

**Department of Transportation**

**For the Year Ended  
June 30, 2001**

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STATE OF TENNESSEE  
**COMPTROLLER OF THE TREASURY**  
State Capitol  
Nashville, Tennessee 37243-0260  
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**John G. Morgan**  
Comptroller

April 25, 2002

The Honorable Don Sundquist, Governor  
and  
Members of the General Assembly  
State Capitol  
Nashville, Tennessee 37243  
and

The Honorable J. Bruce Saltsman, Sr., Commissioner  
Department of Transportation  
Suite 700, James K. Polk Building  
Nashville, Tennessee 37243

Ladies and Gentlemen:

Transmitted herewith is the financial and compliance audit of the Department of Transportation for the year ended June 30, 2001.

The review of management's controls and compliance with policies, procedures, laws, and regulations resulted in certain findings which are detailed in the Objectives, Methodologies, and Conclusions section of this report.

Sincerely,

John G. Morgan  
Comptroller of the Treasury

JGM/th  
01/122



**STATE OF TENNESSEE  
COMPTROLLER OF THE TREASURY  
DEPARTMENT OF AUDIT  
DIVISION OF STATE AUDIT**

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December 4, 2001

The Honorable John G. Morgan  
Comptroller of the Treasury  
State Capitol  
Nashville, Tennessee 37243

Dear Mr. Morgan:

We have conducted a financial and compliance audit of selected programs and activities of the Department of Transportation for the year ended June 30, 2001.

We conducted our audit in accordance with government auditing standards generally accepted in the United States of America. These standards require that we obtain an understanding of management controls relevant to the audit and that we design the audit to provide reasonable assurance of the Department of Transportation's compliance with the provisions of policies, procedures, laws, and regulations significant to the audit. Management of the Department of Transportation is responsible for establishing and maintaining internal control and for complying with applicable laws and regulations.

Our audit disclosed certain findings which are detailed in the Objectives, Methodologies, and Conclusions section of this report. The department's administration has responded to the audit findings; we have included the responses following each finding. We will follow up the audit to examine the application of the procedures instituted because of the audit findings.

We have reported other less significant matters involving the department's internal control and instances of noncompliance to the Department of Transportation's management in a separate letter.

Sincerely,

A handwritten signature in black ink that reads "Arthur A. Hayes, Jr." in a cursive script.

Arthur A. Hayes, Jr., CPA,  
Director

AAH/th

State of Tennessee

# Audit Highlights

Comptroller of the Treasury

Division of State Audit

Financial and Compliance Audit  
**Department of Transportation**  
For the Year Ended June 30, 2001

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## AUDIT SCOPE

We have audited the Department of Transportation for the period July 1, 2000, through June 30, 2001. Our audit scope included those areas material to the *Tennessee Comprehensive Annual Financial Report* for the year ended June 30, 2001, and to the *Tennessee Single Audit Report* for the same period. These areas include the Federal-Aid Highway Administration program. As a portion of our review of the Federal-Aid Highway Administration program, we have summarized an Internal Audit Report on the Newbern Construction Office. In addition to those areas, our primary focus was on management's controls and compliance with policies, procedures, laws, and regulations in the areas of Bridge Maintenance and Inspection, Information Systems, and Equipment. The audit was conducted in accordance with government auditing standards generally accepted in the United States of America.

## AUDIT FINDINGS

### **Department Personnel Did Not Always Maintain Adequate Supporting Documentation for Contractor Payments**

On December 4, 2001, the Department of Transportation Internal Audit Office issued the special report *Newbern Construction Office*. As described in finding 1 of this report, the Newbern Construction Office did not maintain adequate supporting documentation on a current basis for one contract (page 8).

### **Departmental Policies and Procedures to Ensure Compliance With Davis-Bacon Not Always Followed\*\***

The department has established policies and procedures to help ensure compliance with the Davis-Bacon Act. However, department personnel do not always adhere to these policies and procedures. Interviews with laborers and mechanics to help ensure contractors' wage compliance were not always conducted as noted in finding 2. One contractor did not submit payrolls in

accordance with the contract requirements (page 10).

**Inspections of Bridges and Other Structures Are Not Always in Accordance With Departmental Procedures\*\***

The department has established policies and procedures for inspecting bridges and other structures. However, department personnel do not always comply with its inspection procedures documented in *The Tennessee Department of Transportation Bridge Inspection Program Procedures Manual* as noted in finding 3. Divers did not always perform underwater inspections. Also, an underwater inspection by a departmental inspector was not documented (page 13).

**The Department of Transportation Should Improve Controls Over Programmer Access to DOT STARS Production Data Sets**

The Office for Information Resources' Systems Development Support

programmers had ALTER access to the Department of Transportation State Transportation Accounting and Reporting System (DOT STARS) data sets. ALTER access grants users the ability to directly change or delete the contents of application data sets as noted in finding 4 (page 19).

**DOT STARS Disaster Recovery Plan Is Insufficient\*\***

The disaster recovery plan for DOT STARS is insufficient as noted in finding 5. Much of the plan is simply a set of generic guidelines for addressing specific issues relating to disaster recovery. Detailed plan revisions have not been completed or incorporated into a comprehensive plan (page 20).

\*\* This finding is repeated from previous audits.

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"Audit Highlights" is a summary of the audit report. To obtain the complete audit report, which contains all findings, recommendations, and management comments, please contact

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**Audit Report**  
**Department of Transportation**  
**For the Year Ended June 30, 2001**

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**TABLE OF CONTENTS**

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	<u>Page</u>
<b>INTRODUCTION</b>	1
Post-Audit Authority	1
Background	1
<b>AUDIT SCOPE</b>	3
<b>PRIOR AUDIT FINDINGS</b>	3
Resolved Audit Findings	3
Repeated Audit Findings	3
<b>OBJECTIVES, METHODOLOGIES, AND CONCLUSIONS</b>	4
Areas Related to Tennessee's <i>Comprehensive Annual Financial Report and Single Audit Report</i>	4
Federal-Aid Highway Administration	5
Finding 1-Department personnel did not always maintain adequate supporting documentation for contractor payments	8
Finding 2-Employees do not always follow departmental policies and procedures to ensure compliance with the Davis-Bacon Act	10
Bridge Maintenance and Inspection	12
Finding 3-The Department of Transportation does not always inspect bridges in accordance with departmental procedures	13
Information Systems	15
Finding 4-The Department of Transportation Should Improve Controls Over Programmer Access to DOT STARS Production Data Sets	19
Finding 5-The DOT STARS disaster recovery plan is insufficient	20
Equipment	21

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**TABLE OF CONTENTS (CONT.)**

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	<u>Page</u>
<b>OBSERVATIONS AND COMMENTS</b>	23
Title VI of the Civil Rights Act of 1964	23
<b>APPENDIX</b>	24
Allotment Codes	24

# **Department of Transportation For the Year Ended June 30, 2001**

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## **INTRODUCTION**

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### **POST-AUDIT AUTHORITY**

This is the report on the financial and compliance audit of the Department of Transportation. The audit was conducted pursuant to Section 4-3-304, *Tennessee Code Annotated*, which authorizes the Department of Audit to “perform currently a post-audit of all accounts and other financial records of the state government, and of any department, institution, office, or agency thereof in accordance with generally accepted auditing standards and in accordance with such procedures as may be established by the comptroller.”

