

Provincial Highway Maintenance

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The Ministry of Transportation's goal is to foster a positive business climate supported by a safe, efficient and accessible transportation network. The Ministry sets minimum road safety and maintenance standards, establishes and enforces user safety regulations and sets policies for the use of the provincial highways network.

Pursuant to the *Public Transportation and Highway Improvement Act*, the Ministry is responsible for the maintenance and repair of provincial highways. The Ministry performs routine highway maintenance services to protect existing roads from untimely deterioration and to ensure highways are safe and usable. These services include such activities as culvert cleaning, pothole repair, crack filling, guiderail replacement, snow plowing and salting. The provincial network consists of 2,350 bridges and the equivalent of approximately 22,500 kilometres of two-lane highways. The estimated replacement value of this network is \$27 billion.

Since the early 1980s, provincial highway maintenance has increasingly shifted from an internal ministry operation to obtaining private sector contractors to carry out the work. During 1996, the Ministry developed an alternative service delivery strategy whereby all highway maintenance services would be provided by the private sector. On October 22, 1996, the Management Board of Cabinet approved the Ministry's business case for outsourcing maintenance activities. By March 31, 1999, under the alternative service delivery strategy, the Ministry had entered into a number of contracts with the private sector to provide maintenance services for approximately 6,800 kilometres or 30% of the provincial road system. The Ministry plans to have this initiative fully implemented by the spring of the year 2000.

For the 1998/99 fiscal year, total funding for highway maintenance was \$243 million, which includes both payments to contractors and the cost of the remaining ministry internal operations.

AUDIT OBJECTIVES AND SCOPE

The objectives of our audit of the highway maintenance program were to assess whether the Ministry had adequate procedures in place:

- to measure and report on program effectiveness; and
- to ensure that the outsourcing initiative was managed with due regard for economy and efficiency and in compliance with legislation, policies, and contract terms and conditions.

The criteria used to assess the program were discussed with and agreed to by ministry management and relate to systems, policies and procedures that the Ministry should have in place. These criteria include clearly defined goals and objectives for the program, procedures to carry out and monitor the outsourcing initiatives, maintenance standards to protect the Ministry's investments in the highways, and systems for generating reliable information for decision-making purposes.

Our audit was performed in accordance with the standards for assurance engagements, encompassing value for money and compliance, established by the Canadian Institute of Chartered Accountants, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

The scope of our audit, which was substantially completed in February 1999, included a review and analysis of documentation and discussions with staff at the Ministry's head office and district offices. We also reviewed practices in other jurisdictions with respect to highway maintenance and their experiences with outsourcing highway maintenance activities.

Our audit also included a review of the activities of the Ministry's Audit and Evaluation Services Branch. However, we did not reduce the scope of our audit work as the Branch had not issued any recent reports on the administration of the highway maintenance program.

OVERALL AUDIT CONCLUSIONS

Although some performance measures had been developed, the Ministry needed to improve its procedures to measure and report on program effectiveness. The Ministry's procedures were not adequate to ensure that the outsourcing initiative was managed with due regard for economy and efficiency nor to ensure compliance with legislation, policies, and contract terms and conditions. Our major concerns were as follows:

- The Ministry was in the process of developing performance measures for its winter maintenance activity to assess the amount of time it takes to reach bare pavement after a snowstorm. However, the Ministry also needed to develop procedures to assess the effectiveness of its summer activities and to ensure that current activities result in maintaining provincial highways in good condition.
- The Ministry had not achieved the target savings of 5% on the four outsourcing contracts we reviewed, which covered about 20% of the province's highway system.
- Subsequent to awarding highway maintenance contracts, the Ministry engaged the contractors to perform additional work without tender and offered these contractors surplus ministry vehicles and equipment without going through the required public auction.
- There were concerns that individual patrol areas were too large to adequately monitor the work of contractors to ensure that provincial highways were safe, usable and protected from untimely deterioration.

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- To determine the cost of maintenance activities and assist in related decision making, the Ministry maintains a computerized system to record maintenance activities. However, the Ministry did not have procedures in place to ensure that the data input by contractors into its maintenance system were accurate and complete.

DETAILED AUDIT OBSERVATIONS

MEASURING AND REPORTING PROGRAM EFFECTIVENESS

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EFFECTIVENESS MEASURES

The Ministry defines road maintenance as “the activities required to keep the highway in a safe and passable condition and prolong the life of the asset.” The objectives of the highway maintenance program are to ensure a safe, sustainable, efficient and high-quality transportation network with safety and highway preservation being the key maintenance priorities. In 1990, the Ministry started to develop key business measures intending to link performance indicators to these program objectives. However, at the time of our audit, the Ministry was still in the process of developing these effectiveness measures.

