
4 Transportation and Infrastructure Renewal: Mechanical Branch Management

Summary

The Department of Transportation and Infrastructure Renewal's management of mechanical branch operations is deficient. Management lacks fundamental information needed to effectively manage operations. Oversight of operations is inadequate, which has contributed to a number of the deficiencies identified in this chapter. Controls and processes which are fundamental to ensure inventory is adequately safeguarded and equipment is appropriately repaired and maintained, either do not exist or are ignored. We are concerned with management's lack of action to correct operational problems which they know exist.

Parts and tool inventories are exposed to an unnecessary risk of theft due to the lack of appropriate controls. A significant number of variances are identified during inventory counts when parts on hand differ from inventory records. This is indicative of a poorly controlled inventory system. In most cases, management does not know the reason for these variances.

Management lacks the information needed to effectively monitor repair work. Staff do not always include complete and accurate descriptions of work done on repair jobs or the date the work was performed. Management does not know the hours spent and parts used during all repair jobs as information is not tracked in that manner. There are no standards to indicate how long repairs should take. Without this information, management is unable to determine whether staff are working efficiently and whether parts and labour for repair jobs are reasonable.

We found certain required preventative maintenance was not being completed. There was inadequate evidence to support whether other required repair work was completed. In our 2005 audit report on fleet management at the Department, we recommended that preventative maintenance activities be adequately documented. This recommendation has not been addressed.

The Department is not doing a good job of managing total life cycle agreements. These agreements should limit the province's exposure to repair and maintenance costs on certain equipment. However, not all eligible costs are identified due to insufficient information and inadequate analysis of repairs completed.

We have made a number of recommendations to address the weaknesses identified in this report. These recommendations should be a priority for implementation and are necessary to protect government's significant investment in mechanical branch operations.

4 Transportation and Infrastructure Renewal: Mechanical Branch Management

Background

- 4.1 The Department of Transportation and Infrastructure Renewal operates six mechanical branches in four districts (Northern, Eastern, Western and Central) across the province. These branches complete large, more complex repairs for vehicles operating in their district. The Miller Lake mechanical branch is the largest branch in the province, serving the Central District. Miller Lake performs repairs for other provincial mechanical branches when they lack the resources or equipment, and is responsible for developing preventative maintenance requirements used by mobile service mechanics across the province.
- 4.2 Miller Lake is also responsible for managing total life cycle cost agreements related to certain pieces of heavy equipment. These agreements with manufacturers include a guarantee that the five-year accumulated maintenance and repair costs will not exceed a specific dollar amount. At the end of the fifth year, if the total eligible costs exceed the guaranteed amount, the Department can submit a claim to the manufacturer seeking reimbursement of the excess costs.
- 4.3 Each district has a fleet service coordinator who is responsible for inventory management, on-site repairs, and supervising mobile service mechanics operating in that district. Equipment repairs are completed by shop mechanics at each branch. Mobile service mechanics perform minor repair work and preventative maintenance at Department bases across the district.
- 4.4 There are approximately 60 shop mechanics, 37 mobile service mechanics, and 20 stock clerks across the province. The Miller Lake and Truro mechanical branches are the largest. Miller Lake has 30 shop mechanics, five mobile mechanics, and seven stock clerks while Truro has five shop mechanics, 11 mobile mechanics, and four stock clerks.
- 4.5 On March 31, 2012, the branches held inventory valued at \$6 million with Miller Lake holding \$4.1 million and Truro holding \$0.6 million. During 2011-12, staff indicated they spent \$25 million to repair and maintain approximately 1000 vehicles, excluding provincial ferries. Miller Lake is responsible for 276 of these vehicles and Truro is responsible for 210.



Audit Objectives and Scope

- 4.6 In winter 2013, we completed a performance audit of mechanical branch management at Miller Lake and Truro. The audit was conducted in accordance with Sections 18 and 21 of the Auditor General Act and auditing standards established by the Canadian Institute of Chartered Accountants.
- 4.7 The purpose of this audit was to determine whether there were controls, processes and procedures in place to appropriately safeguard inventory and repair and maintain department equipment.
- 4.8 The objectives of the audit were to assess whether the department:
- has systems and procedures in place to ensure inventory is appropriately safeguarded and controlled;
 - has systems and processes in place to ensure repairs are completed appropriately and in accordance with Department standards;
 - has systems and processes in place to ensure preventative maintenance is completed consistent with Departmental policies including manufacturer's requirements; and
 - is adequately monitoring and obtaining timely reimbursement of total life cycle and guarantee and warranty work.
- 4.9 Generally accepted criteria consistent with the objectives of the audit did not exist. Audit criteria were developed specifically for this engagement using both internal and external sources. Criteria were accepted as appropriate by Transportation and Infrastructure Renewal senior management.
- 4.10 Our audit approach included interviews with mechanical branch staff and management; reviews of systems and processes; testing certain processes and key controls; and examination of policies and other documents. Our audit period included activities conducted primarily between August 1, 2009 and August 31, 2012, with tests of controls covering the period August 1, 2011 to August 31, 2012.

Significant Audit Observations

Overall Conclusions

Conclusions and summary of observations

Management's oversight of mechanical branch operations is not adequate. This contributed to many of the deficiencies noted throughout this chapter. Controls and processes which are

fundamental to ensure inventory is safeguarded and equipment is appropriately repaired and maintained either do not exist or are ignored. Key management information such as parts used and labour for specific repairs is not available. Standards have not been established to enable monitoring and assessment of important operational activities. It is unclear how management can know whether operations are effective, efficient and conducted in the most economical manner possible. We have made numerous recommendations to address the weaknesses identified in this chapter. Departmental policy and procedure manuals must be updated to reflect the improvements we have recommended and the Department needs to establish a process to regularly monitor compliance. For significant lasting improvements to be achieved, management must be more effective in their oversight responsibilities.

