

# TRANSITION OF MAINTENANCE SERVICE DELIVERY TO THE PRIVATE SECTOR IN ONTARIO

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## 1. Abstract

In 1995, a new government was elected in the province of Ontario, on a platform that emphasized reducing the deficit, balancing the budget, reducing the size of the civil service, and a stronger role for the private sector. At that time about 50 percent of the performance of highway maintenance in Ontario was outsourced, but the Ministry of Transportation (the ministry) managed and directed all work. Other jurisdictions were experiencing success in effectively contracting out various portions of highway maintenance without reducing service levels.

The ministry carried out and documented a business case and risk analysis of options for, and benefits from, privatized operations. The ministry's goals were ensuring appropriate service standards are met (particularly winter), achieving value for money, creating an environment that is conducive to the development of new methods and technology, and developing a sustainable highway maintenance industry that is well positioned to deliver a full maintenance program in the long term. The ministry's role would concentrate on policy and standards development, priority setting, contract monitoring and evaluation.

As a result, between 1996 and 2000 the ministry outsourced 100 percent of maintenance operations. A blended approach of two contract types, Managed Outsourcing (MO) contracts and Area Maintenance Contracts (AMC), was developed. In MO areas a number of smaller functional contracts are managed and directed by the ministry. In AMC areas, larger contractors perform most or all of the maintenance activities in a 300 to 500 equivalent 2-lane km area under a lump-sum payment system. The AMC contractor manages and plans the work in order to fulfil the standards and specifications in the contract.

There were a number of challenges involved in the contract development, implementation and management. It was imperative to document the ministry's legislated responsibilities and (formerly in-house) specifications in a manner that was biddable for contractors. The level of implicit and explicit risk shared by the contractor and the ministry was carefully articulated to ensure that the government would benefit from privatized contractor innovation and efficiencies and that contractors would not be subject to excessive risks due to unpredictable events such as unusual weather.

Processes and documents for the AMC request for proposal process, evaluations, internal estimates and awards were completed. Communication with industry organizations was continued throughout the process.

The outsourcing is now complete. Maintenance work is being delivered to standard, and the province's standards have been reformatted to support the new delivery methods. The ministry has monitored and carried out quality assurance on the contractor's performance and is also confident that the ministry's legislated responsibilities are being fulfilled. The savings goal of five percent was met.

## **2. Introduction and Background**

The Ministry of Transportation of Ontario is responsible for the design, construction and maintenance of the provincial highways in Ontario, totalling about 22,400 equivalent 2-lane km. These economic corridors carry about \$2.7 billion\* worth of goods each day, and the replacement cost is estimated to be in excess of \$27 billion. Each year about \$240 million is spent on the maintenance of Ontario's highways.

Since about 1980, the Ministry of Transportation of Ontario (the ministry) had privatized portions of highway maintenance. By 1995, the level of privatization was around 50 percent, but with ministry staff directing all work. The majority of the outsourced work was for snow and ice control. In 1995 direction from a new government emphasized reducing the deficit, balancing the budget, reducing the size of the civil service, and a stronger role for the private sector. In addition, ministry visits to other jurisdictions, including those with similar climatology, indicated that highway maintenance services can be effectively contracted out without reducing service levels.

The ministry developed a business case, which reviewed the current delivery methods, the potential alternate delivery models, the expected financial returns and presented a risk analysis. The business case was completed in 1996, and central government agencies endorsed proceeding with two different methods of delivery (Area Maintenance Contracts (AMC) and Managed Outsourcing (MO) contracts) at selected locations across the province in order to examine the impacts and benefits of each model. It was planned that the privatization would be complete by 1999, and a savings goal of five percent was expected.

The challenges included expressing the ministry's legislated responsibility for maintenance and the (previously in-house) maintenance standards in a format that contractors could bid upon. In addition, government guidelines dictated that the contracts must be awarded on a competitive basis.

\* All monetary figures are in Canadian dollars.