Both the Ministry’s 1997/98 and 1998/99 Business Plans contain performance measures and outcomes for the management of provincial highways, but these measures and outcomes relate primarily to the construction side of the Ministry’s business. There were no specific outcomes or performance measures for highway maintenance. However, during 1998, the Ministry produced a document titled *Core Business Performance Measures – 1998*. This document identified two main maintenance outcomes for the provincial highways management core business, which were to ensure that:

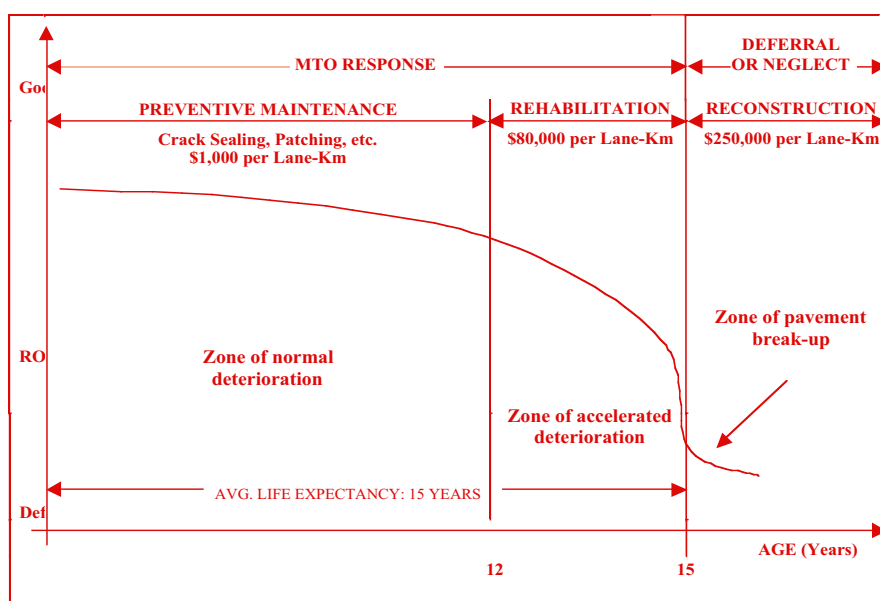
- The highways are usable and in good condition. Usable was to be measured as the average amount of time taken to restore highways to essentially bare pavement following winter storms. The condition of the road network would be measured as the percentage of highway kilometers and bridges in good repair.
- The highways are safe, with the performance measure being the dollars invested in highway safety improvement.

The Ministry has put some effort into measuring the performance of the winter maintenance activity. Specifically, the Ministry is developing a Bare Pavement System which records the length of time required to reach bare pavement after winter storms. Although information was collected in the system for 1997/98, the Ministry determined that this was not a normal winter season and the information would not reflect normal winter operations. Therefore, the Ministry was collecting an additional year of data during the 1998/99 winter season after which the results will be re-evaluated. At the completion of our audit in February 1999, the Ministry was still collecting baseline information for the Bare Pavement System. The Ministry has not developed any such performance measures for its summer maintenance activity. It also needs to develop measures of highway safety, as dollars invested measures only inputs and not the results of highway safety improvements.

We found that the Ministry's performance measures did not link maintenance activities to preserving and prolonging the life of the highways. In other jurisdictions, maintenance management systems have been established to measure this outcome in order to determine whether funds were being used effectively. One such measure is the percentage of highway kilometres where road conditions were maintained at a satisfactory level. This measurement would also help determine whether funds spent on maintenance activities were extending the service life of the highways.

The Ministry recognizes the importance of good preventive maintenance as a tool to slow the deterioration of highways and defer large reconstruction expenditures. Maintenance or rehabilitation that takes place before the pavement condition deteriorates will cost far less than reconstruction after the deterioration reaches a critical point. For example, as the following diagram illustrates, to reconstruct a road would cost \$250,000 per lane-kilometre as opposed to \$80,000 per lane-kilometre if it were resurfaced as a preventive measure.

Road Deterioration Over Time



Source: Ministry of Transportation

In an effort to prevent premature deterioration caused by water entering the road's base, the Ministry performs maintenance such as crack filling, pothole patching and shoulder grading, and ensures that culverts are kept free of dirt and debris so that water can flow freely away from the road.

The Ministry rates all roads as either in good condition or deficient. A deficient highway exhibits conditions such as cracks and rutting that will require corrective action within the next five years. Any conditions that are deemed unsafe are to be rectified immediately.

In our 1992 audit report on the Ministry's highway maintenance activities, we reported that the pavement condition rating had shown significant highway deterioration between 1979 and 1991. The lack of timely maintenance contributed to this decline. In 1979, over 60% of the

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province's highways were rated in good condition whereas in 1991, only 40% of the roads received such a rating. In 1998, only 44% of the province's highways were in good condition.

Studies by the Ministry and its counterparts in other jurisdictions indicate that timely maintenance can preserve and prolong the life of highways. The Ministry estimates that on average provincial highways will last 15 years. As of 1998, approximately 31% of the province's highways were older than 15 years indicating that the roads may require more maintenance or costly reconstruction. The Ministry needs to perform a province-wide assessment to determine whether the highway maintenance program is meeting the Ministry's goal of preserving and prolonging the life of the provincial network.

Although ministry staff agreed that there was a need to evaluate program effectiveness, the Ministry did not have sufficient information to complete this measurement. Without it, the Ministry cannot demonstrate that its maintenance activities result in protecting its investment in a usable, safe highway network.

