Department of Transportation
Maintenance and Operations

July 1, 2000 to December 21, 2001

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President of the Senate

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President of the Senate

The Honorable Albio Sires  
Speaker of the General Assembly

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Executive Director  
Office of Legislative Services

Enclosed is our report on the audit of the Department of Transportation, Maintenance and Operations for the period July 1, 2000 to December 21, 2001. If you would like a personal briefing, please call me at (609) 292-3700.

April 4, 2002
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Department of Transportation
Maintenance and Operations

Scope

We have completed an audit of the Department of Transportation, Maintenance and Operations for the period July 1, 2000 to December 21, 2001. Our audit included financial activities accounted for in the state’s General Fund, the Special Transportation Fund, and the 1999 Statewide Transportation and Local Bridge Fund.

Annual expenditures during the 18 month audit period were $113 million. The prime responsibility of Maintenance and Operations is the maintenance of state roads, bridge and railroad properties, and ensuring safe and efficient movement of traffic. Annual revenues were $1.4 million during our audit period and the major components of revenue were highway permits and fees. Our audit excluded payroll expenditures which was audited as part of another audit.

Objectives

The objectives of our audit were to determine whether financial transactions were related to the agency's programs, were reasonable, and were recorded properly in the accounting systems. We also tested for resolution of significant conditions noted in our prior report.

This audit was conducted pursuant to the State Auditor's responsibilities as set forth in Article VII, Section 1, Paragraph 6 of the State Constitution and Title 52 of the New Jersey Statutes.

Methodology

Our audit was conducted in accordance with Government Auditing Standards, issued by the Comptroller General of the United States.

In preparation for our testing, we studied legislation, administrative code, circular letters promulgated by the State Comptroller, and policies of the agency. Provisions that we considered significant were
documented and compliance with those requirements was verified by interview, observation, and through our samples of financial transactions. We also read the budget message, reviewed financial trends, and interviewed agency personnel to obtain an understanding of the programs and the internal controls.

A nonstatistical sampling approach was used. Our samples of financial transactions were designed to provide conclusions about the validity of transactions as well as internal control and compliance attributes. Sample populations were sorted and transactions were judgmentally selected for testing.

To ascertain the status of findings included in our prior report, we identified corrective action, if any, taken by the agency and walked through the system to determine if the corrective action was effective.

**Conclusions**

We found that the financial transactions included in our testing were related to the agency's programs, were reasonable, and were recorded properly in the accounting systems. In making this determination, we noted certain internal control weaknesses meriting management’s attention.

We also found that the agency has not resolved the significant issues involving the maintenance management system noted in our prior report. This issue has been updated and restated in our current report.
Efforts by the department to fully execute the energy efficient upgrade program will result in significant cost savings of public funds.

Traffic Signals

The department is responsible for the repair and maintenance of 2700 traffic signal intersections. The burden of the utility costs for those signals are either paid for by the state or municipal government. Commencing in 1997, utility companies offered an incentive to their customers, through a cost sharing program, to convert these signals to a more energy efficient light bulb called a light-emitting diode (LED). A state statute, NJSA 27:1B-21.21, enacted in 2000 required the department to replace the existing incandescent light bulbs with the LED in anticipation of the operational energy savings over its life cycle.

As of the end of our audit field work, we found that the department completed LED installations at one-third of the intersections with no further plans to move forward through the end of calendar year 2002. Our analysis of the life cycle cost of LED (seven years) compared to the cost of incandescent bulbs for the remaining 1,800 intersections disclosed a potential cumulative cost savings of $7.2 million once this conversion occurs. (See chart below).

Life Cycle Cost of LED vs. Incandescent
Recommendation

We recommend the department expedite the installations so that the potential savings related to the conversion can be realized.

Auditee’s Response

Concerning the conversion of incandescent bulbs to LED’s at the approximately 1,800 intersections that had not previously been done, we have advertised contracts, and an in-house plan to convert those intersections to LED’s has been developed. I want to stress that the potential savings of $7.2 million listed in the report is not just NJDOT savings, but represents potential savings from reduced utility costs to local and county government entities over the seven-year period. Also, until this fiscal year, there was no funding available within NJDOT for the conversion of intersections to LED elements. Labor and equipment costs for the conversion must also be factored into any potential savings.

