to unanticipated events.

Cost overruns may add value to projects by producing a better product. Overruns may add value when extra work is done that produces a better roadway for citizens, such as adding an access road to a project.

Overruns may also add value when they involve work that was omitted from design plans but clearly needed to be done, such as adding sod to control erosion. The Florida Transportation Commission reports that cost overruns totaled \$93 million in fiscal year 1996-97 and that \$82 million of the cost overruns added value to the projects.

However, some overruns may not add value and represent wasted money if they do not result in a better product. For example, no value is added when a contractor puts down an asphalt roadway, but then has to tear it out and replace it due to faulty design specifications. Of the \$93 million cost overruns in fiscal year 1996-97, \$11 million did not add value.

Prior Findings

Completing transportation projects on time and within budget had been a chronic problem for FDOT and the problem was worsening over time. Cost overruns on projects completed in fiscal year 1994-95 averaged 15% or about \$450,000 per project. Similarly, these projects averaged 32% more days than originally planned to construct (2.5 months of additional work per project to complete than planned).

In the projects we examined, cost overruns were predominantly related to problems that occurred during the planning and design process prior to construction, including: (1) errors and omissions in design plans, (2) inadequate coordination with local governments and utility companies, (3) problems in identifying the scope of work to be done during project development, and (4) changes in project specifications after designs had been completed.

We made six recommendations to the Department for improving the project design process. Specifically, we recommended that the Department: (1) strategically focus its review efforts on the types of projects and engineering areas of design plans that had been particularly problematic, (2) review design plans that it adopted that have been developed by other entities

such as transportation authorities, (3) conduct additional preliminary research to better identify site conditions before design plans are bid, (4) increase its efforts to coordinate projects with local governments and utility companies to minimize construction conflicts, (5) develop formal goals for minimizing cost and delays, and (6) continue developing specifications for innovative contracting.

We also recommended that the Legislature amend the law to authorize FDOT to award construction contracts other than to the lowest bidder. We recommended the Legislature expand FDOT's authority to use design/build contracting to include a wider range of transportation projects whenever FDOT determines that these methods could save time or money. Florida law limited FDOT's authority to award design/build contracts for major bridge work and rail corridor projects. However, we found that design/build contracts could save time on other projects such as roadways and buildings.

We also recommended that the Legislature authorize FDOT to award construction contracts based on both cost and construction time. The law authorized FDOT to award construction contracts only to the lowest price bidder. We found that other states had successfully used both cost and time in awarding construction contracts.

Finally, we recommended that the Legislature authorize FDOT to use a percentage of its appropriations to experiment with innovative contracting methods and report the results back to the Legislature.

Current Status

The Department has initiated steps to address all of our recommendations. The Department has developed strategies to improve the quality of construction plans prior to putting them out for bid. These strategies include enhanced on-site reviews to better identify

actual site conditions, performing constructability reviews that examine whether projects can be readily built as designed, and enhanced training for staff and consultants on contract management. However, the effectiveness of these strategies in controlling cost and time overruns cannot be assessed for several years, until new projects have been completed.

The Department has also increased its efforts to coordinate with third parties, such as local governments and utility companies. For example, FDOT has initiated a "partnering" process to address potential construction conflicts during the initial construction phase. This process is expected to reduce both conflicts among the parties and delays in completing the projects. In addition, FDOT is increasing its efforts to locate underground utilities prior to construction. This additional up-front cost is expected to pay dividends in reducing project delays if the utility conflicts are found during construction.

Florida Transportation Commission reports indicate that cost overruns and time delays continued to be a problem. (See Exhibit 1.) The Department developed short-term targets for minimizing cost overruns and time delays, which are included as performance measure standards in FDOT's 1998-99 Legislative Budget Request. These targets are: (1) 10% increase in the final amount paid for completed construction contracts over the original contract amount, and (2) 30% increase in the number of days required to complete construction contracts over the original contract days. The Legislature needs to monitor FDOT's progress in meeting its 1998-99 targets of 10% cost increase and 30% time increase.

The Legislature implemented all of our recommendations for amending the law. It authorized FDOT to expand design/build contracts to other transportation projects and to use other innovative contracting methods such as lane rentals, cost plus time, and warranties.

It is still too early to evaluate the impact of these innovative contracting methods on cost overruns and project deadlines. Contracts awarded through such innovative contracting methods have not yet been completed. During the period from September 1996 through May 1997, FDOT awarded 31 contracts totaling \$204 million that use innovative methods. FDOT anticipates awarding 66 additional such contracts totaling over \$380 million during fiscal year 1997-98. A Department official indicated that limited preliminary data suggest that the use of innovative contracting methods may provide time and cost savings compared to traditional contracting procedures. It will be important that the Legislature assess the results achieved by using these alternative contracting methods in the future.

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