

INTERNAL AUDIT REPORT

CITY OF MANCHESTER

NEW HAMPSHIRE



*Traffic Department Performance Audit
June 2006*

Prepared by
City of Manchester, NH
Office of the Independent Auditor

**INTERNAL AUDIT REPORT
CITY OF MANCHESTER, NEW HAMPSHIRE
TRAFFIC DEPARTMENT PERFORMANCE AUDIT
JUNE 2006**

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*Committee on Accounts, Enrollment and Revenue Administration
City of Manchester, New Hampshire
Honorable Aldermen: Pinard, Osborne, Devries, Long and Thibault*

Dear Honorable Committee Members:

At the January of 2005 meeting of the Committee on Accounts, Enrollment and Revenue Administration, an audit plan was accepted by the Committee. The plan was based on risk of the auditees and is adjusted annually for changes happening at the Departments. Due to the retirement of the Traffic Department's Director the audit of the Traffic Department was selected for a performance audit. A performance audit systematically examines evidence to independently assess the performance and management of a program against objective criteria. Performance audits provide information to improve program operations and facilitate decision-making.

The audit studied the efficiency and effectiveness of operations at the Traffic Department and looked at information from July of 2003 to December of 2005.

The audit procedures began with a documentation and evaluation of the internal control structure in place during the audit period. The audit also looked at State and City laws and regulations in force during the audit period. Department Personnel were interviewed, as were personnel from other communities and departments. An analysis was done on the workload and efficiency over the different activities at the department and effectiveness of the activities to meet department goals.

Conclusion

The audit revealed eight reportable conditions. Observations 2, 3, and 5 concern issues with the internal control system that reduces the ability of the department to detect errors and irregularities in a timely manner. The remainder of the observations reveals possible inefficiencies in procedures at the department that should be addressed in order to improve services or reduce costs.

In general the department has achieved the goals to support its mission within the City government with a minimal staff and within budgetary constraints. Parking revenues have only decreased slightly despite the sale of revenue producing assets. Expenditures have decreased overall due to the sale of the assets as mentioned above and have generally been well managed in other areas. Of particular note is a large decrease in utility expenses due to an energy conservation program in the department.

The draft audit report was sent to the Traffic Department for review and comment. The observations generated and the auditee written responses are included on pages five through twenty-four. The auditee responses indicate general agreement with the report recommendations and states that corrective action will or have been taken. This audit was done under some adverse conditions at the department due to the reorganization that was taking place during fieldwork and I appreciate the courtesy and cooperation of the staff and administration of the Traffic Department on this assignment. At all times they acted in the highest professional manner throughout the course of the audit.

Kevin M, Buckley CPA
Independent City Auditor

June 7, 2006

INTRODUCTION

AUDIT BACKGROUND

At the January of 2005 meeting of the Committee on Accounts, Enrollment and Revenue Administration, an audit plan was accepted by the Committee. The plan was based on risk of the auditees and is adjusted annually for changes happening at the Departments. Due to the retirement of the Traffic Department's Director, the audit of the Traffic Department was selected for a performance audit. The Independent City Auditor of the City of Manchester has been designated by state law, city charter and local ordinance with the authority to conduct such examinations and audits.

My audit was conducted in accordance with standards applicable to performance audits contained in Government Auditing Standards, issued by the Comptroller General of the United States.

AUDIT SCOPE AND OBJECTIVES

This audit was a performance audit designed to report on efficiencies in the design and operation of the Traffic Department.

I looked at financial and performance data where available for fiscal years 2003, 2004, 2005 and the first six months of fiscal year 2006. Where appropriate data was collected and analyzed on a calendar year basis in order to more accurately reflect seasonal activity. Areas selected for examination were:

- Administration and Management
- Vehicle Usage
- Pavement Marking
- Traffic Signalization Repair and Maintenance
- Parking Meter Repair and Maintenance

Issues related to the City owned garages, parking lots and street parking were discussed in a recent report of the Downtown Manchester Parking Study performed by the Lansing Melbourne Group and were excluded from testing here.

The results of my testing and the related observations and recommendations are included in the report that follows.

BACKGROUND OF AUDITEES

Mission Statement

The Traffic Department reviews, measures and recommends ordinances to regulate parking and traffic for adoption in accordance with all Federal, State and City laws and as directed by the Board of Mayor and Aldermen.

The Traffic Department Installs and Maintains all traffic control devices in the City for the safety of the general public as requested by the Board of Mayor and Aldermen, Federal and State agencies and all measures are taken to minimize pollution sources by changing to non pollution materials when possible. Pollution prevention is emphasized during yearly training. Recycling of materials is of primary importance.

SOURCE: Traffic Department web site.

Organization and Personnel

The Traffic Department, created in 1969, is a department of the City of Manchester and is accounted for in the General Fund of the City.

The Traffic Department consists of four main functional areas, Administration and Management, Signs, Signals and Meters. The duties and personnel of the four main functional areas are:

Administration and Management consists of the Director (vacant), Deputy Director and one Administrative Services Manager. This office controls the financial and administrative functions for the other 15 employees. The Administrative Services Manager does all the data entry and cash handling duties for the entire department.