## **3. Contract Types**

The business case defined the ministry's goals as ensuring appropriate service standards are met, achieving value for money, creating an environment that is conducive to the development of new methods and technology, and developing a sustainable highway maintenance industry that is well positioned to deliver a full maintenance program in the long term. The ministry's role would concentrate on policy and standards development, priority setting, contract monitoring and evaluation.

Four alternatives were identified that could fulfil the ministry's vision: functional contracts, Managed Outsourcing (MO), Area Maintenance Contracts (AMC), and Area Term Contracts.

Functional contracts provide a specific (usually specialized) service over a geographic area, potentially crossing the existing internal area boundaries. Specialties such as line painting or electrical services are often well suited to this type of delivery. Functional contracts were not analyzed as a general delivery method, but as one that can be used in conjunction with other models.

Under the MO model, all direct delivery in an area is contracted out using a number of smaller contracts. However, the ministry retains local management responsibility. Highway patrollers, who direct the work and make management decisions (such as when to start snowplowing or salt application) work directly for the ministry. Contractors are usually paid by a measurable item (such as per day, km, hour, standby, etc). Attempts are made to group work in efficient portions, and by like types. Contract duration varies, but is generally up to three years, with duration of more than one year encouraged.

The MO method significantly reduces in-house human and equipment resources and minimizes non-productive and standby costs. Work to the private sector service providers is distributed throughout the province and thus increases opportunities for all sizes of contractors. The ministry retains flexibility with regard to setting priorities and changing budget levels. However, significant resources are required to prepare and administer contracts. The MO delivery method is expected to produce the most cost effective service in more rural areas where some contractors would pass on efficiencies from their lower overhead costs.

AMC contracts are generally much larger than MO contracts, and to-date have had a duration of five years (three years plus an optional two-year extension). A single contractor assumes responsibility for most or all winter and summer operations within a geographic area, such as snow plowing, salting, sanding, maintenance of the pavement surface, roadside, structures, signs, electrical systems, etc. This includes responsibility to patrol the highway, and to manage and direct the work. The area is large enough to provide economies of scale to both the ministry and the contractor (300-500 equivalent 2-lane km). The contract includes the ministry's detailed standards, but the contractor is generally not told how to approach the work in order to achieve the required end result. Payment is on a lump-sum basis, with monthly payments in the winter months twice those of the summer months. Payments are increased by an inflation factor during the 2 year extension.

The philosophy behind AMCs is one of partnership between the ministry and the contractor, and the contractor is encouraged to bring forward efficiencies, innovations and new technologies. In an AMC area the ministry's role is one of monitoring, contract administration and evaluation, thus significantly reducing the ministry's tendering and administration requirements. AMCs also have other benefits similar to those provided by MOs.

Area Term Contracts are similar to AMCs but would also include the provision of other services such as capital rehabilitation (resurfacing, bridge rehabilitation, etc.) and highway system management. The type of contractors who are expected to deliver maintenance services could also deliver capital rehabilitation, however additional expertise may be required for engineering systems management and corridor control.

All of the contract types have the potential to reduce costs over traditional delivery methods, and it was recognized that it is difficult to conduct accurate costing analysis without testing contractual arrangements and industry response. The recommendations included proceeding very quickly to implement an initial series of AMCs and MOs in selected areas across the province. This would also give industry and the ministry experience on costs, delivery, legal and business relationships. Further contracts were to proceed on an incremental approach, allowing direction to be adjusted based on the experience gained.

#### **4. Contract Development**

In order for external parties to bid on ministry work, particularly work that they would direct and manage themselves, it was necessary to express the ministry's standards in contract language that was biddable, required a specific end result that did not restrict innovation, and incorporated the legislated obligations and responsibilities of government. There was concern that contractors did not have the experience or the non-profit-oriented motivation that government workers had in carrying out highway maintenance duties.