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Contracted Services for Snow Removal

The department is responsible for snow removal on 250 sections of roadway throughout the state. Vendors are hired to provide this service in certain circumstances. Those vendors are contracted either through a competitive advertised bid resulting in a three-year contract or through an annual waiver agreement (non competitive means). Sections not awarded during that first year of the contract are procured through advertised bid after that year. In this way, the department makes an effort to reduce the number of sections covered through the waiver agreements. Only 50 percent of the sections were awarded competitively during that first year. Second year procurements increased contractual coverage to
75 percent. However, the increased efforts are still deemed untimely.

Agency personnel had not evaluated the per hour charges for the waiver agreement in the last five years. Our analysis found that the state is paying 16 percent higher per hour charge under the waiver agreements when compared to the average contract amount. Thus, it is costing the department an additional $600,000 for services acquired in this manner over the one-year period.

**Recommendation**

We recommend that the procurement process be completed within a sufficient time when uncovered sections could be contracted prior to the beginning of the snow season. We also recommend that the department re-evaluate the per hour waiver pricing amounts and utilize a more reasonable methodology to achieve additional cost savings when competitively bid contracts can not be obtained.

**Auditee’s Response**

We are discussing with the Purchase Bureau in the Department of the Treasury ways in which we could improve our contracted snow removal services. Treasury has cited staffing issues as an impediment to bidding the sections twice prior to the winter season. Those same staffing issues exist in NJDOT, as additional staff would be needed to bid snow contracts twice annually. Snow contracts are very involved, and analysis of bids is very time consuming for staff at both agencies. NJDOT has attempted to advertise and award snow contracts earlier each year during the past three years. It was hoped that by doing so, NJDOT would not be rushing to deliver snow equipment during the snow season, but rather, would have all equipment in place with all contractors hooked up, trained and ready at the beginning of the snow season. NJDOT was not successful in the effort because snow contracts are not a priority in mid-summer for Treasury. The resources available to perform the functions are not adequate within
The state would avoid $2.4 million in costs as well as receive an environmental benefit by implementing options available under the federal regulations.

Treasury to do it earlier. As a result, NJDOT starts the snow season without the required contractors.

The savings cited in the audit report are not accurate. Winters in New Jersey are not constant and costs fluctuate from year to year based on the frequency of storms and severity. The savings quoted in the report represent savings that could be realized if every section were to be awarded based on having two bids. Additionally, the report assumes that a particular number of hours will be spent on snow, as the contracts are hourly contracts. In reality, this is not likely to happen, as many sections do not get awarded even after bidding them in the third year of a contract. Actual savings, if any, are unknown and may not materialize. It must be understood that NJDOT is not in control of the bid process, that the contractor resource pool is a finite pool, and that the start, end and severity of the winter changed annually. To forecast a savings that has these variables is not something that NJDOT can agree to.

Alternative Fuel Program

The federal Energy Policy Act of 1992 (EPACT) and the Governor’s Executive Order provide for the purchase of alternative fuel vehicles (AFVs). In New Jersey, strict compliance with federal regulations to purchase AFVs is mandated even though EPACT provides for other options. Consideration of other alternatives, such as using bio-diesel fuel at the department, could result in $2.4 million in cost avoidance for the state.

New Jersey selected compressed natural gas (CNG) as its alternative fuel. Currently, there is only one functioning re-fueling station for its fleet, which is located at the department headquarters in Trenton. As such, limited use of CNG has occurred for the department’s dual-fuel vehicles. As of October 2001,
38 percent of the department’s dual-fuel vehicles had never been filled with CNG and operated exclusively on unleaded gasoline. As a result, the department incurred $400,000 in incremental costs for vehicles being operated solely on gasoline from which it received no environmental benefit. This is due to a lack of infrastructure needed to fuel the vehicles.

The AFVs were designed to improve air quality in New Jersey. We found that the department is not accomplishing this objective in over 85 percent of the time AFVs are in use. (See following chart).

In our audit report of the Alternative Fuel Program, dated October 2000, the Department of Treasury responded that the state developed a strategy to implement an appropriate infrastructure for fueling the AFVs. This involved the use of private sector AFV facilities and the installation of necessary improvements at facilities throughout the state. As of the end of our fieldwork, the department and other state agencies had not participated in the use of private sector facilities, nor have any improvements
or installations been completed at the department facilities.

**Recommendation**

We recommend that the Governor’s Executive Order be modified to permit the state to avail itself of the options available under EPACT, including the increased usage of bio-diesel fuel. The state should pursue these alternatives until an adequate infrastructure is developed for the AFV fleet.