Signs consist of 1 supervisor and 6 employees. This division is responsible for painting new street signs, and installing the signs. During the 18 months ended December 31, 2005 the BMA passed 160 ordinances requiring installation or changes to signage and parking meters. They also paint the road markings for the 387 miles of road under control of the City and plow and shovel all surface parking lots and the remaining City owned Garage. Snow removal from the lots is contracted out to a private company.

Signals consist of 1 supervisor and 2 signal technicians. These employees install, repair and maintain all traffic control devices throughout the City. The City has traffic control devices at 151 intersections and flashing beacons at an additional 41 intersections.

Meters consist of one supervisor and a technician. They are responsible for installing, repairing, maintaining and collecting revenue from 2,492 parking meters throughout the City.

All three supervisors are working supervisors who go into the field and perform much of the same functions as the technicians. The work force is very experienced with an average length of City employment of over 20 years.

FINANCIAL ACTIVITY

The Department had actual revenues and expenditures during the fiscal year ended June 30, 2005 of \$4,186,088 and \$3,139,517 respectively.

Revenues

Revenues by Function for Fiscal Years 2003, 2004 and 2005

Description	2003 Actual	2004 Actual	2005 Actual
Parking Meters	\$ 731,713	\$ 734,528	\$ 676,503
Civic Center	426,605	293,007	256,346
Daily Revenue	-0-	37,687	-0-
Daily Revenue Card Lease	-0-	2,060	20
Parking Permits	1,423,654	1,640,135	1,725,029
McQuades Leases	(82)	-0-	-0-
Card Lease	485,151	507,089	374,551
Monthly Revenue Lease	838,191	671,506	701,001
Lease	191,468	203,914	217,598
Meter Hood	13,026	16,650	29,237
PARKING	<u>\$ 4,109,726</u>	<u>\$ 4,106,576</u>	<u>\$ 3,980,285</u>
Repair Traffic Signals Admin	2,718	3,996	2,001
Repair Traffic Signals State Traffic	4,875	2,964	7,490
Reimbursement	26,508	7,190	25,530
Auto Registration - Parking	174	57,447	169,796
Salvage	905	994	929
Other Fees	43	258	57
Miscellaneous Reimbursement	10,188	1,660	-0-
TOTAL REVENUES	<u>\$ 4,155,137</u>	<u>\$ 4,181,085</u>	<u>\$ 4,186,088</u>

SOURCE: HTE INFYSYS module Budget Summary Reports

Ninety five percent of revenues were derived from parking fees, leases and permits. The remaining five percent was from various reimbursements and auto registration fees. Fees from auto registrations have increased from \$57,477 collected in FY 2004 to 169,796 in FY 2005. This \$2 fee is charged to each automobile registration for the construction, operation and maintenance of parking facilities.

Expenditures

Expenditures by Function for Fiscal Years 2003, 2004 and 2005

	2003 Actual	2004 Actual	2005 Actual
Garages	\$ 1,421,075	\$ 1,360,330	\$ 1,292,181
Admin & Mgt	963,075	898,336	899,010
Signs	402,393	521,325	490,338
Signals	249,515	279,689	313,759
Meters	135,694	182,034	144,230
TOTAL	\$ 3,171,752	\$ 3,241,714	\$ 3,139,518

SOURCE: HTE INFYSYS module Budget Summary Reports

The garage expenditures consist of payments to the management companies who run the Center of New Hampshire, Canal Street and Victory Garages and lease payments to Wall Street and Numerica garages for use of parking spaces. Lease payments make up approximately 40% of garage expenditures. The Canal Street Garage was sold in fiscal year 2004 and the Center of New Hampshire Garage was sold in fiscal year 2006.

Garage Expenditures Fiscal Years 2003, 2004 and 2005

	2003 Actual	2004 Actual	2005 Actual
Wall St Garage	\$ 504,032	\$ 503,717	\$ 481,659
Numerica Garage	30,717	31,191	40,550
CNH Garage	450,544	478,663	471,151
Victory St Garage	221,532	258,155	298,821
Canal St Garage	214,250	88,604	-0-
TOTAL	\$ 1,421,075	\$ 1,360,330	\$ 1,292,181

SOURCE: HTE INFYSYS module Budget Summary Reports

Excluding fees paid to the garages, expenditures consist mostly of salaries and benefits (52%) and contracts (33%). Contracts consist almost entirely of payments to SMG for their share of parking revenues collected during events held at the Verizon Arena.

Of particular note is the significant decrease in utility costs since fiscal year 2001. In FY 2001 electricity costs associated with the Traffic Signal Division totaled \$122,658 and have steadily decreased to \$61,545 during FY 2005. This decrease is due to a very successful energy reduction program where the department replaced high-energy bulbs with low energy LED lights through a rebate program from PSNH.

Expenditures (Excluding Garage and Parking Leases)

Description	2003 Actual	2004 Actual	2005 Actual
Salaries and Benefits	\$ 831,584	\$ 976,786	\$ 1,014,443
Contracts	654,780	559,047	568,162
Construction Material	93,228	187,915	130,179
Utilities	87,984	77,026	66,740
Other Contracted Services	70,339	65,213	44,868
Other Expenses	12,763	15,398	22,944
Total Expenditures	\$ 1,750,678	\$ 1,881,385	\$ 1,847,336

SOURCE: HTE INFYSYS module Budget Summary Reports

OBSERVATION 1 SNOW REMOVAL:

The department is responsible for snow removal from the City's parking lots and garages. It is important that snow be removed from the lots in a timely manner in order to maximize the number of spaces available for customers who lease spaces in the lots. The Department has elected to bid out the snow removal services to a private vendor. The contractor charges an hourly rate to remove the snow. The cost to the City was \$61,633, \$54,695 and \$37,325 for fiscal years 2003, 2004 and 2005 respectively. The Traffic Department lacks the equipment to efficiently remove the snow in a timely manner however, it may be possible to have another department with equipment such as the Highway Department or Parks and Recreation Department remove the snow.