At the time, the ministry had Quality Standards and Operating Instructions which prescriptively described, for in-house staff, how to proceed with maintenance work including snow and ice control. Ministry committees of experienced field and head office staff spent several months translating these in-house procedures into end-result documents.

For MO contracts, initially separate contract documents were developed for each type of work required, and the revised specification text was inserted directly into each specialty contract. The contracts are now modular with a standardized front section. The independent standards which address each type of work are now numbered Maintenance Special Provisions (MSP).

AMCs advanced immediately to the standardized modular MSP format for specifications and standards. Although similar, the AMC and MO MSPs are different, to address changes in contractor responsibilities and payment methods.

All AMCs include detailed MSPs for winter operations, record keeping, road patrolling and other types of work included in the contract. In addition, AMC contract packages include a statement of the partnership philosophy of the contract, definitions and identification of the documents that are included and available, proposal submission instructions, proposal evaluation criteria, general conditions of the work, scope of the work, the historical data of the work completed in the area, the penalties for non-compliance with the contract, contract forms, patrol yard lease details and an inventory of the plant.

The generic contract packages that have been developed for both AMC and MO contracts contain “designer note” sections that facilitate contract customization for a given geographic area or specific combinations of work types. Custody of the generic contracts rests with the ministry’s head office and the contract components are continually updated as required.

## **5. Risk Sharing**

As AMCs differed the greatest amount from the ministry's past practices, they also presented some greater development challenges, including the implicit and explicit sharing of risk with contractors. The philosophy of partnership and the desire to have the contractor share in a significant but appropriate level of risk is reflected in many parts of the AMC contract. Both the ministry and the industry representatives were concerned that the overall the risk balance was appropriate. The right equilibrium would ensure that the government would benefit from privatized contractor innovation and efficiencies while contractors would not be subject to excessive risks due to unpredictable events such as unusual weather.

The most explicit risk-sharing clause in the AMC is for winter salt and sand usage. Under the lump sum price contractors purchase their own de-icing materials from suppliers and are responsible for all materials used up to 110 percent of the five-year average (established at the time of bidding). Above 110 percent, the ministry reimburses the contractor only for the cost of the material used. If the material usage is under 90 percent of the five-year average, the contractor credits 90 percent of the material price under this limit back to the ministry. There is also risk-sharing in place for more expensive freeway guide rail end treatment systems.

It was also identified that certain types of work were not predictable from year to year. This small portion of the work was excluded from the lump sum price, and is carried out under individual "Work Orders", provided the contractor submits a price that is below the ministry’s estimate. The types of work that are Work Order are defined in the contract and include work such as maintenance during tree and shrub establishment, culvert installation and installing new signs. The overall cost of Work Order activities is generally less than ten percent of the lump sum price.

The ministry has retained the risk with respect to making sure that its legislated responsibilities are carried out, and the financing and cash flow risks. The ministry also carries the risk that the financial estimates used for the award decisions are accurate and defensible and will show that Ontario taxpayers are benefiting from maintenance delivery methods that give them the best value for money.

## **6. Implementation**

The 1996 business case advocated the accelerated implementation of both AMC and MO contracts, in order to become familiar with both. That year the first three AMCs, for a total of over 1200 equivalent 2-lane km, were awarded to the same contractor. Two issues then delayed the implementation of further contracts for about eighteen months. Firstly, as part of a larger provincial initiative, the government was in the process of transferring some highways to lower tiers of government. Secondly, the rights and entitlements of the ministry's surplussed employees necessitated that the employer make "reasonable efforts" to ensure that employees would have access to the positions in the company to which the work was outsourced. The eventual resolution of the ministry's labour relations settlement paved the way for government to proceed with alternate delivery methods in other business areas.

In 1999, after experience with both AMC and MO contracts, the ministry revised the business plan implementation and received government central agency approval for the ministry to continue with a “blended approach” of both AMC and MO contract models. This approach provides continuing work for large and small contractors, continues to develop patrolling and field expertise within the ministry for staff succession planning, and gives the ministry the flexibility to use different contract types in the areas best suited to them or in a non-award situation. It was noted that where appropriate and cost effective AMCs are most desirable as they offer maximum transfer of responsibility to the private sector.