Section 8-4-109, *Tennessee Code Annotated*, authorizes the Comptroller of the Treasury to audit any books and records of any governmental entity that handles public funds when the Comptroller considers an audit to be necessary or appropriate.

### **BACKGROUND**

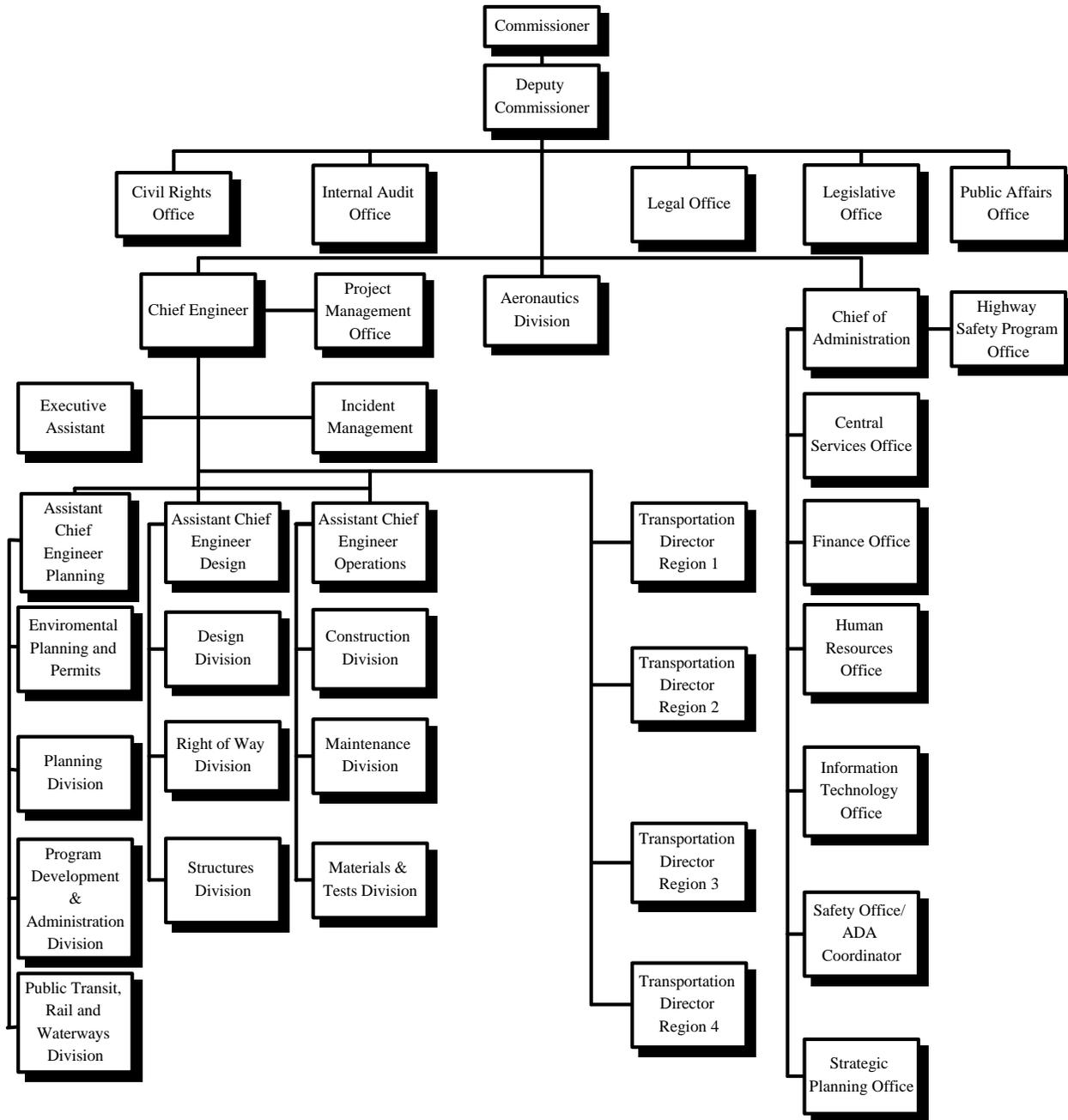
The mission of the Department of Transportation is to plan, implement, maintain, and manage an integrated transportation system for moving people and products, with emphasis on quality, safety, efficiency, and the environment. In order to fulfill this mission, the department has a Bureau of Engineering that administers all phases of transportation programs from planning, constructing, and maintaining of highways to administering field work.

Along with its roadway activities, other duties for the bureau include planning and developing rail transportation, providing aerial photography and mapping services, maintaining and operating state-owned aircraft, issuing permits for overdimensional vehicles, funding and assisting publicly owned airports, and controlling outdoor advertising on state highways. The department also provides maintenance on the state’s general vehicle fleet and technical and funding assistance to over 300 public transportation agencies.

In recent years, one of the primary goals of the department has been to complete the substantial road program passed by the state legislature in 1986. The program is nearly complete.

With 4,600 employees and a budget over one billion dollars, the department is one of the largest agencies in state government. An organization chart of the department is on the following page.

# Department of Transportation Organization Chart



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## AUDIT SCOPE

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We have audited the Department of Transportation for the period July 1, 2000, through June 30, 2001. Our audit scope included those areas material to the *Tennessee Comprehensive Annual Financial Report* for the year ended June 30, 2001, and to the *Tennessee Single Audit Report* for the same period. These areas include the Federal-Aid Highway Administration program. As a portion of our review of the Federal-Aid Highway Administration program, we have summarized an Internal Audit Report on the Newbern Construction Office. In addition to those areas, our primary focus was on management's controls and compliance with policies, procedures, laws, and regulations in the areas of Bridge Maintenance and Inspection, Information Systems, and Equipment. The audit was conducted in accordance with government auditing standards generally accepted in the United States of America.