RECOMMENDATION:

The Department should explore the feasibility of using City labor to remove the snow thereby relieving the need to pay an outside vendor for the service.

AUDITEE RESPONSE:

Snow removal operations will be under the new Parking Division 7/1/06 and the new Parking Manager will determine this recommendation.

Capital Assets

The following table shows the capital assets recorded in the HTE Continuing Property Records module at June 30, 2005 that are under the control of the Department.

CAPITAL ASSETS AT JUNE 30, 2005

Buildings	\$ 9,892,097
Equipment	240,436
Improvements	1,853,279
Land	3,012,727
Vehicles	305,043
TOTAL CAPITAL ASSETS	<u>\$ 15,303,582</u>

SOURCE: HTE Continuing Property Records module

Included in buildings is \$6,609,503 for the Center of NH Garage that the City sold at the end of calendar year 2005. Currently the only buildings that the department controls are the Traffic Department maintenance facility and office and the Victory Garage.

The department is in control of 9 surface parking lots throughout the downtown area. Six lots have parking meters (225 spaces) but the majority of the revenue overall comes from parking leases (1,230 leases). The department also has meters at 2,095 street parking spaces.

The department had 11 vehicles in its fleet, 9 special purpose vehicles and 2 recycled police cruisers used for personnel transportation. While both cruisers were technically pool cars one was assigned to the Director and one to the Deputy Director who were the main users. All vehicles are kept at the Department's garage.

OBSERVATION 2 CAPITAL ASSET RECORD KEEPING:

Each department is responsible for updating the capital asset records in the Continuing Property Records (CPR) module for all capital assets under its control in a timely manner. The only exception to this is that all vehicles are under the control of the Highway Department. The Highway Department is charged with the responsibility for the upkeep of all vehicles in the CPR module. Our testing at the Traffic Department revealed the following errors in the CPR module.

The Canal Street Garage was sold in December of 2003 and the following equipment relating to the garage is still recorded in CPR:

807-000001	Cintac II Main Frame	\$ 8,085
807-000007	Ticket Printer	\$ 5,050
807-000008	Ticket Printer	\$ 5,050
TOTAL CANAL ST GARAGE		<u>\$ 18,185</u>

At December 31, 2005 there were four vehicles that the Traffic Department had in its fleet that were not in the CPR module:

TR-27	1994 GMC Pickup	\$15,500
TR-31	2000 Ford Stake Body	\$30,700
TR-32	2000 Ford Van	\$16,200
TR-33	2001 Ford 4X4 with Plow	<u>\$27,900</u>
Total not in inventory (est.)		\$90,300*

*Cost from these vehicles is an estimate based on similar vehicles in the City's fleet.

The Center of New Hampshire parking Garage was sold in January of 2006. As of April 26, 2006 the garage and associated assets were still in the CPR module and need to be removed prior to the year-end closing.

TOTAL CNH GARAGE \$ 6,644,502

RECOMMENDATION:

The department should establish procedures to ensure that all additions and deletions of capital assets are entered correctly and in a timely manner to the CPR module. Even though entering information regarding vehicles is the responsibility of the Highway Department all departments upon receiving or disposing of vehicles should check the CPR module to ensure that the vehicle transaction had been entered correctly.

AUDITEE RESPONSE:

In defense, Traffic Dept. was kept out of the loop when Canal Garage was sold, and not sure where that equipment ended up. Traffic Dept. will establish procedures to ensure that additions deletions of cap. Assets are entered into CPR module – eff. 7/1/06 – will be Highway responsibility with consolidation.

Consumable Inventory

The department has several rooms of consumable inventory available for its daily usage. Inventories held at the department include paint for road marking, sign blanks, finished signs, parking meters and traffic signals. The dollar value of items in inventory fluctuates throughout the year but is in the thousands of dollars on any given day.

OBSERVATION 3 CONSUMABLE INVENTORY CONTROLS:

The Department maintains an inventory of both sign blanks and finished signs. Periodically a count will be made of all sign blanks and if it is determined that there is a need for more an order will be placed. If the City needs a sign and they do not carry it as a stock sign in the finished inventory a work order will be given to the sign painter who will go to the store room and remove the necessary sign blanks. After painting he puts the finished sign in the finished sign inventory and places the work order in the out box for the employees who install signs. The installers will take the work order to the supervisor who will remove the signs from inventory and give them to the work crew for installation.

The department does not maintain a formal written inventory of blanks or finished signs and does not require that signs be recorded as being put into or taken out of inventory. The only written record is the work orders. This makes it very difficult to analyze the sign making process and determine meaningful performance indicators such as the number of signs installed or number and type of signs painted during a given time period or cost per unit. It also makes it impossible to determine if all signs were used for legitimate City jobs.

