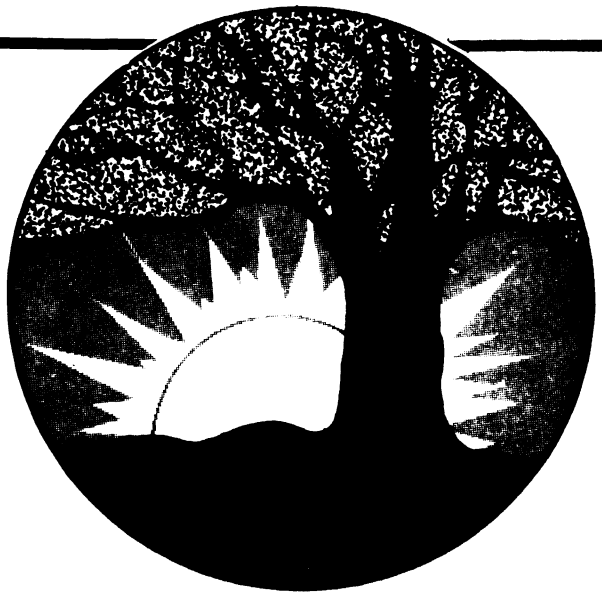
PERFORMANCE AUDIT

Department of Transportation
Follow-up Report

April 2007



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Comptroller of the Treasury

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John G. Morgan
Comptroller

April 10, 2007

The Honorable Ron Ramsey
Speaker of the Senate
The Honorable Jimmy Naifeh
Speaker of the House of Representatives
The Honorable Thelma M. Harper, Chair
Senate Committee on Government Operations
The Honorable Mike Kernell, Chair
House Committee on Government Operations
and
Members of the General Assembly
State Capitol
Nashville, Tennessee 37243
Ladies and Gentlemen:

Transmitted herewith is the follow-up performance audit of the Department of Transportation. This audit was conducted pursuant to the requirements of Section 4-29-111, *Tennessee Code Annotated*, the Tennessee Governmental Entity Review Law. This report is intended to aid the Joint Government Operations Committee in its review to determine whether the department should be continued, restructured, or terminated.

Sincerely,

John G. Morgan
Comptroller of the Treasury

JGM/js
05-043

State of Tennessee

Audit Highlights

Comptroller of the Treasury Division of State Audit

Performance Audit
Department of Transportation
Follow-up Report
April 2007

AUDIT OBJECTIVES

The specific objectives of this audit of the Department of Transportation were to determine the extent to which the department has implemented the recommendations from the July 2002 performance audit of the department. Additional objectives were to summarize and assess information documenting the department's compliance with Title VI requirements.

FINDINGS

Summary of Follow-Up Fieldwork Results
Our follow-up review indicated that the department had taken some action to address all of the 17 findings in the July 2002 performance audit and all of the problems identified in those findings have either been resolved or partially resolved. Three findings have been partially resolved and are summarized here.

The Department Does Not Have Written Guidelines for Determining the Type of Environmental Study to Prepare for State-Funded Highway Projects
The July 2002 performance audit report stated that the department may decide between two options concerning the type of environmental study to prepare for projects that only receive state funding. The report said that guidelines would help department staff decide the best option and provide consistency.

In January 2004, TDOT's Internal Audit Division reported that the department was updating policies and procedures that define the type of environmental study undertaken for federally funded projects, but decided to wait to assess the policies and procedures needed for state projects until the conclusion of the work on the federal projects.

In February 2005, the department had completed a procedures manual for federally funded projects and had drafted policies for state-funded projects. The Environmental Division reviewed the initial draft and responded with comments.

In October 2006, the manual was still in the draft stage. After the department reviews the draft, the department plans to send the draft to the Federal Highway Administration to have the manual finalized and approved. Because the procedures manual is not finished, we consider the finding partially resolved.

The Department Did Not Inspect All Airports and Heliports in the Required Time Period
The July 2002 performance audit reported that inspections for 77 airports were overdue and

licenses for 48% of the 93 heliports were past their expiration date. When inspections are not timely, problems such as hazardous runway or heliport pad conditions may not be discovered.

A January 2004 file review by department internal auditors determined that all airports in the sample reviewed were inspected during the 2003 calendar year and that in May 2004 all 101 healthcare heliports tested had a survey. No issues were noted. The Aeronautics Division inspected all of the public-use heliports in calendar year 2004 and found no problems.

Our file review conducted in October 2006 determined that all but seven of the airports had received an inspection during calendar years 2004 and 2005. For calendar year 2004, the state inspected 73 of 75 airports, and for calendar year 2005, the state inspected 68 of 73 airports. Inspectors did not find any problems.

Our October 2006 file review of all 124 healthcare heliports found that 63 did not have a required annual survey in calendar year 2005. The department inspected all public-use heliports in calendar year 2004 and found no problems. The controls in place are not fully effective, and thus we consider this finding partially resolved.

The Department Is Not Evaluating the Cost-Effectiveness of Contracting Maintenance Work as Required by State Law

The July 2002 performance audit reported that the lack of a formal assessment method may affect the department's ability to determine the most efficient means of obtaining maintenance services.

In January 2004, TDOT reported the Maintenance Management System (MMS) being developed would provide a cost effectiveness module. This system was scheduled to be implemented in 2004. However, in February 2005, a consultant was still working on the system, staff had received some training, and the department was testing MMS for acceptability and accuracy. Pilot implementation was conducted in April 2005 with a target to implement statewide on July 1, 2005. However, it would take two years for sufficient data to compare in-house costs to contract costs.

During fieldwork in October 2006, we found that MMS went live in July 2005. While department officials reported that the system could not compare in-house costs against contracted costs at that time, it would be able to in the future. The system's inability to compare costs was because the software has not been written or developed to allow the comparison, and because the data necessary to make the comparisons had not been accumulated. Staff said the system is a big improvement over the previous method.

Department officials further conceded that MMS has had a number of problems. The contract with the vendor who created the system ended in June 2006. Since that time, department IT staff have provided technical support, but they are not able to effectively address all problems with the system. We consider this finding partially resolved because the department does not have a formal method to evaluate the cost-effectiveness of contracting maintenance work, but is developing MMS to provide that function.