By July of 2000, one hundred percent of highway maintenance had been outsourced. A total of nine separate companies had been successful in 36 AMCs, and there were hundreds of smaller

contractors participating in MO areas. About 60 percent of Ontario provincial highway maintenance is now delivered under the AMC model, with the remaining 40 percent delivered by the MO model. Individual AMC contracts (300-500 equivalent 2-lane km) range from around \$1.5 million to \$5.6 million per year, depending on size, complexity, traffic volumes and other factors. As outsourcing progressed and contractors became more confident with AMCs and the ministry's administration of them, there has been a trend toward more bidders on each contract.

In order to bid on any contract over \$500,000 contractors must either prequalify or submit financial surety. In order to become prequalified under the ministry's system, the contractor must demonstrate both a financial history indicating the ability to do the work and past experience in similar work (preferably for the ministry). Each contractor's quality control plan is evaluated as part of their proposal submission for that particular contract.

AMC Request for Proposals (RFP) are generally advertised for approximately twelve weeks, and during that period a non-mandatory bidders meeting is held, where contractors can ask questions about the work, award process or other details. Written questions are also accepted and if answers substantially change the RFP or could affect the preparation of proposals, then answers are issued as addenda to all bidders.

Proposal submissions consist of several parts, including a technical submission and a sealed financial bid submission. The quality of each technical submission is evaluated by a ministry team for compliance to the RFP requirements and is overseen by an external process consultant for consistency and adherence to the set process. If the technical proposal does not meet minimum criteria, it is discarded and not considered further. Otherwise, proposals are given a numerical quality score. The contractors financial bid submissions are then opened. Financial submissions are adjusted by a factor whereby decreased quality increases the price used for comparison with other bids. The lowest adjusted price is awarded the contract, pending resolution of any unclear components of the proposal.

Prior to the date the proposals are due, the ministry prepares and seals an internal estimate for the work. This estimate is used in determining whether to award the contract. The ministry has had a number of AMC and MO non-awards due to high bids. These areas were re-packaged and were subsequently awarded, some with a changed delivery method (AMC to MO or vice versa).

Throughout the implementation period, the ministry maintained strong communication linkages with the contracting industry.

## **7. Contractor Performance and Monitoring**

In AMCs, in particular, the ministry's role has changed from one of directing and conducting the work to one of quality assurance, during which the ministry monitors the contractors' adherence to the contract requirements. The ministry's staffing complement includes just under 170 contract monitors. A number of these monitors are for specialized services such as electrical and line painting. The ministry has a training plan in place for monitors and regularly reviews course content.

The ministry monitors all facets of the contractors' plans and work. In advance of each contract, and before each winter in multi-year contracts, the monitors review each contractor's maintenance plan, including training, equipment compliment, plow and spreader routes, material supply arrangements, staffing, patrolling and weather monitoring plans.

During the contracts, the monitors work irregular hours, particularly during winter storm events. After these events, the monitors review the contractors' records and response. On a regular basis, the monitors review highway sections and contractor patrol yard(s). They note work that is required, and whether the contractors complete the work within the timeframes and other specified standards prescribed in the contract specifications. The ministry's comprehensive monitoring records are in standardized formats and are retained and archived by the ministry.

Contractors also must keep detailed diary records of patrolling observations and work completed. In addition, contractors are required to document their accomplishments for all work performed in the ministry's software database, the Maintenance Management Information System (MMIS). Ministry monitors review contractor inputs, and must verify data integrity before it becomes part of the ministry's historical database.