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## PRIOR AUDIT FINDINGS

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Section 8-4-109, *Tennessee Code Annotated*, requires that each state department, agency, or institution report to the Comptroller of the Treasury the action taken to implement the recommendations in the prior audit report. The Department of Transportation filed its report with the Department of Audit on September 27, 2001. A follow-up of all prior audit findings was conducted as part of the current audit.

## RESOLVED AUDIT FINDINGS

The current audit disclosed that the Department of Transportation has corrected the previous audit findings concerning the surety bond requirement for overweight and overdimensional permits, and the unauthorized departmental bank account operated by the Governor's Highway Safety Office. In addition, management has taken steps to correct the prior finding on the improper administration, direction, supervision, and monitoring of subrecipient operations at the Governor's Highway Safety Office. Although this finding is not yet completely resolved, it will not be repeated in this report.

## REPEATED AUDIT FINDINGS

The prior audit report also contained findings concerning the failure to follow departmental policies designed to ensure compliance with the Davis-Bacon Act, the failure to inspect bridges and other structures in accordance with departmental procedures, and the inadequate documentation of the Department of Transportation State Transportation Accounting

and Reporting System disaster recovery. These findings have not been resolved and are repeated in the applicable sections of this report.

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## OBJECTIVES, METHODOLOGIES, AND CONCLUSIONS

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### AREAS RELATED TO TENNESSEE'S COMPREHENSIVE ANNUAL FINANCIAL REPORT AND SINGLE AUDIT REPORT

Our audit of the Department of Transportation is an integral part of our annual audit of the *Comprehensive Annual Financial Report (CAFR)*. The objective of the audit of the *CAFR* is to render an opinion on the State of Tennessee's general-purpose financial statements. As part of our audit of the *CAFR*, we are required to gain an understanding of the state's internal control and determine whether the state complied with laws and regulations that have a material effect on the state's general-purpose financial statements.

Our audit of the Department of Transportation is also an integral part of the *Tennessee Single Audit*, which is conducted in accordance with the Single Audit Act, as amended by the Single Audit Act Amendments of 1996. The Single Audit Act, as amended, requires us to determine whether

- the state complied with rules and regulations that may have a material effect on each major federal financial assistance program, and
- the state has internal controls to provide reasonable assurance that it is managing its major federal award programs in compliance with applicable laws and regulations.

We determined that the Federal-Aid Highway Administration program within the Department of Transportation was material to the *CAFR* and to the *Single Audit Report*.

To address the objectives of the audit of the *CAFR* and the *Single Audit Report*, as they pertain to this major federal award program, we interviewed key department employees, reviewed applicable policies and procedures, and tested representative samples of transactions. For further discussion, see the Federal-Aid Highway Administration section.

We have audited the general-purpose financial statements of the State of Tennessee for the year ended June 30, 2001, and have issued our reports thereon dated December 4, 2001. The opinion on the financial statements is unqualified. The *Tennessee Single Audit Report* for the year ended June 30, 2001, includes our reports on the Schedule of Expenditures of Federal Awards and on internal control and compliance with laws and regulations.

The audit of the department revealed the following findings in areas related to the *CAFR* and *Single Audit Report*:

- Department personnel did not always maintain adequate supporting documentation for contractor payments
- Employees do not always follow departmental policies and procedures to ensure compliance with the Davis-Bacon Act

In addition to the findings, other minor weaknesses came to our attention which have been reported to management in a separate letter.

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## **FEDERAL-AID HIGHWAY ADMINISTRATION**

To address the objectives of the *CAFR* and *Single Audit*, as they pertain to federal financial assistance programs, our audit focused primarily on the compliance requirements for the Federal-Aid Highway Administration (FHWA) program.

The audit consisted of the following areas:

- General Internal Control
- Activities Allowed or Unallowed and Allowable Costs/Cost Principles
- Davis-Bacon Act
- Procurement and Suspension and Debarment
- Real Property Acquisition and Relocation Assistance
- Federal Reporting
- Special Tests and Provisions: Sampling Program
- Schedule of Expenditures of Federal Awards

The primary audit objectives, methodologies, and our conclusions for each area are stated below. For each area, auditors documented, tested, and assessed management's controls to ensure compliance with applicable laws, regulations, grants, contracts, and state accounting and reporting requirements. To determine the existence and effectiveness of management's controls, auditors administered planning and internal control questionnaires; reviewed policies, procedures, and grant requirements; prepared internal control memos, and performed walk-throughs and tests of controls; and assessed risk.

### **General Internal Control**

Our primary objective for general control was to obtain an understanding of, document, and assess management's general controls within the department. We interviewed key program employees; reviewed organization charts, descriptions of duties and responsibilities for each division, program procedures and guidelines, and the reports issued by the department's internal audit staff; and considered the overall control environment of the FHWA program.

## **Activities Allowed or Unallowed and Allowable Costs/Cost Principles**

The primary objectives of this area were to determine if

- funds were used for allowable purposes;
- federal expenditures were in compliance with grant requirements;
- expenditures involving federal funds have been recorded correctly in the department's accounting records; and
- costs meet the criteria set forth in the "Basic Guidelines" of Circular A-87, *Cost Principles for State, Local and Indian Tribal Governments*, Attachment A, paragraph C.

Supporting documentation for all significant FHWA expenditure items was reviewed and tested to determine if the funds were used for allowable purposes and to determine if costs were in compliance with Circular A-87. The significant items were also tested for compliance with grant requirements and appropriate recording in the department's accounting records.

Our testwork indicated that the department's FHWA funds were used for allowable activities, expenditures were in compliance with grant requirements, expenditures were recorded correctly in the department's accounting records, and costs were in compliance with Circular A-87. However, the department's Internal Audit staff issued a special report dated December 4, 2001, describing a lack of supporting documentation for contractor payments on a contract in the Newbern Construction Office. This deficiency is described in finding 1.

### **Davis-Bacon Act**

The primary objective of this area was to determine if the department ensured that laborers and mechanics on applicable construction contracts were paid the prevailing wage rates as determined by the U.S. Department of Labor.

To monitor compliance with the Davis-Bacon Act, the department has established a system which includes review of contractor and subcontractor payrolls and documented on-site visits and interviews with laborers and mechanics by department personnel.

We tested a sample of closed construction contracts for evidence of departmental monitoring for compliance with the Davis-Bacon Act. We reviewed the labor interviews, contractor and subcontractor payrolls, and prevailing wage rate classifications.

