

2008

The Canadian Council for Public-Private Partnerships
2008 National Award Case Studies

Autoroute 30 (Montréal), Québec

Northwest Anthony Henday Drive, Alberta

William R. Bennett Bridge, British Columbia

Abbotsford Regional Hospital & Cancer Centre, British Columbia

Highway 407 ETR, Ontario

The Canadian Council for
Public-Private Partnerships



Le Conseil Canadien pour
les Partenariats Public-Privé



The Canadian Council for Public-Private Partnerships
2008 National Award Case Studies

The Canadian Council for Public-Private Partnerships

June 2009

Table of Contents

Introduction	01
Autoroute 30 (Montréal), Québec	11
<i>2008 Gold Award for Project Financing</i>	
Quick Facts	12
Overview	13
Description of the Project	15
Procurement Process	16
Overall Structure of the Agreement	21
Financial Arrangements	24
Risk Allocation	31
Benefits	34
Communications	37
Labour	38
Monitoring	39
Other Issues	39
Concluding Comments	41
Testimonials	41
Contacts	42
Appendix	43
Glossary of Terms – Autoroute 30 Case Study	44
Northwest Anthony Henday Drive, Alberta	45
<i>2008 Silver Award for Project Financing</i>	
Quick Facts	46
Overview	47
Description of the Project	49
Procurement Process	50
Overall Structure of the Agreement	56
Financial Arrangements	58
Risk Allocation	62
Benefits	65
Communications	65
Labour	66
Monitoring	66
Other Issues	67
Concluding Comments	69
Testimonials	69
Contacts	70
Glossary of Terms – Northwest Anthony Henday Drive Case Study	70

William R. Bennett Bridge, British Columbia	71
<i>2008 Award of Merit for Project Financing</i>	
Quick Facts	72
Overview	73
Description of the Project	73
Procurement Process	75
Overall Structure of the Agreement	79
Financial Arrangements	80
Risk Allocation	82
Benefits	84
Communications	85
Labour	85
Monitoring	85
Other Issues	86
Concluding Comments	88
Testimonials	89
Contacts	90
Abbotsford Regional Hospital & Cancer Centre, British Columbia	91
<i>2008 Silver Award for Infrastructure</i>	
Quick Facts	92
Overview	93
Description of the Project	94
Procurement Process	96
Overall Structure of the Agreement	102
Financial Arrangements	104
Risk Allocation	105
Benefits	106
Communications	108
Labour	109
Monitoring	109
Other Issues	110
Concluding Comments	113
Testimonials	114
Contacts	115
Glossary of Terms – Abbotsford Regional Hospital & Cancer Centre Case Study	116

Highway 407 ETR, Ontario	117
<i>2008 Silver Award for Service Delivery</i>	
Quick Facts	118
Overview	119
Description of the Project	121
Procurement Process	121
Overall Structure of the Agreement	124
Financial Arrangements	126
Risk Allocation	126
Benefits	127
Communications	133
Labour	133
Monitoring	134
Other Issues	134
Concluding Comments	137
Testimonials	138
Contacts	139
Appendix 1	140
Appendix 2	142
Glossary of Terms – Highway 407 ETR Case Study	144
Definitions & Glossary of Terms – Document-wide	145

Introduction

During the final writing of this publication, the world was in the midst of a serious economic slowdown affecting a wide range of areas, including the construction and financial sectors. Governments around the world are recognizing the critical importance of infrastructure investments to help stimulate the economy in the short term, and to provide long-term social and economic prosperity.

That global context gave great resonance to the importance of the five projects included in this publication. Not only were these projects selected for National CCPPP Awards for qualities related to excellence and innovation, but we are reminded that once completed, they will add enormous value to the regions in which they have been or will be developed. Completed public infrastructure projects are investments that continue to contribute back over time in ways that are often immeasurable.

However, these projects were conceived long before Canadian governments were aware of a looming global crisis. As part of a well considered resurgence in commitment to public infrastructure, governments across Canada had already begun to undertake large scale infrastructure programs. For many, the use of public-private partnerships was the preferred approach.

The list of Canadian governments using public-private partnerships expanded in 2008 and early 2009. The Government of Saskatchewan and the Government of Prince Edward Island announced the formation of dedicated offices that will assist in the development of P3s. Nova Scotia is evaluating the potential for using the P3 approach for new correctional facilities, a highway and a mobile radio network. New Brunswick, confident in its earlier experiences in the education sector, announced two schools to be developed as P3s. New Brunswick also moved forward with the procurement of two courthouse projects. As of April 2009, 27 P3 projects were in procurement and 40 projects under construction in Canada, across six provinces, one territory and at the federal government level.

The projects featured in the *2008 Award Case Studies* reflect the most active areas of P3 in Canada today – transportation and hospitals – and are a testament to the role P3 plays in a wider infrastructure development program. Each of these projects will be providing important transportation links and vital healthcare services that are efficient and well-maintained far into the future.

As the Canadian P3 market continues to become more competitive, so too has the Awards selection process. The quality of applications, both in detail and innovation, is increasing each year and the 2008 selection panel was challenged to select only seven recipients. A panel of impartial experts from across Canada review the submissions and select winners based on a number of criteria:

- innovative features;
- relevance or significance as a model nationally and/or abroad;
- economic benefit (job creation, enhanced economic value, export potential, etc.);
- measurable enhancement of quality and excellence in service or project;
- appropriate allocation of risks, responsibilities and returns between partners; and
- effective use of financing and/or use of non-traditional sources of revenue.

The Awards are broken into four main categories: project financing, service delivery, infrastructure and “other.” The last category allows the panel to recognize an exemplary project based on its unique merits.

The Awards program is made possible through the generous support of our 2008 National Awards sponsors:

- Blake, Cassels & Graydon LLP
- Partnerships BC
- PricewaterhouseCoopers LLP
- Teranet Inc.

Production of the *2008 National Award Case Studies* has been made possible through a financial contribution from Infrastructure Canada. The views expressed herein do not necessarily represent the views of the Government of Canada.

Free copies of the *Case Studies* are distributed to over 1,300 members of The Council, representing a wide variety of companies and all levels of government across Canada. The *Case Studies* are also available for purchase; proceeds support the various activities of The Council and its diverse research programs.

Award Winners

For 2008, the selection panel chose a Gold and Silver recipient for project financing, three Silver Awards for infrastructure, one Silver Award for service delivery and an Award of Merit for “social infrastructure procurement.” A Champion Award was also presented this year, which recognizes individuals who have made an outstanding contribution to P3 in Canada.

The following are brief summaries of each 2008 National Award recipient:

Autoroute 30 (Montréal), Québec

The **Gold Award for Project Financing** was awarded to the Ministère des Transports du Québec, the Agence des partenariats public-privé du Québec and Nouvelle Autoroute 30, S.E.N.C. (NA 30) for the completion of Autoroute 30 (A-30) in Montréal. This project paves the way for the creation of a bypass route south of Montréal involving 42 kilometres (km) of divided highway, including major bridges spanning the St. Lawrence River and the Beauharnois Canal, a major interchange and a hybrid tolling system. Nouvelle Autoroute 30, S.E.N.C., is responsible for the Design-Build-Finance-Maintain-Operate-Rehabilitate (DBFMOR) project for 35 years, as well as the financing, maintenance, operation and rehabilitation of 35 km of supplementary

sections of the A-30. Within 100 days of announcing the preferred proponent, the \$1.5 billion (net present value) project reached financial close and the credit facility was fully syndicated, a significant achievement given the instability of credit markets at the time. Measured against the Public Sector Comparator, it is estimated that the P3 achieved \$751 million in savings and will be completed two years earlier than if the Government had used a conventional approach.

Northwest Anthony Henday Drive, Alberta

The Silver Award for Project Financing was awarded to the Government of Alberta, Alberta Infrastructure and Bilfinger Berger Project Investments Inc. for the Northwest Anthony Henday Drive. This project is the second section of Edmonton’s ring road to be procured as a P3 and will add 29 bridge structures by the time it is open to traffic in 2011. The \$500 million in progress payments from the Government represents approximately 43 per cent of total funding required, with Bilfinger securing the balance of the financing through an equity component and two tranches of debt. The benefits of using the DBFMO approach means \$240 million in savings to taxpayers, as well as the confidence of a fixed cost, a fixed completion date, interest rate protection and a 30-year guarantee for the Government.

William R. Bennett Bridge, British Columbia

The **Silver Award for Infrastructure** was awarded to SNC-Lavalin Group Inc. and the B.C. Ministry of Transportation and Infrastructure for the William R. Bennett Bridge. This 30-year DBFMO project opened 108 days ahead of schedule on May 24, 2008. The 1,060-metre-long structure is the only floating bridge in Canada; it includes 697 metres of floating concrete pontoons, two 54-metre transition spans and a 277-metre-long western approach ramp structure. Built on a special-purpose graving dock near the bridge site in Kelowna (see photo on page 71), it has a design life of 75 years. The results are impressive: reduced congestion and crossing times, improved driver safety, cyclist- and pedestrian-friendly features, a permanent 18-metre-high marine navigation channel and an estimated \$25 million in savings in net present value over the 30-year agreement.

Abbotsford Regional Hospital & Cancer Centre, British Columbia

The **Silver Award for Infrastructure** was awarded to Abbotsford Regional Hospital and Cancer Centre Inc. and AHA Access Health Abbotsford Ltd. for the Abbotsford Regional Hospital and Cancer Centre. Opened for patients in August 2008, this 300-bed acute care regional hospital and cancer centre is located on a 10-hectare green-field site in Abbotsford. Built

under a DBFMO model, it is the first regional hospital in B.C. to be built in 30 years and the first Canadian hospital designed to achieve the LEED Silver standard. The integrated Project Agreement balances short-term design and construction requirements with the need to consider the future costs of facility management, service provision, maintenance and repair. It is estimated that the P3 model saved \$39 million versus conventional procurement. This project also received an Award of Merit for project financing in 2005.

New Brunswick Trans-Canada Highway, New Brunswick

The **Silver Award for Infrastructure** was awarded to the Trans-Canada Highway Corporation and Brun-Way Construction Inc. for the New Brunswick Trans-Canada Highway. This project has two components: the design, construction and financing of 98 km of highway between Grand Falls and Woodstock, and upgrades to 128 km of the existing four-lane highway; and the operation, maintenance and rehabilitation of 275 km of highway until 2033. It was one of the largest construction projects in the Province's history and was completed in just 27 months, on schedule and within budget. This safer, well-maintained section of the Trans-Canada Highway opened on November 1, 2007, and will provide an improved corridor for the movement of goods and services into and around New Brunswick.