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INTRODUCTION

PURPOSE AND AUTHORITY FOR THE AUDIT

This follow-up performance audit of the Department of Transportation was conducted pursuant to the Tennessee Government Entity Review Law, *Tennessee Code Annotated*, Title 4, Chapter 29. Under Section 4-29-226, the department is scheduled to terminate June 30, 2005, but has been extended to June 30, 2007. The Comptroller of the Treasury is authorized under Section 4-29-111 to conduct a limited program review of the department and to report to the Joint Government Operations Committee of the General Assembly. The performance audit is intended to aid the committee in determining whether the department should be continued, restructured, or terminated.

OBJECTIVES OF THE AUDIT

The specific objective of this audit of the Department of Transportation was to determine the extent to which the department has implemented the recommendations from the July 2002 performance audit of the department.

SCOPE AND METHODOLOGY OF THE AUDIT

The scope of this audit was limited to following up on the 17 findings in the July 2002 Sunset audit of the Department of Transportation. To achieve the audit objective, we employed auditing techniques which adhere to the generally accepted auditing standards as promulgated in *Government Auditing Standards*, issued by the Comptroller General of the United States. We relied on existing audit work performed by the department's Internal Audit Division in assessing the department's progress in resolving the findings in the July 2002 Sunset audit and also performed additional audit work ourselves. We obtained, reviewed, and discussed with the auditors the audit methodologies used. We interviewed department staff and obtained additional information and reports as deemed necessary.

ORGANIZATION AND RESPONSIBILITIES

The Tennessee Department of Transportation is responsible for planning, designing, constructing, and maintaining the state highway network. The department also has planning and/or regulatory responsibilities for other modes of transportation such as aeronautics, public transit, railroads, and waterways.

The department is headed by a Commissioner; a Chief of Administration, who oversees department offices such as Finance, Human Resources, and Information Technology; a Chief of Environment and Planning, who oversees environmental issues related to highway projects; and a Chief Engineer, who oversees the department's highway planning, design, and operations function. The department has four regional field offices—one each in Knoxville, Chattanooga, Nashville, and Jackson. Those offices report directly to a Transportation director at each office who is responsible for the regional office and who reports to the Chief Engineer.

SUMMARY OF FOLLOW-UP FIELDWORK RESULTS

Our follow-up review indicated that the department had taken some action to address all of the 17 findings in the July 2002 performance audit, and all of the problems identified in those findings have either been resolved or partially resolved. Exhibit 1 summarizes the results of our follow-up fieldwork. The Findings and Conclusions section includes information about actions taken to resolve the audit findings from the July 2002 report.

Overview of Status of July 2002 Audit Findings
As of March 2007

	March 2007 Status			
July 2002 Performance Audit Finding	**Not Resolved**	**Partially Resolved**	**Resolved**	**Page**
1. Bridge inspections were not always conducted timely			X	4
2. Many bridge inspection files reviewed were not evaluated in a timely manner			X	5
3. Completion of department bridge maintenance recommendations not documented			X	6
4. The department does not always document bridge damage inspections			X	7
5. The department does not always obtain the required environmental project permits in a timely manner			X	7
6. The department does not have written guidelines for determining when to prepare an environmental study for state-funded highway projects		X		8
7. Independent assurance testing of asphalt is not conducted as required			X	9
8. Contractor lab qualification policies not fully implemented			X	9
9. Weaknesses exist in policies on timely submission of concrete materials for testing			X	9
10. No cost-benefit assessment for contracted geotechnical consultants			X	10
11. No formal assessments of geotechnical consultant work			X	11
12. No follow-up assessments of products			X	11
13. The department did not inspect all airports and heliports in the required time period		X		11
14. The department recertified Disadvantaged Business Enterprise vendors without documenting financial information			X	12
15. The department is not evaluating the cost-effectiveness of contracting maintenance work as required by state law		X		13
16. The department could not determine the amount of time spent for the planning and design phases of some projects			X	14
17. The department has not updated the Long-Range Transportation Plan as required by statute			X	15

FINDINGS AND CONCLUSIONS

This section of the audit report contains updates on audit findings from the July 2002 performance audit and our conclusions on the department's progress in resolving those findings.

July 2002 Finding: 1. Bridge Inspections Were Not Always Conducted Timely

The July 2002 performance audit reported that a review of 40 randomly selected bridge inspection files revealed that some bridges (9%) were not inspected within 27 months while others (12.5%) were inspected less than 22 months after the last inspection. The department's *Structures Procedures Manual* states that the time between inspections should not be less than 22 months or greater than 27 months.

In January 2004, TDOT's Internal Audit Division reported that the Bridge Inspection Office had developed a tracking system to monitor the timeliness of inspections. The office sends a quarterly exception report to the regional directors informing them of bridges that have reached the 24-month mark. In addition, the office informed regional supervisors to review bridges being inspected to ensure they are not inspected earlier than 22 months since the previous inspections. Regional staff said inspections of bridges on the exception report receive priority.

In addition, at that time, internal auditors reviewed a sample of bridge inspections and found all were inspected timely—none before 22 months or later than 27 months since the previous inspection. In January 2005, we reviewed the "Past Due Bridge Inspections Report." It indicated that 54 (.28%) of 19,401 bridge inspections were past due.

The National Bridge Inspection Standards (Section 650.311 of 23 CFR) identifies the maximum allowable timeframe between inspections of a bridge. According to this publication, prior to January 2005 the maximum allowable time between inspections was 27 months. In January 2005, NBIS revised the maximum to 25 months, with the ideal period being a 24-month cycle. The NBIS also stated, "Ideally, to conserve state resources, the interval should not be less than 22 months. However, circumstances may require earlier inspections on occasion." According to department officials, the department's *Bridge Inspection Program Procedures Manual* mirrors the NBIS standards. We determined that inspections earlier than 22 months since the previous inspection, within reason, were not violations of statute or guidelines.

In October 2006, we reviewed 40 randomly selected bridge inspection files, 10 from each region. We found that two of the 40 bridges reviewed (5%) were inspected (between 2002 and 2005) more than 27 months after the previous inspection. Since the time of the October 2006 testwork, these two bridges have been inspected within the 24-month window. Based on our testwork, we consider this finding resolved.