Our testwork revealed that the department did not always conduct the labor interviews in accordance with its policy. Also, one contractor did not submit payrolls in accordance with contract requirements. This deficiency is disclosed in finding 2.

## **Procurement and Suspension and Debarment**

The primary objective of this area was to determine that the department did not enter into contracts with vendors that have been suspended or debarred from federal contracts.

We compared all vendors from the significant FHWA expenditures to the *List of Parties Excluded From Federal Procurement or Nonprocurement Programs*, issued by the General Services Administration, to determine if the vendors were suspended or debarred.

None of the vendors from the significant FHWA expenditures were listed on the *List of Parties Excluded From Federal Procurement or Nonprocurement Programs* as suspended or debarred.

## **Real Property Acquisition and Relocation Assistance**

The primary objective of this area was to determine compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (URA) of 1970, as amended. The URA provides for uniform and equitable treatment of persons displaced by federally assisted programs from their homes, businesses, or farms and establishes procedures to determine just compensation to the owner.

We reviewed the departmental policies and procedures developed to ensure compliance with the URA. We tested a sample of FHWA payments made for real property acquisition or relocation assistance for compliance with the URA. We compared the documentation on file supporting the payment to the documentation required for each unique type of payment.

Based upon the testwork performed, it appears that the department's policies and procedures are in compliance with the URA and that the department is complying with its policies and procedures.

## **Federal Reporting**

The primary objective of this area was to determine if the required report for federal awards included all activity of the reporting period, was supported by the applicable accounting records, and was presented in accordance with program requirements.

In the FHWA program, the only required report is the PR-20, *Voucher for Work Under Provisions of the Federal-Aid and Federal Highway Acts, as Amended*. Within the department, this report is referred to as the "current bill." The department generates this report within the department's State Transportation Accounting and Reporting System (DOT STARS) and submits it electronically each week. The report includes detailed financial activity for all authorized FHWA projects.

We reviewed the department's procedure for establishing projects within DOT STARS. We tested FHWA significant items for appropriate recording in the department's accounting records (DOT STARS). We reviewed controls and procedures relating to DOT STARS as described in the Information Systems Review section of this report. We reviewed the process for

reconciling DOT STARS with the Department of Finance and Administration's accounting system (STARS) supporting the state's financial statements. We reviewed the process for reconciling DOT STARS with the federal system for authorized projects.

Based on our review and testwork, the required report appears to include all activity of the reporting period, is supported by the department's accounting records, and is presented in accordance with program requirements.

### **Special Tests and Provisions: Sampling Program**

The FHWA program requires a sampling and testing program for projects to ensure that materials and workmanship generally conform to approved plans and specifications. The primary objective of this area was to determine whether the state is following a quality assurance program that meets FHWA requirements.

We reviewed documentation in a sample of closed construction contracts to determine if materials used were sampled and tested for conformity with approved plans and specifications.

Based on our testwork, the department has a sampling and testing program in place to ensure that materials and workmanship generally conform to approved plans and specifications as required by FHWA.

### **Schedule of Expenditures of Federal Awards**

Our objective was to verify that the Schedule of Expenditures of Federal Awards was properly prepared and adequately supported. We verified the grant identification information on the Schedule of Expenditures of Federal Awards prepared by staff in the department's finance office. We reviewed the reconciliations of disbursements with expenditures in the accounting records on a grant-by-grant basis. Based on the testwork performed, we determined that, in all material respects, the Schedule of Expenditures of Federal Awards was properly prepared and adequately supported.

### **Finding, Recommendation, and Management's Comment**

1. **Department personnel did not always maintain adequate supporting documentation for contractor payments**

#### **Finding**

On December 4, 2001, the Department of Transportation's Internal Audit Office issued the special report *Newbern Construction Office*. As described in their finding, the department's Newbern Construction Office personnel did not maintain adequate supporting documentation on a current basis for one contract. The construction work on the contract was completed as of January 4, 2000. However, the Department of Transportation project engineer's field books—the department's daily record of the continuing progress and quantities of materials used at the

construction site, intended to support the monthly progress payments to the contractor—were not complete. Newbern Construction Office personnel began recording the majority of the information in the field books in September 2000. Although payments totaling \$17,758,192.41 were made to the contractor as of February 12, 2001, the field books were still not complete as of November 29, 2001.

As noted in the special report, the Internal Audit staff sampled the documentation available as of March 1, 2001, for \$9,607,583.81 of the contractor payments. The Internal Audit staff determined that payments of \$869,962.92 had been made to the contractor although as of March 1, 2001, no documentation was available at the construction office to support those payments. In addition, it was unclear whether the support for the remaining payments in the sample (\$8,737,620.89) was appropriately maintained during the execution of the contract, or whether the support was improperly created or obtained after the payments had been made. The Construction Division Circular Letter 109.02.04 states:

The Engineer will keep a book in which the current quantities for each item in the contract is [are] shown. He is to show the calculations for each item in this book or if copied from other records he is to reference back by book and page of sheet to the original notes. All calculations either original or copied are to be signed and dated.

The project engineer's failure to comply with the requirements of the Circular Letter resulted in inadequate supporting documentation for the contractor payments. Furthermore, the project supervisor allowed payments to be made to the contractor even though the proper supporting documentation was incomplete.

The entire effect of this finding will not be determined until after the department's final records review process has been completed. Although the total amount of actual unsupported costs cannot be determined at this time, the payments of \$869,962.92 that the Internal Audit staff determined were not adequately supported as of March 1, 2001, will be questioned.

### **Recommendation**

When the department has completed the final records review process on this contract, Internal Audit should conduct a subsequent review of the contract. Any adjustments necessary should be reflected on the final estimate. The Finance Office should resolve questioned costs with the Federal Highway Administration. Management should ensure that all engineers involved in the construction process understand the necessity of maintaining accurate, up-to-date field books on every project. Furthermore, management should implement sufficient controls to ensure that all contractor payments are adequately supported as they are paid during the progress of the construction projects.

## Management's Comment

Management concurs with the finding and recommendations. We have visited the office, reviewed the records, and found that proper documentation for the roadway items of the contract were not in accordance with our documentation procedures. However, we feel that the circumstances that occurred were isolated instances and should be treated as such.