Recommendation

To ensure that the highway maintenance program is effective in meeting its stated objectives, the Ministry should:

- **implement and monitor performance measures for highway safety improvements and both winter and summer maintenance activities; and**
- **gather the necessary information to determine whether its maintenance activities are cost effective in preserving and prolonging the life of the provincial highways.**

Ministry Response

The Ministry agrees that performance measures are desirable management tools. The Ministry has implemented a new winter performance measure across the province. An analysis of the data accumulated during the winter of 1998/99 will be available in the fall of 1999 and will form the basis for the Ministry to establish performance targets.

Establishment of meaningful summer performance measures for maintenance is a significant challenge, both for the Ministry and other highway jurisdictions. However, the Ministry acknowledges that there is value in incorporating maintenance measures in its overall strategy for enhancing its asset management. The Ministry is continuing its review of the maintenance management information system for opportunities to develop appropriate summer maintenance performance measures.

The capital rehabilitation of roads and bridges has a far more significant impact on the anticipated service life of the infrastructure assets. Pavement deterioration is a complex process which is influenced by a number of factors including the pavement design life, layer types, depths and other material properties, traffic volumes, types of loading experienced, drainage characteristics, rehabilitation history, and others.

Achievement of a longer service life of a pavement may indicate an effective rehabilitation strategy that results in the lowest overall life cycle costs.

In this regard, and as indicated in its Business Plan, the Ministry is currently in the process of developing an integrated Asset Management Business Framework (AMBF). This project, which followed from a 1997/98 study conducted for the Ministry, examined best practices among leading highway jurisdictions and established a workplan for the development of an AMBF. Development of this framework includes improvements in performance prediction tools relative to its infrastructure management strategies. These tools will allow the Ministry to better measure the effectiveness of its highway preservation strategies.

New technology is required to effectively establish result-based performance measures. The Ministry is currently testing such technology.

DUE REGARD FOR ECONOMY AND EFFICIENCY

ALTERNATIVE SERVICE DELIVERY OPTIONS

Since 1995, the government has directed ministries to reassess their program delivery approach. In February 1996, Management Board of Cabinet issued its guiding principles for alternative service delivery strategies. These principles state that the choice of delivery method will be based on a sound business case which provides customer service and ensures the best value for the tax dollar. The Ministry analyzed several different options for the delivery of road maintenance services including outsourcing. In October 1996, the Ministry submitted a business case to the Management Board of Cabinet to justify outsourcing and outline its implementation plans.

The Ministry considered three alternative service delivery models as follows:

- **Managed outsourcing contracts (MO):** All direct delivery of maintenance services would be contracted out, but the Ministry would retain management responsibility for the activity. The Ministry would still be responsible for patrolling the roads and directing when and where maintenance activities were to take place.
- **Area maintenance contracts (AMC):** A contractor would assume the responsibility for all maintenance operations within a geographic area. The contracts would extend over several years and the Ministry's involvement would mainly be to monitor the contractor's work to ensure value is received and service levels are achieved.
- **Area term contracts (ATC):** Activities would be similar to an area maintenance contract, but would include the further provisions of other services such as road rehabilitation and resurfacing, engineering, systems management and corridor control.

In the business case submitted to the Management Board of Cabinet, a detailed cost analysis and risk assessment was done for each of these three models. The cost analysis considered

costs of equipment, material and labour. Potential variations and sensitivity ranges were established based on ministry experience and consultation with the industry. Contractor overheads and profit margins were also applied based on advice from the industry and consultants. The following table summarizes the range of potential annual savings determined by the Ministry when the estimated costs of alternative service delivery methods were compared to the Ministry's existing direct delivery method.

Potential Alternative Service Delivery Savings

	Managed Outsourcing (MO)	Area Maintenance Contracts (AMC)	Area Term Contracts (ATC)
Estimated Potential Annual Savings	5% to 11%	-11% to 7%	-13% to 10%

Source: Ministry of Transportation

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The primary risks that the Ministry considered in its assessment included reduced program flexibility as a result of being locked into fixed multi-year contracts, the risks associated with potentially reduced levels of competition and the risk of not being able to provide adequate service levels. The business case showed that higher risks were associated with area maintenance contracts (AMCs) and more so for area term contracts (ATCs). Overall, managed outsourcing (MO) had the potential for greatest savings and was the least risky option.

The Ministry's initial implementation strategy, which began in December 1996, recognized that MO was a preferred alternative. However, since there was also a potential for savings with the AMC strategy, implementation was to include several trials for both delivery methods. Subsequent implementation would depend on which method provided the best value for the taxpayer, which would be determined after further analysis of the AMC and MO delivery methods. However, because of unresolved labour issues associated with managed outsourcing, the Ministry was unable to implement the MO strategy and proceeded to implement the AMC delivery strategy throughout the province.

In January 1999, the labour issues associated with managed outsourcing had been resolved. However, at the completion of our audit, the Ministry was continuing with its AMC implementation plan despite the increased risk associated with this strategy. The Ministry had not determined which of the two methods would actually be the most cost effective. The MO alternative was considered in areas where AMCs were shown to be too costly because they were in remote areas or AMC bids were not competitive. At the time of our audit, Ministry plans indicated that by the spring of the year 2000 nearly two thirds of the province's highways would be maintained using area maintenance contracts and one third would be maintained using the managed outsourcing alternative.