- 4.11 Management lacks fundamental information needed to effectively manage operations. For example, there is no detailed information regarding the work completed on specific repairs and management does not know the hours and parts charged to all jobs. Additionally, management does not know whether preventative maintenance work is completed as required. There are no standard timeframes for types of repairs which would allow the Department to measure staff efficiency. In our 2005 Report on fleet management, we recommended that maintenance activities be adequately documented; this has not been addressed.
- 4.12 In 2008, the provincial Internal Audit and Risk Management Centre recommended inventory control improvements at Miller Lake and Truro. During our audit, we identified similar issues and repeated some of the same recommendations.
- 4.13 The Miller Lake and Truro mechanical branches have a poor control culture. We found many instances in which controls did not exist or were ignored. In certain cases, management were aware controls were being ignored but did not take steps to ensure they were operating as intended. Departmental policies and procedures must be followed and management must take steps to ensure compliance.
- 4.14 Throughout this chapter, we identify several significant deficiencies resulting from a lack of management oversight. As noted in the scope section, this audit included a detailed examination of the Miller Lake and Truro mechanical branches. The number and nature of our findings supports the need for the Department to assess the remaining four branches and implement the recommendations in this chapter as needed. Departmental policy and procedure manuals need to be updated to reflect the findings in this chapter and establish clear expectations of staff.

Recommendation 4.1

The Department should assess all mechanical branch operations and implement the recommendations in this chapter where similar conditions exist.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will implement the recommendations in all Mechanical Branches where similar conditions exist.



Recommendation 4.2

The Department should update its policies and procedures to reflect operational practices and the recommendations in this chapter.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will strike a Provincial Policy & Procedure Committee to address the recommendations. This committee will meet on an ongoing basis to address P&P opportunities.

- 4.15 *Quality assurance process* – There is no quality assurance process such as reviewing a sample of repair jobs, examining vehicles to determine if adequate preventative maintenance work was completed, and monitoring the quality and accuracy of electronic work orders. A quality assurance process involves planned and systematic actions to provide confidence the system is performing as required. This would give management assurance that repairs and maintenance are completed appropriately and policies and procedures are followed.

Recommendation 4.3

The Department should implement a quality assurance process to regularly monitor operational activities and controls.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will develop a new Policy for Quality Assurance in conjunction with our new Fleet Management Tool, ARI (Automotive Resources International).

Inventory Stewardship

Conclusions and summary of observations

Management does not have adequate controls and processes to safeguard and monitor parts and tools inventories. We identified significant weaknesses which unduly expose expensive parts and tools to theft. At Miller Lake, a key-card system was established to restrict and monitor access to inventory. However, staff still have the original key which renders the new system ineffective. At Truro, the inventory stockroom doors are unlocked during the day allowing unauthorized access to inventory. There are insufficient controls to ensure inventory distributions are valid and recorded. Numerous unexplained variances identified during inventory counts indicate a poorly controlled inventory system. Although there are regular comparisons of inventory in the records to physical inventory, there are no established criteria to investigate inventory variances. As well, there is no evidence to support which variances were investigated. At Truro, staff told us count variances were not investigated.

- 4.16 *Information system* – The Department uses the inventory management module of the province’s Corporate Financial Management System to track inventory activities including issues, receipts, and adjustments to inventory levels.
- 4.17 *Receiving inventory* – There are adequate controls in place to ensure inventory received is properly recorded. Accounting staff ensure purchase order details agree to physical goods received and recorded before the invoice is processed for payment.
- 4.18 *Approval for tool purchases* – At Miller Lake, we noted a key control in monitoring the tool inventory was not working as intended. All tool purchases are required to be approved by management; however, we found this is not occurring. We tested 14 tool purchases and found six which were not properly approved or had no evidence of proper approval. One form was not signed, one was approved by a stock clerk who did not have authority to authorize a purchase, and four did not have an order form authorizing the purchase. Failure to approve tool purchases limits management’s ability to monitor these expenditures.
- 4.19 In Truro, verbal approval is given to purchase items between \$1,000 and \$5,000. As a result, there is no evidence to support these approvals.

Recommendation 4.4

The Department should approve tool purchases and retain documented support for the approval.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will develop a Policy for the purchase of tools for its Mechanical Branches, following the Procurement thresholds and appropriate sign offs.

- 4.20 *Inventory access* – At Miller Lake, access to the stockroom and warehouse is restricted using electronic key-cards. The key-card system records who accesses the stockroom and when. Before these key-cards were used, staff had keys to the stockroom. These keys were not collected once the new system was implemented; they can bypass the electronic key-card readers rendering this control ineffective. As well, it is possible the keys have been copied. To address these concerns, the stockroom door locks should be changed and keys stored in a secure area to ensure the electronic key-card readers cannot be bypassed.
- 4.21 One access card, assigned to an employee who no longer works at the facility, could not be located. The key-card system indicates it was used twice after the employee left. More than a year later, this card had not been deactivated. As long as it is active, there is a risk that it can be used for unauthorized access to the stockroom.



Recommendation 4.5

The Department should deactivate all inventory stockroom electronic key-cards issued to former employees at Miller Lake and moving forward, should deactivate key cards when employees leave.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department has reviewed the list of Electronic Key holders and has deactivated all cards no longer necessary. Complete.