**Auditee’s Response**

We are in complete agreement about the alternative fuel program. We have an issue concerning expanding our use of biodiesel throughout other areas of the Department in that it costs approximately twice as much as regular diesel fuel. Without funding supplements to cover the extra cost of the biodiesel, we do not have enough funding in our fuel account to expand its use. Requests have been made of this Treasury Program to fund the additional costs; however, no funding has been made available.

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**Maintenance Management System**

In September 2001, the department entered into an agreement with a third party to implement an automated Maintenance Management System (MMS). As recommended in our July 1997 audit report, such a new system would enable the agency staff to plan, monitor and control the maintenance function in an accurate, efficient and timely manner. This agreement was done by way of a contract modification for $2.7 million to an existing feasibility study.

Our review of the contractual terms disclosed deficiencies, thereby putting the interest of the state at risk. Missing clauses include: prior approval by agency personnel for vendor staff substitution; retainage of funds until product satisfaction by the agency; state ownership disclosure of the source code; and responsibility along with accountability by
the vendor to assure that the system works. Therefore, the contract does not provide sufficient assurances that the product will meet expectations.

When brought to management’s attention, efforts were made by agency personnel to correct the deficiencies noted, by defining the roles and responsibilities of all parties in the work plan and licensing agreement.

**Recommendation**

We recommend that the vendor’s performance be closely monitored by agency staff. Such activity is required in order to keep the project on track, and give the agency the ability to make swift corrective action when issues arise.

**Auditee’s Response**

The recommendation that the Maintenance Management System vendor’s performance be closely monitored has been in effect since the beginning of the contract. At one point NJDOT refused to authorize payment for work performed, and the contract was almost terminated due to philosophical differences between contractor personnel and NJDOT project management personnel. Those differences have been resolved and the project is back on track. However, other issues pertaining to funding and logistics still threaten the success of the project as it pertains to the features inventory data collection.

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**Inventory**

In fiscal year 2001, the department expended $5 million for vehicle parts, tools, and maintenance of equipment which are the responsibility of the department’s 12 garages. Until this year, physical inventory counts were not performed at any of the garages for over a period of 10 years. During our audit period, an attempt to physically count inventory at 6 of the 12 garages was made by the agency. However, the data obtained was not effective for analytical purposes and discrepancies
noted were not resolved. Proper and timely physical inventory counts and an analysis of the variances are necessary internal control functions in safeguarding assets.

**Recommendation**

We recommend that the department establish and implement an inventory control process for the garages which properly safeguards its assets.

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**Preventative Maintenance**

The department has internal policies and procedures regarding the preventative maintenance for its vehicles. Timely preventative maintenance, which includes oil changes, lubrication of parts, brake checks, engine inspections, etc., increases a vehicle’s longevity and overall performance. Our test of records for 170 vehicles indicated that 22 percent had not received any type of preventative maintenance during the last two years. Effective management oversight of agency staff, including preventative maintenance reports on the fleet, would provide additional assurance of safeguarding the vehicular assets.

**Recommendation**

We recommend that the department enforce its internal policies and procedures regarding preventative maintenance to assure the safeguarding of vehicular assets.

**Auditee’s Response**

Preventive maintenance schedules are established annually; however, many equipment repair facilities are not able to perform the preventive maintenance for two reasons. First, many people who are assigned vehicles, as well as pool coordinators, do not bring their vehicles in for scheduled maintenance. There
exists no method to readily track or enforce compliance. It is expected that tracking compliance with preventive maintenance schedules will be feasible when the new fleet management system comes online, provided adequate staff is available to contact each person when the time has passed.

Internal Controls

According to departmental policy, various units receive cash receipts as part of their normal operations. Several units have one individual opening the mail, recording the receipt, maintaining the related documentation and forwarding the receipt to the cashier for depositing. The risk of errors and irregularities occurring is increased by this lack of segregation. A proper system of internal control requires separating the receiving of the receipts from the recording.

Recommendation

We recommend the department modify their procedures to include a proper segregation of duties to minimize the risk of errors and irregularities occurring and going undetected.

Auditee’s Response

It is recognized that several units, namely our regional permits units, have one individual opening the mail, recording receipts, and maintaining related documentation, as well as forwarding the receipts to the cashier. Segregation of these functions is not possible, as the administrative units in all areas of this agency have been downsized, leaving only one person in the permits unit to do that work. Additional staffing would be necessary in order to segregate the duties and reduce our risks. In order to compensate for this internal control weakness, additional supervisory oversight is utilized to minimize the associated risk.