Transportation Public/Private Partnerships in New Brunswick A Success Story

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Introduction

The Province of New Brunswick has implemented two major highway projects in the form of Public/Private Partnerships. The first project, the 195-kilometre Fredericton-Moncton Highway Project was opened to traffic in October 2001 and is now being operated, managed and maintained by the private sector operator, MRDC Operations Corporation. On the second project, the Trans-Canada Highway Project, approximately 100 kilometres of highway is now under construction and a further 125 kilometres of previously constructed roadway is currently being operated, managed and maintained by the private sector partner, Brun-Way Group. The New Brunswick Department of Transportation (NBDOT) is constructing an additional 47 kilometres of roadway which will be transferred to the Brun-Way Group when completed.

This paper will briefly discuss the history and physical characteristics of the two projects, the business models established, some key aspects of NBDOT's management in regard to implementing these projects and our assessment of the results.

History

Like many road jurisdictions, the New Brunswick Department of Transportation has traditionally constructed and maintained its highways either directly using its own forces or through a large number of small third party contracts for clearly defined works (usually paid on a unit cost basis). In many cases, the construction of a section of highway has involved several separate contracts for different phases of the project. To a large extent, the management and inspection of this contracted work has (partly by necessity) remained with NBDOT.

For example, the construction of the 35-kilometre Pokiok to Longs Creek section of the four-lane Trans-Canada Highway now under construction by NBDOT has been or is being done under many separate contracts, not including any separately contracted pre-engineering work.

This approach is well suited to the traditional annual budgeting cycle of government, where a fixed sum is budgeted in any fiscal year for highway construction, and every effort is then made to spend the allocated funds while avoiding any over expenditure. Careful monitoring of actual and forecast expenditures allows projects to be advertised and awarded during the course of the year to ensure that the amount of work and forecast expenditures are balanced with the available funds.

In the mid 90's, the New Brunswick government recognized the need to make a number of large investments in the Province's infrastructure, including its highway infrastructure, over a relatively short time period. One of the top investment priorities from both an economic and a safety perspective was the four-laning of the Trans-Canada Highway between the Québec border and the Nova Scotia border.

The scale of the investment required, the size of the project, and particularly the desired timing for completion were beyond the scope of the Province to manage using the traditional approach. Other sources of funding and other ways of implementing large investments in a short period of time were required. While the Province had been successful in obtaining some federal funding for portions of this work, there was and still is a need to find alternative approaches to implementing these major transportation projects within time and budget constraints.

In response to these needs, the Province established a crown corporation, the New Brunswick Highway Corporation (NBHC), as a vehicle to implement major highway projects using alternative financing and management options. NBHC has a broad mandate subject to the direction of government to construct, operate, maintain, and finance major highway projects. It has greater flexibility than NBDOT to enter into contracts, to raise revenues such as tolls, and to form joint ventures.

The Projects

Fredericton-Moncton Highway Project

In 1996, the provincial government decided to accelerate the reconstruction of the Trans-Canada Highway (TCH) by proceeding with an alternative service delivery model for the design, construction, operation and maintenance of the Fredericton-Moncton Highway (between Longs Creek and Moncton). Financing for the project was to be raised in part against the revenue stream arising from user pay tolls. It was decided that contracting the future operation, maintenance and rehabilitation of the highway to the same developer/operator would encourage the developer to design and build a project which best balanced the initial investment in design and construction with future maintenance and rehabilitation costs. It would also encourage the developer to build in quality so as to reduce these future maintenance and rehabilitation costs.

The Fredericton-Moncton Highway Project (FMHP) consists of 204 kilometres of highway, of which 29 kilometres had been previously completed by NBDOT and transferred to the developer/ operator for operation, maintenance and rehabilitation. The project includes two major river crossings of about one kilometre each, and 21 interchanges including four high speed interchanges. The highway is designed to RAD 120 standards and is posted at 110 km/h. A wide, 80 metre, median is provided through most of the project. Other features include rumble strips, energy absorbing guide rail end treatments, wildlife fencing and wildlife passages under the highway, clear recovery zones and open abutment structures.