Highway 407 ETR, Ontario

The **Silver Award for Service Delivery** was awarded to the Ontario Ministry of Transportation and 407 ETR Concession Company Limited for the Highway 407 ETR project. Running for 108 km across the busy Greater Toronto Area, 407 ETR is known around the world in the transportation sector for its innovative fully electronic tolling system and in Canada as the largest P3 project in the country's history. Structured as a DBFMO for 99 years, the Agreement requires 407 ETR to build new lanes where certain congestion thresholds are reached. Traffic volumes have continually exceeded projections and, as of fall 2008, 129 km of new-lane expansions had been built. Ten years after the Agreement was signed, customer service measures have improved dramatically and users benefit from a fast, safe alternative to other major highways in the region.

Alberta Schools Alternative Procurement (ASAP) Project, Alberta

The **Award of Merit for Social Infrastructure Procurement** was awarded to the Government of Alberta, Ministries of Infrastructure, Education, Finance, Justice and Treasury Board, and BBPP Alberta Schools Inc. for the Alberta Schools Alternative Procurement (ASAP) Project. This project represents a new wave of P3 schools in Canada, and involves a bundle of 18 new elementary schools in the Calgary and Edmonton areas. Using a DBFM model, BBPP

Alberta Schools Limited will provide a 30-year warranty against defects, while the school board retains responsibility for school ownership and operations. The buildings will be based on three core designs, but will allow for custom exteriors and modular classrooms. They are expected to open in September 2010 and to achieve 18 per cent savings compared to conventional delivery.

Hon. Gordon Campbell

The **2008 Champion Award** was presented to the Honourable Gordon Campbell, premier of British Columbia. This award is not presented every year and is given to an individual who has made extraordinary contributions to the leadership and development of PPP in Canada. Hon. Gordon Campbell became the ninth recipient of the Champion Award. He also became the Honourary Chair of The Canadian Council for Public-Private Partnerships. Previous recipients were the late James MacLaren and the late Chuck Wills, as well as Hon. Donald Macdonald, Mac Carson, Glenna Carr, Gary Collins, Hon. Michael H. Wilson and Pierre Le François.

The *2008 National Award Case Studies* profile the Project Financing award recipients, two of the Silver Award for Infrastructure recipients and the Silver Award for Service Delivery recipient. The case studies are based on written submissions, procurement documentation, project websites, legal contracts and personal interviews.

Observations

A number of trends are evident in the case studies, as well as in the Canadian P3 market in general over the past two years:

- Canadian governments are increasing their focus on public-private partnerships, with eight provincial/territorial governments and the federal government now having either a dedicated P3 office or a significant stream of projects.
- Transparency has become the standard for these projects, with milestones, fact sheets, procurement documents, agreements and other key information easily available on websites and for public viewing.
- Canada is gaining an international reputation as a stable and reliable P3 market, with significant opportunity for companies to establish a long-term presence.
- While cost savings are still a key impetus for using P3, governments are increasingly recognizing the importance of benefits such as long-term maintenance, service improvements, economic development and innovation that these projects offer.
- Financing continues to evolve in step with Canada's maturing market, where simple bond financing early on has given way to more complex club financing in recent years.

Common themes and interesting developments are apparent in the *2008 National Award Case Studies*.

P3 model provides much-needed congestion relief sooner

All four transportation projects detailed below will alleviate significant traffic congestion problems in major Canadian urban areas (Montreal, Vancouver, Toronto) and a rapidly growing region of British Columbia (Kelowna). The Abbotsford Regional Hospital and Cancer Centre provides a modern, larger replacement to the 50-year-old MSA Hospital and reduced the growing wait lists in the area. All of these projects were delivered sooner than would have been possible through conventional procurement. In these growing urban areas, they began moving people and goods, as well as improving healthcare faster.

Opportunity for innovation produces several Canadian "firsts"

The output-based P3 approach, versus more prescriptive design-build processes, resulted in several innovative and groundbreaking milestones in these award-winning projects. The William R. Bennett Bridge will be the only floating bridge in Canada and one of only nine in the world. The collaboration between designer, builder and operator helped deliver this project 108 days ahead of schedule. The Abbotsford Regional Hospital and Cancer Centre became Canada's first hospital to achieve LEED Silver standard. Highway 407 ETR was the world's first all-electronic open-access toll highway and remains a model of innovation 12 years later. These partnerships all demonstrate what can be accomplished by governments with vision and private-sector partners who rise to the challenge.

Draft agreement review by proponents results in streamlined procurement

During the procurement process for all the case studies detailed below, proponents were permitted to review and comment on draft project agreements prior to financial close. According to those involved on both sides of the negotiations, this transparency saved a significant amount of time and provides greater certainty for both government and proponents. As indicated in the Northwest Anthony Henday Drive case study, early reviews of a draft agreement allowed several objectives to be met: acceptability to lenders; optimal allocation of risks; acceptability to all proponents; and protection of the Government's interests.

Value for money is not just cost savings

One term that is reiterated several times throughout these case studies is "value for money." While this may be construed simply as cost savings, for the governments involved and the taxpayers they represent, it means much more. For Autoroute 30, it means improved service delivery, the potential for creativity and innovation and an early completion date. For Northwest Anthony Henday Drive, value for money means a fixed cost, a fixed completion and opening date, and a 30-year warranty. For the William R. Bennett Bridge, value for money translates into a lifecycle-costing approach and optimal risk allocation between

the public and private partners. For Abbotsford Regional Hospital and Cancer Centre, it resulted in operational efficiency, lifecycle costing, expedited construction and integrated facilities management. And last, for Highway 407 ETR, value for money was achieved through significant risk transfer, major infrastructure investments and better customer service.

Tolls become more common in Canada

In many countries, road and bridge tolls are a common mechanism for governments to pay for expensive capital projects. Canadians, however, have little experience with tolls. In 1997, Highway 407 ETR and Highway 104 in Nova Scotia were the first P3 road projects in Canada to introduce tolls to drivers. Twelve years later, several P3 transportation projects are charging tolls, including a bridge on Autoroute 30 detailed below. The private partner is responsible for operating the toll system and collecting the tolls on both Autoroute 30 and Highway 407 ETR. In the case of the former, the Government set a range within which NA 30 can set toll pricing on the bridge crossing the St. Lawrence River. In the case of Highway 407 ETR, the private partner can set its own toll rates, provided congestion relief targets are met on the surrounding highway network. If it does not achieve the targets, the toll rate is capped. As cash-strapped governments look at new ways to finance major infrastructure projects and private-sector tolling expertise is utilized, user tolls are likely to become an additional funding mechanism.

The case is made for the DBFMO model

All of the 2008 case studies utilized a design-build-finance-maintain-operate model to achieve the Government's project objectives. Providing the best value for money, measured against the Public Sector Comparator, and offering a long-term warranty, the model allocates risk to the partner best able to manage it. While not appropriate for every project, such as partial renovation projects or retrofits, it has applicability across a wide range of sectors and types of infrastructure. As experience has demonstrated in other countries, use of the DBFMO model usually grows as governments gain more confidence and the P3 market matures.

Environmental benefits are a natural spin-off

A final common thread among the five case studies is the environmental benefit these projects are generating. The P3 lifecycle approach to design and construction provides a natural incentive for improved energy efficiency and the requirement for LEED certification is becoming common in project agreements. Whether it is lower greenhouse gas emissions resulting from reduced travel time on Autoroute 30 and Northwest Anthony Henday Drive, wildlife passages under Highway 407 ETR, or electric vehicle-charging stations in the Abbotsford Regional Hospital and Cancer Centre, these P3 projects are proving that cost savings and environmental stewardship are not mutually exclusive.

Acknowledgements

The Awards process and the development of the *Award Case Studies* require the work of many people to complete, and this year was no exception. The legacy they provide to the award winners and to the many readers who benefit from the wisdom shared in the *Case Studies* is now in its 12th year. Several individuals deserve special recognition for their commitment, time and talents that go into this year-round activity.

Cynthia Robertson has ably chaired the Awards program since 2001, with day-to-day support provided by CCPPP Administrator Carla Walmsley. They coordinate the entire process, from reading applications, through the formal evaluation process and on to the production of the Annual Awards Dinner. Congratulations and thank you to both of them for continuing to raise the bar and helping to increase the profile and quality of the Awards each year.

Our two researchers, Deborah Reid and John Chenery, are the wordsmiths behind the *2008 Award Case Studies*. They have once again risen to the challenge of taking a myriad of complex contracts, documents, interviews and checking facts to produce a 20-plus page description that gets to the essence of each partnership arrangement. They have managed to write content that offers some interest both for technical experts and those who are beginning to get their feet wet in the P3 field. Thanks to them for providing such valuable additions to the CCPPP library and to the greater body of knowledge on Canadian PPP.

Each year, the Awards applications are reviewed by a volunteer advisory panel composed of members of The Council's Board of Directors, as well as other industry experts. Some of them also read and comment on the case studies, providing valuable continuity throughout the process. CCPPP thanks the following panel members for ensuring that the award evaluation and research components are both objective and informed:

CCPPP Board Members:

- Cynthia Robertson (Chair), Principal & COO, Parkridge Properties Inc.
- D. Robert Beaumont, Partner, Osler, Hoskin & Harcourt LLP
- Larry McCabe, Clerk-Administrator, Town of Goderich

CCPPP Member Advisors:

- Gianni Ciufo, Partner and North American Leader, Infrastructure Advisory and Project Finance, Deloitte & Touche LLP
- Peter Hepburn, Managing Director, Energy & Infrastructure, Canada, CIT Financial Ltd.
- Cliff Inskip, Managing Director, Debt Capital Markets, CIBC World Markets

■ David Kierans, Partner, Gowling Lafleur Henderson LLP

■ Alain Massicotte, Partner, Blake, Cassels & Graydon LLP

■ Dr. Alan Russell, Professor, Department of Civil Engineering, University of British Columbia

Both the public and private-sector partners have provided a wealth of material and knowledge to the researchers and have signed off on the validity of their respective case study. We commend them for their awards, thank them for their time and effort in refining the write-ups and we acknowledge their lasting contributions to the excellence of Canadian public-private partnerships.

And, finally, thank you to the Award sponsors for their generous financial support. Their contributions help The Council to recognize the people who have made their governments and companies leaders in the PPP field, both in Canada and internationally. The 2008 Awards program sponsors are: Blake, Cassels and Graydon LLP, Partnerships BC, PricewaterhouseCoopers LLP, and Teranet Inc. Infrastructure Canada is the Research Contributor for the *2008 National Award Case Studies*.