Recommendation

To ensure that the maximum benefits are realized from the outsourcing initiative, the Ministry should evaluate each contract to determine which outsourcing method provides the taxpayer with the greatest actual savings and revise the implementation strategy where necessary.

Ministry Response

The Ministry agrees with the recommendation. In fact, the Ministry has recently evaluated its experience with highway maintenance outsourcing to this point and developed a refined plan for outsourcing which combines the best options to maximize savings and minimize risks. The Ministry's revised strategy was submitted to and accepted by Management Board early this year.

The Ministry's experience to March 1999 with both the area maintenance contracts (AMC) and managed outsourcing (MO) concepts has resulted in a refined plan for outsourcing. The revised plan uses a combination of both AMCs and MOs in a blended approach. Ministry experience shows that this approach offers several advantages over the use of a one-concept strategy suggested in the original business case. Among the more significant demonstrated advantages is the ability of the blended approach to ensure greater competition, match contracts to local market conditions, allow greater industry participation and permit future flexibility in modifying contract areas and types. The blended approach also lowers risk levels relative to either alternative used on its own and will provide greater savings than either AMC or MO alternatives alone.

The Ministry's outsourcing strategy will continue to evolve and be adjusted based on experience gained in order to maximize savings to the taxpayer and minimize risks.

In order for maintenance outsourcing to be successful, the Ministry must ensure long-term sustainability, as well as initial cost savings. The Ministry will achieve this through the proposed blended contract approach to provide for a healthy and competitive supplier market and future flexibility to adapt to changing market conditions.

POTENTIAL OUTSOURCING SAVINGS

In October 1996, Management Board of Cabinet reviewed the Ministry's business case and approved its highway maintenance outsourcing plan. The Ministry's implementation plan was divided into two phases. Phase one was to implement a pilot area maintenance contract (AMC) followed by an AMC and a managed outsourcing (MO) contract in each region of the province. By August 31, 1997, the Ministry was to report to Management Board of Cabinet on the costs and benefits of each awarded contract before proceeding with phase two. Phase two would be to carry on with either AMCs or MOs, whichever yielded the greatest benefit in phase one. The Ministry reported to the Management Board of Cabinet that the effective implementation of the outsourcing initiative would result in estimated cost savings of 5%.

At the time of our audit, the Ministry had solicited bids from the private sector to implement AMCs in seven areas of the province. The Ministry estimated savings or losses on these AMCs by calculating the difference between the estimated cost of the Ministry doing the work and the contractor's bid price. In two northern districts the contractor's bid greatly exceeded

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the estimates of the Ministry's cost to do the work and AMCs were therefore not awarded. Area maintenance contracts were awarded in the other five areas including the pilot district.

We were informed that the estimated savings in the pilot district were \$900,000, but the Ministry could not provide us with any documentation to support its calculation. We reviewed the other four AMC contracts that were awarded during the 1998/99 fiscal year, and noted a number of costs which were included in the Ministry's estimates that required either adjustment or updating. For example, the Ministry either double counted or overestimated its own cost of equipment maintenance, service crews and miscellaneous expenditures.

Additionally, the Ministry based overhead cost for two districts on 1995/96 data whereas 1997/98 data were used to calculate the overhead costs for the other two districts. The Ministry also included in its estimated savings imputed financing charges on the purchase of equipment. However, if the Ministry had continued to provide highway maintenance services instead of agreeing to pay the four contractors a total of \$93.1 million, it would have had to spend \$93.3 million. Outsourcing will therefore result in minimal cash flow savings. Nevertheless the Ministry included financing costs of \$2.3 million in its estimates which it based on a cash flow reduction of \$13.8 million from not buying the equipment. Therefore, the Ministry has not considered the financing costs for all government cash flows including cash flows to outsourcing contractors. If all of these costs were factored out of the Ministry's estimates, outsourcing would result in estimated losses on three of the four contracts.

In addition to estimating savings from these contracts, the Ministry calculated net one-time savings of \$2.35 million for the four districts from the sale and lease of equipment and the closure of facilities for \$5.1 million less severance pay and other one-time costs of \$2.75 million. Despite these one-time savings, outsourcing may ultimately result in a significant increase in the cost of highway maintenance for these contracts.

Outsourcing Savings/Losses

AMC Location	Ministry's Estimate \$000's	Provincial Auditor's Estimate \$000's
District A	1,434	296
District B	1,262	(864)
District C	27	(386)
District D	(66)	(1,097)
Contract Savings (Loss)	2,657	(2,051)
One-time Savings	2,349	2,349
Total Savings	5,006	298
Percent Savings	5.2%	0.3%

Source: Ministry of Transportation and Office of the Provincial Auditor

Based on our calculations, the Ministry has not achieved the estimated 5% savings on these four contracts. Since these contracts represent almost 20% of the provincial highways network, future contracts will require significantly higher savings in order to achieve the overall 5% savings necessary for the effective implementation of the outsourcing initiative.