Agreements were signed with Maritime Road Development Corporation (MRDC), the developer and operator in January 1998. MRDC is a joint venture comprised of Dragados FCC Canada Inc., Miller Paving Limited and Janin Atlas Inc. Construction began that same spring. The highway opened to traffic in October 2001, less than four years later, and five weeks ahead of the required delivery date.

The Operation, Management and Maintenance (OMM) agreement for the FMHP assigns responsibility for all operations, management, maintenance and rehabilitation of the highway to the operator for a thirty-year period (until 2028). This includes corridor control, general maintenance such as guide rail repairs and pot-hole patching, winter maintenance including ploughing and ice control, and rehabilitation of pavements and bridges to ensure that the expected life of the highway infrastructure is realized and that the highway offers the necessary safety and comfort to the users. Hand back standards in the agreements establish the minimum required condition of the road and bridges at the end of the contract period.

Trans-Canada Highway Project

In February of 2005, the province signed agreements with Brun-Way Group, a joint venture comprised of SNC-Lavalin Inc. and Atcon Construction Inc. for the design, construction and financing of 98 kilometres of a new four-lane highway between Grand Falls and Woodstock, and the operation, maintenance and rehabilitation of this 98 kilometre section, 130 kilometres of existing highway and a further 47 kilometres of highway under construction by NBDOT between the Québec border and Longs Creek and on Route 95 as four lane divided highways. This contract for the Trans-Canada Highway (TCH) project runs until June 2033.

As with the Fredericton-Moncton Highway, the new sections of highway will be designed and built to meet TAC guidelines for an RAD 120 highway and will be posted at 110 km/h. The developer is required to carry out selected upgrades to the existing sections to bring them up to current safety standards. In the Edmundston area, because of geometric and right of way limitations, the highway will continue to be posted at 100 km/h. A wide, 80-100 metre, median is to be provided along 30 km where environmental and other planning considerations allow. Elsewhere, the median is generally 30 metres in width. The highway is to be designed and built with the safety features expected of a highway of this nature, including energy absorbing guide rail end treatments, rumble strips, and clear recovery zones.

Construction by both NBDOT and the developer is to be completed, and the highway fully opened to traffic by November 1, 2007. This will complete the twinning of the TCH through New Brunswick between the Québec and Nova Scotia borders with the exception of 2 km at the Québec border which will require realignment when the province of Québec completes the four-laning of Route 185 between New Brunswick and Rivière du Loup. The Route 95 4-lane section connects the Trans-Canada Highway to US Interstate 95.

Business Models

Both projects are similar in the scope of work required of the developers and operators – design, construction, operation, maintenance and rehabilitation of extensive sections of four lane divided highway, and in the length of the contract period – 25 to 30 years.

However, in other respects, there are some key differences in the governance of the projects, in the financing, and in the timing and nature of payments, and hence in the transfer of risks.

Fredericton-Moncton Highway Project

We will discuss the Fredericton-Moncton Highway Project first. For a number of reasons, this project was planned as a user-pay toll highway. Financing of the capital works was funded through two sources of financing. Toll-based debt which would be repaid from the toll revenues paid by users, and Lease-based debt which would be repaid by the Province in return for making the highway available to the public. Surplus toll revenues that are not required to service the Toll-based debt are paid to the provincial government as a concession fee.

Because of the planned tolling, the tax implications of the tolling revenues, the debt, the need for an appropriate process for selecting a private sector partner and the need to ensure that the private sector partner would have the flexibility to manage the project, the Province assigned responsibility to the New Brunswick Highway Corporation (NBHC) which in turn created a project company –a single purpose not-for-profit company (the New Brunswick (F-M) Project Co.), to carry out the project on its behalf. This project company has two members appointed by the Province, two members appointed by the Developer/Operator and an independent chair. In the agreement granting the project company the concession to build and operate the highway, NBHC retains the right to decide certain fundamental matters. The project company has retained NBDOT to carry out its responsibilities on a day-to-day basis.