AUTOROUTE 30 (MONTRÉAL), QUÉBEC

2008 Gold Award for Project Financing



Quick Facts – Autoroute 30

Project type

- ▶ 42 km – Design, Build, Finance, Maintain, Operate and Rehabilitate (DBFMOR)
- ▶ 35 km – Finance, Maintain, Operate and Rehabilitate (FMOR)
- ▶ Total 77 km

Asset/Service

- 35-year partnership agreement to:
- ▶ complete a 42-km section of the highway, including two bridges, one tunnel and a hybrid tolling system on one of the bridges; and
 - ▶ operate and maintain supplemental sections over 35 km

Partners

- Ministère des Transports du Québec
Nouvelle Autoroute 30, S.E.N.C. comprised of:
- ▶ Acciona S.A. (Acciona), 50% equity sponsor through Acciona Nouvelle Autoroute 30 Inc.; and
 - ▶ Iridium Concesiones de Infraestructuras S.A. (Iridium), part of the ACS Group, 50% equity sponsor through Iridium Nouvelle Autoroute 30 Inc.

Other participants

Public Sector

Participants:

- ▶ Agence des partenariats public-privé du Québec – process co-managers

Advisors:

- ▶ Fraser Milner Casgrain LLP – legal advisor
- ▶ KPMG – finance and selection process advisor
- ▶ Groupement CBR – engineering advisor
- ▶ PB Consult Inc. – traffic and revenue advisor
- ▶ Groupe Gallagher Lambert Québec ULC – damage insurance broker
- ▶ Partnerships BC – P3 advisor
- ▶ Marc-André Patoine – fairness auditor

Private Sector

Participants:

- ▶ Dragados Canada Inc. – design-build joint venture
- ▶ Acciona Infraestructuras Canada Inc. – design-build joint venture
- ▶ Construction DJL Inc. – design-build joint venture
- ▶ Verreault Inc. – strategic partner of design-build joint venture
- ▶ Arup Canada Inc. – design team lead
- ▶ SICE – electronic toll system supplier

Advisors:

- ▶ Royal Bank of Canada (RBC) – financial advisor
- ▶ Gowling Lafleur Henderson LLP – legal advisor
- ▶ Jardine Lloyd Thompson Canada – insurance broker
- ▶ Steer Davies Gleave – traffic advisor
- ▶ Collings Johnson Inc. – technical advisor

Advisors to lenders:

- ▶ Ogilvy Renault LLP – legal advisor
- ▶ Capita Symonds – technical and traffic advisor
- ▶ In Tech Risk Management Inc. – insurance advisor
- ▶ Operis Group plc – lenders' model auditor

Financing

Equity

\$225 million in equity contributed by Acciona and Iridium in equal shares

Debt

\$1.094 billion senior secured facilities, consisting of two senior debt facilities provided by first-ranked bank debt (13 banks participating):

- ▶ a 30-year senior term facility in the amount of \$804 million; and
- ▶ a 5-year revolving construction bridge facility in the amount of \$290 million.

Public

Ministère des Transports du Québec to provide total payments of \$1.523 billion in NPV value comprised of:

- ▶ quarterly construction payments linked to milestones, during the construction period;
- ▶ monthly capital payments during the operating period;
- ▶ monthly operations, maintenance & rehabilitation payments; and
- ▶ remittances linked to toll revenues.

All payments are subject to non-performance deductions.

Other features

- ▶ hybrid tolling system to include payment by transponder, credit card and cash
- ▶ 2 significant bridges:
 - over the Beauharnois Canal of 2550 m in length; and
 - over the St. Lawrence River of 1859 m in length
- ▶ Tunnel underneath the Soulanges Canal.

Partnership Agreement and other documents

Available at: www.autoroute30.qc.ca

Overview



Completion of 42 kilometres (km) of Autoroute 30 (A-30) in the Montréal region will be delivered through a design, build, finance, maintain, operate and rehabilitate (DBFMOR) public-private partnership (P3) with a 35-year term. The private partner – Nouvelle Autoroute 30 S.E.N.C. (NA 30) – will also provide financing, maintenance, operation and rehabilitation of 35 km of supplementary sections of A-30. Some of these sections are in existence and some are to be newly built by the government using a traditional procurement method.

It is expected that having the private partner responsible for a continuous 77-km section of A-30 between Vaudreuil-Dorion and La Prairie will provide long-term economies of scale.

Background and rationale

Planning for A-30 began in the 1960s and 1970s, when Québec started developing its highway network. The purpose of A-30 was to connect the main industrial municipalities along the south shore of the St. Lawrence River between Salaberry-de-Valleyfield and Sorel.

From 1968 to 1996, approximately 100 km of A-30 were gradually brought into service. However, by the mid-1990s there were still uncompleted sections, including:

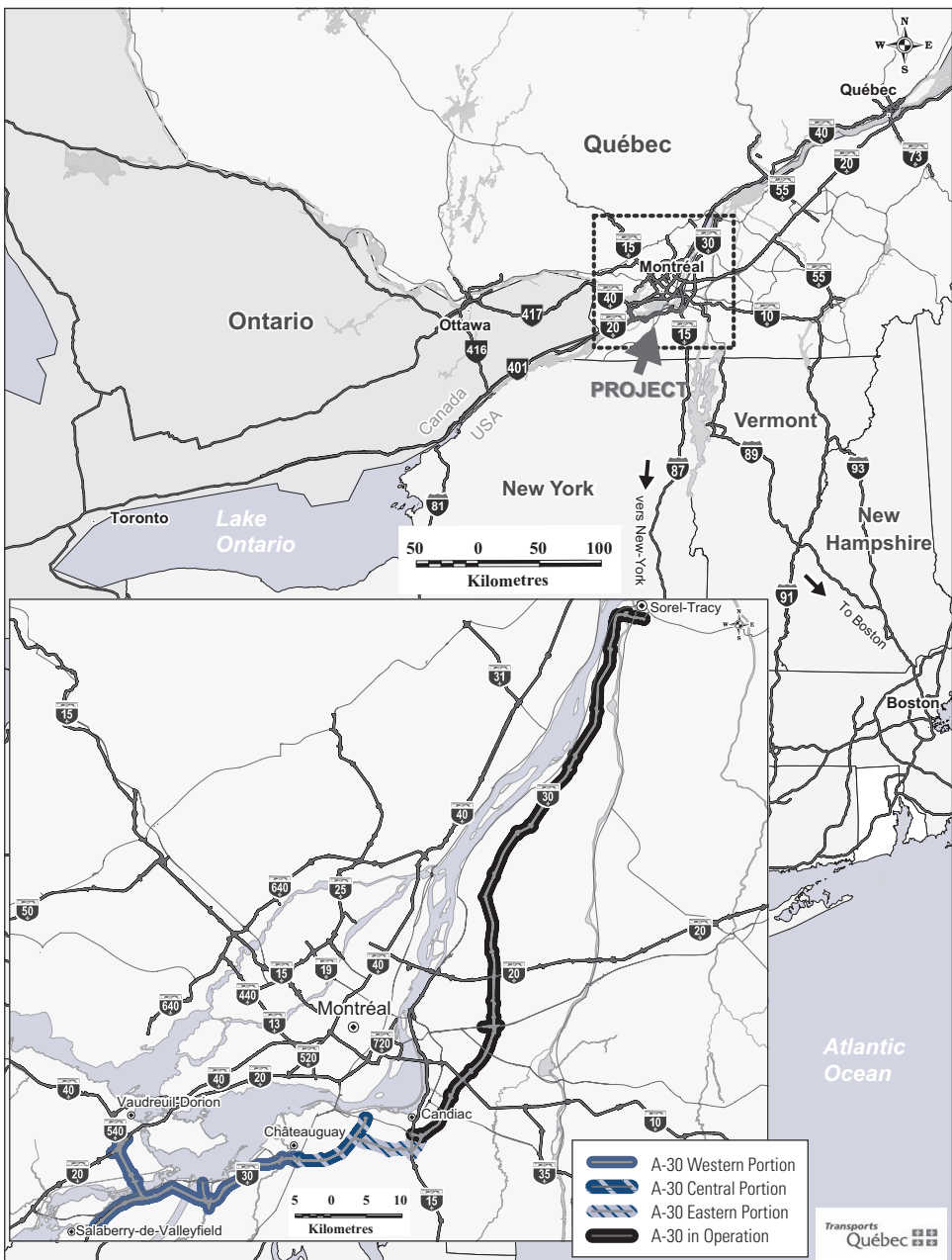
- the western section between Vaudreuil-Dorion and Châteauguay (42 km); and
- the eastern section – a stretch of approximately 12 km between Sainte-Catherine and Candiac just south of Delson.

Currently there is no bypass route for Montréal; thus commercial and passenger vehicles must travel through the city core to cross the city using valuable time and energy. In addition, the lack of highway access in the western portion of the Montérégie area impedes the region's economic growth, despite its proximity to major markets in the United States and Ontario.

Completing A-30 will give the Montréal area a bypass route, which will save time, money and improve the environment. It will also facilitate the movement of people and goods, contributing to the economic growth of the Montérégie, metropolitan Montréal and Québec in general.

The following map shows the relative location of the highway and the sections to be completed.

Autoroute 30 Regional Map



Project Objectives

- ▶ facilitate access of goods and services to external markets (Ontario, United States, Maritimes);
- ▶ allow through-traffic to bypass the Island of Montréal and increase the predictability of travel time;
- ▶ create an efficient and continuous highway link for Montérégie communities along the south shore;
- ▶ enable better integration of the western section of Montérégie with the socio-economic environment of the Montréal region;
- ▶ create an alternative route, in case of temporary unavailability due to construction or major incidents; and
- ▶ reduce accidents in neighbouring municipalities and avoid the transportation of hazardous materials through urban areas

Description of the Project

The completion of Autoroute 30 has two main parts. The first is to complete the construction of the western portion of A-30 through a design, build, finance, operate, maintain and rehabilitate (DBFMOR) P3. This part of the project is approximately 42 km in length and includes:

- a 35-km section in the Montérégie running from Vaudreuil-Dorion to Châteauguay; and
- a 7-km section connecting Route 201 in Salaberry-de-Valleyfield.

The 35-km section will include a short tunnel under the Soulanges Canal, a toll bridge over the St. Lawrence River and a non-toll bridge over the St. Lawrence Seaway at the Beauharnois Canal.

NA 30 will be responsible for implementing a hybrid tolling system on the bridge over the St. Lawrence River which will allow for payment electronically, by credit card or cash.