It should be noted that Newbern Construction Office had four different Project Supervisors in a relatively short period of time. The lead inspector on the contract in question was promoted to the Project Supervisor during the course of the project. Apparently, it was communicated to the field personnel that the new Project Supervisor would continue to document project quantities. As a result of this communication, the field personnel did not document the quantities as required. Also the Project office was relocated during the construction of these contracts and during the move some field books were misplaced and subsequently found. Therefore, some of the items that could not be verified during the audit can now be validated with the field books.

Independent inspectors inspected the roadway items and bridge items. It should be noted that bridge quantities were properly documented as required by the respective bridge inspector. However, the documentation on several roadway items was not completed as noted in the audit. All items that can be field verified are being measured and documented.

We are not aware that this has happened on any other contract and we feel that appropriate guidelines and procedures are in place to direct the field office in proper documentation. Region 4 construction has reiterated the documentation procedures to their field offices during their staff meetings and the other Regions will be advised to do likewise.

When all documentation has been completed, Internal Audit will conduct a follow-up review and coordinate with the Finance Office to resolve any questioned costs.

## Finding, Recommendation, and Management's Comment

### 2. Employees do not always follow departmental policies and procedures to ensure compliance with the Davis-Bacon Act

#### Finding

The Department of Transportation has established program policies and procedures to comply with the Davis-Bacon Act. However, as noted in 13 of the past 17 years (beginning with the year ending June 30, 1984), department personnel do not always adhere to these policies and procedures to monitor classifications and wage rates as required by the Davis-Bacon Act.

The Davis-Bacon Act requires laborers and mechanics employed by contractors or subcontractors on federal contracts to be paid no less than the prevailing wage rates established for that locale by the U.S. Department of Labor. To monitor compliance with this requirement,

the department has established a system whereby designated personnel check contractor and subcontractor payrolls during each month of a project. Also, the project engineer or his representative is required to conduct a specific number of interviews with laborers and mechanics to verify the accuracy of payroll records examined. A separate interview form is completed and signed by the laborer or mechanic and the project engineer to document each interview. In response to the prior findings, the department issued Circular Letter 1273-03, which, as amended, requires that the project engineer conduct interviews at two-month intervals with a minimum of three interviews every two months, or a minimum of two interviews on contracts not anticipated to last two months. These interviews provide evidence of on-site visits to monitor classifications and wage rates.

For 7 of 40 closed construction contracts tested (18%), the project engineers had not always conducted a sufficient number of interviews. Of the seven, four contracts had no labor interviews conducted. The duration of these projects ranged from three weeks to nine months. The number of interviews required by the Circular Letter ranged from at least two interviews to nine interviews. Three contracts did not have a sufficient number of interviews conducted. Of the three, two contracts were each one interview short of the number required by the Circular Letter, and one contract was two interviews short.

In addition, for one of 40 closed construction contracts tested (3%), contractor payrolls were not submitted in accordance with contract requirements.

Without a sufficient number of labor interviews and the proper submission of contractor payrolls, management cannot have adequate assurance of compliance with the Davis-Bacon Act.

### **Recommendation**

Management should always perform labor interviews as evidence of on-site visits to monitor classifications and wage rates for all projects. Contractor payrolls should be submitted in accordance with the contract requirements and reviewed by management. Procedures should be followed to ensure that the department complies with the Davis-Bacon Act.

### **Management's Comment**

Management concurs with the finding and recommendations. The requirement to perform employee interviews has continued to be a problem. Contractor employees often work on more than one TDOT project; therefore, they continue to get interviewed numerous times during the course of the year and become reluctant to respond to our request. Also, most subcontractors are only on the project for a short duration of time and the window for interviewing them is difficult to manage. Based on past instances, nearly 100 percent of the discrepancies found in wage rates have been noted in the payroll review and not during the interview process. We feel that the time involved in the interview process is not justified by the results. However, we do understand that the interview process is required and we are exploring

ways to make this more manageable. We have had discussions with the Federal Highway Administration concerning the interviews.

In addition, we are in the process of checking with other Departments of Transportation to evaluate their programs. Once that information is gathered and we have coordinated with FWHA, we will issue a revision to Circular Letter 1273-03.

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## **BRIDGE MAINTENANCE AND INSPECTION**

The bridge maintenance and inspection section of the Department of Transportation routinely performs inspection on all bridges in the state. The objectives of our review of the controls and procedures for the bridge maintenance and inspection section were

- to determine whether policies and procedures regarding bridge maintenance and inspection for structures greater than 20 feet in length were adequate and based on current *National Bridge Inspection Standards* from the *Code of Federal Regulations*,
- to determine whether personnel in charge of bridge inspection teams were properly qualified,
- to determine whether effective monitoring and management of a National Bridge Inspection program was occurring, and
- to follow up on the prior audit finding.

We interviewed key department personnel to gain an understanding of the department's controls, policies, and procedures over bridge maintenance and inspection. We also reviewed supporting documentation for these controls and procedures. In addition, we tested a sample of bridges greater than 20 feet to determine if the individuals in charge of the inspection teams were properly qualified and if the bridges were inspected in accordance with departmental procedures and the National Bridge Inspection program. We determined that management has corrected the portion of the prior audit finding for structures less than 20 feet in length by revising policies and procedures.

However, as noted previously, we determined that the Department of Transportation did not always inspect bridges in accordance with departmental procedures. In addition, one individual in charge of a bridge inspection team was not properly qualified. These items are discussed below in finding 3.

## Finding, Recommendation, and Management's Comment

### 3. The Department of Transportation does not always inspect bridges in accordance with departmental procedures

#### Finding

As noted in the two prior audit reports, the bridge maintenance and inspection section of the Department of Transportation performs inspections on all bridges in the state. The Department of Transportation has developed departmental policies and procedures based on the *National Bridge Inspection Standards* and the *American Association of State Highway and Transportation Officials Manual for Condition Evaluation of Bridges*. However, the department does not always comply with its inspection procedures documented in *The Tennessee Department of Transportation Bridge Inspection Program Procedures Manual* (TDOT manual).

Based on a sample of inspections of structures (bridges) greater than 20 feet in length, the following discrepancies were noted.