As part of the selection process, the proponents were required to provide financing proposals which were evaluated as part of the bids. The successful proponent was required to arrange the financing upon signature of the agreements.

The developer was paid a fixed bid price (the Guaranteed Maximum Price) ($577 million) adjusted only for quality payments and agreed scope changes. Payments were made monthly on the basis of work progress.

The operator bid a fixed year-by-year price for all operations, management, maintenance and rehabilitation (OMM) work on the highway for the first twenty-year period of the agreement. (Average annual price $9.9 million). This price varies by year according to the operator's estimate (at time of bidding) of when maintenance and rehabilitation of the highway would be required. The price for the last ten years will be negotiated at the end of the twenty-year period. The annual bid price is adjusted based on changes in the provincial consumer price index. All OMM costs are paid by the Province.

A separate annual price was bid for the operation, management, maintenance and rehabilitation of the toll collection system. Shortly after the start of the project, government policy with regard to tolls changed. As a result, the contract with MRDC was renegotiated and user pay tolls were replaced with shadow tolls. As part of the renegotiation, contract costs, including tolling OMM costs were also renegotiated.

Under this shadow toll arrangement, the province makes a payment for each vehicle that uses the highway. Vehicles are classified as either passenger or commercial vehicles based on their length. Vehicles are counted and classified at four shadow toll stations along the highway.

Trans-Canada Highway Project

Without tolls, the business model for the TCH project is simpler. However, for several reasons including the need for an appropriate process for selecting a private sector partner and the need to ensure that the private sector partner would have the flexibility to manage the project, the government again decided to give responsibility for implementing the TCH project to NBHC.

NBHC created a wholly owned subsidiary – the Trans-Canada Highway Project Co. Ltd. (TCHPCo.) to contract with the developer/operator for the work. However unlike the Fredericton-Moncton Highway Project, and because of the different business model, this 'project company' has a board of directors entirely appointed by NBHC and comprised of representatives of the Departments of Transportation and Finance. NBDOT staff is assigned to TCHPCo. to administer the project.

The proponents for the TCH project were required to submit a Guaranteed Maximum Price (GMP) for the design and construction of the highway, and the proposals had to include options for long term financing. Upon review, the province decided not to accept the long term financing proposals but to pay the project capital costs directly. The developer is required to finance all capital costs during the construction period. (The GMP is $544 million). The province will pay 97.5% of the GMP upon the safe opening of the highway to traffic as defined in the agreements. The remaining amount will be paid upon total completion.

Unlike the FMHP, where payments for operations, management, maintenance and rehabilitation (OMR) are paid based on the originally anticipated cash flow requirements for the work, on the TCHP, during the operating period, the operator is paid a fixed constant (subject to adjustment for inflation, as measured by the NBCPI) annual amount ($18.8 million) on a monthly basis. This payment is full payment for all the costs of OMR of the 275 km of highway. The operator therefore has to manage the cash flow, putting funds into a rehabilitation account from which he can draw in the future during years of high maintenance and rehabilitation activity.

Both the GMP and the annual OMR payments are subject to adjustment for agreed scope changes or as the result of penalties imposed for non-performance.

Under both contracts, the province has sought to transfer to the developer/operator those risks which it could best manage, and to retain those risks best managed by the province. For example, the risks relating to schedule, costs and quality of work have been transferred to the developer/operator, while risks such as changes in the consumer price index or changes in standards have been assumed by the province.

The province has sought to protect its own and the public's interests on both projects through a number of provisions in the agreements. These protections include guarantees and requirements for insurance and bonding throughout the terms of the agreements.

Project Management / Partner Selection Process

Implementing any large project requires a large expenditure of effort in clarifying the needs, planning the scope of the project and specifying in detail the results required. This work is required no matter how the infrastructure is to be acquired or the service is to be provided. However, with a long term project, no matter how it is delivered, it is essential to correctly and completely draft the requirements since any changes following the signing of agreements could be costly.

In the case of a P-3 project, the partner selection process is an essential and key element in the delivery of a successful project. The objective of this phase of a project is to find a private sector firm or consortium that has the skills, experience and resources to deliver the project in compliance with the objectives of the owner and at the least cost to the province.