Recommendation 4.6

The Department should change stockroom door locks and store keys in a secure location at Miller Lake.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department is reviewing the current key/card holders and will be retrieving all outstanding keys and cards. Locks will be changed and cards will be accounted for and stored securely.

- 4.22 Two inventory clerks have stockroom access cards but based on their duties, there is no operational need for such access. Inventory access should be restricted to staff whose duties require such access.

Recommendation 4.7

The Department should evaluate which staff require access to parts and tool inventories at Miller Lake. Only those with an operational need should have access.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department is conducting an access review for the stockroom and tool room and access will be restricted to those who have an operation need.

- 4.23 In December 2012, a crime prevention review was completed at Miller Lake by the Transportation and Infrastructure Renewal coordinator of security services. The report included recommendations related to protecting and safeguarding the facility. For example, having the commissionaire check manifests of trucks entering and leaving the property, repairing fencing around the facilities, having all pedestrians and vehicles sign-in at the guardhouse, and erecting surveillance cameras at the guardhouse. Management indicated they intend to address these recommendations by the end of 2013.

Recommendation 4.8

The Department should implement the recommendations from its December 2012 crime prevention review at Miller Lake.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department is in the process of tendering/requesting quotes, to address the opportunities noted in the CPTED Audit (Crime Prevention Through Environmental Design.)

- 4.24 In Truro, the stockroom door is unlocked during the day. There is the possibility a staff member could enter the stockroom and remove inventory.

Recommendation 4.9

The Department should restrict inventory access to authorized personnel at the Truro mechanical branch.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department is developing an authorized personnel list. Only people on the list will have access to the Inventory.

- 4.25 *Access to shared tools and supplies* – On average, Miller Lake spends \$53,000 annually on shared tools and supplies. These items are stored in a locked room; the fleet service coordinator and the shop supervisors have keys.
- 4.26 In January 2012, the full-time staff member responsible for the tool room retired. Prior to that time, tools were engraved with identification numbers, a tool listing was maintained, and tools were signed out for use. Since then, sign-out sheets have not been used consistently, new tools are no longer given an identification number, and a tool listing has not been maintained. During our audit, we observed that staff have unsupervised access to the tool room.
- 4.27 Truro spends approximately \$20,000 annually on shared tools and supplies. These items are not held in a secure area, unique identification numbers are not used, and tools are not signed out for use.
- 4.28 Neither branch maintains an updated list of shared tools and supplies or requires these items be signed out. Effectively, there are limited controls over shared tools and supplies.

Recommendation 4.10

The Department should store shared tools and supplies in a secure area with limited access. The Department should also maintain an inventory of shared tools and supplies and require staff to sign tools out for use.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Tool Inventory and controls are in place in Miller Lake and the Department will work with the other Mechanical Branches to ensure a similar process and accountability is in place.



- 4.29 *Inventory distributions* – The Department’s inventory policy has controls to ensure inventory distributions are valid and recorded in the inventory records. However, we found these controls are not operating as required.
- 4.30 All distributions from inventory are to be documented and recorded in the inventory records. Paper inventory distribution documents are sequentially numbered so management can verify all forms are accounted for. These forms should be used to update the parts inventory records.
- 4.31 We requested 60 distribution forms to determine whether the records were updated accurately and on a timely basis. We identified a number of deficiencies.
- Inventory distribution forms are sequentially numbered but they are not tracked.
 - Only 45 of the 60 distribution forms we requested could be provided. The rest could not be located.
 - Management told us parts are removed from inventory without a distribution form.
 - Of the 18 distributions tested at Miller Lake, 16 were recorded in a timely manner. Two forms were not dated so we were unable to determine if they were entered in a timely manner.
 - Of the 27 distributions tested at Truro, 16 were recorded in a timely manner while nine were not. The average delay in posting the remaining nine transactions was 15 days; the longest posting delay was 33 days. Two forms were not dated, so we could not determine if these were entered in a timely manner.
- 4.32 There are insufficient controls to ensure inventory distributions are recorded on distribution forms accurately. The inventory coordinator told us that inaccurate information on inventory distribution forms contributes to inventory count variances at Miller Lake. Inventory records would also be inaccurate if distributions are not recorded in a timely manner. As well, there is a risk that the inventory does not get charged to equipment covered by a total life cycle cost agreement and is missed in its annual eligibility claim. This issue is discussed later in this chapter.

Recommendation 4.11

The Department should track and maintain inventory distribution forms.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The inventory distribution forms will be reviewed, and Policy will be written to ensure their tracking and maintenance.

Recommendation 4.12

The Department should update parts inventory within one week of distributing the part.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Policy will be developed to ensure parts inventory is updated in a timely manner.

Recommendation 4.13

The Department should record all parts distributed on a distribution form.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. As noted in recommendation 4.11 the forms will be reviewed and Policy developed.

- 4.33 The distribution form provides a signature space for the mechanic requesting the part from inventory. We examined 45 distributions and found 30 were not signed by the mechanic. Stock clerks will often write the mechanic's name on the form. Stewardship of inventory is greatly improved when individuals are required to note the specific repair job and sign indicating they removed the part from inventory. Parts charged to repair jobs could then be reconciled to distribution forms as necessary.

Recommendation 4.14

The Department should implement a process to ensure all parts inventory distribution forms identify the specific repair job and are signed by the mechanic receiving the part.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Mechanics will sign the form and note the job it is to be used for. This will be developed in Policy as well.