An evaluation of actual savings is important to determine if projected savings from outsourcing highway maintenance services have materialized as anticipated. In one Canadian jurisdiction, consultants were engaged to review its outsourcing of the highway maintenance program. The consultants concluded that savings claims stemmed from projections and estimates about the future and were not based on a review of actual costs incurred. Similar cost estimating procedures were used in Ontario. In addition, the study concluded that, in the five years since outsourcing was undertaken, that jurisdiction may have incurred increased costs of as much as \$100 million. The study also noted that all local knowledge, experience, technical skill and competency in highway maintenance service delivery was permanently removed from the public service of the province.

Recommendation

To ensure that the outsourcing initiative actually results in better value for money for the taxpayer, the Ministry should:

- **reassess the estimated savings for the contracts awarded prior to renewal and modify its service delivery approach accordingly; and**
- **review its business case methodology for service delivery to ensure that outsourcing is in fact beneficial to the taxpayer.**

Ministry Response

It is the Ministry's position that financing costs for capital (for example, equipment) should be included in the estimates of cost to government for in-house delivery. However, the Ministry agrees with the recommendations and estimated cost savings will be reassessed prior to the renewal of contracts, and the Ministry will continuously review its business case methodology for service delivery.

It should be noted that at the time of the audit, only four contracts had been awarded. Savings associated with subsequent awards indicate that the Ministry's savings target for the complete outsourcing initiative is likely achievable.

MAINTENANCE INFORMATION SYSTEM

The Ministry's District Direct Input System is used to record maintenance information. Some of the details included are labour hours, equipment utilized and the amount of salt, sand and material used. The system's manual notes that one of the most important requirements of an effective system for managing the highway maintenance program is the reporting of accurate and meaningful data. These data should include the cost of the work performed, the quantity of work and the resources used. Highway maintenance work such as patching, ditching, sign placement and guiderail repair is defined in the manual so that the type of work performed, as well as the labour, equipment and materials used, can be related to a specific operation. The manual also indicates that in order to achieve any degree of success in performing these tasks, managers must rely on detailed and accurate reporting.

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In areas where the Ministry has outsourced maintenance services, the information will be input directly by the contractors. We found that there were no procedures in place requiring ministry staff to verify the accuracy and completeness of the information provided and input by the contractors. Ministry staff generally followed up on large variances between contractor information and historical information. This historical information was input into the system when the work was performed internally. However, over time the Ministry's historical information will become less meaningful and the Ministry will have to rely fully on contractor input.

We were informed that the Ministry intends to use the system's information to prepare its estimate of maintenance costs to be used when evaluating future bids, including bids from the incumbent contractor. If the information on the system is not accurate, the Ministry's estimate would also be incorrect. This may affect management's decisions regarding the awarding of contracts. Without the assurance that information on the system is accurate and reliable, it would be difficult to make informed decisions.

Recommendation

To ensure that the District Direct Input System provides accurate and complete information for management decision making, the Ministry should establish procedures, such as periodic on-site verification by existing employees, to obtain the necessary assurance that information submitted by contractors is reliable.

Ministry Response

The Ministry agrees with the importance of accurate information to manage the highway maintenance program and maintains that monitoring the computer output by contractors of maintenance information is being carried out. The Ministry will, however, create a more formalized process that will include periodic reviews to ensure that District Direct Input System input appropriately reflects the work being done.

HIGHWAY TRANSFERS

In the spring of 1996, the government announced that a number of roadways that serve primarily local needs would be transferred to municipalities. At the same time, the Ministry was in the process of obtaining bids for highway maintenance services in the pilot district. The pilot contract started in December 1996 and by April 1998, the Ministry had transferred 425 kilometres of roads in the district to local municipalities.

This transfer of highways to the local municipalities was not reflected in the contractor's original bid price as the details of the transfer were not known at the time the contract was awarded. However, the contract states that if the number of kilometres decreases, the Ministry will pay only 20% of the costs associated with the maintenance of the highways transferred. As a result of this provision, the Ministry is paying the contractor approximately \$500,000 annually for the highways transferred to municipalities that the contractor no longer maintains. This

provision is designed to compensate the contractor for inefficiencies imposed by changes to the original terms of the contract.

The term of the pilot area maintenance contract is for three years and five months and is scheduled to end on April 30, 2000. However, the contract allows for an extension of an additional two years by mutual agreement between the Ministry and the contractor. Exercising this provision would cost the Ministry an additional \$1 million for highways no longer maintained. In addition, the contractor contends that the 20% payment is insufficient and there is a risk that the Ministry may eventually have to pay more.

Recommendation

To maximize the benefits of the outsourcing initiative, the Ministry should consider not exercising the two-year option on the pilot area maintenance contract and either retender or switch to an alternative delivery method that is more cost effective.

Ministry Response

Area maintenance contracts contain provisions dealing with changes in the highway system the contractor is required to maintain. These provisions are designed to cover overhead and other costs which impose inefficiencies as a result of the reduced size of the highway system.