Similar problems occur in inventories of paint, parking meters and traffic signals.

RECOMMENDATION:

The Department should formalize procedures for controlling its consumable inventory.

AUDITEE RESPONSE:

The Department will formalize procedures for controlling its consumable inventory

VEHICLE USAGE

The Traffic Department, as of December 31, 2005, had a fleet that consisted of 11 vehicles. The make up of the fleet is as follows:

- 2 sedans used by Administrative Staff for transportation
- 2 vans, 1 used by Meter Division and 1 used for lot clean up
- 1 paint truck with compressors and painting equipment
- 1 bucket truck used to service and install traffic signals and signs
- 1 stake body truck used by the sign crew
- 4 pickups used for various jobs

One of the pickup trucks is stored and used exclusively by the Victory Garage. When the City owned the Canal Street and CNH Garages it was also used at these two garages.

Expenditures and cost per mile were calculated using FY 2005 data in order to examine an entire year of expenditures. For some vehicles it was necessary to use data from part of FY 2006 in order to get a full year of expenditures.

Total operating costs for all vehicles during FY 2005 were \$ 28,075 which includes \$63 spent on a Bob Cat loader and approximately \$900 in fuel used at the Victory Garage for other equipment such as a sweeper, golf cart, snow blower and power washer. Maintenance costs for the fleet was not excessive during the fiscal year tested.

OBSERVATION 4 VEHICLE EFFICIENCY:

All vehicles are special purpose vehicles except the two sedans that are used by administrative office personnel for local transportation. Per mile cost was calculated and compared to the IRS reimbursement rate of 44.5 cents per mile. Neither of the cars used by the Administrative Office appears to cost less to run per mile than the IRS rate. Vehicle TR-35 had a cost of \$.98/mile and TR-36 had a cost of \$.55/mile to operate during FY 2005. Vehicle TR-35 had operating costs alone (fuel and repairs) that exceeded the IRS mileage rate.

The truck that is garaged at the Victory Garage was used less than 1,000 miles in FY 2005 and as such has an extremely high per mile rate and very low utilization.

All other vehicles are special purpose vehicles that appear to be used on a daily basis and did not appear to have excessive maintenance costs during FY 2005.

RECOMMENDATION:

The truck housed at the Victory Garage does not appear to be needed as it gets very little use except for the occasional snowstorm and should be declared surplus by the department.

It is questionable as to whether either of the cruisers is needed by the department but at the very least the older cruiser that has required excessive maintenance costs should be declared surplus. It does not appear that the department needs more than one vehicle for the office use.

AUDITEE RESPONSE:

The truck housed at the parking garage should be declared surplus from the Traffic Department. The new Parking Division may have a need for it. We agree the office needs one vehicle for office use.

Fuel Usage

The Traffic Department used 8,679 gallons of fuel during FY 2005. The Department fills up its fleet at the Highway Department garage using the Gas Boy system. Under this system each operator is issued a gas card and each vehicle is issued a vehicle card. In order to dispense fuel both cards need to be swiped. This enables the system to record both the vehicle being fueled and the operator doing the fueling. The system has controls that require the operator to enter the odometer or hour usage meter reading prior to dispensing fuel. The use of the cards and entering meter readings are valuable internal controls that enables the system to generate reports used to determine the efficiency of the vehicles and identify vehicles that are too expensive to maintain. It also ensures that only authorized personnel are using the pumps to fuel City vehicles. When used properly monthly reports can show how often a vehicle is being used and by comparing the miles per gallon each month it can detect if an employee is using his/her card to fuel other than City vehicles.

OBSERVATION 5 GAS BOY CONTROLS NOT WORKING:

Out of the 12 vehicles in use during the audit period tested it was noted that 8 of the vehicles did not have odometer readings entered prior to fueling. Upon inquiry it was discovered that the control to require this information has never been used and that no one has been required to enter mileage in order to get fuel. The only vehicles that consistently entered mileage information correctly were the sedans used by the administrative office.

It was also noted that the personnel at the Victory garage have been entering the fuel used for equipment other than the garage truck on the truck's fuel card.

RECOMMENDATION:

The system should be set up to require that mileage be entered prior to dispensing fuel and that the mileage entered meets preset parameters. For example the entered mileage has to be greater than the previous mileage and not any greater than an acceptable range for that vehicle.

All personnel who are authorized to use the system need to be properly trained in the use and importance of entering data correctly.

Separate cards should be issued for gas cans and small engine equipment and fuel for these items should never be entered using a vehicle's card. This card should be under the control of one assigned individual and kept in a secured area when not in use.

AUDITEE RESPONSE:

We have issued separate cards for gas cans and small engine equipment and fuel for these items. This card is under the control of one assigned individual and kept in a secured area when not in use.

We have instructed personnel to enter all data when filling up.

ADMINISTRATION AND MANAGEMENT

The Traffic Department is a separate department of the City of Manchester with both a Director and Deputy Director. From a search of 5 northern New England cities all had the traffic functions incorporated into the public works department. A quick survey of the National Association of Local Government Auditors members showed 11 of 11 cities responding had the traffic functions as a part of the public works department. One city, Berkeley California had a separate Traffic Department but recently merged them with the public works department in a cost saving maneuver.