- 4.34 *Inventory adjustments* – The inventory coordinator has physical access to inventory and can process adjustments. There is no requirement for inventory adjustments to be approved. As a result, this person could remove inventory from the stockroom and adjust inventory records so this would not result in a count variance. The risk of theft could be reduced if someone who is not responsible for inventory periodically reviewed inventory adjustments for appropriateness.
- 4.35 Miller Lake processes all inventory adjustments for the province. We were told adjustments from other districts require that district's approval before processing. We identified 14 inventory adjustments completed for the Truro mechanical branch which were not approved by the Truro fleet service coordinator. Properly authorized inventory adjustments are an important control to help ensure inventory records are complete and accurate and inventory is not stolen.



Recommendation 4.15

The Department should approve all inventory adjustments. Additionally, adjustments should be reviewed periodically by someone independent of the inventory adjustment process.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department has separated the duties of the inventory coordinator to create an independent person in the process. All adjustments will be reviewed and approved by the appropriate Management personnel.

- 4.36 *Obsolete inventory* – Transportation and Infrastructure Renewal’s equipment and mechanical inventory policy requires “at least once per year, parts for write-off be submitted to the fleet director for approval.” However, the fleet director does not approve write-offs. Inventory adjustments should be reviewed and approved to ensure they are reasonable.

Recommendation 4.16

The Department should implement a process to ensure inventory write-offs are properly approved as required by Department policy.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Department policy will be followed for all inventory write-offs.

- 4.37 *Periodic inventory counts* – During an inventory count, staff count the physical inventory available and compare it to the inventory records. Inventory counts at most mechanical branches occur on an annual basis around fiscal year end. At Miller Lake, partial inventory counts are completed every two weeks such that each item is counted twice a year. The inventory coordinator is responsible for supervising the inventory counts and also has the ability to change inventory records. This increases the risk of inventory being stolen.

Recommendation 4.17

The Department should change system access so that supervisors with responsibility for inventory counts cannot also change inventory records.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will review the access control for the Inventory Coordinator to address the fundamental access control issue. The Department will isolate duties where necessary.

- 4.38 Following each inventory count, a variance report is prepared which shows, by item, any overage or shortage of inventory, including the number of items and dollars

involved. These reports are provided to management to review and discuss. The Department's inventory control policy indicates significant variances should be investigated but does not define significant. The percentage of count variances in a sample of 12 reports we reviewed were high enough to suggest the inventory control system is ineffective. This was the case for all counts we examined. The variances showed both overages and shortages for items. Management cannot know which inventory is in stock based on the results of the inventory counts.

- Miller Lake – We examined count results for August 2012 and found that there were errors in 141 items, which represents 16% of the total items counted. The March 2012 count report showed errors in 255 items, which represents 18% of the total items counted.
 - Truro – The March 2011 count report showed errors in 588 items, which represents 30% of the total items counted. The March 2012 count report showed errors in 510 items or 26% of the total items counted.
- 4.39 *Miller Lake* – The variance reports we examined at Miller Lake included very few explanations of specific variances. The inventory coordinator told us he investigates some variances but typically only makes a note if he can explain a variance. As a result, there is no support to indicate which variances were investigated. Management told us items are discussed which may lead to further investigation but this is not specifically documented.
- 4.40 Management informed us that variances could be caused by many things, such as recording the wrong number for inventory distributions, not recording a distribution, or inventory stored in the wrong location on shelves. They also indicated they are focused on the higher dollar variances. However, because inventory is not always stored in the correct locations in the stockroom, the inventory items may not be properly valued. Dollar variances may be misleading providing an inaccurate picture of the actual physical inventory on hand.
- 4.41 Operational changes were made in the summer of 2011 to attempt to address count differences. These included assigning staff responsibility for specific inventory sections and changes in how stockroom items are selected for counts. However, as discussed above, the percentage of errors remained high.
- 4.42 *Truro* – Inventory count variances are provided to the fleet service coordinator annually. The fleet service coordinator indicated he has not investigated variances and does not know why they are occurring.

Recommendation 4.18

The Department should establish criteria to investigate inventory count variances.



Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Policy will be developed to address inventory count variances, siting criteria for investigation including thresholds.

- 4.43 *Test counts* – We performed test counts at Miller Lake and Truro to assess the accuracy of inventory records. We examined 20 items at Miller Lake and found two had fewer physical assets than the inventory records indicated. This resulted in an inventory shortage of \$6,378. One variance related to four heavy equipment tires valued at \$6,191. Management was unable to determine the reasons for these differences.
- 4.44 We examined 20 items at Truro and found eight differences between inventory records and the physical assets. Staff provided the following explanations for these variances.
- Five variances resulted from items distributed from inventory but not yet recorded.
 - One variance was because the items were in the wrong location.
 - One item was not supposed to be in inventory.
 - One item was returned to inventory but the inventory adjustment had not been processed yet.
- 4.45 In total, we identified \$889 in missing inventory and \$517 in excess inventory. Of the five variances with distributions not recorded, three were still not fully recorded approximately one month after we completed our count.

Recommendation 4.19

The Department should establish a process to investigate variances which includes action required, documentation and approvals.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Policy will be developed to address the investigation of variances and Provincial guidelines will be followed.

Equipment Repair Management

Conclusions and summary of observations

Transportation and Infrastructure Renewal does not have adequate systems and processes to ensure repairs are completed appropriately. Management lacks fundamental information needed to effectively manage repair work. For example, they do not have complete and

accurate information on the work carried out for each repair job, or the dates the work was performed. Management do not know both the hours and parts used for specific repair jobs which significantly reduces their ability to effectively oversee branch operations. We identified control weaknesses and controls which were not operating as intended. If addressed, these controls would help to ensure information is accurate and complete. There are no standard timeframes for repairs. There is no requirement to document why repair jobs are carried out by external vendors versus internal staff. When examining vendor approvals, we found proper approval was not obtained.