The Ministry will consider all options in making a decision with respect to the provision of highway maintenance services in the pilot area, including the Provincial Auditor's recommendation. The Ministry will also consider all relevant costs in making a decision.

MAINTENANCE OF A COMPETITIVE INDUSTRY

The Ministry's business case for outsourcing indicated that a key factor in contracting out maintenance services would be its ability to ensure adequate competition. Without adequate competition, costs could escalate and result in the Ministry being forced to pay more to maintain service levels. The Ministry determined that the size of individual contracts may limit the number of bidders to a select group of contractors that have the resources to manage major projects. This would result in a lack of competition. Therefore, the Ministry decided to limit the size of individual contracts to 300 to 500 two-lane kilometres. Another strategy to mitigate the risk of reduced competition, as proposed in the business case, was to limit the quantity of work that any one contractor could be awarded.

At the completion of our audit, the Ministry had yet to establish an upper limit on the amount of work that any one contractor could obtain. Also, our review of the five area maintenance contracts awarded indicated that, although the proposals for each area were advertised as three or four contracts in the 300 to 500 kilometre range, the Ministry allowed contractors to bid on the entire package without providing bids for each individual component. The Ministry determined that bids on the entire package were the best value. However, this results in a

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reduced number of companies with experience in providing highway maintenance services. Therefore, the risk of an inadequately competitive market still exists.

In May 1994 the Ministry reviewed the outsourcing initiative in another jurisdiction and found that, for the second round of competition, there was a disturbing trend toward fewer contractors in total and, in a number of districts, there were very few bids. The review noted that it was difficult to come to a definitive conclusion on the cost effectiveness of outsourcing.

In some areas of the province the Ministry has found that there were not enough contractors to ensure adequate competition. In one area, the Ministry found that bids submitted were significantly higher than ministry estimates. For example, three contracts had a total estimated value of \$470,000 and the sum of the lowest bids submitted for the three contracts totalled over \$1.6 million. In another case, two maintenance contracts had a total estimated value of \$118,000 and the lowest bids submitted for each of the two contracts totalled \$164,000. Appropriately, the Ministry did not award these maintenance jobs to contractors.

We were informed that the Ministry might accept bids in some areas that are higher than the Ministry's estimated costs as long as total savings of 5% are realized from the province-wide outsourcing initiative. However, this would be neither cost effective nor result in a competitive industry in some areas. In addition, a Management Board of Cabinet directive on alternative service delivery indicates that the government will remain in direct delivery where it can best serve the public interest. Due to a lack of competition in some areas, outsourcing may actually lead to an escalation in maintenance costs.

Recommendation

The Ministry should review its current tendering practices to ensure that excessive costs are not incurred in future highway maintenance. In addition, in areas where no savings would result from outsourcing, the Ministry should implement the most cost-effective method of service delivery.

Ministry Response

The Ministry agrees with the Provincial Auditor that any outsourcing plan must ensure that the Ministry is protected from long-term cost increases. The Ministry's current outsourcing plan has been built on the diverse experience of other jurisdictions, optimizing its tendering approach to provide maximum flexibility and ensuring the most cost-effective outsourcing alternatives are, and continue to be, available to suit local conditions. In this regard, the Ministry has developed an outsourcing plan which achieves these objectives; the blended approach being implemented uses a combination of area maintenance contracts (AMCs) and managed outsourcing (MO) contracts.

Among other benefits, the use of both AMCs and MOs ensures that the Ministry is able to manage the level of competition within the industry and retain the cost advantages of outsourcing. This measure helps to avoid the difficulties that some other jurisdictions seem to have encountered.

The use of a blended approach also provides greater flexibility to address regional characteristics such as geography, highway types and the capacity of the contracting industry.

The Ministry is continually reviewing and refining the way it outsources highway maintenance services, pursuing strategies such as:

- ***reducing the financial pre-qualification level without compromising financial surety (thereby increasing the number of potential contractors able to bid); and***
- ***adjusting the allowable maximum of subcontracted work in AMCs so as to provide opportunities for small local business operators who traditionally participate in delivering operations, and providing future flexibility for service.***

Regarding the Provincial Auditor's reference that "the Ministry had yet to establish an upper limit on the amount of work that any one contractor could obtain," the need for such a restrictive measure will only be required if industry consolidation limits competition. Ministry experience to date, with a wide variety and number of contractors bidding on maintenance contracts, indicates that there is no need at this time to impose limits on the amount of work that one contractor can hold. The Ministry has indicated to the industry however that, should circumstances warrant, such a limit may be imposed.

With respect to the Provincial Auditor's comments that the Ministry might award contracts where bids are above estimated costs, the Ministry is looking at overall cost efficiencies. It is the Ministry's view that it may not always be cost effective to retain small pockets of ministry direct delivery staff and related equipment where there is only a narrow difference between the individual contract prices and the in-house costs. It may be necessary on rare occasions to accept prices on small components of work to achieve the overall savings of large components of work. The Ministry's strategy, through a blended AMC and MO approach, is to outsourcing highway maintenance activities which will achieve an aggregate saving as well as creating a competitive and robust industry.