The Traffic Department has 5 employees at the supervisor level or higher. Management consists of a Director, a Deputy Director and three supervisors. All three supervisors are working supervisors who, in addition to supervisory duties, perform job duties alongside the employees they supervise.

The Maintenance Supervisor in the Signs division is in-charge of 6 employees and his duties include signage, pavement marking and parking lot maintenance.

The Signal supervisor is in-charge of 2 workers and controls the work of maintaining and repair of the 151 intersection signals.

The Meter supervisor is in-charge of 1 employee and controls the collection, repair and maintenance of parking Meters.

OBSERVATION 6 HIGH RATIO OF SUPERVISORY EMPLOYEES:

The Meter Supervisor appears to mostly work at the collecting, repair and maintenance of parking meters and performs little supervisory duties. The Meter Post Supervisor formerly was also responsible for the counting and preparation of the coin deposit. Currently the collected coins are picked up from the office by an armored car service and counted at the bank.

The ratio of supervisory level to technical and support employees is 1 supervisory level employee to every 2.2 support and technical employees. Of all departments in the City, Traffic has one of the lowest ratios. This is partially due to the low number of employees. The department is the 12th smallest (out of 25) departments in the City.

RECOMMENDATION:

With the upcoming realignment of the Department it is recommended that the City look at the necessity of the number of supervisors used in the department. It does not appear to be necessary to have both a Director and Deputy Director in a department with so few employees and relative simplicity of operations. The supervisory function for the parking division should rest with the new head of the division who can manage both the parking garage and the meter technicians.

AUDITEE RESPONSE:

The Traffic Department is consolidated under Highway Department 7/1/06 and Director and Deputy Director positions have been eliminated. Parking Meter supervisor position has been downgraded to Parking Meter Technician and has been transferred to new Parking division under MEDO.

PARKING METERS

The two employees of the Meter section are charged with the collection, maintenance and repair of the city's 2,492 parking meters. The City has 1,171 2-hour meters and 1,321 10-hour meters. On average the coins from the meters are collected weekly. Some routes such as the Millyard, where most parking is by permit, the collections are less frequent. The meters have a plastic coin container that connects to and empties into the collection cart. The employee does not come into contact with the coins during the collection process. The collection cart is brought into a secured coin room, which is always locked and has security cameras that constantly monitor the room. The coins are put into heavy gauge plastic collection bags for pick up by an armored car service. The bank counts the coins and notifies the business office of the amount of the daily collection.

The meters require regular cleaning, lubing and battery replacement. Batteries are replaced when they go bad and cleaning and lubing is done annually.

Complaints concerning broken or malfunctioning meters are received in the office and a complaint sheet is filled out and given to the technicians. The technicians then go into the field to fix or replace the meter.

A majority of broken meter calls are from citizens who have been ticketed and are disputing the ticket due to the meter not working properly or from the enforcement officers who have noticed the malfunctioning meter. All meters are older electronic meters. A majority of these meters only take quarters, the exception being the meters on Elm Street. When other coins are used the meter will take the coin but not register the transaction. The person who is parking will call claiming that the meter is not working. There are also many meters that get jammed with foreign objects and batteries that go dead. When a battery goes dead the meter will still accept coins but will not register the time. As the battery gets low the meter will start to not register some transactions but will work fine when they are checked. Other than a jammed meter the meter will still be available to accept coins.

When the meter technicians get the daily repair log they will check the meter and note the date the complaint was fixed and the outcome of the inspections. Outcomes fall into 5 categories:

- **REPLACED BATTERY** – The technician either found the battery to be dead or had been giving a low battery signal and had complaints of not recording a transaction.
- **JAMMED METER** – Foreign object lodged in the coin slot and meter is inoperable. In most cases the technician can clear the object but some cases require that the meter be replaced.
- **REPLACE METER** – Meter is inoperable and cannot be repaired in the field or has had several complaints and all efforts to repair have not worked. In most cases the meter is still receiving coins but recording the transaction.
- **RESET METER** – Sometimes a meter will have a temporary problem and will show an error light on the display. After the error the meter may continue to work so the technician will hit the reset button to clear the error light.
- **METER OPERATIONAL** – When the technician checked the meter they could not find a problem. Quite often this is due to using nickels and dimes or Canadian coins in a meter that takes only quarters.

It is the Division’s goal to address all complaints within one business day. The technicians collect coins during the morning and after the armored car service picks up the coins they spend the afternoon clearing complaints. In most cases they will take the previous days complaint log and fix all the complaints during the afternoon shift. If a log sheet from the current day is full by the time the armored car service picks up the day’s collections, they will take that complaint sheet and clear the complaints the same afternoon. All logs from Police and the Ordinance Violation Bureau are received the morning after they are recorded by the officers and cleared the same afternoon they are received.

From all complaints reported during calendar year 2005 a spreadsheet was developed to analyze the types of problems and the number of business days required to clear the complaint. There were 3,676 complaints recorded during the audited period as shown in the following table.

Condition	# of Complaints
Replaced Battery	1,369
Cleared Jammed Meter	478
Replaced Meter	331
Meter Operational	1,252
Reset Meter	448
TOTAL	3,878

SOURCE: Complaint Sheets - Note numbers includes 202 duplicate complaints

The average time to clear a complaint during the audited period was 1.37 business days. March was the month that had the longest time to clear of 2.85 business days due to vacation time taken by the technicians. The jammed meters, which are the ones not accepting coins took an average of 1.49 business days to clear and consisted of 444 unique complaints.