Communication with the contractor can occur daily as required, and formal monthly meetings, with minutes, are used to discuss any concerns with contract execution. Sections in the contract describe the penalties for non-compliance, which range from financial penalties to a demerit point system that can lead to possible loss of the contract and/or limitations on future bidding on other contracts. Guidelines for monitoring AMCs have been established to provide specific direction and a consistent approach for monitors to use in dealing with contract non-conformance.

In addition, senior ministry monitors from across the province have internal meetings regularly to discuss consistent clause interpretations and contract administration, to comment on new ministry developments and contract language, and to bring concerns and issues from the field forward to the persons developing policy and generic contract improvements.

Contractors are formally evaluated after every contract, or annually for longer contracts. The evaluation follows guidelines that are in place for the required format, categories, and backup documentation. Each evaluation is signed by both a ministry representative and a contractor representative and retained on file.

The conclusion that ministry staff monitoring procedures work and that contractors are delivering to ministry standards for snow and ice control is reinforced by the ministry's performance measurement for winter operations. The measure reports the success of providing bare pavement within standards after the end of winter storms and is currently set at 90%. This target has been met each year since implementation in 1998.

## **8. Ongoing Refinements**

The first AMCs awarded will expire in early spring of 2002. In the second generation contracts, the ministry is moving toward more detailed and documented monitoring, including more explicit contractor quality control plans and more structured quality assurance by the ministry. In MO contracts, methods for transferring an appropriate amount of work direction and risk to contractors are being examined.

Contractor proposals and ministry requirements to-date for new technology use are mostly for winter snow and ice control and include ARWIS, electronic spreader controls, de- and anti-icing (both fixed and mobile systems), infrared thermometers, salt and sand prewetting, and zero velocity material spreaders.

A particularly interesting new innovation is the Automated Vehicle Location (AVL) system. It was piloted by the ministry and is an automated system to collect and archive real-time operations vehicle data via GPS. It can provide information such as vehicle location, speed, direction, material application rates and whether the plow is up or down. The ministry completed trials on 48 units during the 2000/01 winter. The trials addressed the ministry's monitoring needs, and it is anticipated that AVL also can help provide appropriate quality control for contractor use. The trial will be expanded, and several contracts have AVL as mandatory equipment for the 2001/02 winter.

To further encourage contractor research and implementation of new maintenance technologies, and to promote the more effective use of salt, the ministry is considering contract options to reduce the lower threshold at which AMC contractors must provide financial credit for de-icing materials saved.

The contracting industry has told the ministry that in order to amortize the cost of purchasing heavy equipment, such as snow plows, spreaders, and combination units, an increase in the contract duration from five years to seven or eight is desirable. The ministry is also investigating this option, as well as tendering processes where there is more flexibility to achieve greater efficiencies and to manage government cash flows through fixed or inflation adjusted pricing.

Draft plans are in place for a process whereby contractor evaluations from past work will affect their ability to bid on future work. This will further emphasize the importance of quality and fulfilling standards when executing ministry contracts. It is anticipated that this Contractor Performance Rating System will use the database of evaluations that is currently being compiled.

Finally, the information gathered from the implementation of AMC and MO contracts will allow the ministry to refine and better evaluate the risks and benefits of proceeding toward expanded contractor responsibilities such as Area Term Contracts.

## **9. Conclusions**

After full privatization of highway maintenance activities, the ministry's quality assurance and monitoring, research and analysis has led to confidence that maintenance work is being delivered to standard and the ministry's legislated responsibilities are being fulfilled. The five percent savings estimate was met.

New Area Maintenance Contract and Managed Outsourcing delivery methods have been developed, a new AMC industry has been created where one did not previously exist, and the industry capability to carry out Ontario's provincial highway maintenance has been demonstrated. Contractors have made job opportunities available to the ministry's former staff, thus retaining knowledge within the industry.

The enormous effort that was made to transform the delivery methods of highway maintenance in Ontario has already been more than worthwhile, but it is still work in progress. Possibilities include continuing contract refinements, more comprehensive delivery methods like Area Term Contracts, and further economies of scale such as partnering with other levels of government.

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