The Québec Government (the Government) is also entrusting NA 30 with the financing, operation, maintenance and rehabilitation of supplementary sections totalling approximately 35 km. These include:

■ three existing sections:

1. in the east from Châteauguay to Saint-Constant (10 km);
2. in the east from Candiac to La Prairie (7 km); and
3. in the west in the municipality of Vaudreuil-Dorion between Boulevard de la Cité-des-Jeunes and the northern boundary of the future A-20/A-30 interchange (3 km); and

■ two sections currently being completed by the Ministère des Transports du Québec (the Ministère) using a conventional procurement approach:

4. linking the existing A-30/A-730 interchange in Saint-Constant with Autoroute 15 in Candiac (8.8 km); and
5. running between Autoroute 15 and the Jean-Leman interchange in Candiac (3.4 km)

The map on the opposite page shows the 42-km western section and the 35-km supplementary sections.

Procurement Process

Selecting the P3 model

The Ministère carried out a number of studies to determine the most favourable way to proceed with the project. These studies allowed the Ministère to conclude that carrying out this project through a P3 offered distinct advantages.

The business case developed by the Ministère, working with the Agence des partenariats public-privé (PPPQ), concluded there will be savings of \$751 million (at present value as of July 1, 2008) over the 35 years of the Partnership Agreement (the Agreement).¹ In addition, the completion of A-30 as a P3 will make it possible to open the highway as a continuous route along the south shore two years earlier than if using conventional methods (2012 versus 2014).

There will also be contractual assurance that funds will be available for maintenance, operation and rehabilitation, thus ensuring the infrastructure remains in top condition for the duration of the Agreement.

Selecting a partner

The private-partner selection process involved several steps, designed to ensure sound competition between the companies involved so the project could be carried out at the lowest possible cost, while fully complying with the requirements of the Ministère.

The selection of NA 30 took place using a two-phase process:

1. Request for Qualifications (RFQ); and
2. Request for Proposals (RFP).

These steps were followed by the finalization of the Agreement. All of these steps were carried out under the supervision of a fairness auditor selected by the government.

¹ For all documentation related to the A-30 completion project, only the French version of the documentation is official and has legal effect.

Autoroute 30 Project Segments



Competitive process

Request for Qualifications

The purpose of the RFQ stage was to identify and select the potential partners most qualified to

assume the necessary responsibilities. The four candidates who applied were evaluated by a selection committee based on their competencies and their technical and financial capabilities. The assessment criteria are presented in the following table:

Assessment Criteria	
	Points
1. ability in the design and construction of major engineering structures	20
2. ability in the design and construction of highways	15
3. ability in the operation, maintenance and rehabilitation of roads and bridges, and in the design, construction, implementation and operation of electronic toll systems	20
4. ability in project management	10
5. ability in environmental management	10
6. ability in the area of quality control	10
7. project financing expertise	20
Maximum Grade	105

Four candidates submitted responses to the RFQ and all four were qualified. However, only the three highest scoring candidates were invited to proceed to the RFP stage, with the understanding that if one dropped out before the RFP deadline, the fourth candidate would be invited to submit a proposal. The top three candidates were:

- Infrac-Québec A30 (Concession A30 S.E.C.)
– Macquarie Bank Ltd., primary sponsor;
- Nouvelle Autoroute 30 (Nouvelle Autoroute 30 S.E.N.C.) – Acciona S.A. and Iridium Concesiones de Infraestructuras S.A., primary sponsors; and
- SNC-Lavalin (Partenariat Autoroute 30 S.E.N.C.)
– SNC-Lavalin, primary sponsor.

The fairness auditor’s report covering the activities during this first step of the process was released to the public on February 16, 2007. This report attests to the fair and transparent manner in which the RFQ stage was conducted.

Request for Proposals

The three qualifying candidates were asked to submit proposals including technical and financial components. After evaluation, all three proposals were deemed to be eligible and compliant from a commercial, technical, and financial perspective.

The proposals were evaluated on a pass/fail basis in three major steps. First, the technical component was evaluated. This included an assessment of commercial and technical compliance. Those who passed the technical component moved on to evaluation of the financial component. In the last, step the selection committee chose, from the eligible proposals deemed to be compliant, the proposal that represented the lowest cost expressed in the present value² of construction, capital and operation-maintenance-and-rehabilitation (OMR) payments.

The RFP included a separate evaluation for the payments related to the OMR activities for the supplemental sections of A-30. This allowed the Ministère to have the option of awarding this responsibility based on whether or not it was in the Ministère’s interests to do so. Evaluation was based on the lower of:

1. the discounted value of the payments proposed for the supplemental OMR activities; and
2. the discounted value of the costs estimated by the Ministère for carrying out the supplemental OMR activities.

If the proposed payments for the supplemental OMR activities were higher than the cost estimate of the Ministère using a conventional approach, those activities would not be included in the Agreement.

² The price of a proposal corresponded to the discounted value, as of July 1, 2008, of the construction payments, capital payments and OMR payments based on the following conditions: the discounted value of the payments was to be calculated using a 6.5 per cent annual discount rate for the construction payments, since they were required in current dollars, and a 4.5 per cent discount rate for the capital payments and OMR payments, since they were required in nominal dollars.

Before submitting their proposals, qualified candidates were invited to submit their comments and suggestions for changes on a draft Agreement. In light of the suggestions and comments received, a final version of the Agreement, reflecting the amendments accepted by the Ministère, was distributed to the qualified candidates.

Furthermore, along with their proposals, qualified candidates were required to submit a letter from their funding parties confirming their intention to participate in the project financing. The funding parties also had the opportunity to examine the final version of the Agreement.

The report from the fairness auditor covering the activities of the RFP stage was released to the public on June 6, 2008. This report attests to the fair and transparent manner in which the RFP process was conducted.

Timelines

2006	November 8	RFQ issued
	November 22	Information session
2007	February 16	Qualified candidates announced
	June 20	RFP issued
	July 26 to January 30, 2008	Information sessions and discussion workshops
	October 12	Comments due from candidates on draft Partnership Agreement
2008	December 12	Comments due from candidates on draft Partnership Agreement
	February 7	Comments due from candidates on draft Partnership Agreement
	February 26	Final Partnership Agreement issued for proposal submissions
	March 26	Technical component deadline
	May 7	Financial component deadline
	June 18	Selected proponent announced
	September 25	Partnership Agreement signed - financial close & commercial close
	November 5	Value-for-money analysis published
2012	December	Projected substantial completion and commissioning

Financial and commercial close

The process concluded by signing the Agreement, which was only amended by adapting the final version of the Agreement to the specific characteristics of the proposal submitted by NA 30.

The opportunities to examine, comment on and propose amendments to the Agreement made it possible to eliminate negotiations following selection of the successful proponent and to significantly reduce the elapsed time before Agreement signing.

This approach made it possible for the Agreement to be signed within 100 days of announcing the selected proponent. The project reached financial and commercial close on the same day – September 25, 2008.

Name of private partner

The proposal submitted by NA 30 represented the lowest cost expressed in present value and included both the DBFMOR activities of the 42-km western section and the OMR activities for the 35 km of supplemental sections.

NA 30 is comprised of:

- Acciona S.A., 50 per cent equity sponsor through Acciona Nouvelle Autoroute 30 Inc.; and
- Iridium Concesiones de Infraestructuras S.A., 50 per cent equity sponsor through Iridium Nouvelle Autoroute 30 Inc.

Fairness of the process

The entire process took place under the supervision of a fairness auditor to confirm the principles of equity and transparency for government authorities, the public and the proponents. The fairness auditor issued several notices after each stage of the competitive process, indicating that it took place in a fair and transparent manner. All of the fairness auditor's reports are available on the Ministère's and PPPQ's websites.³

Overall Structure of the Agreement

The Ministère and NA 30 signed the Agreement on September 25, 2008. It governs the contractual relationship between the parties, defines the rights and obligations of each party and defines the risk sharing. Highlights of the Agreement include the following:

- The duration of the Agreement is 35 years, composed of an estimated construction period of four years and three months, and an operation, maintenance and rehabilitation (OMR) period of 30 years and nine months.
- The management of the partnership agreement is therefore made up of two distinct periods in terms of activities:
 1. the design and construction period, and
 2. the OMR period.

³ The fairness auditor's reports are available on both the Ministère's and PPPQ's websites at: www.autoroute30.qc.ca and www.ppp.gouv.qc.ca.

NA 30 is responsible for the design and construction of the infrastructure, the related risks and the commissioning of the infrastructure.

NA 30, during the OMR period, operates the infrastructure in accordance with the Agreement. Failing to comply with the requirements established in the Agreement for OMR is likely to result in penalties for non-availability and non-performance.

NA 30 is responsible for financing activities.

In consideration for carrying out these activities, the Ministère will pay NA 30 a total of \$1.523 billion in NPV terms, which results from the sum of construction payments during the design and construction period and monthly capital and OMR payments during the OMR period.⁴

The Ministère is responsible for monitoring the Agreement for compliance and non-performance. NA 30 is required to report events, and provide data and information on a periodic basis.

Acciona S.A. (Acciona) and Iridium Concesiones de Infraestructuras S.A. (Iridium) are the equity sponsors of NA 30 through their respective Canadian entities Acciona Nouvelle Autoroute 30 Inc. and Iridium Nouvelle Autoroute 30 Inc.

NA 30 has signed a contract with a design-build joint venture (DBJV) to undertake construction activities. The DBJV is comprised of:

- Dragados Canada Inc.;
- Acciona Infraestructuras Canada Inc.;
- Construction DJL Inc.; and
- Verreault Inc., as strategic partner.