In New Brunswick, we have found that the use of a focused and dedicated team to carry the project through the selection phase has been very successful. This project team should be kept small so that it can truly operate as a team. It should be comprised of selected government staff and consultants. The primary skills of the team, both NBDOT and its consultants, included technical, legal, business and process skills.

The selection phase should be run to a tight schedule. On both projects, in New Brunswick, agreements were signed within 13 months of the issue of the Request for Qualifications (RFQ) for the projects. The process included the issue of an RFQ, the evaluation of submissions and the selection of a short list of proponents who were invited to respond to a Request for Proposals (RFP), the evaluation of the proposals, selection of the preferred proponent and the signing of the agreements.

This process was managed with strict rules regarding confidentiality, conflict of interest, and various levels of diligence on the evaluation of submissions. Draft agreements were issued as part of the RFP process. As a result, discussions with the preferred proponent were kept to the minimum necessary to finalize agreements. Key to managing the selection process successfully is ensuring timely access to decision makers and obtaining necessary decisions promptly.

During the term of the agreements as with any long-term contract, there is a need to discuss issues as they arise, however it is important to follow the agreements and address issues within the parameters set in those agreements for changes in scope or standards, and for dispute resolution.

A key measure of the success of a project is the quality of the infrastructure and services provided by the private sector partner. The agreements require the developer/operators to implement quality management systems (QMS). These quality management systems are/were required to be certified as ISO 9001 compliant, with the exception of the QMS during the construction phase of the FMH project which was only required to be compliant with the requirements of ISO 9001.

Non-conformance payment regimes have been established on both projects to encourage compliance with the requirements of the agreements and to provide a degree of compensation to the province in cases of non-conforming work by the developer/operators.

On the TCH project, the non-conformance payments include specific payments by the developer/operator for failing to comply with certain key performance indicators such as not having the Quality Management System certified, or failing to correct certain pavement conditions (such as pavement roughness exceeding the specified IRI) within the defined time frame, as well as a payment whenever the basket containing other non-conformances identified by the province contains in excess of the specified limit. This limit is 40 for the design-build phase and 15 for the operations phase of the project. Non-conformances are removed from the basket when either the developer/operator can show that he has identified the non-conformance and is correcting the problem or the problem is corrected to the satisfaction of the province.

Results

The Fredericton-Moncton Highway project was opened to traffic on October 24, 2001, five weeks ahead of schedule, and approximately 43 months after the signing of the agreements. Since then the highway has been operated and maintained by the private sector operator (MRDC Operations Corporation). The operator has met the requirements of the province and provided the travelling public with safe and high quality highway service.

The Fredericton-Moncton Highway project was the recipient of a number of awards including the Canadian Council for Public-Private Partnerships 2003 National Awards for Innovation and Excellence in Public-Private Partnerships Gold Award for Infrastructure.

The Trans-Canada Highway project is presently under construction by Brun-Way Construction Inc. and scheduled to open to traffic by November 1, 2007. Brun-Way Highways Operations Inc. is currently operating, maintaining and rehabilitating 130 kilometres of the highway. It will assume responsibility for a further 35 kilometres of highway to be completed by NBDOT on November 1 of this year.

Conclusion

The use of public-private partnerships for highway construction and operation in New Brunswick has been a successful means of delivering major highway projects in a timely and effective manner. This method has provided price certainty following award of the project and resulted in a quality product meeting the needs of the travelling public in the Province.

It is our opinion that these projects have been / are being successfully delivered because in planning and implementing these projects, the province:

- has focussed on the results required,
- clearly defined the requirements in terms of the performance expected,

- ensured that the required performance was / is delivered,
- assigned staff and consultants with the necessary expertise and experience to manage the projects, and
- clearly established the decision-making authority.