The following table shows the percent of meters fixed at various time intervals.

DAYS TO FIX	PERCENT OF COMPLAINTS
Same Day	6.91%
Next Day	69.56%
Third Day	13.52%
Fourth Day	4.95%
5 to 11 Days	5.06%

The division had a success rate of clearing the complaint within one business day of 76.47% of the time and within 2 business days of 89.99% of the time.

Cost of Idle Meters

While all meters in the City are electronic digital meters they are of an older style. As noted in the Lansing – Melbourne Group November 14, 2005 parking study, the single space meters should be replaced with newer multispace or pay and display meters.

The newer meters are GIS based and can report wirelessly to the Parking Office computer when they are full of money and need to be emptied or are not working for whatever reason. At the point that a meter goes off line a technician can immediately be dispatched to fix the problem. This would also give the Parking Office real time information on the collection and occupancy of every parking space in the city. Such information would greatly enhance the ability of the City to make informed decisions on the effectiveness of every parking space. These meters can also minimize the amount of time a meter is not operating thereby maximizing revenues.

Because of the limitation of the system it was not possible to determine an estimate of the amount of lost revenue by meter. In order to determine the approximate lost revenue due to non-working meters the average collection per meter per business day was calculated. First the total amount of revenue collected for all meters during fiscal year 2005 (\$739,246) was divided by 250 working days to arrive at \$2,957 collected per day for all meters. The City had 2,492 meters in operation during this time, which calculates to an average of \$1.19 per meter, per business day during fiscal year.

For the analysis every jammed meter and meter that needed to be replaced was assumed to be in a condition that prevented it from accepting coins. Analysis of the complaint logs determined that from these types of conditions 1,092 meter days of potential collections were lost. This translates into approximately \$1,300 of lost revenue during the year. This figure is most likely low due to the following reasons:

- Some of the other conditions such as replaced battery would have resulted in lost revenue. Even though the meter would still receive coins it is unlikely that coins would be added after it was noticed that the display was not recording the time.
- Meters in areas that get the most activity are the most likely to malfunction. They would also have a daily collection rate greater than the \$1.19 per day average.

The newer meters as noted in the parking study could record the out of service time for each parking space thereby giving a more accurate accounting of possible lost revenue and act as a useful performance indicator for the Parking Office.

TRAFFIC SIGNALS

The traffic signals section is operated by a supervisor and two signal technicians. One technician has been out on sick leave for much of the past couple of years. These three people are responsible for the installation, repair and maintenance of all electronic traffic control devices throughout the city. Currently the City has 151 intersection signals, 34 Flashing beacons, 14 school zone flashers and is also responsible for the lighting in 7 municipal parking lots. All three employees are certified electricians.

In addition to these duties they on occasion assist with putting up holiday decorations/lighting and changing streetlights.

The traffic signals can be controlled and synchronized from a computer in the office. If a signal has a problem it will send a message to the computer. In order to get the message however a technician has to have the computer set to that intersection and be monitoring it. No audio alarm or break in message is sent to the screen. Most problems are detected from citizens who are passing through the intersection and call in. The department receives about 2 to 3 trouble slips per day on average.

Maintenance

Annual Maintenance is essential for proper functioning of the system. They try to get to each intersection at least once per year to perform maintenance but due to having so few personnel and the medical problem of one employee, it has been very difficult. They feel that the lack of annual maintenance may be causing a higher rate of failures than should be occurring.

Testing revealed that the average maintenance time spent at each flashing beacon was 20 minutes and at each signal intersection was 55 minutes using 2 technicians. Our testing revealed that approximately 8% of the signals did not receive maintenance during the calendar year.

OBSERVATION 7 TRAFFIC SIGNAL TECHNICIANS:

According to the *Traffic Signal Installation and Maintenance Manual* the suggested ratio of traffic signal technicians needed to properly maintain and repair traffic signaling devices is 1 technician for every 31 traffic lights. The City of Manchester maintains 151 traffic signals. In order to adhere to the suggested ration the Department would need 4.9 full time equivalents. The department currently employs three technicians to perform this function. In recent years one of the technicians has been ill and out on leave for long periods of time. While they try to perform annual maintenance to every signal it has not always been possible. In addition to maintenance the technicians are currently receiving 2 to 3 trouble slips per day that they have to take care of. The large amount of trouble slips might be reduced with more timely maintenance.

RECOMMENDATION:

The department should consider hiring an additional technician to help perform the maintenance. They should also track the amount and type of trouble slips received to ensure that the added cost of adding a new position is resulting in a reduction in system failures.

AUDITEE RESPONSE:

There is a hiring freeze on, and the Mayor needs to authorize the creation of a new position.

If a position is approved, we will track the amount and type of trouble slips received to ensure that the added cost of adding a new position is resulting in a reduction in system failures.

Repairs

A quick response to a traffic signal failure is important to the public's safety. The department always has an employee in "on call" status during off business hours to handle problems that may occur at nights, weekends and holidays. To test the efficiency of reacting to signal failures a sample of intersections was selected and all call slips for the year were analyzed. The sample of 19 signalized intersections was selected. The 19 signals had 51 call slips for a rate of 2.7 incidents per signal in our sample. Forty-six of the fifty-one calls were responded to in less than one hour (90%). The average time to respond was approximately 30 minutes. The average time to complete the work and get the signal operating was 1 hour and 25 minutes from the time the call was received.