Subcontracts held by the DBJV are with:

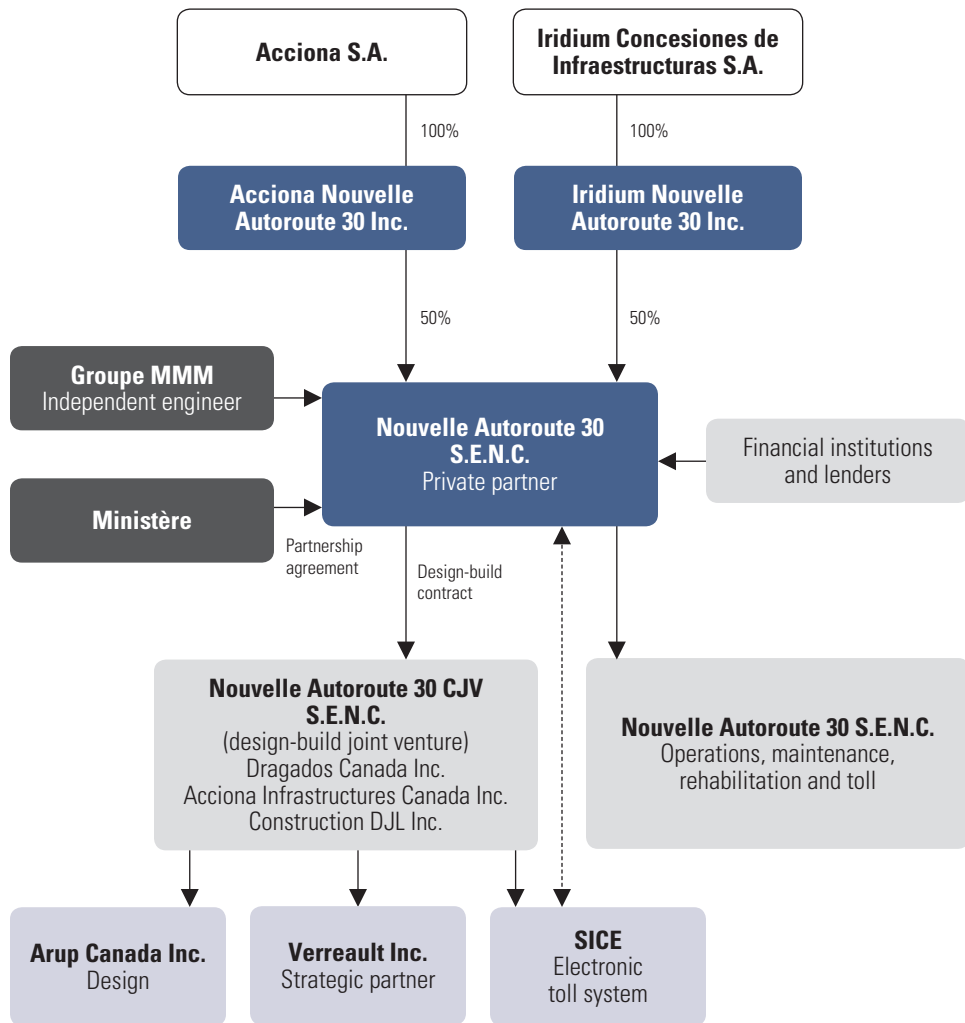
- Arup Canada Inc., design, and
- SICE, design and implementation of the tolling system.

There is an approval and supervisory link from NA 30 directly to SICE to oversee the tolling system, as NA 30 is ultimately responsible for the successful implementation and operation of the electronic tolling system. NA 30 will be responsible for all operation, maintenance, rehabilitation and toll collection activities during the operating phase.

⁴ Construction payments in current dollars; capital and OMR payments in nominal dollars.

For the execution of the partnership, NA 30 has the following commercial structure:

Autoroute 30 Commercial Structure



Financial Arrangements

Financing capital costs

The project has total capital costs of approximately \$1.9 billion. Acciona Nouvelle Autoroute 30 Inc. and Iridium Nouvelle Autoroute 30 Inc. will provide \$225 million in equity in equal shares for the project.

The credit facility was provided by a group of 13 Mandated Lead Arrangers (MLAs) and has been described throughout the P3 industry as a “club deal”. However, NA 30 describes the process as a “pre-close syndicated financing” or a “hybrid” between a syndicated loan and a club deal as six Primary MLAs underwrote the facility at bid submission, but the credit facility was syndicated to a larger group of banks in advance of financial close.

NA 30 officials explained that they submitted a fully committed and underwritten bid at the bid submission date by the Primary MLAs. The Primary MLAs, who supported the transaction chose, with the support of the sponsors, to undertake a syndication in advance of financial close. In a challenging economic environment, the Primary MLAs and sponsors were able to fully syndicate the transaction to a level where all the Primary MLAs had their final positions in the transaction equal to their desired hold amount.

This pre-close syndication was a success due to the determination of the banking group and the sponsors in a very challenging market environment.

Role of the Debt Participants

Primary Mandated Lead Arrangers	One or more Mandated Lead Arrangers who are putting up a proportionally bigger share of a loan.
Book Runners	One or more lenders responsible for calling other banks and running the syndication process.
Underwriters	<p>A financial institution that commits to 100% of the project debt (sole underwriter) or part of the debt (if more than one underwriter) being raised in the bank-debt market before other lenders are brought in to participate in the financing.</p> <p>A bank is an underwriter if it intends to syndicate the loan. A bank can be either an underwriter or a bookrunner, but underwriters are typically bookrunners as well.</p>
Mandated Lead Arrangers	One or more lenders who participate and/or bring together other lenders in a financing.

There are two groups within the syndicate:

Primary MLAs, Bookrunners and Underwriters

1. Banco Bilbao Vizcaya Argentaria, S.A., New York Branch (BBVA)
2. Banco Español de Crédito, S.A., New York Branch (Banesto)
3. Caja de Ahorros y Monte de Piedad de Madrid (Caja Madrid)
4. Caja de Ahorros y Pensiones de Barcelona (LA CAIXA)
5. Instituto de Crédito Oficial
6. Royal Bank of Canada (RBC)

Mandated Lead Arrangers

7. Banco Espirito Santo S.A.
8. The Bank of Nova Scotia
9. Dekabank Deutsche Girozentrale
10. Bosc Inc. (HBOS Canada)
11. Banco Popular Español, S.A.
12. Société Générale Canada Branch
13. Bayerische Hypo- Und Vereinsbank AG, New York Branch

The six Primary MLAs supported the consortium at bid submission. Afterwards, additional banks came into the deal on a take-and-hold basis. BBVA and RBC acted as co-syndication agents leading the arrangement of the bank syndicate before financial close. Banesto served as documentation agent and Caja Madrid as technical bank. In addition to co-syndication agent, RBC also serves as administrative agent, and was hedge arranger, insurance bank, model bank and acted as the sponsors' financial advisor. The bank debt was hedged using long-term interest rate and Canadian Consumer Price Index (CPI) revenue swaps.

By financial close, the credit facility was fully syndicated. This was a significant and important achievement given the instability of the credit markets in September 2008, just after the bankruptcy of Lehman Brothers was announced. At the same time, the way this financing was arranged introduced a certain degree of innovation for a P3 project by having a fully syndicated credit facility before financial close. In the past, the usual approach would have been to secure financial close with the Primary MLAs and to launch syndication afterwards. Although the method of syndication post-financial close has worked in the past, in a riskier economic environment lenders are uncomfortable taking syndication risk, given the time between bid submission and financial close. This pre-financial close syndication allowed lenders the ability to reduce their risk and gain greater comfort in the project overall.

The syndicate provided total debt financing of \$1.1 billion broken down as follows:

- \$804 million syndicated loan; and
- \$290 million construction bridge loan (\$197 million outstanding at completion).

The bridge loan is used to finance the milestone payments that are received from the Ministère during construction. There are some significant Ministère payments that occur after the construction completion, due to the delayed nature of the payment stream and the fact that some milestones are linked to tolling tests one year after substantial completion has been met. The majority of the construction bridge facility is retired two months after substantial completion.

Traditional Syndication vs. Club Deal

Traditional Syndication approach

The syndicated loan approach involves a small number of primary institutions, or Mandated Lead Arrangers, committing to underwrite all the financing at the outset. Each lender will also have a target hold amount – an amount of debt they are prepared to hold, which is smaller than their underwrite.

Subsequent to the underwriting, the Mandated Lead Arrangers would look to sell the debt to other financial institutions, usually after financial close, until they have reached their approved final hold amount.

This approach carries underwriting risk for the Mandated Lead Arrangers, as they need to be sure that they will be able to sell the debt to the other financial institutions. If not, they will have a hold amount above their target, which limits their ability to do further business.

Club Deal approach

In a club deal approach, financing is arranged whereby a group of institutions ‘club’ together and will commit only their ‘take-and-hold’ amount. As the take-and-hold amount will be lower than the underwrite amount, more banks are required, thereby adding to the complexity of the transaction. However, this approach eliminates the syndication risk for the banks.

A-30 approach

The A-30 structure was a hybrid between a syndicated loan and a club deal. At bid submission it was a fully underwritten loan, by the six Primary Mandated Lead Arrangers. The Primary Mandated Lead Arrangers then syndicated the loan in advance of financial close; thus all banks were at their hold amount by the time financial close was reached and hence, at this point, the deal resembled a club deal.

Payments

The Ministère will pay NA 30 quarterly construction payments during the construction phase and monthly capital and OMR payments during the operation phase. The value of these payments is considered commercially sensitive information and has not been disclosed.

Construction payments

Construction payments (chiefly originating from the federal contribution⁵) are payable on a quarterly basis during the design and construction period and upon certification of completion by an independent engineer. Construction payments include 50 per cent of eligible construction costs, including design, construction and insurance costs, professional fees and all charges in connection with management, bonds, letters of credit and the financing inherent in the design and construction phase. The balance of the construction price is covered by capital payments.

Capital payments

Capital payments will be paid monthly to NA 30 throughout the OMR period to cover all of the remaining construction costs over and above those included in the construction payments.

OMR payments

The OMR payments will be paid monthly to NA 30 throughout the OMR period to cover operating, maintenance and rehabilitation costs for the western section, completed as a P3, as well as those relating to the supplemental segments, completed using a conventional method, for which OMR will be carried out by NA 30.

Remittances linked to toll revenues/revenue sharing

NA 30 is to assume all risks relating to toll revenues. These revenues, collected from users driving across the bridge over the St. Lawrence River, are to be collected in a dedicated fund by NA 30 and remitted to the Ministère daily. The toll revenues that exceed a pre-determined threshold will be shared equally by NA 30 and the Ministère.

The pre-determined Toll Income-Sharing Threshold (TIST) is expressed in a fixed dollar amount as at the base date and is indexed annually in each operating year by the same inflation factor used to index the minimum and maximum tolls (see section on Toll framework below). In the first year of operations, the TIST is set at \$3.08 million in base-date dollars and rises to \$7.36 million in base-date dollars in year 30 of operations.

⁵ As of the date of publication of this document, the amount of the contribution from the Government of Canada had not officially been made public. It is expected that this announcement will be made in the near future.

⁶ The base date for the tolling framework is April 30, 2008.

Deductions and holdbacks

Various deductions and holdbacks may apply to the different payments for purposes of encouraging NA 30 to:

- maximize traffic lane availability;
- meet performance and safety requirements, such as driving comfort, maintenance, towing and lighting; and
- undertake OMR activities and respond to unexpected events quickly so as to minimize their impact on traffic.

There will also be end-of-term holdbacks from capital payments to ensure the end-of-term requirements are satisfied. The Ministère will hold back capital payments prior to the end of the Agreement equal to an amount calculated in accordance with the Agreement, but no more than an amount equal to the last 24 capital payments. On the termination date of the Agreement, the end-of-term holdback will be retained by the Ministère if NA 30 has not performed all the end-of-term work.