PRESERVATION MANAGEMENT

Preservation management activities usually encompass preventive and rehabilitative work that helps to sustain or prolong the life cycle of the provincial highways network. They include such items as sealing cracks in the road and replacing deck joints on bridges. The contractor identifies this type of work to the Ministry each year. According to the terms of the area maintenance contracts, the Ministry may engage the contractor at a negotiated price to carry out any or all such work that is valued at less than \$250,000. This amount was reduced to \$100,000 for contracts signed subsequent to 1998. We noted that the Ministry would first approach the contractor for a price before considering an open competitive process. This price would then be compared to ministry estimates and if considered reasonable, the work would be granted to the existing contractor. However, Management Board of Cabinet directives require

all services to be acquired competitively to ensure a fair process and receipt of the best value for the funds expended.

As of March 1999, 12 preservation management contracts totalling \$335,000 were given to the existing contractor in the pilot district without going through a competitive acquisition process. This practice does not allow the Ministry to demonstrate that it is receiving the best value for the money expended, as other contractors were not allowed to bid on the work. In addition, the Ministry did not request or obtain the required approval from Management Board of Cabinet to be exempted from the competitive acquisition policy.

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Recommendation

To ensure that value for money is obtained, the Ministry should award preservation management contracts through a competitive acquisition process as required by the Management Board of Cabinet directives.

Ministry Response

It is the Ministry's position that preservation management work is an inherent part of the area maintenance contracts (AMCs) and it is therefore acquired in an open and competitive manner. The Ministry achieves the best overall value for the total work, including preservation management work, as part of each AMC contract. This opportunity provides an incentive to each AMC bidder and results in lower contract prices and greater savings overall. At the same time the Ministry retains the option of seeking other bids for preservation work if not satisfied with the quotes provided by the AMC contractor. The Ministry understands the Provincial Auditor's concerns about the need for a specific Management Board exemption. The Ministry maintains that this practice was clearly presented in submissions to Management Board and received the concurrence of procurement specialists. The Ministry accordingly believes approval was implicit in Management Board's authorization to proceed with the initiative. The Provincial Auditor's concerns however will be addressed and the Ministry will seek specific Management Board direction on this subject.

SURPLUS ASSETS

The Management Board of Cabinet assigned to the Ministry the sole responsibility to arrange for the disposal of all government-owned vehicles. All such disposal arrangements must be equitable to all potential buyers, avoid conflict of interest concerns and optimize the returns to the government. Ministry policy states that all such surplus equipment must be disposed of through public auction. However, the request for proposal for the outsourcing of highway maintenance services allowed for the successful bidder to buy or lease surplus vehicles and equipment directly from the Ministry. Such equipment included trucks, snow plows, front-end loaders, tractors and graders.

We noted that for the five area maintenance contracts awarded, ministry equipment was either sold or leased to the successful bidders for a total of \$6.5 million. This practice is not equitable to all potential buyers, and there is no assurance that the Ministry optimized its returns from the disposal of vehicles and equipment. In addition, the Ministry did not request or obtain approval from Management Board of Cabinet to be exempted from this policy.

To sell or lease surplus equipment to the successful bidder is contrary to Management Board of Cabinet directives. In addition, including the option to lease or purchase surplus equipment in the request for proposal distorts the bid price and makes any subsequent comparison to the Ministry's estimate misleading. Contractors may reduce their bid price, knowing that they do not have to purchase new equipment. For subsequent contracts, contractors may have to increase their bids to purchase new equipment because the Ministry will not have equipment to offer at a potential discount. This situation may also provide an unfair advantage to the incumbent contractor when the initial outsourcing contract expires.

Recommendation

To ensure that the Ministry optimizes its returns on the sale of surplus assets by allowing all potential buyers an equal opportunity to purchase surplus vehicles and equipment, the Ministry should dispose of surplus assets through public auction as required by the Management Board of Cabinet directives and ministry policy.

Ministry Response

The sale, in the area maintenance contract (AMC), of equipment normally used to perform the work is integral to the successful implementation of an AMC by the contractor. It is the Ministry's position that the sale of these surplus equipment assets was done in an open and competitive manner and achieves the best overall value by virtue of being tendered as part of each AMC contract. The Ministry maintains that this practice received the concurrence of procurement specialists. The Ministry accordingly believes approval was implicit in Management Board's authorization to proceed with the initiative. The Provincial Auditor's concerns however will be addressed and the Ministry will seek specific Management Board direction on this subject.

COMPLIANCE WITH POLICIES, PROCEDURES AND CONTRACT TERMS

SELECTION OF MAINTENANCE CONTRACTORS

The Ministry's contractor selection process includes a pre-qualification and a proposal evaluation stage. The pre-qualification process determines the financial strength of the contractors while the proposal evaluation process evaluates the contractor's ability and knowledge with respect to providing highway maintenance services. The evaluation process

rates each contractor on several criteria with minimum scoring requirements to be achieved in each area before the contractor can continue through the process. In addition, there is a minimum overall score that contractors must attain to be awarded the contract. We concluded that the Ministry had a proper process in place to select highway maintenance contractors and selected the bidders with the lowest evaluated price and maximum score.