- 4.46 *Management information* – Transportation and Infrastructure Renewal uses the plant maintenance module of the province’s Corporate Financial Management System as its electronic job costing system to record information on vehicle repair work. We expected each repair job would have a work order, including dates and a detailed description of the work completed, as well as hours and parts charged to the job. However, this was not available for all the repair jobs we examined. The information system is not complete, accurate and it does not track all relevant information. As a result, management has inadequate information to effectively manage vehicle repairs. This lack of information makes it extremely difficult to assess the reasonableness of hours and parts charged to jobs, to monitor staff efficiency, and to ensure all eligible costs incurred are claimed under total life cycle cost agreements. As well, documenting the dates when work was completed could aid in diagnosing problems with vehicles if it is known what other jobs were carried out and when. This information may also provide insight into the quality of repairs performed at the various branches. This lack of essential operational information should be unacceptable to management.
- 4.47 Mobile service mechanics document work completed on their time sheets. Shop mechanics are supposed to complete a paper work order for each repair job and provide details of the work completed each day. Management is to review the paper work order to determine if the details of the work done are reasonable based on the job request and sign off on the paper work order. The details of the work done and the applicable days, from the paper work order, are then supposed to be entered into an electronic work order.
- 4.48 *Electronic work order testing* – We reviewed the processes and controls to ensure adequate repair information is documented and found these failed to operate as intended. We tested information available electronically regarding the work done and completion dates for repair jobs. Our sample included tracing hard copy support to the information system, as well as tracing system details back to supporting paper documents.
- 40% of the paper work orders we selected supporting electronic work orders could not be provided.
 - 22% of paper work orders examined did not have a description of the work completed and 11% did not note the date work was done.



- For those paper work orders which documented work completed, 57% did not have the information entered into the electronic work order and 19% did not have the date the work was done entered into the electronic work order.
 - 83% of paper work orders did not have the same details in the electronic work order as in the paper work order. For 23%, the date the work was completed did not agree with the date noted in the electronic work order.
 - None of the paper work orders were reviewed by management.
 - 10% of mobile service mechanic time sheets had greater details of work completed than the electronic work order. 23% of electronic work orders had no date or an incorrect date compared to the time sheet.
 - 33% of electronic work orders did not include sufficient details regarding the nature of the work completed.
- 4.49 At Miller Lake, management are aware that paper work orders are not completed by all staff. They are also aware the description of work for each job is not entered in the information system. At Truro, management are aware information on completed forms is not sufficiently detailed. No effective action was taken to address these important information issues.
- 4.50 Completing paper work orders and ensuring required information is recorded in the information system in a timely manner are necessary steps to improve the operational information available to management.

Recommendation 4.20

The Department should establish standards detailing the nature and type of information to be documented on paper work orders, including dates work was completed and timelines for retention of the work orders.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will develop standards to ensure accountability.

Recommendation 4.21

The Department should implement a process to ensure electronic work orders include accurate and complete information which is updated in a timely manner.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will ensure Mechanics update the work orders accurately and Maintenance Planners enter that information in a timely manner.



4.51 At Truro, hours are charged to specific repair jobs on a work order. At Miller Lake, hours are charged to work orders and not to specific repair jobs. A work order can include more than one job. As a result, management does not know the hours spent on each repair job. In order to know what parts were used on each job, there should only be one job for each work order.

Recommendation 4.22

The Department should implement a process to ensure parts and labour hours are charged to specific repair jobs.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. “Standing Orders” for repair jobs will be closed ensuring new orders are created specific to the repair at hand.

4.52 Management told us they are concerned with how parts and shop supplies taken from inventory are recorded to repair jobs. For example, mobile service mechanics may charge more oil than used to one job, and use the extra oil on other vehicles as needed without charging the oil to that vehicle. We confirmed this during our testing. As a result, the actual repair costs may be higher or lower than they appear.

Recommendation 4.23

The Department should implement a process to ensure only the actual parts and shop supplies used for a repair are recorded to the job.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Our new Fleet Management/Garage Management System ARI (Automotive Resources International) will allow us to accurately and efficiently record all parts and supplies to specific jobs. The department will develop policy to ensure this is followed.

4.53 Work orders are not always closed once a job is completed. For example, open work orders are created for certain repairs such as brake work. These work orders are left open and, in this instance, all brake-related jobs for a vehicle would be charged to the work order. This could lead to parts or labour charged to jobs after the work has been completed. We examined 60 work orders and found 57 were open. Of the 57, six work orders were opened in 2004 and twelve were opened between 2006 and 2009.

Recommendation 4.24

The Department should close electronic work orders once repair jobs are complete so that no additional postings can be made.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. “Standing Orders” for repair jobs will be closed, so that no additional posting will be made.



4.54 The following are additional control weaknesses we identified concerning the accuracy of data in the information system for completed jobs.

- There are insufficient controls to ensure hours worked are charged to the correct job. We identified two of six jobs for which the hours were charged to the wrong job.
- Mobile service mechanics have procurement cards which they can use to purchase parts for jobs. These purchases are not traced to work orders to ensure the item was reasonable for the job involved.
- There are insufficient controls to ensure procurement card purchases are charged to the correct work order. We tested 30 transactions and identified three which were charged to the wrong work order.
- Shop mechanics can request parts be ordered for a job when the item is not in inventory. However, there are insufficient controls to ensure the correct work order is charged. We tested 13 transactions at Miller Lake and could not determine if the proper work order was charged for two transactions. The work order number was not noted on one authorization form and one form could not be provided. We tested 15 transactions at Truro and found we could not determine if the proper work order was charged in all instances as the requests are done verbally and there is no written record.
- Stock clerks and the inventory coordinator have the ability to purchase, receive, and charge parts to a work order when a mechanic has not ordered the part. This increases the risk that parts are charged to a work order but not used on that job.
- There are insufficient controls to ensure work orders are accurately charged for inventory distributions.
- Inventory distributions are not properly recorded to work orders. This was discussed earlier in the chapter.