Tolling

Toll system

The highway will have only one tolling section, which will be over the 1.8 km bridge crossing the St. Lawrence River. NA 30 will implement a mixed electronic toll-collection (ETC) system with barriers in all lanes, which will allow for different payment methods. The toll plaza will be comprised of:

- fully electronic toll lanes, requiring the identification of a transponder (TAG) and allowing for low-speed traffic flow; and
- additional lanes allowing for payment by cash, credit or debit card, as well as by electronic payment with a TAG.

Having barriers on all lanes simplifies the administration and billing processes. Schedule 16 of the Agreement includes a third-party agreement between NA 30 and the Société de l'assurance automobile du Québec (SAAQ), providing a link to provincial records to ensure that addresses for drivers with TAG accounts are current.

Toll-setting framework

The toll framework is based on a lower and higher traffic volume threshold (cap and floor), with minimum and maximum toll rates set by the Ministère according to predefined rules. NA 30 may, within this rate range, set toll rates at its discretion, within certain conditions. The main conditions are summarized below.

Vehicle classification

For toll purposes, vehicles will be divided into four categories:

- Class 1: all vehicles less than 230 cm in height, which include most passenger automobiles, motorcycles, minivans, and sport-utility vehicles, as well as some light trucks;
- Class 2: all vehicles 230 cm or more in height, which include most tractor semi-trailers, heavy vehicles, recreational vehicles, non-exempt buses and other heavy commercial vehicles, other than non-standard vehicles;
- Class 3: road vehicles operated by or for an organization transporting the mobility impaired; buses operated by or for a public transportation organization; school buses; emergency vehicles; the Ministère's road vehicles required for the construction, maintenance and rehabilitation of the A-30 Section corridor; and
- Class 4: all road vehicles operated by or for NA 30 that are required for the construction, maintenance, operation and rehabilitation of the A-30 corridor.

Class 1 and 2 vehicles will pay a rate per axle. Class 3 and 4 vehicles will be exempt from tolls, subject to being equipped with transponders. The electronic toll system will be capable of immediately reading the transponder and simultaneously measuring the vehicle's height and counting the number of axles. NA 30 must charge and collect a toll on Class 3 and 4 vehicles that are not equipped with a transponder, as if they were Class 1 or 2 vehicles, as the case may be.

Exceptional convoys that have received authorization from the Société de l'assurance automobile du Québec (SAAQ) to use the bridge across the St. Lawrence River may be subject to special rates, to be determined on a case-by-case basis in accordance with the provisions of the Agreement.

Toll setting

Tolls for Class 1 and Class 2 vehicles

Determining the tolls will be left to the discretion of NA 30, subject to the requirements described below. The tolls for Class 1 and 2 vehicles will be calculated using the following equations:

- Class 1 toll = number of axles x Class 1 rate per axle
- Class 2 toll = number of axles x Class 2 rate per axle

The Class 2 rate cannot be more than one and a half times the Class 1 rate per axle.

Toll schedule

Toll rates will be based on a predetermined timetable (as opposed to dynamic tolls), at the discretion of NA 30, but subject to the toll framework described in the Agreement.

Initial minimum and maximum tolls

For the first 12 months following the tolling commencement date, the initial toll cannot be less than \$0.30 or more than \$0.70 per axle for Class 1 vehicles, expressed in base-date dollars. Tolls set by NA 30 may vary freely within those limits.

Tolls in subsequent years

After the first 12 months following the start of tolling, the minimum and maximum toll rates will be adjusted annually at the national rate of inflation, using the national Consumer Price Index (CPI).

There will also be an adjustment related to traffic volume and in accordance with the Agreement's Maximum Toll and Minimum Toll Adjustment Plan (the Toll Adjustment Plan). Starting at the beginning of the second operating year and at the beginning of each subsequent operating year, minimum and maximum toll rates will be adjusted upward or downward as follows:

1. if the average daily traffic in the previous operating year is less than or equal to 14,000 vehicles per day, then the maximum toll rate will be set at \$0.70 and the minimum will be set at \$0.30 in base-date dollars;
2. if the average daily traffic in the previous operating year is between 14,001 and 16,000 vehicles per day, then the maximum toll rate will be set at \$0.80 and the minimum will be \$0.40 in base-date dollars;
3. if the average daily traffic in the previous operating year is between 16,001 and 18,000 vehicles per day, then the maximum toll will be set at \$0.90 and the minimum will be \$0.50 in base-date dollars; and
4. so on by \$0.10 increments in the maximum toll rate, for every 2,000 vehicles-per-day increase in the average daily traffic in the previous operating year.

Tolls set by NA 30 may vary freely within the minimum and maximum ranges. This system differs from the tolling framework established for the Autoroute 25 (A-25) P3 in that there is no guaranteed minimum. This is expected to encourage use of the bridge to divert traffic from travelling through the city centre. NA 30 may also offer a discount to users, but it must be available to all users of the same category, on the same conditions, and must not result in charging a toll rate lower than the minimum toll rate for each category.

Risk Allocation

The allocation of the principal risks and responsibilities over the term of the Agreement is illustrated in the following table:

Main risks and responsibilities	Risks and responsibilities assigned to:	
	NA 30	Minister ⁷
Environmental permits and authorizations		
Certificate of authorization for the project (CAR) – Western section; and CAR – additional A-30 segments		■
Certificate of authorization for the construction (CAC)	■	
Federal permits and authorizations	■	
Authorizations under the Land Use Planning and Development Act L.R.Q. c. A-19.1	■	■
Permits and authorizations relating to the Politique de protection des rives et du littoral et des plaines inondables under the terms of Section 2 of the Environment Quality Act L.R.Q. c. A-6.01	■	■
Authorizations from the Commission de protection du territoire agricole du Québec (CPTAQ) limited to right-of-ways		■

(continued on page 32)

⁷ The Partnership Agreement is signed by the Minister, who is the Ministère’s representative.

Allocation of Principal Risks and Responsibilities (continued)

Main risks and responsibilities	Risks and responsibilities assigned to:	
	NA 30	Minister
Design and construction of structures that are the responsibility of NA 30		
Cost overruns	■	
Delays	■	
Relocation of public services infrastructures	■	■
Selection of tolling technology	■	
Contracting of the site under the terms of the Act respecting occupational health and safety L.R.Q. c. S-2.1	■	
Contaminated soil — undocumented and in existence before the signing of the Partnership Agreement or before the transfer to NA 30, if applicable		■
Contaminated soil — documented, in addition to that resulting from the construction and the OMR for the structures that are the responsibility of NA 30	■	
Geotechnical risks	■	
Acquisition, access to and use of the right-of-way		■
Acquisition of property outside the right-of-ways for construction purposes	■	
Expropriation		■
Acquisition of additional or temporary right-of-ways	■	■

(continued on page 33)

Allocation of Principal Risks and Responsibilities (continued)

Main risks and responsibilities	Risks and responsibilities assigned to:	
	NA 30	Minister
Financing and financing terms		
Inflation risk during the design and construction period	■	
Inflation risk beyond the CPI during the OMR period	■	
Risk of fluctuation of the benchmark index rate for the period starting five business days before the submission of the financial component, and ending at the financial closing date		■
Risk of fluctuation of the interest rate effective on the financial closing date	■	
Sharing of proceeds from refinancing	■	■
Sharing of the proceeds generated by changes approved by the minister	■	■
OMR of work for which NA 30 is responsible		
Sharing of the proceeds generated by changes approved by the minister	■	■
OMR for structures that are the responsibility of NA 30 and the electronic tolling system, including obligations resulting from the CAR – western section and CAR – additional A-30 segments, CAC and prior examinations	■	
Status of the structures when submitted to the minister at the end of the completion of A-30 as a PPP	■	
Toll		
Establishment of the toll	■	
Collection of tolls and related charges	■	
Risks associated with toll revenues	■	
Sharing of toll revenue beyond the established threshold	■	■

Benefits

Cost savings/value for money

PPPQ published a Value for Money (VFM) report⁸ to confirm to the public that the decision to complete A-30 through a P3 process offered the best value for the community. The VFM analysis testifies to the rigour of the procurement process and maintains the Government's commitment for transparency throughout the process. The report also showed that the completion of A-30 presented the basic characteristics necessary for a P3 project within the Government's P3 framework policy.⁹ These characteristics include:

- | improvement of service delivery to the population;
- | the Government's involvement in significant financial commitments;
- | a technically complex and high-risk project;
- | potential for creativity and innovation likely to take advantage of the know-how of the private sector; and
- | reflection of an existing, competitive market.

The Public Sector Comparator for this project was developed in preparing the initial business case and was updated before proposals were submitted on May 7, 2008. The risks retained by the Government, were the project to be completed using conventional means, were established and quantified in a risk analysis performed by the Ministère and its advisors.

The cost of the Public Sector Comparator included:

1. The government's disbursement:
 - a. the costs of the project over a 35-year period
2. The other relevant costs:
 - a. toll revenue that the Government would collect, based on those forecasted by its advisor regarding traffic and revenue;
 - b. the quantification of risks planned to be transferred to the private partner but that would be assumed by the Ministère if the Project was completed using conventional means; and
 - c. the residual value of the assets

As the table below shows, the net cost of carrying out the project using a conventional approach was estimated at \$2,289.8 million net present value (NPV).¹⁰

⁸ The VFM report is available on both the Ministère's and PPPQ's websites at: www.autoroute30.qc.ca and www.ppp.gouv.qc.ca

⁹ Public-private partnership framework policy adopted by the Government of Québec in June 2004.

¹⁰ Amounts in the VFM analysis are expressed in present value as of July 1st, 2008, using a discount rate of 6.5 per cent.