July 2002 Finding: 2. <u>Many Bridge Inspection Files Reviewed Were Not Evaluated in a Timely Manner</u>

The July 2002 performance audit report stated that a review of 40 bridge inspection files revealed that the department did not evaluate 71% of inspection reports within the department's goal of five months from the date of the inspection. Central office staff prepare the evaluations after receiving bridge inspection information from the regional inspectors. These bridge evaluations serve as an independent review of the inspection and are used to determine the overall condition and load capacity of a bridge.

In January 2004, TDOT's Internal Audit Division found that inspection reports are submitted for evaluation electronically—providing a consistent work flow and reducing backlog. (Previously, regional staff held the paper reports and physically mailed them to the central office in batches.) Also, regional staff monitor bridge inspection schedules to prevent early inspections that contribute to the backlog. A file review found that 42% were late evaluations (150 days after inspection) compared to 71% in the July 2002 performance audit.

In May 2004, additional file reviews by TDOT Internal Audit indicated that late evaluations of bridge inspections were reduced to 24%. The internal auditors stated that while the headquarters bridge inspection management does not have supervisory responsibility over inspectors in the field (they report to region management), headquarters had taken steps (described in the preceding paragraph) to reduce untimely evaluations.

In February 2005, an internal report on 2004 bridge inspections indicated that 96% of 9,616 inspections were reviewed within 150 days.

Number of Days to Complete 2004 Bridge Inspection Evaluations

Number of Inspections	*Number of Days*
2,752	0-9
1,079	10-19
850	20-29
423	30-39
584	40-49
556	50-59
589	60-69
320	70-79
329	80-89
358	90-99
262	100-109
321	110-119
298	120-129
268	130-139
202	140-149
425	> 150
9,616	**Total**

In October 2006, we performed additional test work. At that time department officials reported that in response to the 2002 Performance Audit, the department established a series of queues within the Filenet system that prioritize incoming reports for evaluation, thereby allowing bridge engineers to focus their time on evaluating bridges in a more efficient manner. Further, department officials developed an evaluation exception report to show the status of the bridge evaluation backlog. Finally, department officials reported that one additional bridge evaluation engineer position was assigned to the Headquarters Inspection Office, thereby increasing the total number of positions from six to seven.

To test the effectiveness of the changes the department made, we reviewed 40 randomly selected bridge inspection files in October 2006, 10 from each region. We found that 4 of the bridge inspection reports (10%) were evaluated beyond the 150-day limit established by the department's *Bridge Inspection Program Procedures Manual*. We consider this finding resolved. Two bridge inspection reports, which had not been evaluated at the time of the audit, were still within the 150-day period and were not included in the calculations.

July 2002 Finding: 3. <u>Completion of Department Bridge Maintenance Recommendations Not Documented</u>

As reported in the July 2002 performance audit, most bridge inspection files reviewed did not indicate whether the inspector's maintenance recommendations were completed. In January and May 2004, TDOT's Internal Audit Division found that the department had implemented the Bridge Inspection Module in TRIMS (Tennessee Roadway Information Management System) which can track maintenance recommendations. However, the bridge repairs are entered into TRIMS only if they are reported to the office. This does not always occur when entities other than TDOT (cities and counties) and divisions other than Bridge Repair (Maintenance and Construction) are involved.

According to regional bridge division supervisors interviewed for the 2004 internal audit report, not all maintenance recommendations made by inspectors and evaluators are performed because some are deemed to be routine maintenance such as painting or brush removal and not safety maintenance issues. If this type of maintenance work recommended is not performed, there is no documentation. Subsequent to the internal audit work, in November 2004, the Bridge Inspection Office revised the Bridge Maintenance Recommendations format and revised its policy on the types of bridge maintenance recommendations inspectors should report. At the time of the July 2002 audit, all types of recommendations, including clearing vegetation to actual repairs on the bridge structure were included in BMR. Management determined that only items regarding the structural integrity of the bridge should be in the recommendations section and that a report should be made when they are corrected. Management instructed the regional offices (including the regional Maintenance Division staff) to enter completed work on the recommendations in the TRIMS module. According to the Bridge Inspection Office, the results of this new procedure will not be known until the current bridge inspection cycle is completed. In regard to locally owned bridges, if a local bridge is in such poor condition that the department recommends a weight posting or closure, the local entity must respond to the department or the department will withhold federal money.

Additional test work performed in October 2006 found the department modified the TRIMS database to provide a priority field so that each repair item could be classified as priority or routine. Staff also added fields so that the date of the repair and the repair agency can be recorded, and comment fields for field personnel to document maintenance actions. In addition, they developed a completely new interface module to give regional maintenance personnel the software tools to record maintenance repairs. Because of the improvements made, we consider this finding resolved.

July 2002 Finding: 4. <u>The Department Does Not Always Document Bridge Damage Inspections</u>

The July 2002 performance audit reported that department procedures require documentation of bridge inspections following accidents involving bridges. However, the department does not always complete a damage report if the damage is minor. In addition, the department does not keep a log of bridge accidents, which makes ensuring that inspections are done and recorded more difficult.

Based on its January and May 2004 testwork, TDOT's Internal Audit Division concluded that

- Inspectors document the results of the damage inspections according to department procedure when major damage occurs.
- In October 2003 the department established a central log of bridges involved in accidents in TRIMS. The regional office staff have access to the log.

We performed testwork in October 2006 and found that inspectors document the results of damage inspections in the Filenet system, according to procedures, when major damage occurs, but minor damage is not documented. The system prioritizes inspector recommendations according to the nature of the damage. We consider this finding resolved.

July 2002 Finding: 5. <u>The Department Does Not Always Obtain the Required Environmental Project Permits in a Timely Manner</u>

Contractors are prohibited from performing certain work without permits from the Department of Environment and Conservation, the U.S. Army Corps of Engineers, and the Tennessee Valley Authority. The July 2002 performance audit stated that this project delay increases the cost of completing the project.

In January 2004, TDOT's Internal Audit Division found that management of the Environmental and Planning Division is beginning the permitting process one to three months before a project is scheduled for bid letting. Based on the internal auditors' testwork and review of division goals and procedures, they concluded that management is tracking the progress of the permitting process, meeting with the Department of Environment and Conservation on a regular basis, instituting timeliness goals, and hiring staff dedicated to tracking and reducing the backlog of permit applications.