4.55 A periodic reasonableness review by management of the hours and parts charged to jobs, and sign-off of the final work order by mechanics, would help to address the issues discussed above.

Recommendation 4.25

The Department should require management to perform a periodic reasonableness review of the hours and parts charged to jobs.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Our new Fleet Management/Garage Management tool (ARI) will provide us with the ability to review hours and parts charged to jobs throughout the Department. This will allow managers the ability to show accountability and the reasonableness of the work performed.

Recommendation 4.26

The Department should require mechanics to sign off on the final work orders for which they are responsible.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Mechanics are required to sign off on their final work orders. Complete.

- 4.56 At Miller Lake, mechanics must get authorization for part purchases, regardless of the amount. This control is not operating as intended. We tested 13 parts purchased and found one purchase had no authorization form; in another instance, the form was not signed.
- 4.57 Truro requires verbal approval of purchases between \$1,000 and \$5,000. This does not provide evidence of approval and is another example of different processes at Miller Lake and Truro. This is discussed later in this chapter.

Recommendation 4.27

The Department should revise approval policies and practices to purchase parts for repair jobs so they are consistent among districts. Approval should be documented.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will develop Policies for the approval of parts for repair jobs. The Department will follow Procurement guidelines to ensure consistent application of the thresholds and signing authority required.

- 4.58 At Miller Lake, when stock clerks receive a part ordered for a specific job, the staff person who requested the part signs the packing slip to indicate receipt. However, in Truro, staff are not required to sign the packing slip when they pick up the part. Accountability for the use of parts is greatly enhanced when staff are required to sign indicating receipt of parts for repairs.

Recommendation 4.28

The Department should require staff to sign indicating receipt of parts used for specific repair jobs.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. Staff are required to sign for the receipt of parts. Policy will be developed if necessary to ensure accountability.

- 4.59 Most repair requests from mobile service mechanics are verbal. There is a risk that a job request is not communicated accurately. When vehicles return from repairs at a mechanical branch, it is not always possible to inspect the vehicle without removing



parts. Providing the mobile service mechanic with a detailed work order would confirm the repair was completed and agreed to the work requested. This information should be available as recommendations in this chapter are implemented.

- 4.60 *Standards* – There are no time standards established for staff, such as time required to complete various repair jobs. Standards could help in monitoring staff efficiency.

Recommendation 4.29

The Department should implement and monitor time standards for repair activities.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will develop standards to ensure consistency among work activities. The department will use peer review (other provincial jurisdiction), staff involvement and industry standards (Mitchel Book) to ensure accuracy.

- 4.61 *Outsourced repair work* – Outsourced repair work occurs when a vehicle is taken to an external garage. There are no guidelines regarding when to outsource work and no requirement to document the reason. Management told us repairs are outsourced only when Department mechanics are busy or do not have the ability or equipment to complete the work. We examined 29 outsourced repairs and found the reason for outsourcing was not documented for 28 repairs. Noting reasons would aid in analyzing whether it is more cost effective for the Department to do the work versus outsourcing.

Recommendation 4.30

The Department should establish a policy outlining when it is appropriate to purchase outside repair work, including requirements for documented rationale.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Province is currently developing guidelines to ensure outside repair work is used appropriately and requirements are documented as necessary.

- 4.62 Repairs in excess of \$1,000 require management approval. Accordingly, management should be aware of outsourced repairs and should approve the purchase.
- 4.63 Miller Lake and Truro have different repair cost approval practices. At Miller Lake, the area manager is to provide written approval for repairs between \$1,000 and \$10,000. However, in Truro, the area manager is to provide verbal approval for repairs between \$1,000 and \$5,000, and written approval between \$5,000 and \$10,000. Verbal approval provides no evidence the approval was given or when.
- 4.64 We selected a sample of eight outsourced repair purchases in excess of \$1,000 and found the following.

- Two were properly approved.
- One was approved after the invoice date.
- One was approved after the repair work was completed. This was noted as an emergency but was approved three weeks after the invoice date.
- Four purchases required verbal approval which staff told us was not obtained.

Recommendation 4.31

The Department should revise its policies and practices for outsourced repair approvals so they are consistent among districts. This should include a requirement for documented approval.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Province is currently developing guidelines to ensure outside repair work is used appropriately and requirements are documented as necessary.

- 4.65 *Mechanic qualifications* – Transportation and Infrastructure Renewal does not track mechanics’ licenses to ensure they remain valid. Licenses expire every five years but can be renewed by paying a fee as long as the individual remains in good standing. A mechanic could lose his or her license; management would not be aware of this because they do not track licenses. We selected a sample of 16 mechanics and found they all had valid truck and transport licenses.
- 4.66 There are a few mechanics who are not required to have truck and transport licenses; they are restricted in the work they can do on vehicles. We tested a sample of their work and found it was allowed within the restrictions.

Recommendation 4.32

The Department should track mechanics’ licenses to ensure they remain valid.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will document, verify and track all Mechanics Licenses through our training software STEMS. STEMS will be reviewed on a regular basis.

