STATE OF NORTH CAROLINA

AUDIT OF THE FEDERAL HIGHWAY BILLING SYSTEM

APPLICATION CONTROLS

DEPARTMENT OF TRANSPORTATION

FEBRUARY 2008

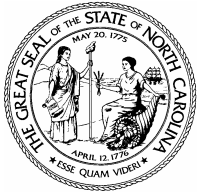OFFICE OF THE STATE AUDITOR

LESLIE MERRITT, JR., CPA, CFP

STATE AUDITOR

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AUDITOR'S TRANSMITTAL

The Honorable Michael F. Easley, Governor
Members of the North Carolina General Assembly
Mr. Lyndo Tippett, Secretary
North Carolina Department of Transportation

Ladies and Gentlemen:

We have completed our information systems (IS) audit at The Department of Transportation. The audit was conducted in accordance with generally accepted auditing standards issued by the American Institute of Certified Public Accountants, the Information Systems Auditing and Control Association, and *Government Auditing Standards* issued by the Comptroller General of the United States.

The primary objective of this audit was to evaluate controls for the Federal Highway Billing System which allocates and bills approved costs to federal highway projects. Application controls for the application system include data completeness, data accuracy, table maintenance, user access, processing, and data backup and recovery. The purpose of application controls is to ensure that as data passes through the application, it is complete, accurate, timely and protected from unauthorized access.

This report contains an executive summary that highlights the areas where The Department of Transportation has performed satisfactorily relevant to our audit scope and where improvements should be made.

We wish to express our appreciation to the staff at The Department of Transportation for the courtesy, cooperation, and assistance provided to us during this audit.

North Carolina General Statutes require the State Auditor to make audit reports available to the public. Copies of audit reports issued by the Office of the State Auditor may be obtained through one of the options listed in the back of this report.

Respectfully submitted,

Leslie W. Merritt, Jr.

Leslie Merritt, Jr., CPA, CFP
State Auditor

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EXECUTIVE SUMMARY

We conducted an information system (IS) audit at The Department of Transportation (DOT) from March 2, 2007, through August 8, 2007. The primary objective of this audit was to evaluate controls for the Federal Highway Billing System. The application controls tested in this application review were: (a) data completeness, (b) data accuracy, (c) table maintenance, (d) user access, (e) processing, and (f) data backup and recovery. Our conclusions for the application review of the Federal Highway Billing System are organized into these six categories. Based on our objective, we report the following conclusions.

Data completeness controls are designed to ensure that all transactions are entered into the system once and only once, that all errors are corrected without any being lost, duplicated or added, that all transactions are processed, that databases are updated completely, and that all output reports are complete. *Our audit did not identify any significant weaknesses in data completeness controls.*

Data accuracy controls ensure that the details of transactions are entered and processed correctly, and that printed output is not distributed to the user until it is checked for reasonableness. *Our audit did not identify any significant weaknesses in data accuracy controls.*

Systems use tables to make computations and to verify valid codes during data entry. **Table maintenance** controls ensure that tables used in processing include correct and timely values. *Our audit did not identify any significant weaknesses in table maintenance.*

User access controls ensure that only authorized persons are able to inquire about, record, change, or delete data that electronic signatures are used to approve transactions are valid, that only authorized users receive printed reports, and that blank negotiable instruments are protected. *We did not identify any significant weaknesses in to user access controls.*

Processing includes all of the activities associated with running productions jobs. *Our audit did not identify any significant weaknesses in processing.*

Data Backup and Recovery procedures ensure that the system can be restored if a disaster destroys the primary data files. To be effective, the backup data files must be stored in a secure offsite location, and all essential files should be included. The backup tapes should be stored in an environmentally safe facility far enough away from the computer center so that the backups and the center cannot be both destroyed by a single disaster. The Department of Transportation has established alternative procedures or provisions to recover these transactions. *Our audit did not identify any significant weaknesses in data backup and recovery controls.*

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AUDIT OBJECTIVES, SCOPE, AND METHODOLOGY

OBJECTIVES

Under the North Carolina General Statutes Chapter 147-64.6, the State Auditor is responsible for examining and evaluating the adequacy of operating and administrative procedures and practices, systems of accounting, and other elements of State agencies. This IS audit was designed to ascertain the effectiveness of application controls at The Department of Transportation.