Public Sector Comparator

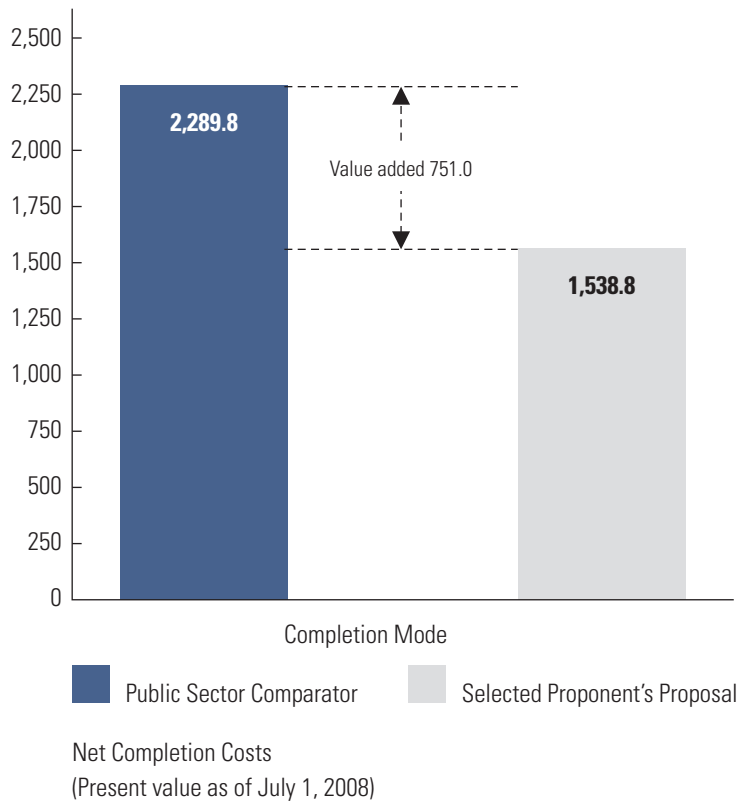
	NPV at July 1, 2008 (\$millions)
Project cost over 35 years	1,647.5
Net toll revenues	(20.8)
Quantification of risks:	
▶ Design & construction	435.4
▶ Risk of inflation during design & construction	239.4
▶ Risk of inflation during operation, maintenance & rehabilitation period	116.9
Compensation of the three respondents not selected	6.0
Realization costs	2,424.4
Residual value	(134.6)
Net costs for realization of the project	2,289.8

The net cost of carrying out the project as a P3 is \$1,538.8 NPV, as shown in the table below:

Total Cost to the Government of Proposal by NA 30

	NPV at July 1, 2008 (\$millions)
Payments to private partner	1,523.0
Quantification of risks retained by the Ministère:	
▶ Risks related to the fluctuation of the CPI relative to payments other than construction payments	133.7
▶ Ministère's costs for monitoring the Partnership Agreement	24.8
▶ Compensation of the two respondents not selected	4.0
Realization costs	1,685.5
Residual value	(146.7)
Net costs for the realization of the project via a P3	1,538.8

Value Added for Public Funds Invested (\$millions)



The net value added of \$751 million in savings to the Québec taxpayer by undertaking this project as a P3 is illustrated in the figure above.

Other benefits

The VFM analysis also noted that using a P3 model results in a number of additional benefits:

- The project will be completed two years earlier, in 2012, compared to a conventional approach (2014).
- Highway users will benefit from time savings two years earlier. This time savings translates into savings of \$214 million NPV, according to an economic evaluation report prepared by MOTREM-98 in February 2006.

Regional economic development

Studies undertaken by the Ministère showed that, despite the Montérégie region's proximity to markets of Montréal, Ontario and the United States, the absence of a highway connection may have contributed to limiting expansion and renewal of businesses in this region. A stronger grid would improve the chances of economic growth. The completion of A-30 could encourage investment in the order of over \$8 billion over a 30-year period and the creation of almost 450 jobs per year in existing industrial parks located along the periphery of the highway.

As an intermodal convergence artery, A-30 will also add value to the rail and port systems, as well as other surrounding highways in Québec.

Short-term economic benefits will also accrue to the immediate region, as the project itself will generate 18,900 direct and indirect jobs over the duration of the construction work. It is estimated that more than 75 per cent of the construction expenses will be local or regional.

Travel time in the Montréal area

By improving the average speed on the road network, adding road capacity contributes to reducing travel time and the cost of using vehicles. The studies conducted by the Ministère concluded that the completion of A-30 will generate daily time savings of around 40,000 vehicle/hours in metropolitan Montréal. The largest gains will be realized during rush hour when the metropolitan network is used most. For instance, between Vaudreuil-Dorion and Boucherville, a driver should save, on average, 23 to 31 minutes during rush hour using A-30, rather than crossing the Island of Montréal on the Metropolitan highway (A-40).

This southern bypass around Montréal will provide not only an option for average drivers, but also an alternative route for truck traffic carrying hazardous materials and for all road users in the event of major incidents. Reduced travel time will also translate into environmental benefits by reducing greenhouse gases.

Communications

Before and during the project, communication with the public has been, and will continue to be, extensive. The Ministère has developed and put in place a "general public" communication strategy designed to keep the public informed and, more particularly, to fight scepticism with regard to the completion of the project. A website, a monthly newsletter with broad-scale distribution, sign boards installed along the roads, brochures, and participation in regional meetings (boards of trade, caisses populaires, regional county municipalities, etc.) are all examples of this strategy.

The Ministère has also imposed highly specific communication requirements for NA 30. The latter include the process required to ensure, in a timely and appropriate manner, the generation, collection, storage, recovery and final processing of the information related to the completion of A-30 as a P3. The communications management processes for the project are:

- communications planning:** determining the information and communications requirements within a communications plan, specifically including the communication context, the communication objectives, emergency procedures, target clientele (main groups targeted), strategy, communication methods, production schedule, and communications protocols included in agreements with third parties;
- circulation of information:** making the necessary information available to the government in a timely manner; and
- communications management:** ensuring communications management in order to comply with the communications requirements and resolve major communications issues, specifically by implementing internal and external communications systems, interfaces with the community, website, call centre, and the management of exceptional situations such as emergencies.

NA 30 is responsible for communications for the entire term of the Agreement, in particular during the design and construction period. However, the Ministère will remain responsible for circulating the information to the media and to traffic reporters with respect to construction activities and closures. NA 30 is responsible for notifying the public of any toll rate changes and providing appropriate explanations. NA30 has set up its website at www.na30.ca.

Labour

There will be no transfer of labour from the government for carrying out the completion of A-30. This would be the case even if the project had been carried out in a conventional manner, as traditionally the Ministère would contract for highway construction and OMR services.

For the project itself, NA 30 will assign the vast majority of personnel from Québec. In order to support the design and construction team, a few employees of partner companies Iridium and Acciona will move with their families to the Montréal and Montérégie regions. Skilled labour workers will be referred by the local unions in accordance with provincial labour laws.

Monitoring

Contract monitoring

The performance of NA 30 will be evaluated by means of internal and external audits. The external audits will be performed by the Ministère based on the progress of completion of the work. The Ministère has established a contract-management team with technical, financial and legal advisors who monitor the contract according to its obligations and to make sure NA 30 is complying with the Agreement requirements. Failure to achieve the levels of performance stipulated in the Agreement will directly impact the OMR payments and the capital payments, if necessary (the Appendix shows the organizational structure for this group).

NA 30 is responsible for the internal audits. It is supported by both Acciona and Iridium and their affiliates in Canada and Spain through specialised technical, legal and financial departments. NA 30 also has a fully dedicated team located in Montréal to support the project. This dedicated team monitors the project on a day-to-day basis and performs a supervisory role with respect to the design and build, as well as the operations and maintenance. In addition, this group is designed to handle all financial and administrative issues.

Policing the highway

The provincial police force, the Sûreté du Québec, is responsible for policing the highway.

Other Issues

Flexibility of the Project Agreement

There are mechanisms in the Agreement allowing certain changes to be made to it. Either partner may propose a change to the Agreement with certain terms and conditions. If the Government wants to make a change, it would ask NA 30 for a cost quotation and, based on that, the Government would then decide whether or not to proceed. If NA 30 suggests a change (for instance, a good idea that has arisen during construction), the Government can accept it or not. This flexibility allows for the incorporation of innovative ideas from the private sector and for policy and legislative changes from the public sector.

Lessons learned

Continuous efforts were maintained by the Ministère throughout the process to insure that all stakeholders complied with the base schedule for the project. This allowed the project to reach financial close and have the Agreement signed on September 25, 2008. The total procurement process took 23 months from the RFQ stage to financial close.

This was in spite of a very complex project. Beyond the fact that it included two distinct activities – the DBFMOR for the western portion and the OMR for the supplementary sections – the project included:

- integrating many external stakeholders and third-party agreements (i.e., the Federal Government, Hydro-Québec, the St. Lawrence Seaway, CN Rail, CP Rail, seven municipalities, etc);

going through a two-step submittal process for the proposal (technical proposal followed by a financial proposal a little over a month later); and

very unstable financial markets once the financial proposal was submitted.

The Ministère and PPPQ officials stated that maintaining the procurement process schedule is of the utmost importance for all involved and gives the public partner credibility with the candidates involved in the process.

In addition, Ministère and PPPQ officials felt that openness and availability are valuable through the workshops to ensure that, in spite of the complexity of the project, the candidates get their questions answered and their concerns addressed. All technical data was made available and explained as needed and required.

From the perspective of the private partner, NA 30 officials made a number of comments:

A solid and well-structured deal can succeed in even the worst financial conditions. Funds are always available for attractive, good projects and strong sponsor groups;

In difficult environmental situations, a very deep and thorough risk analysis is absolutely necessary. The lenders' due diligence, albeit usually already extensive and detailed, will require an even more conservative approach in the financing to allow lenders the ability to gain comfort in the project.

The financial strength and technical capabilities of the sponsors and construction team become more important than ever, in order to provide some comfort to the lenders.

Technically complex projects like this one, with two bridge structures of more than one kilometre, require very strong construction partners with vast experience in similar projects. The experience and capabilities of the DBJV members were essential in the development of a successful and competitive technical proposal.

The completion of the A-30 was a stimulating project for the consortium since the constraints and the challenges were known; it makes the consortium members very proud to have arranged and closed the financing when the world markets were in turmoil. The fact that major international banks decided to invest in this important project in Québec was evidence of their confidence in the project and in the two partners.

Applicability outside Canada

From NA 30's perspective, even though different countries require different risk analyses, most of the risks are related to each project's specific characteristics. For any project, a solid and robust finance structure has to be considered independently from the country. The cost estimations, traffic projections and project schedule depend on the peculiarities of each project and each location. Nevertheless, the general approach for all these aspects can be applied in many countries.

In addition, it is the view of NA 30 officials that: the overall conservative approach for the financial close (pre-close syndicated financing) can be applied for any project under current circumstances; difficult financial environments require further conservative approaches and very strong financial sponsors; and complex technical projects require lead construction firms.

According to the editor of *Public Works Financing*, bringing this project to financial close amid the market turmoil of September 2008 was a “miracle.” Assembling the 13 banks to share the debt was an outstanding success reflecting the commitment of the winning bidders and their financial advisors. This financial model also reflects the new economic times, not only in Canada, but throughout the world. Necessity has played a large part in bringing this model of financing P3 projects to the fore. Necessity and continued economic uncertainty may also mean that this model will become the norm for P3 projects throughout the world.

Concluding Comments

According to NA 30 officials, the A-30 project was the most professionally managed project they have worked on in the world. The Ministère and PPPQ conducted a procurement that was user friendly and, for the most part, stayed within specified timelines. The process was clear and well documented for all participants. Documents were available in both French and English, including the draft Agreement. A separate management team – the A-30 PPP Completion Team – with an official project headquarters, was established to oversee the project and coordinate

the involvement of the various departments of the Québec Government.