In October 2006, we reviewed the division's tracking database and found that the department appeared to be adequately tracking projects during the permit process and initiating the permit process in a timely manner. We conclude this finding is resolved.

July 2002 Finding: 6. The Department Does Not Have Written Guidelines for Determining When to Prepare an Environmental Study for State-Funded Highway Projects

The July 2002 performance audit report stated that the department may decide between two options concerning the type of environmental study to prepare for projects that only receive state funding: no study or a technical report addressing ecological, archaeological, and historical issues. The report said that guidelines would help department staff decide the best option and provide consistency to the decision-making process.

In January 2004, TDOT's Internal Audit Division reported that the department, working through a consultant, was updating written policies and procedures that define the type of environmental study undertaken for federally funded transportation projects. Although some meetings were held concerning environmental studies for state-funded projects, the department decided to wait to assess the policies and procedures needed for these at the conclusion of the work on the federal projects.

In February 2005, the department's consultant had completed a procedures manual for federally funded projects and had drafted policies for state-funded projects. The Environmental Division reviewed the initial draft and responded to the consultant with comments. The consultant was expected to submit a second draft in mid-March 2005.

In October 2006, we met with the Environmental Division management who stated that the manual was still in the draft stage as the department is looking at all procedures for the department with chapter 12 of the manual relating to the finding. The consultant is finalizing the last draft. After the department reviews the draft, the department plans to send the draft to the Federal Highway Administration to have the manual finalized and approved. Because the procedures manual is not finished, we consider the finding partially resolved.

Management's Comment

We concur. The environmental process for state funded projects is incorporated into the department's *Tennessee Environmental Procedures Manual.* This manual outlines the environmental process and procedures for environmental compliance on all transportation projects and has been submitted to the FHWA for approval. Once approved, the manual will be finalized and posted on TDOT's website. We expect this to occur by the end of April 2007.

July 2002 Finding: 7. Independent Assurance Testing of Asphalt Is Not Conducted as Required

The July 2002 performance audit reported that the Division of Materials and Tests does not consistently conduct independent assurance tests of asphalt as required by the Federal Highway Administration and the department's policies. Of 26 projects tested, three contained required asphalt test reports.

In January 2004, TDOT's Internal Audit Division reported that the Materials and Tests Division's revised procedures for the Independent Assurance Program were approved by the Federal Highway Administration in December 2002. Materials and Tests Division management met with regional Materials and Tests staff to review the policy and procedures. A review of required asphalt tests found 28 of 29 required reports in project files.

In October 2006, we performed additional testwork confirming what TDOT Internal Audit testing had shown. The number of tests missing was significantly decreased from the original audit with only two tests missing (from one project) out of 50 tested. We conclude that the controls are working and we consider this finding resolved.

July 2002 Finding: 8. Contractor Lab Qualification Policies Not Fully Implemented

In July 2002, the performance audit reported that not all contractor labs are being inspected by the department's regional labs as required by department policy.

In January 2004, TDOT's Internal Audit Division reported that all of the contractor laboratories chosen in its sample had a current inspection report on file. In addition, the region supervisors met with managers at Materials and Tests headquarters and were informed of the department's laboratory qualification requirements. Region supervisors regularly submit a list of the contractor lab inspection dates to Materials and Tests headquarters for evaluation. A field operations engineer regularly monitors the inspections by evaluating this list to ensure inspections are performed as required.

In October 2006, we reviewed inspection reports for 20 labs and found that all 20 had a current inspection report on file. We consider this finding resolved.

July 2002 Finding: 9. Weaknesses Exist in Policies on Timely Submission of Concrete Materials for Testing

The July 2002 performance audit stated that the department's policy on the timely submission of concrete samples for testing does not encourage contractors to submit samples on time.

The department implemented a new specification effective June 2002 requiring cylinder tests within 35 days, allowing 7 days for delivery from the regions to Materials and Tests

headquarters. The new specification states that contractors who do not deliver the cores within 42 days must meet a higher strength requirement. The department's January 2004 internal review reported that only 1% of the cylinder tests sampled were performed after the deadline compared to 11% in the 2002 performance audit.

In October 2006, we reviewed the database showing all the concrete tested in 2006 and selected a sample of 25 tests. All 25 items met the division's regulations for concrete testing. We consider this finding resolved.

July 2002 Finding: 10. <u>No Cost-Benefit Assessment for Contracted Geotechnical Consultants</u>

In July 2002, the department had not determined the advantages of using private consultants for geotechnical investigations. These investigations can identify potential problems like sinkholes and landslides that can add to project costs.

In its January 2004 report, TDOT's Internal Audit Division reported that the department was in the process of implementing a cost-benefit assessment model for geotechnical consultants. The Chief Engineer's Office and the Materials and Tests Division were working on the details of this new process. In the interim, the Materials and Tests Division staff provided two draft analyses—one comparing geotechnical consultant costs to in-house work for the two-year period 2000-2002 and another comparing a specific project that required geotechnical work. The analysis of the work for 2000-2002 indicated that consultant costs were 51% higher than the cost of in-house work.

After the geotechnical analysis, the department conducted a more comprehensive study covering all technical staff. The department's 2003 "Technical Compensation Review Report" compared salaries to other states and to metropolitan governments in Tennessee and analyzed the costs and benefits of doing more technical work (geotechnical, design, etc.) in house. Regarding the cost analysis, the report concluded that "when cost effective and practical" the department should convert contract work to in-house work.

In February 2005, the Design Division director and Materials and Tests Division staff stated that although the cost-benefit analyses would be beneficial, with the volume of work, the lack of staff, and time constraints, consultants have to be hired regardless of the outcome of the analyses. Good business practice dictates that the department strive to provide the best services at the lowest price possible. If further analysis shows that the department can provide the geotechnical investigations more economically than private consultants, the department should consider establishing additional positions.

In October 2006, discussions with Materials and Tests Management confirmed that the opinion of the department has not changed in regards to the use of consultants. We consider this finding resolved because the department has performed cost-benefit analyses, monitors the level of contracted technical staff on an ongoing basis, and will follow the recommendation to convert contracted work to in-house work "when cost-effective and practical."