SCOPE

Application controls govern whether the design of the critical application control supports management's financial statement assertions and that the controls are functioning effectively. The scope of our IS application controls audit was to review application controls which directly affect the allocation and billing of costs to the federal highway projects. Other IS access control topics were reviewed as considered necessary.

METHODOLOGY

We audited policies and procedures, interviewed key administrators and other personnel, examined system configurations, toured the computer facility, tested on-line system controls, reviewed appropriate technical literature, reviewed computer generated reports, and used security evaluation software in our audit of application controls. We conducted our audit in accordance with the standards applicable to performance audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States and *Information Systems Audit Standards* issued by the Information Systems Audit and Control Association.

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NCDOT has a long history of public service with its roots dating to 1915 in the establishment of the State Highway Commission. In 1941, The General Assembly created the Department of Motor Vehicles, consolidating services previously provided by the Secretary of State and the Department of Revenue. The Executive Organization Act of 1971 combined the State Highway Commission and the Department of Motor Vehicles to form the N.C. Department of Transportation and Highway Safety. In 1979, "Highway Safety" was dropped from the department's name when the Highway Patrol Division was transferred to the newly created Department of Crime Control and Public Safety.

Today, NCDOT employs over 14,000 people with varying skills and backgrounds across the state. NCDOT is divided into 11 main divisions with 14 local division offices under the Division of Highways located geographically throughout the state. These 14 local division offices are responsible for construction, maintenance, roadside environmental programs, traffic services and the fiscal and facility operations involved in administering these functions. Additionally, the Division of Motor Vehicles operates 124 driver license offices, three mobile driver license offices, nine weigh stations, and eight enforcement district offices.

The North Carolina Department of Transportation implemented the Business System Improvement Project (BSIP) in April 2003. This project was to improve the financial-related processes within NCDOT.   The new system contains several modules such as cost distribution, project system and funds management which affect Federal Funding. During the development of the system, Federal Aid Accounting, within the Funds Management Module, was designed to accommodate the Federal and State requirements by establishing records to fund, track and bill project costs. The necessary control and edits were implemented to ensure that costs are billed to the Federal Highway Administration were in accordance with Federal requirements.

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The following audit results reflect the areas where The Department of Transportation has performed satisfactorily or where recommendations have been made for improvement for the Federal Highway Billing System.

APPLICATION CONTROLS

Application reviews consist of determining whether the design of the critical application control supports management's financial statement assertions and that the controls are functioning effectively. These reviews are performed when the auditor intends to rely on an application system control to reduce the amount of substantive testing of details required before rendering an opinion on the financial statements.

DATA COMPLETENESS

Data controls are designed to ensure that all transactions are entered into the system once and only once, that all errors are corrected without any being lost, duplicated or added, that all transactions are processed, that databases are updated completely, and that all output reports are complete. Data completeness is the responsibility of the individual local counties. *Our audit did not identify any significant weaknesses in data completeness controls.*

DATA ACCURACY

Data accuracy controls ensure that the details of transactions are entered and processed correctly, and that printed output is not distributed to the user until it is checked for reasonableness. Data accuracy is the responsibility of the individual local counties. *Our audit did not identify any significant weaknesses in data accuracy controls.*

TABLE MAINTENANCE

Systems use tables to make computations and to verify valid codes during data entry. Table maintenance controls ensure that tables used in processing include correct and timely values. *We did not identify any significant weaknesses in table maintenance.*

USER ACCESS

User access controls ensure that only authorized persons are able to inquire about, record, change, or delete data that electronic signatures are used to approve transactions are valid, that only authorized users receive printed reports, and that blank negotiable instruments are protected. *We did not identify any significant weaknesses in user access controls.*

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PROCESSING

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Processing includes all of the activities associated with running productions jobs. *Our audit did not identify any significant weaknesses in processing.*

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DATA BACKUP AND RECOVERY

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Data Backup and Recovery procedures ensure that the system can be restored if a disaster destroys the primary data files. To be effective, the backup data files must be stored in a secure offsite location, and all essential files should be included. The backup tapes should be stored in an environmentally safe facility far enough away from the computer center so that the backups and the center cannot be both destroyed by a single disaster. *Our audit did not identify any significant weaknesses in data backup and recovery controls.*

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