- Although located in water 3.5 feet and deeper, 2 of 25 bridges examined (8%) did not receive an underwater inspection performed by divers within the past five years. The TDOT manual states, "All bridges on public roads in Tennessee with substructures located in water 3.5 feet and deeper shall receive an underwater inspection by a diver at frequencies not to exceed five years."
- No documentation of an underwater inspection was available for one of 25 bridges selected for testing (4%). Therefore, it could not be determined whether the bridge inspection team performed an underwater inspection as a part of the Routine Bridge Inspection for bridges with substructures located in water less than 3.5 feet. The TDOT manual states, "All bridges on public roads in Tennessee with substructures located in water less than 3.5 feet deep shall receive an underwater inspection at frequencies not to exceed two years. It shall be performed by the bridge inspection team as a part of the Routine or In-depth Bridge Inspection."
- One of 16 individuals in charge of the bridge inspection teams (6%) was not properly qualified. This individual did not have the required years of experience. The *National Bridge Inspection Standards*, Appendix C, Section 650.307(b)(2), states, "An individual in charge of a bridge inspection team shall have a minimum of 5 years experience in bridge inspection assignments in a responsible capacity and have completed a comprehensive training course based on the Bridge Inspector's Training Manual."

#### Recommendation

Management should develop monitoring procedures to ensure that the appropriate underwater inspections are performed within the required time period and documented. Also,

management should ensure that all individuals in charge of bridge inspection teams have met the experience requirements for inspectors.

### **Management's Comment**

We concur. It is the policy of TDOT to use consulting engineering firms and underwater divers on bridges with water deeper than 3.5 feet. The TDOT inspection teams, as part of the standard inspection cycle, inspect all other bridges over shallow water. Unfortunately, it is not always as cut and dried as this rule implies when it comes to classifying whether a bridge needs a diver inspection or not. A certain segment of bridges will have water levels that vary around the 3.5 limit. At certain times of the year, the water level may be less than 3.5 feet. At other times, it may be considerably greater.

It is much more cost effective to conduct the underwater inspection with TDOT personnel versus an engineering consulting firm with diving equipment. Therefore, we try to take advantage of low water levels whenever possible to conduct the inspection with TDOT personnel. During the low water periods of 1999 and 2000, we were able to inspect approximately 100 bridges that normally require diver inspection. At the time, the cost for a consultant to conduct a diver inspection and prepare a report averaged about \$3,000 per bridge; therefore, a considerable expense was avoided without sacrificing the safety of the motoring public.

Currently, we have 526 bridges listed as requiring a diver inspection on a five year cycle. In the 2000-01 time period, we had consulting engineering firms conduct underwater inspections on 249 (47.3%) of them. Tennessee has 16,495 bridges over shallow water that are inspected on a two-year cycle. Of these 8,142 (49.4%) have been inspected in 2001. Therefore, we feel that the underwater inspection program is proceeding correctly and is on schedule. Clearly, we are already providing adequate oversight to the program and additional monitoring procedures are not needed.

It was also noted that one of 16 individuals in charge of the bridge inspection teams (6%) was not properly qualified per the experience requirements of the National Bridge Inspection (NBI) Standards. This is a well-known problem. It has been mentioned in numerous Federal Highway Administration (FHWA) NBI reviews and in previous audits. The problem stems from a discrepancy between the requirements for a bridge inspection team leader as specified by the Department of Personnel and the requirements as specified by the National Bridge Inspection Standards.

There is a considerable mismatch between the requirements of being a team leader, which the Department of Personnel classifies as an "Operations Specialist 2," and the requirements as set forth in the National Bridge Inspection Standards. Someone can be hired as a team leader with as little as 2 years of experience here at TDOT. Furthermore, this experience does not have to be specifically bridge inspection related. Yet this individual fails to qualify under the NBI

standards because of inadequate bridge inspection experience. The individual identified by the audit falls in this category.

Note that the mismatched requirements also work in the opposite sense. We have many bridge inspectors who have 5 or more years of specific bridge inspection experience and who have completed a comprehensive training course. According to the NBI standards, they are perfectly qualified to act as team leaders. Yet, TDOT is absolutely prevented from promoting them to a team leader position because they do not meet the education requirements specified for the Operations Specialist 2 position by the Department of Personnel.

TDOT has been working for literally years to try to resolve this mismatch problem. We have formulated a new plan to provide a position within each inspection team to allow someone, who is qualified under the Department of Personnel criteria but not the NBI criteria, to obtain bridge inspection experience and training without acting as the team leader. Hopefully, when a vacancy in an inspection team leader position occurs in the future, we will have people who qualify under both criteria available for promotion from these training positions into the vacant position. Therefore, we are fully aware of this qualification mismatch problem and are continuing our efforts to find a resolution acceptable to all parties.

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## **INFORMATION SYSTEMS**

The department's State Transportation Accounting and Reporting System (DOT STARS) is an on-line, interactive, table-driven application used by the Department of Transportation to track various events. The system tracks financial transactions, contract status, project status, equipment owned by the department, and road construction and repair supply inventories. DOT STARS interfaces with the State of Tennessee Accounting and Reporting System to transmit financial transactions each night. The department's Information Technology division supports the system.

Our information systems audit consisted of the following areas:

- Controls, System Documentation, and Policies and Procedures
- Management Involvement and Planning
- Logical Access Security
- Physical Access Security and Contingency Planning
- Operations

### **Controls, System Documentation, and Policies and Procedures**

The primary objectives of this area were to

- gain and document an understanding of the components of the system's internal control,
- review information technology functions for adequate segregation of duties,
- determine whether adequate controls were in place over program changes and whether these procedures reflect current operating conditions,
- determine whether system documentation is available and kept up to date, and
- determine whether relevant policies and procedures have been placed in operation and reflect current operating conditions.

We interviewed key personnel, completed internal control questionnaires, and observed operations to gain an understanding of the system's internal control. The department's organization chart was reviewed to determine whether information technology duties were properly segregated. Program change procedures were discussed with key personnel. Testwork on controls over program changes was performed to determine whether the procedures reflected current operating conditions. System documentation was obtained and reviewed to determine whether it is kept up to date. We reviewed policies and procedures to assess adequacy and observed operations to determine if those policies and procedures have been placed in operation and reflect current operating conditions.

Based on our interviews, questionnaires, and observations, it was determined that internal controls related to DOT STARS appeared adequate. The organization chart reflected that the duties of network administration, systems administration, and processing appeared to be properly segregated. Based on our interviews and testwork, program change controls appeared adequate and they reflected current operating conditions. DOT STARS systems documentation was available for review and appeared adequate and up to date. Relevant policies and procedures appeared adequate and appeared to reflect current operating conditions.

### **Management Involvement and Planning**

The primary objectives of this area were to

- determine if senior management, user management, and internal audit actively participated in information systems planning and systems development; and
- determine whether computer resources were planned and managed effectively.

Key personnel were interviewed regarding senior management, user management, and internal audit's participation in DOT STARS systems planning and development as well as any relevant system audits affecting the period under audit. While senior management and user management were involved in the day-to-day systems planning and development, internal audit was consulted only on major issues.