July 2002 Finding: 11. No Formal Assessments of Geotechnical Consultant Work

The July 2002 performance audit reported that the Division of Materials and Tests did not have a formal process to evaluate the quality of work of its geotechnical consultants.

In December 2003, the Materials and Tests Division initiated a process to evaluate geotechnical consultants. All consultants used in 2003 and 2004 were evaluated and the evaluations shared with the consultants. Nineteen consultants were evaluated in 2003 and 13 in 2004. The average score was 3.5 on a four point scale. The lowest score for both years was 2.65 and all the rest of the scores were above 3.0.

In October 2006, we reviewed the evaluations for consultants used in 2005. The review showed that eight consultants were utilized and evaluated. The average score was 3.39, the lowest was 2.1, and the rest were above 3.1. We consider this finding resolved.

July 2002 Finding: 12. No Follow-Up Assessments of Products

The 2002 performance audit reported that the department does not assess products used in construction and maintenance projects after they are added to its preapproved product list. The assessment is to help the department identify problem products and remove them from the list.

In their January 2004 follow-up, the department's internal auditors reported that the department had formed a Product Evaluation Committee and developed guidelines and procedures to address problem products. Procedures were in place to allow for removal of faulty products from the department's Qualified Product List.

Meetings to discuss the products and assessments were conducted quarterly beginning in February 2003. The committee held two meetings in 2003 and three meetings in 2004. Information concerning the Product Evaluation Committee is available on TDOT's website.

In October 2006, we reviewed the minutes from the committee meetings and confirmed that the department has created a set of guidelines and procedures to review and identify problem products and keep the approved products list current. Based on the products list and the evaluation procedures, the controls appear to be operating effectively. We consider this finding resolved.

July 2002 Finding: 13. The Department Did Not Inspect All Airports and Heliports in the Required Time Period

The July 2002 performance audit reported that inspections for 77 airports were overdue from one month to more than two years. Licenses for 48% of the 93 heliports were from one month to seven years past their expiration date. When inspections are not timely, problems such as obstacles and hazardous airport runway or heliport pad conditions may not be discovered.

A January 2004 file review by department internal auditors determined that all airports in the sample reviewed were inspected during the 2003 calendar year. The policy for heliport inspections states that inspections of healthcare facilities' heliports will be accomplished by an annual survey. The internal auditors found in May 2004 that all 101 healthcare heliports tested for calendar year 2004 had a survey. No issues were noted. Department policy requires all other public-use heliports to be inspected annually. The Aeronautics Division inspected all of the public-use heliports in calendar year 2004 and found no problems.

Our file review conducted in October 2006 determined that all but seven of the airports had received an inspection during calendar years 2004 and 2005. The number of airports the department was responsible for inspecting varied from year to year as some airports were closed and some were no longer required to be inspected by the state. For calendar year 2004, the state inspected 73 of 75 airports, and for calendar year 2005, the state inspected 68 of 73 airports. Inspectors did not find any problems.

Our October 2006 file review of all 124 healthcare heliports found that 63 did not have a required annual survey in calendar year 2005. All public-use heliports must be inspected every three years. The department inspected all public-use heliports in calendar year 2004 and found no problems. The controls in place are not fully effective, and thus we consider this finding partially resolved.

Management's Comment

We concur. License renewal and inspection of Healthcare Heliports requires an annual self-survey. As of October 2006, 63 of 124 Healthcare heliports had not completed and returned the required survey. To resolve this finding, the Aeronautics Division has added a requirement for inspectors to follow up on heliport Applications for License and Survey with periodic telephone contact until the surveys have been received.

July 2002 Finding: 14. The Department Recertified Disadvantaged Business Enterprise (DBE) Vendors Without Documenting Financial Information

The July 2002 performance audit reported that vendors' personal financial statements, needed to determine if a vendor is eligible to be a DBE, were missing supporting documentation. Unless DBE vendors are monitored more closely, the department risks certifying and recertifying vendors that are not in compliance with department policies and federal regulations.

In its January 2004 review, TDOT's Internal Audit Division found that 43 files sampled did not contain support for all items on the personal financial statement (PFS), and 24 of these were certified DBEs at the time follow-up testwork was performed. The internal auditors also found that:

- The Department's Civil Rights Office had created a *Manual of Standard Operating Procedures* that establishes standards and monitoring procedures to identify compliance operations for small business development and identifies steps to certify and recertify DBEs. The office was currently working to refine this manual to ensure consistency in this process.
- The division was actively seeking additional staff with the necessary skills.
- The May 2004 testwork related to newly certified DBEs determined that all files tested had the required supporting documentation.

Some businesses become certified DBEs but may not do work for the department. According to staff, the department contacts inactive DBEs in writing with information regarding the program, all DBEs receive program updates, and all are offered the opportunity to attend seminars at no cost. Staff stated that some DBEs are inactive because they have gone out of business or are unable to get contracts (for reasons beyond the department's control).

Additional test work performed in October 2006 found that prior to development of the procedure manual, the department did not have a manual that discussed standard operating procedures for the Civil Rights Division. Department officials stated that under the new policies, companies renewing their DBE status do not have to submit supporting documentation regarding their personal finances. At the time of the performance audit, the federal government did not have this requirement, but TDOT did. Since the time of the performance audit, TDOT also discontinued the requirement. In accordance with federal guidelines, TDOT now requires companies to submit a signed affidavit stipulating that the company meets SBA business size criteria and overall gross receipts cap.

We reviewed the files of 20 companies that applied during 2005 and 2006 and found that each company either had the necessary affidavits or was not required to have the information in its file. The controls appear effective and we consider this finding resolved.

July 2002 Finding: 15. <u>The Department Is Not Evaluating the Cost-Effectiveness of Contracting Maintenance Work as Required by State Law</u>

The July 2002 performance audit reported that the lack of a formal assessment method may affect the department's ability to determine the most efficient means of obtaining maintenance services.

In its January 2004 review, TDOT's Internal Audit Division reported the Maintenance Management System (MMS) being developed would provide a cost-effectiveness module. This system was scheduled to be fully implemented in 2004. However, in February 2005, department staff said that a consultant was still working on the system custom design, staff have received some training, and the department is testing the system for acceptability and design accuracy. Pilot implementation was conducted in April 2005 with a target to implement statewide on July 1, 2005. However, for the comparison of in-house costs to contract costs, it will be two years until data are available for comparison.