Preventative Maintenance

Conclusions and summary of observations

The Department does not have adequate systems and processes to ensure preventative maintenance is completed in accordance with manufacturers’ requirements. There is no monitoring to ensure preventative maintenance is completed as required. We found



manufacturers' maintenance requirements were not accurately reflected in the documents provided to staff who are responsible for completing the work. We found all required preventative maintenance was not being completed. We also found inadequate documentation to support the maintenance work completed. In 2005, we recommended that maintenance activities be adequately supported by appropriate documentation. This recommendation has not been addressed.

- 4.67 *Background* – Preventative maintenance is designed to ensure vehicles are properly maintained to help ensure they are operating safely, to extend the operating life, and to reduce down-time resulting from unscheduled repairs. If manufacturers' preventative maintenance requirements are not completed, it could result in voided warranties and total life cycle cost agreements. It is also important to have adequate documentation to support that vehicle maintenance was completed. If adequate maintenance records are not maintained, the terms of the total life cycle cost agreements allow the manufacturers to void the agreement with the Department.
- 4.68 *Manufacturers' maintenance requirements* – For regularly scheduled preventative maintenance, Miller Lake staff are responsible for documenting the manufacturers' preventative maintenance requirements for each vehicle in a preventative maintenance book. Mobile service mechanics are to document the type of maintenance work and date completed to provide support that preventative maintenance was carried out.
- 4.69 We selected 30 vehicles and three service intervals for each vehicle to determine whether the preventative maintenance books accurately reflected the manufacturer's requirements.
- 18 preventative maintenance books did not accurately reflect the manufacturers' requirements.
 - Two books accurately reflected the requirements.
 - Four vehicles did not have a book or were missing service intervals from the book.
 - Five books did not have support for the manufacturers' requirements.
 - One vehicle did not have a book or support for the manufacturer's requirements.

Recommendation 4.33

The Department should revise mechanical branch preventative maintenance practices so that they accurately reflect manufacturers' maintenance requirements.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The department will review all manufacturers maintenance requirements to ensure we are meeting their standard in our own Preventative Maintenance Program.

- 4.70 *Monitoring* – The fleet service coordinators are not adequately monitoring whether preventative maintenance is completed and documented. The Miller Lake coordinator told us that he started examining preventative maintenance books monthly, in spring 2012, during visits to the Department’s bases. However, he does not document this review. He told us that mechanics do not always complete preventative maintenance books. He said he instructed them to complete this task; however, no action was taken when they did not comply. The fleet service coordinator in Truro does not review preventative maintenance books. Neither fleet service coordinator inspects a sample of vehicles to determine if preventive maintenance work is being completed.
- 4.71 *Testing* – We selected 27 vehicles and found that required preventative maintenance work was not fully completed and was not adequately documented for all 27 vehicles. Of 68 service intervals tested:
- nine service intervals were completely filled out in the preventative maintenance books; and
 - 59 service intervals were not filled out or were partially filled out.
- 4.72 Preventative maintenance work is to be documented in the Department’s information system so there is a total history of the work completed on vehicles. We identified 81 service intervals for which we knew service was needed and tried to trace the service to the information system. We found 42 service intervals. We could not determine if the other 39 were included as there were no kilometres or hours noted to allow us to determine which service interval was completed.
- 4.73 We asked mobile service mechanics whether all service requirements were met for the 68 service intervals we examined. They told us 76% were not fully completed.

Recommendation 4.34

The Department should implement a process to ensure required preventative maintenance is completed, including maintaining proper documentation supporting the maintenance performed.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department’s new Fleet/Garage Management system will allow us to easily document and review all preventative maintenance performed on any of our equipment.

- 4.74 *Prior audits* – In our 2005 audit report of fleet management at the Department of Transportation and Public Works, we recommended “*maintenance activities be adequately supported by appropriate documentation.*” As discussed above, management has failed to address the inadequate documentation of preventative maintenance activities.



Management of Supplier Warranties and Guarantees

Conclusions and summary of observations

The Department is not adequately monitoring warranty terms and total life cycle cost agreements. Detailed warranty information is not maintained for vehicles. The Department is behind in its annual submission of eligible costs under the total life cycle cost agreements which allows the manufacturers the option to disallow these eligible costs. Additionally, the Department is not ensuring all eligible costs under total life cycle cost agreements are identified. Data available in the information system is insufficient to claim certain costs. We identified potentially eligible costs which the Department missed.

- 4.75 *Warranties* – Vehicles include factory warranties and may also have an extended warranty if one was purchased. Transportation and Infrastructure Renewal does not maintain a list of vehicles covered under warranties or general coverage. Only some extended warranty information is entered in the Department's information system. As well, the information is not sufficiently detailed for staff to determine which items are covered under warranty. Staff may contact the vehicle dealer to obtain detailed warranty information. Failure to ensure warranty information is available to staff could result in the Department paying for or completing repairs which should be covered under warranty.
- 4.76 We selected a sample of ten vehicles and examined 17 repairs which appeared to be eligible under the manufacturer's warranty. We also asked staff whether the items could have been claimed under an existing warranty. Of the 17 repairs, we identified the following.
- Three repairs were covered by a manufacturer's warranty, but the Department completed these repairs at a cost of \$616.
 - Three repairs did not have sufficient information entered in the repair descriptions to determine whether the work would have been covered under a manufacturer's warranty. The total cost of these repairs was \$761.

Recommendation 4.35

The Department should make detailed vehicle warranty information readily available to staff.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department's new Fleet/Garage Management System will allow all information to be shared with authorized staff. Furthermore the Department's Equipment Maintenance Coordinator will ensure records are recorded timely and accurately into ARI.