In one district, we noted that ministry employees who were involved either on the evaluation team or the approval process had left the Ministry to accept positions with the successful bidder. We could not determine the impact, if any, the employees may have had on the awarding of this contract. However, since that time Management Board of Cabinet issued a directive to address such cases, and the Ministry has included a conflict-of-interest clause in requests for proposals.

3.14

MONITORING OF MAINTENANCE SERVICES

Under the *Public Transportation and Highway Improvement Act*, the Ministry is responsible for the maintenance and repair of all highways in the province. As the Ministry shifts from providing the service directly to having contractors carry out the work, it is important that the Ministry have an appropriate monitoring system in place to ensure fulfilment of its legislative responsibilities. In this regard, the Ministry has included standards in area maintenance contracts that contractors must follow in providing maintenance services.

The Ministry has assigned area maintenance coordinators to monitor highway maintenance. Each coordinator is assigned an area of 300 to 500 kilometres of highways. Their responsibilities include patrolling the highways and inspecting the work carried out by the contractors. The coordinators determine whether the maintenance standards are being met and provide assurance that the highways are safe for public use. In addition, the coordinators are required to maintain detailed records of their monitoring efforts.

For any monitoring effort to be successful, there need to be qualified staff who understand the maintenance business. We reviewed the qualifications and experience of the maintenance coordinators and found that they were qualified to ensure that the work performed by contractors met ministry standards. However, we had the following concerns:

- The maintenance coordinators in the districts we visited stated that the areas patrolled were too large and there were insufficient staff to adequately monitor the work of the contractors. We were also advised that since some of the contractors' staff were former ministry employees, some coordinators assumed that maintenance work was being carried out as required. This results in an additional risk of insufficient monitoring to ensure contractors meet ministry standards.
- Maintenance coordinators generally do not maintain detailed records of their monitoring efforts. Such documentation is important to support the evaluation of contractor performance and to assist in any legal cases involving alleged negligence by the Ministry in maintaining safe highways. In addition, minutes of meetings with contractors were often not detailed enough to determine the resolution of any apparent deficiencies in the contractors' work.

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- Agreements with contractors include penalties, such as damages for non-performance of maintenance activities. However, we noted that maintenance coordinators in the pilot district issued several verbal warnings to the contractor, sometimes for the same violation. The coordinators did not assess penalties under the terms of the contract even though penalties were warranted. In addition, we noted several records of violations with little or no documentation indicating how they were resolved.

Recommendation

In order to fulfil its obligations under the *Public Transportation and Highway Improvement Act*, the Ministry should establish procedures to ensure that:

- **the monitoring function is effectively carried out;**
- **maintenance coordinators maintain sufficiently detailed records of their monitoring efforts; and**
- **penalties are assessed where warranted according to the terms of the maintenance contracts.**

Ministry Response

The Ministry has recently reviewed the staffing requirements involved in monitoring the maintenance contracts. The Ministry believes that staffing levels are appropriate to protect the Ministry and public. The Ministry's experience is that the level of monitoring currently in place works effectively. Ministry field monitoring levels are significantly higher than in another province using similar contracting methods.

Although the Ministry is of the opinion that the appropriate monitoring and enforcement of maintenance contract provisions are in place, it has recognized the need to improve documentation procedures. Standardized diaries and work records are currently being developed by the Ministry's Maintenance Office. Training in the use of these diaries and work records will be provided as appropriate.

The Ministry has established mechanisms to ensure contract provisions are applied fairly and consistently. In addition the Ministry is also considering further refinements to the processes currently in place. The Ministry has also implemented training for staff who directly administer the contracts. There are also significant penalties to address failures to comply with contract provisions.

CONTRACT PERFORMANCE EVALUATION

Ministry policy requires the preparation of a formal evaluation at the completion of a contract to ensure that it has received the best value for the money expended and that the contractor's performance was satisfactory. Since none of the area maintenance contracts had been completed, there were no evaluations done. However, in one district where managed

outsourcing contracts had been completed, we noted that subsequent contracts were awarded without consideration given to the past performance of the contractors. The most current contract performance evaluations on file were done in 1997. We also noted that there was no mechanism in place for regions to exchange information regarding the past performance of contractors.

3.14

Recommendation

To ensure that only competent contractors are selected and that the best value for the funds expended is received, the Ministry should formally evaluate all contractors upon completion of maintenance service contracts and before awarding subsequent contracts. In addition, the Ministry should develop a system to allow regions to share information regarding a contractor's past performance.

Ministry Response

The Ministry is considering a review of the Maintenance Contractors' Performance Appraisal System for all maintenance contracts along with a pre-qualification system for major maintenance work (similar to construction pre-qualification). Under a maintenance pre-qualification system, poor performance could result in a reduced rating and ability to bid on ministry maintenance contracts.

Ministry policy requires Maintenance Contractors' Performance Appraisals to be performed on maintenance contractors. Those who perform in an unsatisfactory manner may be prohibited from bidding on any ministry contracts for a period of time. A system to compile a provincial database on maintenance contractor appraisals is being considered.