Test work we conducted in October 2006 found that MMS went live in July 2005. While department officials reported that the system could not compare in-house costs against contracted costs, it will be able to provide cost comparisons in the future. The system's inability to compare costs was because the software has not been written or developed to allow the comparison of the two forms of data, and because the data necessary to make the comparisons had not been accumulated. Staff say the system is a big improvement over the previous method.

Department officials further concede that MMS has had a number of problems that the department continues to address. The contract with the vendor who created the system ended in June 2006. Since that time, department IT staff have provided technical support, but they are not able to effectively address all problems with the system. We consider this finding partially resolved because the department does not have a formal method to evaluate the cost-effectiveness of contracting maintenance work, but is developing MMS to provide that function.

Management's Comment

We concur. The Department currently utilizes some form of contract to perform approximately 45% of the statewide Maintenance Activities. These contracts include guardrail installation and repair, mowing and litter removal, pavement marking, operation of Rest Areas and Welcome Centers, and City Maintenance Agreements. The requirement (15) under the duties of the Commissioner in TCA 4-3-2303 was enacted in 1987 as the Department began to utilize private contractors for Maintenance activities, primarily mowing operations. Since that time, in-house maintenance staff has been reduced by several hundred positions statewide making it physically impossible to accomplish all maintenance work with State Forces. Intuitively, privatization could be accomplished by either privatizing all maintenance work on specific routes or geographical areas, or by choosing segments of work where a private market already exists. As a department, we have chosen to use the second method.

In July 2005, the Department implemented the Maintenance Management System (MMS) as discussed in the Audit Report. Since the implementation of that system, an abundance of data has been gathered which can be used to analyze the productivity and cost-effectiveness of State Forces. In order to fully comply with the provision in TCA 4-3-2303, the Department will put in place a method to compare costs for specific segments of maintenance work that are or could be privatized. This method will be documented by August 1, 2007.

July 2002 Finding: 16. <u>The Department Could Not Determine the Amount of Time Spent for the Planning and Design Phases of Some Projects</u>

The July 2002 performance audit reported that the department did not have a system to provide the planning and design time for all construction projects. Thus, the department could not determine whether it was meeting its goal to decrease the amount of time a project takes from conception to completion.

In its January 2004 review, TDOT's Internal Audit Division reported that the Program, Project, and Resource Management (PPRM) system had been implemented to track the time for various phases of a project, including planning and design. Auditors reviewed a February 2005 PPRM report and determined that the system is being used to track the start and end dates for planning and design phases including various parts of the survey and right-of-way responsibilities.

During our additional test work conducted in October 2006, department officials reported that at the time of the 2002 performance audit the department was working with Xybernout Solutions, Inc. to develop the PPRM system. The PPRM system has multiple modules, including project scheduling, that allow the department to look at each phase of a project at any time. According to department officials, the scheduling module should eventually allow the department to compare project data from multiple projects and determine how long different project phases take.

The department also has a template of necessary project activities. Based on periodic assessments, the template and related project can be adjusted for greater efficiency. However, department officials report that it takes four to five years to complete a project and PPRM is only two to three years old, so it will take time to gather enough data to perform assessments. We reviewed the PPRM scheduling system and screens and found that the system contains planned and actual start and completion date screens. We found that the system is being used to track start and end dates for planning and design phases, so we consider this finding resolved.

July 2002 Finding: 17. <u>The Department Has Not Updated the Long-Range Transportation Plan as Required by Statute</u>

The July 2002 performance audit said that it is important that the department update the long-range plan because changes could affect the state's long-term transportation needs and the department's and legislature's actions to address those needs.

As of January 2004, the department assigned responsibility for monitoring the development of the plan to a planning and research manager, and also hired a consultant to work with division personnel to plan a 25-year statewide multimodal plan.

In March 2005, department staff said that the consultant, hired in January 2004, was given 18 months to complete the plan. The plan has four steps, three of which were completed at that date. The entire plan was to be completed in June 2005. The third round of public hearings was to be held in April 2005. Annual performance measures were also being developed.

During our test work in October 2006, the Director of the Long-Range Planning Division reported that the 25-year plan was completed in February 2006. It will better enable the department to plan and prepare for the state's transportation needs. While statute currently requires the department to update its long-range plan every two years, the department plans to submit a proposal to the 105th General Assembly to change the statute to require an update every four years, updating a portion of the plan each year over a four-year period. The director reported that long-range plans should not need to be changed more frequently than every four

years. We consider this finding resolved because the department completed the long-range transportation plan in 2006.

APPENDIX
TITLE VI INFORMATION

All programs or activities receiving federal financial assistance are prohibited by Title VI of the Civil Rights Act of 1964 from discriminating against participants or clients on the basis of race, color, or national origin. In response to a request from members of the Government Operations Committee, we compiled information concerning federal financial assistance received by the Tennessee Department of Transportation and the department's efforts to comply with Title VI requirements. The results of the information gathered are summarized below.

In fiscal year 2006, the Tennessee Department of Transportation received $761,188,000 in federal funds from the U.S. Department of Transportation as follows:

Federal Grantor	Description	Amount
Federal Aviation Administration	Airport Improvement Program	$16,325,151
Federal Highway Safety Administration	Highway Planning and Construction	$705,893,250
Federal Transportation Authority	Federal Transit Metropolitan Planning Grant	$717,143
Federal Transportation Authority	Federal Transit Formula Grant	$116,314
Federal Transportation Authority	Formula Grants for Other Than Urbanized Areas	$13,565,810
Federal Transportation Authority	Job Access – Reverse Commute	$27,640
National Highway Transportation Safety Administration	State and Community Highway Safety	$12,744,713
National Highway Transportation Safety Administration	Alcohol Traffic Safety and Drunk Driving Prevention Incentive Grants	$1,521,381
National Highway Transportation Safety Administration	Occupant Protection	$625,872
National Highway Transportation Safety Administration	Safety Incentive Grants for Use of Seatbelts	$237,196
National Highway Transportation Safety Administration	Safety Incentives to Prevent Operation of Motor Vehicle by Intoxicated Persons	$9,413,530

The department submits a Title VI Implementation and Compliance Plan to the Federal Highway Administration on June 30 of each year. The Title VI Section of the Civil Rights Office has the following staff: one director, two professional staff (as of March 2005 one position was vacant), and one support staff in the central office; and two professional staff working in regional offices. The Title VI Director is responsible for Title VI monitoring and technical assistance, training of all internal and external stakeholders, monitoring Title VI compliance for subrecipients, and ensuring non-discrimination in TDOT's programs and activities.