- 4.77 *Total life cycle cost agreements* – Total life cycle cost agreements include a manufacturer's guarantee that the five-year accumulated maintenance and repair

costs will not exceed a specific dollar amount. Each year, within 30 days of the anniversary date of the vehicle being put into service, Department and manufacturer's representatives review and agree to all eligible expenses for the preceding year. At the end of the fifth year, if the approved accumulated cost of repairs and maintenance exceed the guaranteed amount, the Department can submit a claim to the manufacturer seeking reimbursement of the excess costs. Total life cycle cost agreements are only included in heavy equipment purchases, such as graders or loaders, and were first introduced in 2006. 2011 was the first year in which any eligible costs could be claimed. As of March 31, 2012, 59 vehicles were covered by these agreements.

- 4.78 The last annual eligible expenses were submitted to the manufacturer's representatives in January 2012. We were informed the staff position responsible for monitoring and preparing total life cycle agreement eligible costs was vacant for approximately 15 months. Manufacturers provided a grace period at the end of January 2012, extending the 30-day deadline to agree on annual eligible costs. However, the manufacturers can terminate the grace period at their leisure and have the ability to disallow eligible costs since the 30-day deadline was not met. Five vehicles reached the end of the fifth year of their agreements in August 2012. The total eligible costs for those vehicles at the end of the agreements had not been determined at the time we wrote this chapter.

Recommendation 4.36

The Department should submit annual total life cycle cost claims and final payment claims to manufacturers within 30 days of the contracted timeframe of vehicles as required.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will ensure TLC claims and costs are submitted in a timely manner.

- 4.79 *Cost tracking spreadsheet* – Department staff use an excel spreadsheet to track eligible repair and maintenance costs per vehicle for the five-year period under total life cycle cost agreements. The spreadsheet includes, by vehicle, the guaranteed cost for repairs and maintenance, eligible costs agreed upon to date, and the net difference. We selected three agreements and checked whether the guaranteed costs in the spreadsheet were accurate. We found the maintenance and repair guarantee amounts were overstated by \$6,200 for 13 pieces of equipment. These errors mean the Department could fail to seek reimbursement for accumulated repair and maintenance costs at the end of the fifth year if costs exceed the correct guarantee amount but are below the overstated amount.

Recommendation 4.37

The Department should implement a process to ensure guarantee details per total life cycle cost agreements are accurately reflected in the tracking spreadsheet.

***Transportation and Infrastructure Renewal Response:***

The Department agrees with the recommendation of the Auditor General. The Department will ensure guarantee details are submitted accurately into ARI/SAP.

- 4.80 *Claim testing* – In January 2012, the Department submitted three requests for reimbursement totaling \$22,298 for heavy equipment which had reached the end of its five-year agreements. All three claims were submitted within 30 days as required under the agreements. We found an error in two of the three claims. The Department failed to include \$1,885 of eligible expenses previously approved by the manufacturer resulting in the Department failing to obtain a refund of all eligible expenses.
- 4.81 *Eligibility of costs* – We selected a sample of 15 pieces of heavy equipment currently under total life cycle cost agreements and reviewed the most recent annual cost claim. We also reviewed all repair and maintenance expenses recorded in the system for that equipment during the applicable year. We identified 138 jobs for which costs may be eligible under the agreements. Staff were interviewed to determine whether all 138 jobs claimed were eligible. We found the following.
- 22 of 138 jobs should have been claimed but were missed. The total cost of these jobs was \$3,461 in parts and \$11,999 in labour.
 - For 51 of 138 jobs, there was insufficient information in the system supporting the nature and costs of the repair, or it was unclear whether costs were eligible under the agreements. These costs were not claimed but may have been eligible. The total value of these jobs was \$9,548 in parts and \$23,610 in labour.
 - 31 of 138 jobs were properly included on the claim.
 - 34 of 138 jobs were deemed to be ineligible.
- 4.82 The labour and parts costs noted above are based on amounts recorded in the Department's system which may not be the amounts finally approved by the manufacturer. Additionally, based on discussions in other sections of this chapter, the accuracy of the information in the Department's system related to parts and labour is questionable.
- 4.83 Failure to ensure all eligible costs are claimed limits the usefulness of total life cycle cost agreements and increases the Department's exposure to incurring unnecessary equipment maintenance and repair costs.

Recommendation 4.38

The Department should include all eligible costs under total life cycle cost agreements in claims to manufacturers.

Transportation and Infrastructure Renewal Response:

The Department agrees with the recommendation of the Auditor General. The Department will ensure all eligible costs are included/submitted to manufacturers.



Transportation and Infrastructure Renewal Response

Thank-you for your report of April 2013 outlining the recent audit of our Mechanical Branches in Truro and Miller Lake. The findings of the report and the discussions with your staff have certainly been helpful and will serve as the basis of our Mechanical Branch improvements. Upon our initial review of the report, we find that we are in total agreement with the recommendations as put forward.

The details of the report support Governments newest initiative, a state of the art Fleet Management and Garage Management Tool provided to us by Automotive Resources International (ARI.) This tool will support our efforts to respond to the recommendations in a timely and efficient manner. Furthermore the report supports our development of a TIR Provincial Policy and Procedure Committee, which will aid in the review and development of new and existing P&P, leading to increased efficiencies and increased accountabilities.

The Department is looking forward to the implementation of your recommendations and the benefits that will follow. We recognize that this report supports responsible management of personnel as well as the fleet assets and operations of the Province.

In closing I would like to acknowledge the cooperation of your office and your staff during the course of this review.