The department's Information Technology Three-Year Plan was reviewed to determine whether computer resource needs are planned and managed effectively. Based on our reviews,

the Information Technology Three-Year Plan appears to address future processing and hardware needs. It appears that computer resources were planned and managed effectively.

### **Logical Access Security**

The primary objectives of this area were to

- determine whether RACF security controls are utilized to ensure that users terminated from state employment do not have active user identifications,
- determine whether only current DOT employees or other appropriate individuals have entered transactions onto DOT STARS,
- determine whether logical access controls (passwords and related controls) are adequate to restrict unauthorized use of the system,
- determine whether the department identifies potential security threats through security violation reports or other adequate procedures, and
- determine whether access to DOT STARS datasets is properly controlled.

Resource Access Control Facility (RACF) is the statewide mainframe security software, used to provide access security at the initial level (or front-end) before the user can access department or agency systems such as DOT STARS. The Department of Finance and Administration's Office of Information Resources is administratively responsible for RACF. However, the Department of Transportation's Information Technology division is responsible for establishing, maintaining, and terminating departmental users.

We used Audit Command Language (ACL) to match the RACF security software report of active users with the state payroll system's terminated users report to verify that users terminated from employment did not have active RACF user identifications. Our testwork revealed that RACF security controls were utilized to ensure that users terminated from state employment do not have active user identifications.

ACL was also used to perform testwork to determine that unauthorized users had not made entries on the system. Additional testwork was performed to determine whether only employees and other appropriate individuals had access to DOT STARS. It appeared that only employees and other appropriate individuals entered transactions onto DOT STARS.

We interviewed key personnel and made attempts to access the system using valid RACF IDs to determine whether logical access controls (passwords and related controls) are adequate to restrict unauthorized use of the system. Based on our interviews and attempts to access the system, it appears that logical access controls are adequate to restrict unauthorized use of the system.

We interviewed key personnel to determine whether potential security threats were identified. Based on our interviews, the department does identify potential security threats.

We obtained a schedule of users with ALTER access to DOT STARS datasets and reviewed it to determine whether access is properly controlled. Based on our review, we determined that ALTER access to DOT STARS datasets was not properly restricted. This matter has been reported in finding 4 below.

### **Physical Access Security and Contingency Planning**

The primary objectives of this area were to

- determine whether physical conditions of the computer room and networking facilities are adequate,
- determine whether there is an offsite backup and storage facility,
- determine whether there is an adequate disaster recovery plan, and
- determine whether the disaster recovery procedure was tested and whether results are reviewed by management.

The computer processing and networking centers were inspected to determine whether the facility climate and environment were properly controlled, secured, and maintained. Documentation was obtained and reviewed and the offsite facility was inspected to determine whether programs and data are stored at an offsite facility. The department's Disaster Recovery Plan was reviewed to determine whether an adequate written disaster recovery plan existed to recover processing capabilities if an accident or malfunction should occur. Documentation of disaster recovery procedure test results was obtained and reviewed to confirm that a test was conducted, documented, and that the resulting information was provided to management for review.

Computer facilities had adequate security; climate controls are maintained; and the environment appeared clean, neat, and organized. Based on the review of relevant documentation and site visits conducted by the auditors, it was determined that an offsite storage facility was routinely used. The test of the disaster recovery procedure was documented and submitted to management for review. The Disaster Recovery Plan was reviewed with significant deficiencies noted. These weaknesses will be discussed in finding 5 below.

### **Operations**

The primary objectives of this area were to

- determine whether automated procedures for billing DOT projects to the Federal Highway Administration appear adequate,
- determine whether reconciliation procedures are adequate,
- determine whether error correction procedures are adequate and whether those procedures are being followed,
- determine whether system edits have accepted only allowable information, and

- assess the validity and reliability of computer-generated data.

We interviewed key personnel and observed procedures to determine whether automated procedures for billing DOT projects to the Federal Highway Administration appeared adequate. Based on our interviews, automated procedures for billing DOT projects to the Federal Highway Administration appeared adequate.

We interviewed key personnel to determine whether reconciliation and error correction procedures appeared adequate. Additionally, a reconciliation was tested and the error correction process was observed to determine the accuracy and effectiveness of these procedures.

Based on our interviews, the department does perform reconciliations, and error correction procedures appeared adequate and effective. Additionally, it appeared that the reconciliation and error correction procedures were followed.

We used ACL to develop tests to confirm that DOT STARS system edits accepted only allowable information and computer-generated data is valid and reliable. The ACL testwork revealed that DOT STARS edits operated effectively, accepting only allowable information, and that computer-generated data is valid and reliable.

## **Finding, Recommendation, and Management's Comment**

### **4. The Department of Transportation should improve controls over programmer access to DOT STARS production data sets**

#### **Finding**

Resource Access Control Facility, or RACF, is the security software that protects the state's mainframe computer programs and data files from unauthorized access. The auditors found that the RACF user group AGRM041, which contained Office for Information Resources' (OIR) Systems Development Support (SDS) programmers as members, had ALTER access to DOT STARS data sets for extended periods of time. ALTER access grants users the ability to directly change or delete the contents of application data sets. The anomalies during processing sometimes cause data elements or control tables to become corrupted and, because of their technical expertise, OIR's SDS programmers may be asked to make corrective changes to the affected databases. However, making such changes is not a normal application programmer duty and must be controlled. The preferred procedure is for the agency's security administrator to set access privileges for the programmers' user group to ALTER only long enough for the corrections to be made and then to promptly reset them back to NONE or READ. Under no circumstances should the programmers' user group access be continuously set to ALTER. Failure to follow this procedure could result in illegal or inappropriate changes to or destruction of state data.

## **Recommendation**

The department should change the access privileges for RACF user group AGRM041 to READ or NONE. In addition, the department should provide ALTER access to SDS programmers on an as-needed basis and promptly remove ALTER access after the necessary modifications have been completed. Furthermore, after the modifications have been completed, the department should review the changes made to verify that the only changes made were the requested modifications.

## **Management's Comment**

We concur and will establish closer controls and give programmers access only as needed. It should be noted, after modifications have been completed, there is currently in place a thorough review by Finance and Information Technology staff to ensure that the changes made were only those requested modifications.