The department submitted its annual Title VI compliance report and implementation plan update to the Office of the Comptroller of the Treasury in June 2006, as required by statute. The plan, which we reviewed, describes the department's Title VI policy, the responsibilities of the various division of the department, the department's proposed Title VI activities related to public notification of eligible participants, data collection and reporting of participation data, complaint handling, and compliance reviews. New employees are trained on Title VI during new-employee orientation.

The Title VI office holds periodic training sessions for each division and office of the department as well as Title VI and multicultural forums throughout the state. The office requires each division and office of TDOT to submit a report annually on May 1 regarding Title VI activities. The Title VI Office conducts random on-site reviews, pre- and post-award reviews, and desk audits of subrecipients. Contractors and subcontractors are notified of their Title VI responsibilities through language included in each contract agreement.

The department's Title VI Plan contains its complaint procedure. When the department receives a Title VI complaint, the office determines whether the complaint is valid. Processing of the complaint is started immediately. For FY 2003, through FY 2006, the department did not receive any Title VI complaints.

The department provided a list of consultant and contractor contract balances. Due to the size of the list, over 300 pages, the information is not included in this report. For example, as of March 14, 2005, the department had 6,084 contracts with consultants and contractors for a total amount of $2,576,358,216. The department does not track ethnicity of contractors and consultants.

Staff of the Department of Transportation
by Title, Gender, and Ethnicity
as of March 2007

Title	Male	Female	Black	White	Asian	Indian	Hispanic	Other
Account Clerk	1	32	5	28	0	0	0	0
Accounting Manager	4	1	1	4	0	0	0	0
Accounting Technician	0	8	3	5	0	0	0	0
Accountant	10	4	3	9	1	0	0	1
Assistant Commissioner	3	0	0	3	0	0	0	0
Administrative Assistant	0	13	2	11	0	0	0	0
Administrative Secretary	0	50	6	43	0	0	0	1
Administrative Services Assistant	22	53	5	67	0	3	0	0
Aerial Photographer	2	1	0	3	0	0	0	0
Aerial Technician	2	0	0	1	1	0	0	0
Aerial Personnel Supervisor	1	0	0	1	0	0	0	0
Affirmative Action Director	0	1	1	0	0	0	0	0
Affirmative Action Officer	3	3	4	1	0	0	1	0
Aircraft Scheduler	1	0	1	0	0	0	0	0
Archaeologist	3	0	0	3	0	0	0	0
Aircraft Chief Pilot	1	0	0	1	0	0	0	0
Aircraft Lead Pilot	8	1	0	9	0	0	0	0
Aircraft Mechanic	3	0	0	3	0	0	0	0
Attorney	2	3	1	4	0	0	0	0
Audit Director	0	1	0	1	0	0	0	0

Title	Male	Female	Black	White	Asian	Indian	Hispanic	Other
Auditor	6	4	2	8	0	0	0	0
Automotive Master Mechanic	2	0	0	2	0	0	0	0
Biologist	2	2	0	4	0	0	0	0
Building Maintenance Worker	8	1	1	8	0	0	0	0
Board Member	4	1	1	4	0	0	0	0
Budget Analyst	1	1	0	2	0	0	0	0
CADD Supervisor	6	4	0	9	1	0	0	0
CADD Technician	49	14	16	44	1	1	1	0
Civil Engineer Administrator	1	0	0	1	0	0	0	0
Civil Engineer Director	4	0	0	4	0	0	0	0
Civil Engineer Manager	40	10	2	46	2	0	0	0
Civil Rights Director – DOT	0	1	1	0	0	0	0	0
Clerk	10	52	8	52	0	1	1	0
Computer Operations Manager	1	0	0	1	0	0	0	0
Computer Operations Supervisor	0	1	1	0	0	0	0	0
Contract Compliance Officer	5	3	6	2	0	0	0	0
Commissioner	1	0	0	1	0	0	0	0
Communications Dispatcher	8	12	4	15	0	0	1	0
Communications Systems Analyst	6	0	1	5	0	0	0	0
Custodial Worker	7	3	9	1	0	0	0	0
Custodial Worker Supervisor	1	1	2	0	0	0	0	0
Database Administrator	0	3	0	1	2	0	0	0
Data Processing Operator	1	5	4	2	0	0	0	0
Data Processing Operator Supervisor	0	1	1	0	0	0	0	0
Drafting Technician	2	0	0	2	0	0	0	0
Distributed Computer Operator	0	1	1	0	0	0	0	0
Electrician Technician	1	0	0	1	0	0	0	0
Emergency Management Area Coordinator	1	0	0	1	0	0	0	0
Environmental Coordinator – Transportation Projects	3	2	0	5	0	0	0	0
Environmental Specialist	6	0	0	6	0	0	0	0
Equipment Mechanic	155	0	7	147	1	0	0	0
Equipment Management Director	1	0	0	1	0	0	0	0
Equipment Maintenance Supervisor	10	0	20	8	0	0	0	0