PAVEMENT MARKING

The Traffic Department's goal is to paint all lines in the City annually. The painting season runs from when the paint order comes in (usually March or April) until the snow starts in November or December.

The department has a double-tank line truck for painting "long lines" and a three small hand spray painters for use in painting other road markings such as crosswalks and stencils.

In addition to painting the road markings the crew is responsible for painting and installing road signs, new parking meter installation, parking lot snow removal and parking lot maintenance.

Road Signs

Annually a road sign survey is done to determine which signs need to be replaced. Severely faded signs or signs that are no longer needed are brought back to the shop and stripped down for repainting. The sign shop also paints its own special order signs from a stock of sign blanks. They also paint in-house a majority of regularly needed road signs such as "no parking" signs. They will order pre-painted signs if they are less expensive than signs made in-house.

Most sign requests are a result of Board of Mayor and Aldermen action. During the 18 months between July 1, 2004 and December 31, 2005 the BMA passed ordinances requiring the installation of road signs 160 times. This included 109 parking regulation ordinances, 37 stop sign regulations and 14 other regulations requiring the installation of signage or road markings.

Pavement Markings

The City of Manchester is responsible for the maintenance of the following streets:

TYPE	DESCRIPTION	LINEAR MILES	LINEAR FEET
Class IV	Urban Compact	348.68	1,841,030
Class V	Town or City Roads	38.27	202,066
Class VI	Discontinued	.49	2,587
TOTALS		387.44	2,045,683

SOURCE: City of Manchester Highway Department

The 2 million linear feet of streets are lined in sections. A section can be from a hundred feet to over one thousand feet. Some sections have several types of lines per linear foot such as a double yellow centerline, two white lane lines and two white edge lines. All long lines are painted by the paint crew using the single painting truck. The following table shows the type of line and number of segments painted.

TYPE OF LINE	# OF SECTIONS
Centerline	458
Broken Yellow	2
Broken White plus Lanes	13
Broken White	22
White Lanes	213
Lane Lines	8
Edge Lines	39
TOTAL	755

SOURCE: Traffic Department Street Marking Reports

One hundred thirty nine of the sections are on State roads that the City gets partial reimbursement for and the remaining six hundred and sixteen segments are City road sections.

In addition to the street lining the Department paints the following various stencils and markings using a smaller crew and hand spray painters. The Department has three such painters. The number of parking stalls are painted in 87 sections that may contain a few stalls to a complete parking lot.

Parking Stalls	6,882
Islands	74
Arrow Stencils	1,231
“ONLY” Stencils	292
“STOP” Stencils	144
“SCHOOL” Stencils	96
Crosswalks	1,132
Stop Bars	1,216

SOURCE: Traffic Department Street Marking Reports

The Department does not accumulate performance information as a part of its normal operating procedures. In order to calculate the cost of street marking in a manner that makes it comparable to bid prices per outside vendors, costs need to be converted to cost per foot of painted line. The majority of road markings are on City owned roads and the cost and linear foot information is not accumulated by the department. They do however mark a certain amount of roads that are owned by the State of NH and must collect this information in order to seek reimbursement from the State. The State will take the costs from all communities seeking reimbursement and allocate the amount appropriated by the State Legislature based on each community’s pro rata share. The amount reimbursed is always less then the amount applied for.

The City has broken the streets into sections. All sections that are eligible for State reimbursement have been measured. When a crew works on a state section they record their time on a work sheet and turn it into the office. The amount of paint and beads used is calculated based on the length of the line painted. The department has developed a formula of the average amount of paint and beads used to paint a linear foot of line. The work sheets are attached to a request for payment for reimbursement from the State. As of May 3, 2006 the State has still not reimbursed the City for painting done in Calendar year 2005. The request for payment was submitted March 2, 2006.

In CY 2005 the City painted 313,308 linear feet of State reimbursable line striping and used 298 man-hours of labor to accomplish the painting. Total direct costs were; \$1,962 of direct vehicle costs, \$6,826 of paint and reflective beads, \$7,072 labor and benefits, \$1,700 of vehicle depreciation, \$3,683 of administration fee. Administration fee is calculated as 22% of direct costs. Total cost was \$21,243 or \$0.068 per linear foot. Based on this the cost to paint the entire 2.043 million linear feet of road would be approximately \$138,934. The City billed the State about \$.04 per linear foot. The difference between the two rates is the vehicle costs, which are not included in the State reimbursement request.

The City also applied for reimbursement for other pavement markings. Markings are converted to linear feet for billing purposes. The cost for direct expenses per linear foot for other markings were \$.17 for stencils, \$.09 for stalls, \$.10 for islands. The audit analysis has determined that stencil items averaged around \$14 per stencil to paint.

OTHER COMMUNITIES

I sent out a request to other communities on the National Association of Local Government Auditors Listserv and the following community replied:

Naperville IL \$.33/linear foot, \$3.50/sq. ft for stencils

Other NH communities who responded to an inquiry for information were:

Concord, NH \$.045/Linear foot, \$35 to \$50 per stencil. The City chose an option to have lines painted using paint purchased by the City from the State bid. The cost was \$.011 per linear foot for the labor. According to the Traffic Department's records paint costs were around \$.022 per linear foot so total cost would have been around \$.033 per linear foot.