## **Finding, Recommendation, and Management's Comment**

### **5. The DOT STARS disaster recovery plan is insufficient**

#### **Finding**

As noted in the prior two audit reports, the disaster recovery plan dated August 17, 1993, for the Department of Transportation (DOT) State Transportation Accounting and Reporting System (STARS) is insufficient. DOT STARS is a mission-critical system that processes virtually all of the department's accounting data. The DOT STARS disaster recovery plan lacks the specific instructions necessary to restore the system in an emergency. Much of the plan is simply a set of generic guidelines. For example, the plan states, "If there are different requirements for recovery depending on time of month or year, these should be documented." The plan also states, "Agencies should plan for the retention of production job output, as needs dictate." However, there is no documentation indicating that these issues have been considered. Specific instructions—such as an alternate office site and a plan to recover data entered since the most recent system backup—are vital to the execution of a sufficient plan.

In the two prior audit reports, management concurred and stated that the department's Information Technology Division (IT) was completing revisions. The reports also stated that management planned to follow up to ensure completion of the plan. However, the detailed plan revisions have never been completed or incorporated into the plan, and management has not followed up with the department's IT division.

## **Recommendation**

The department should thoroughly document specific disaster recovery procedures and specific actions to be taken from the declaration of a disaster until the time that normal business operations are resumed to help ensure that business and accounting functions are quickly restored.

The guidelines presented in the current plan for considering specific issues should be addressed and incorporated into the comprehensive plan. The comprehensive plan should be reviewed, updated, and reapproved periodically. The procedures should be prioritized and should list the specific actions to be taken from the declaration of a disaster until the time that normal business operations are resumed.

## **Management's Comment**

We concur. TDOT Information Technology staff and TDOT Finance staff have met to address the specific concerns provided in meetings during the audit. The current Disaster Recovery Plan has been annotated with each specific concern and the proposed response to address the concern. These will be incorporated into the final plan and stored with other IT procedures for the Department. This annotated copy is available for review upon request until the plan is finalized.

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## **EQUIPMENT**

The objectives of our review of equipment controls and procedures at the Department of Transportation were to determine whether

- the property listing represents a complete and valid listing of the capitalizable cost of assets purchased, and assets could be physically observed or confirmed;
- new purchases have been added at the correct prices and were actually received, and purchases for additional units were justified;
- property and equipment were adequately safeguarded;
- use charges to grant programs have been computed on an acceptable basis consistent with prior periods and were reasonable based on expected useful lives and salvage values;
- proper procedures were followed for reporting lost or stolen equipment to the Comptroller's Office and deleting equipment from the property listing;
- documentation existed of surplus property transferred to the Department of General Services, proper amounts of proceeds were received from the sale of surplus property, actual miles of replaced equipment met minimum criteria for replacing mobile

equipment or another exceptional condition, and replaced units were removed from the mobile equipment report;

- equipment use has been charged to the correct projects at the correct rates;
- depreciation calculations were accurate and charges were reasonable based on expected useful lives and salvage values; and
- costs, and if applicable, related depreciation, associated with all sold, abandoned, damaged, or obsolete fixed assets have been removed from the property listing.

We interviewed key department personnel to gain an understanding of procedures for accounting for and safeguarding property and equipment, and reporting lost and stolen property. Samples of mobile equipment and fixed assets were selected for observation or confirmation. The information on the equipment was compared to the department's property listing to determine whether the listing was a complete and valid listing of the capitalizable cost of assets purchased. Descriptions, serial numbers and locations according to the property listing were confirmed. Existence of the assets was verified through observation or confirmations. A sample of new purchases was selected and relevant identifying information was compared to the property listing and invoices to determine if new purchases were received, justified, and added at the correct costs. We reviewed the physical conditions surrounding the equipment to determine if the equipment was adequately safeguarded. We reviewed the method used for the usage rate calculations. We reviewed the procedures followed for reporting and deleting lost or stolen equipment. The information from a sample of surplus items was compared to the report of surplus vehicles, bill of sale, and criteria for replacement. We tested a sample of vehicle logs to determine if equipment use was charged to the correct project at the correct rate. A sample of depreciation calculations was tested to determine if they were reasonable and accurate.

We determined that the property listing represents a complete and valid listing of the capitalizable costs of assets purchased and assets were physically observed or confirmed. We determined that new purchases were received, justified, and added at the correct prices. Equipment appeared to be adequately safeguarded. The use charges to grant programs were computed on an acceptable basis and were reasonable. It appears that the department followed proper procedures in reporting lost or stolen equipment. Documentation of surplus property transferred to the Department of General Services existed and the proper amounts of proceeds were received from the sale of surplus property. Replaced equipment items met minimum criteria for replacement and were moved to the surplus property report. Equipment use was charged to the correct projects at the correct rates. Depreciation calculations were accurate and reasonable. Minor weaknesses came to our attention, and they have been reported to management in a separate letter.

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## OBSERVATIONS AND COMMENTS

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### **TITLE VI OF THE CIVIL RIGHTS ACT OF 1964**

*Tennessee Code Annotated*, Section 4-21-901, requires each state governmental entity subject to the requirements of Title VI of the Civil Rights Act of 1964 to submit an annual Title VI compliance report and implementation plan to the Department of Audit by June 30, 1994, and each June 30 thereafter. The Department of Transportation filed its compliance report and implementation plan on June 29, 2001.

Title VI of the Civil Rights Act of 1964 is a federal law. The act requires all state agencies receiving federal money to develop and implement plans to ensure that no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal funds. The Human Rights Commission is the coordinating state agency for the monitoring and enforcement of Title VI. A summary of the dates state agencies filed their annual Title VI compliance and implementation plans is presented in the special report *Submission of Title VI Implementation Plans*, issued annually by the Comptroller of the Treasury.

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## APPENDIX

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Department of Transportation allotment codes:

401	Transportation Headquarters
402	Bureau of Administration
403	Planning and Programming
411	Bureau of Operations
412	Engineering Administration
414	Claims for Injury and Damage
416	Area Mass Transit
417	Waterways and Rail Construction
430	Equipment Administration
440	Planning and Research
451	Maintenance and Marking
453	Betterments
455	State Aid
461	Rural Roads Construction
462	Federal Secondary Construction
470	State Industrial Access
471	State Construction
472	Interstate Construction
473	Primary Construction
475	Forest Highway Construction
476	Appalachia Construction
478	Local Interstate Connectors
479	State Secondary Construction
480	State Highway Construction
481	Capital Improvements
482	Other Construction
484	Great River Road
485	Highway Beautification
487	Metropolitan-Urban
488	Bridge Replacement
489	Highway Safety Construction
491	Aeronautics Commission
494	Transportation Equity Fund