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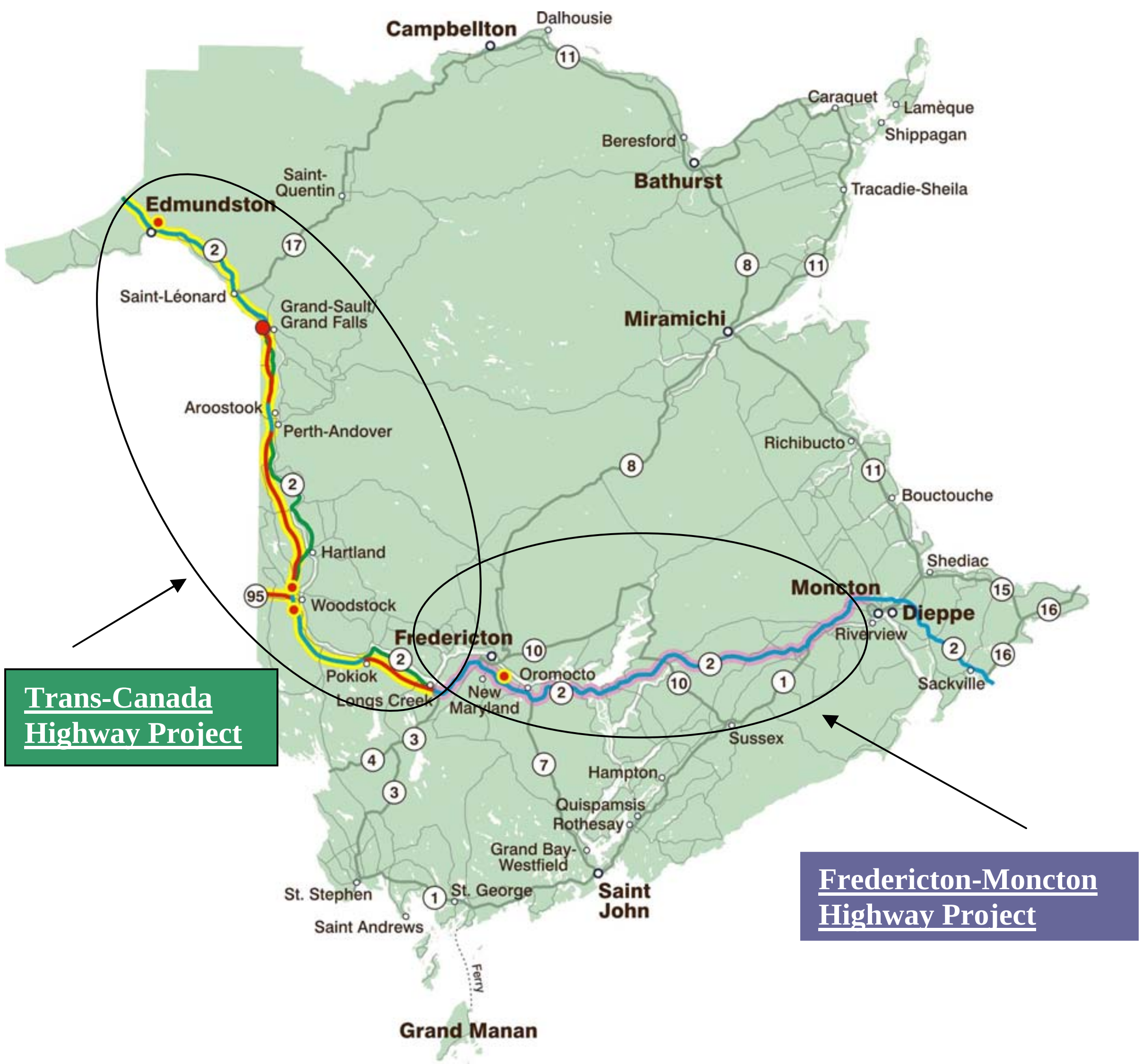
Appendix



Province of New Brunswick

Appendix
Fredericton-Moncton Highway Project

Jemseg River Bridge

Fredericton West High Speed Connector Interchange

Oromocto Interchange

Saint John River Bridge

Appendix
Trans-Canada Highway Project

Pokiok interchange

Jewetts Creek Bridges

Route 560 Bridge

Big Presque Isle River