Per the Highway Department the City of Nashua received a bid of \$.053/Linear foot for calendar year 2006 based on painting 1,000,000 linear feet of lines. The cost for calendar year 2005 was .0315 per linear foot.

Because the department uses latex based paint they should repaint all lines and markings every year and this is the goal of the department. Painting, however, can only be done when the roads are dry and the temperature will be sustained above 50 degrees until the paint dries. This means that the painting season is usually from late April through early November.

During calendar year 2005 the painting crew was out from March 23 to December 5. During this period they painted a total of 132 days. During this time crews worked 8 Sundays, 10 Saturdays and 12 nights accumulating 212 hours of over time and 2,834 regular hours.

Line Painting is broken down into 755 segments of varying lengths. In CY 2005 the department was able to paint 511 segments (68%). Of the lines not painted in CY 2005, 204 (27%) were painted in CY 2004 and the remaining 4 segments were painted in CY 2003.

Parking Stalls are also broken down into segments and parking lots. Of the 67 segments the department painted 60 (90%) in CY 2005. Of the stalls not painted in CY 2005 2 were painted in CY 2003 and 5 were painted in CY 2004. Of 20 parking lots and garages 3 were painted (15%) in CY 2005, 12 in CY 2004, 2 in CY 2003. The remaining three lots have not been painted for several years. The Bus Terminal was a special MTA project and has not been requested again. The Highway Garage lot is non-public and gets little use. The Victory Garage has not been repainted since its renovation several years ago.

The following chart shows the total amount of various road markings the department is responsible for painting and the percent that were painted in calendar year 2005.

MARKING	TOTAL	# PAINTED CY 05	% PAINTED CY 05	# PAINTED CY 04	# PAINTED CY 03	# PAINTED PRIOR
Islands	74	63	85%	3	2	6
Arrows	1,231	300	24%	4	409	487
Stop Stencils	144	0	0%	0	0	144
Only Stencils	292	71	24%	0	114	107
School Stencils	96	96	100%	0	0	0
Crosswalks	1,132	1,090	96%	10	8	1
Stop Lines	1,216	1,151	95%	16	18	1

SOURCE: Traffic Department Street Marking Reports

The table above only shows the length of time between paintings. Each year many of the street markings are repainted. The department tries to paint all the heavily trafficked areas first then paint the remainder as time allows. A visual inspection of some of the areas not painted for several years revealed that the markings were very faint or nonexistent. The Victory Garage, which hasn't been painted in several years, was slightly faded but the markings were still easily readable.

OBSERVATION 8 STREET MARKING COSTS:

The City of Manchester maintains over 397 miles of class IV, V and VI roads throughout the City. The Traffic Department is responsible for maintaining the traffic markings on all these public roadways as well as parking lots and the remaining city owned garage. A crew of six employees maintains over two million linear feet of road striping, seventy-four islands, hundreds of parking stalls including 19 parking lots and one garage, 1,132 crosswalks, 1,216 Stop Lines and 1,837 stencils and other markings. Painting is done using a latex-based paint.

During calendar year 2005 the painting crew was painting from March 23 to December 5. During this period they painted a total of 132 days. During this time crews worked 8 Sundays, 10 Saturdays and 12 nights accumulating 212 hours of over time and 2,834 regular hours. The following table summarizes the activity for FY 2005.

MARKING	TOTAL	# PAINTED CY 05	% PAINTED CY 05
Islands	74	63	85%
Arrows	1231	300	24%
Stop Stencils	144	0	0%
Only Stencils	292	71	24%
School Stencils	96	96	100%
Crosswalks	1,132	1,090	96%
Stop Lines	1,216	1,151	95%

Long line painting is broken down into segments of roadway. Each segment is determined by breaks in the line and varies in length from a few feet to hundreds of feet. Of the 755 segments the Department was able to paint 68% in calendar year 2005. Those that were not painted in 2005 had been painted in calendar year 2004.

The Department also painted 90% of the street parking stalls but only 15% of parking lots. They have not painted the Victory Garage in several years.

Based on reimbursement requests to the State of NH it is estimate that the cost per linear foot to paint the lines in the road was \$.068 per linear foot. The cost to paint crosswalks is estimated to be \$.13 per linear foot and \$.34 per linear foot for stencils.

The City of Concord in 2002 bid out the painting work and accepted a bid of .042 per linear foot for long lines and \$30 to \$45 per crosswalk. They were also given an alternative quote of \$.015 per linear foot of long lines if the City supplied the paint. A recent bid from the City of Nashua came back with \$.0315 per linear foot.

The Department seems to be having a problem painting all road markings in a timely manner. A visual inspection of road markings that have not been painted for over three years shows severely faded or non-existent markings.

RECOMMENDATION:

Because the per linear foot cost to privatize the long line marking is significantly less expensive then the in-house cost it is recommended that the department put this part of the job out to bid. This would free up the staff to concentrate on the area that they appear to be able to do less expensively then private companies. This would allow them to reduce the time between paintings for all markings.

AUDITEE RESPONSE:

Traffic Dept. concurs with recommendation so long as there is a provision to provide next day service to stripe newly paved roads.

APPENDIX