Title	Male	Female	Black	White	Asian	Indian	Hispanic	Other
Equipment Service Worker	32	1	10	23	0	0	0	0
Executive Administrative Assistant	4	2	1	5	0	0	0	0
Facility Manager	3	0	0	3	0	0	0	0
Fiscal Director	7	2	1	8	0	0	0	0
Fleet Maintenance Assistant 1	1	1	0	2	0	0	0	0
Fleet Supervisor	1	0	0	1	0	0	0	0
General Counsel	1	0	0	1	0	0	0	0
Geologist	5	1	1	5	0	0	0	0
Geographic Information Systems Analyst	4	2	0	6	0	0	0	0
Geographic Information Systems Manager	1	0	0	1	0	0	0	0
Geographic Information Systems Technician	2	1	1	2	0	0	0	0
Geographic Systems Technician Manager	2	1	0	3	0	0	0	0
Geographic Systems Technician Supervisor	3	3	1	4	1	0	0	0
Grants Analyst	0	1	0	1	0	0	0	0
Grants Program Manager	0	1	0	1	0	0	0	0
Grounds Worker	5	0	3	2	0	0	0	0
Historical Preservation Specialist	1	1	0	2	0	0	0	0
Horticulturist	4	0	0	4	0	0	0	0
Historical Preservation Supervisor	0	1	0	1	0	0	0	0
Highway Maintenance Assistant Supervisor	91	2	13	79	0	1	0	0
Highway Maintenance County Supervisor	92	0	7	85	0	0	0	0
Highway Maintenance Floating Supervisor	47	1	7	41	0	0	0	0
Highway Maintenance Superintendent	67	1	5	63	0	0	0	0
Highway Maintenance Worker	1,079	115	246	943	1	4	0	0
Highway Response Operator	48	0	7	40	0	0	1	0
Highway Response Supervisor	15	1	4	12	0	0	0	0
Information Resource Support Specialist	34	9	8	33	1	0	0	1
Information Officer	0	1	0	1	0	0	0	0
Information Representative	1	0	0	1	0	0	0	0
Information Systems Analyst	3	3	2	4	0	0	0	0

Title	Male	Female	Black	White	Asian	Indian	Hispanic	Other
Information Systems Analyst Supervisor	0	1	0	1	0	0	0	0
Information Systems Director	2	1	0	3	0	0	0	0
Information Systems Manager	7	1	1	7	0	0	0	0
Legal Assistant	2	1	0	3	0	0	0	0
Librarian	0	2	0	2	0	0	0	0
Materials Associate	27	2	1	27	0	1	0	0
Materials Assistant	59	15	6	65	0	1	1	1
Materials Manager	2	1	0	3	0	0	0	0
Maintenance Carpenter	10	0	0	10	0	0	0	0
Maintenance Electrician	2	0	0	2	0	0	0	0
Motor Vehicle Management Administrator	1	0	0	1	0	0	0	0
Motor Vehicle Management Director	1	0	0	1	0	0	0	0
Network Technical Specialist	1	0	0	1	0	0	0	0
Offset Press Operator	5	2	3	4	0	0	0	0
Operations Specialist	219	27	12	225	3	1	0	5
Operations Specialist Supervisor	66	8	1	71	1	0	0	1
Personnel Analyst	2	5	0	7	0	0	0	0
Personnel Director	1	0	0	1	0	0	0	0
Personnel Manager	2	2	1	3	0	0	0	0
Personnel Technician	1	1	0	2	0	0	0	0
Personnel Transactions Supervisor	0	1	0	1	0	0	0	0
Photogrammetrist	4	2	0	6	0	0	0	0
Photogrammetrist Supervisor	2	0	1	1	0	0	0	0
Printing Service Superintendent	1	0	1	0	0	0	0	0
Printing Service Supervisor	2	0	2	0	0	0	0	0
Procurement Officer	4	3	1	6	0	0	0	0
Program Monitor	1	1	0	1	1	0	0	0
Program Analyst	9	3	0	11	1	0	0	0
Property Utilization Manager	1	0	0	1	0	0	0	0
Public Educator	0	1	0	1	0	0	0	0
Radio Communication Technician	6	0	0	6	0	0	0	0
Radio Communication Technician Supervisor	1	0	0	1	0	0	0	0
Radio Systems Analyst	1	0	0	1	0	0	0	0

Title	Male	Female	Black	White	Asian	Indian	Hispanic	Other
Roadway Specialist	110	31	15	117	7	0	0	2
Roadway Specialist Supervisor	46	9	4	45	3	1	2	0
Right-of-Way Agent	35	20	6	48	0	1	0	0
Right-of-Way Appraiser	18	1	0	19	0	0	0	0
Railroad Safety Specialist	3	0	0	3	0	0	0	0
Railroad Safety Inspector	6	0	1	5	0	0	0	0
Small Business Development Director	0	1	1	0	0	0	0	0
Secretary	2	64	9	56	0	1	0	0
Storekeeper	24	12	4	32	0	0	0	0
Stores Clerk	8	10	1	16	0	0	0	1
Structure Specialist	30	6	2	31	2	0	0	1
Structure Specialist Supervisor	19	3	0	18	3	0	0	1
Systems Programmer	3	0	0	3	0	0	0	0
Title VI Director	0	1	0	1	0	0	0	0
TMC Operator	6	3	2	7	0	0	0	0
TMC Supervisor	5	2	0	7	0	0	0	0
Traffic Technician	3	0	1	2	0	0	0	0
Traffic Technician Supervisor	3	0	0	3	0	0	0	0
Training Officer	3	1	0	4	0	0	0	0
Training Specialist	3	3	0	6	0	0	0	0
Transportation Administrator	1	0	0	1	0	0	0	0
Transportation Administration Director	1	0	0	1	0	0	0	0
Transportation Aide	14	2	1	15	0	0	0	0
Transportation Assistant	207	77	58	226	0	0	0	0
Transportation Coordinator	7	13	3	16	1	0	0	0
Transportation Director	6	3	0	9	0	0	0	0
Transportation Investigator	1	2	1	2	0	0	0	0
Transportation Investigator Manager	1	0	0	1	0	0	0	0
Transportation Manager	64	10	2	71	1	0	0	0
Transportation Planner	36	29	17	47	1	0	0	0
Transportation Regional Assistant Director	6	0	0	6	0	0	0	0
Transportation Regional Director	4	0	0	4	0	0	0	0
Transportation Safety Manager	0	1	0	1	0	0	0	0
Trans Spec	27	14	7	34	0	0	0	0
Trns Sr Sv 1	6	2	1	7	0	0	0	0
Transportation Technician	421	68	44	441	0	4	0	0

Title	Male	Female	Black	White	Asian	Indian	Hispanic	Other
Vehicle Operator	1	0	1	0	0	0	0	0
Web Dev	2	0	0	2	0	0	0	0
Totals	3,535	912	629	3,739	36	20	8	15
Percentages	79.5%	20.5%	14.1%	84.1%	0.8%	0.5%	0.2%	0.3%