The success of the procurement process can in part be attributed to the fact that the Ministère and PPPQ learned from their own experience with the A-25 procurement process and from the experience of other jurisdictions such as Partnerships BC. Rather than reinvent the wheel for each project, they have improved and brought consistency to a complex process. According to the September 2008 edition of *Public Works Financing*, “Québec has set the new standard in P3 procurements.”

Testimonials

Public sector

The completion of Autoroute 30 as a PPP will bring about real benefits for Québec and Canadian taxpayers. In fact, in the wake of the rigorous and transparent PPP process that took place in recent months, it was demonstrated that the project’s completion as a PPP, in addition to the fact that the highway will be opened to traffic two years earlier than if it was built in a conventional manner, will generate savings of \$751 million.

The Ministère des Transports du Québec is very proud to have completed the procurement process as a PPP for one of the largest road projects in Canada. The Ministère is also proud to be working with a private partner of the calibre of Nouvelle Autoroute 30 to complete the project.

Paul-André Fournier
Former Project Director
Ministère des Transports du Québec

Private sector

The A-30 completion project is a major transportation public-private partnership in Québec, and represents a milestone in the delivery of infrastructure in the province. Nouvelle Autoroute 30, S.E.N.C., is composed of Acciona and Iridium. These two companies are internationally renowned leaders in the execution of major PPP infrastructure projects. They will apply their unsurpassed technical skills to the planning, design, construction, operation, maintenance and rehabilitation of the Autoroute 30, using the latest technologies in any area and providing the highest level of excellence throughout.

The success of the project has been made possible by the Ministère des Transports du Québec and its business advisors and consultants. Nouvelle Autoroute 30 is confident that the highly experienced and productive local and international companies brought on board will contribute to successfully meeting the various challenges of the most important road project in Québec.

Antonio de la Llama
Member of Board of Directors
 Nouvelle Autoroute 30 S.E.N.C.

Public Sector Contact

Ms. Sandra Sultana, P.Eng., M.A.Sc.
Director, Office of Public-Private Partnerships
 Ministère des Transports du Québec
 Bureau 13.40
 500, boulevard René Lévesque Ouest
 Montréal, QC H2Z 1W7
 514-873-4377 ext. 2201
 Sandra.sultana@mtq.gouv.qc.ca

Private Sector Contact

Mr. Miguel Sanchez-Praena
(Acciona representative)
 Business Development Director
 Acciona Concessions Canada
 Park Place, Suite 1550
 666 Burrard Street
 Vancouver, BC V6C 2X8
 604-622-6558
 mspraena@acciona.ca

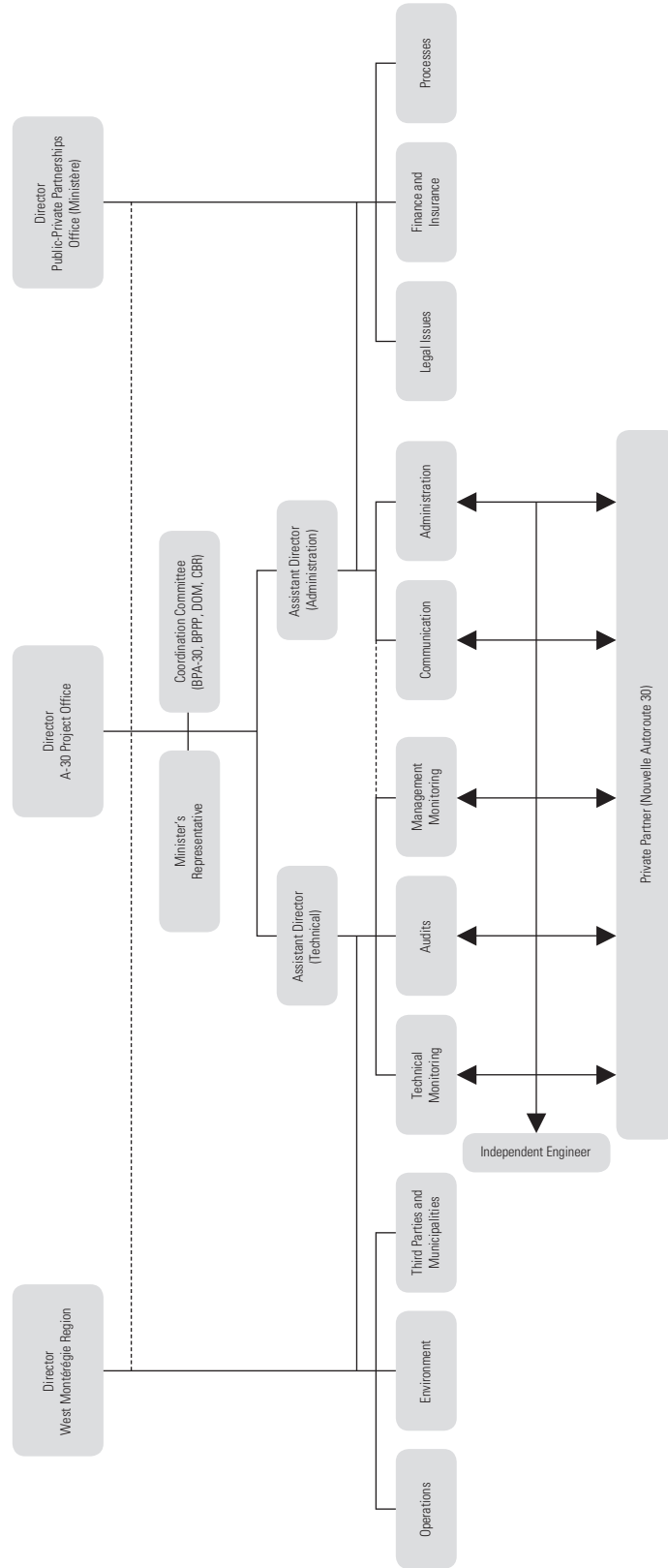
Mr. Antonio Estrada
(Iridium representative)
 Senior Operations Vice President,
 USA & Canada
 Iridium Concesiones de Infraestructuras S.A.
 919 Congress Avenue, 5th floor
 Austin, TX 78701 USA
 512-236-1700
 aestrada@acsinfra.com

Project Website

www.autoroute30.qc.ca

Appendix

Autoroute 30 Operational Flow Chart (design-construction period)



Glossary of Terms

– Autoroute 30 Case Study

A-30 – Autoroute 30

Agreement – Partnership Agreement

CAC – Certificate of Authorization for Construction

CAR – Certificate of Authorization for the Project

ETC – Electronic tolling collection

MLA – Mandated Lead Arranger

Primary MLA – Primary Mandated Lead Arranger

OMR – Operations, Maintenance & Rehabilitation

PPPQ – Agence des partenariats
public-privé du Québec

SAAQ – Société de l'assurance automobile
du Québec

Sponsor – a party interested in forming a
consortium with all the necessary participants to
bid on a public-private partnership project.

TAG – transponder

NORTHWEST ANTHONY HENDAY DRIVE, ALBERTA

2008 Silver Award for Project Financing



Quick Facts – Northwest Anthony Henday Drive

Project type

Design-Build-Finance-Maintain-Operate (DBFMO)

Asset/Service

33.25-year Public-Private Partnership Agreement to design, build, maintain, operate and partially finance the 22-km northwest leg of Anthony Henday Drive, Edmonton's ring road with two components:

- ▶ 3.25-year design-build period, and
- ▶ 30-year operations and maintenance period

Partners

Government of Alberta, represented by the Minister of Transportation and the Minister of Infrastructure
Northwest Connect General Partnership (NWC), a wholly owned company of Bilfinger Berger Project Investments Inc. (Bilfinger)

Other participants

Public Sector

Participants:

- ▶ Alberta Minister of Infrastructure
- ▶ Alberta Minister of Transportation

Advisors:

- ▶ Alberta Finance and Enterprise – internal financial advisor
- ▶ Alberta Justice – legal advisor
- ▶ Deloitte & Touche LLP – financial and process advisor
- ▶ AECOM Canada Ltd. – engineering advisor
- ▶ TD Securities Inc. – capital markets advisor
- ▶ GGC Consultants Inc. – fairness auditor

Private Sector

Participants:

- ▶ Flatiron Construction Corp.
- ▶ Graham Construction and Engineering Inc.
- ▶ Parsons Overseas Company of Canada Ltd.
- ▶ Carmacks Enterprises Ltd.

Advisors:

- ▶ Davis LLP – legal advisor
- ▶ CIT Group Securities (Canada) Inc. – financial advisor
- ▶ Dillon Consulting Ltd. – structures lifecycle advisor
- ▶ John Emery Geotechnical Engineering Limited – pavement lifecycle advisor & quality assurance
- ▶ Halcrow Group Ltd. – traffic advisor
- ▶ Marsh Canada Ltd. – insurance advisor
- ▶ McMillan LLP – lender's legal advisor
- ▶ Stikeman Elliott LLP – lender's legal advisor
- ▶ KBR Inc. – lender's technical advisor
- ▶ Aon Inc. – lender's insurance advisor

Financing

Total value = \$1.42 billion NPV

- ▶ \$57 million in equity contributed by Bilfinger
- ▶ Senior debt comprised of two tranches:
 - \$266 million fully underwritten bond issue, underwritten by RBC Dominion Capital Markets; and
 - \$353 million fully underwritten long-term bank loan, collectively underwritten by DEPFA Bank plc, Dexia Credit Local S.A. and Fortis Bank S.A./N.V.

Government of Alberta to provide:

- ▶ \$500 million in progress payments during construction period;
- ▶ fixed monthly capital payments during operating period;
- ▶ major rehabilitation payments; operations and maintenance payments during the operating period.

Other features

Agreement term is 30 years following construction completion (anticipated to be November 1, 2011). The payment structure is availability/performance based and subject to substantial deductions in the event that the private partner fails to perform its obligations.

Overview



The Northwest Anthony Henday Drive project will be delivered through a design, build, finance, maintain and operate (DBFMO) process, repeating and improving upon the original DBFMO delivery for the Alberta Ministry of Transportation (Alberta Transportation) of the Southeast Anthony Henday Drive project in Edmonton, as well as the Northeast Stoney Trail project in Calgary.

This project, which to date represents the largest single transaction entered into by Alberta Transportation, reached financial and commercial close on July 29, 2008. Construction began in September 2008 and the road is scheduled to open on November 1, 2011.

Background and rationale

Alberta has one of the fastest growing economies in Canada and is one of the primary driving forces behind Canada's current economic growth.

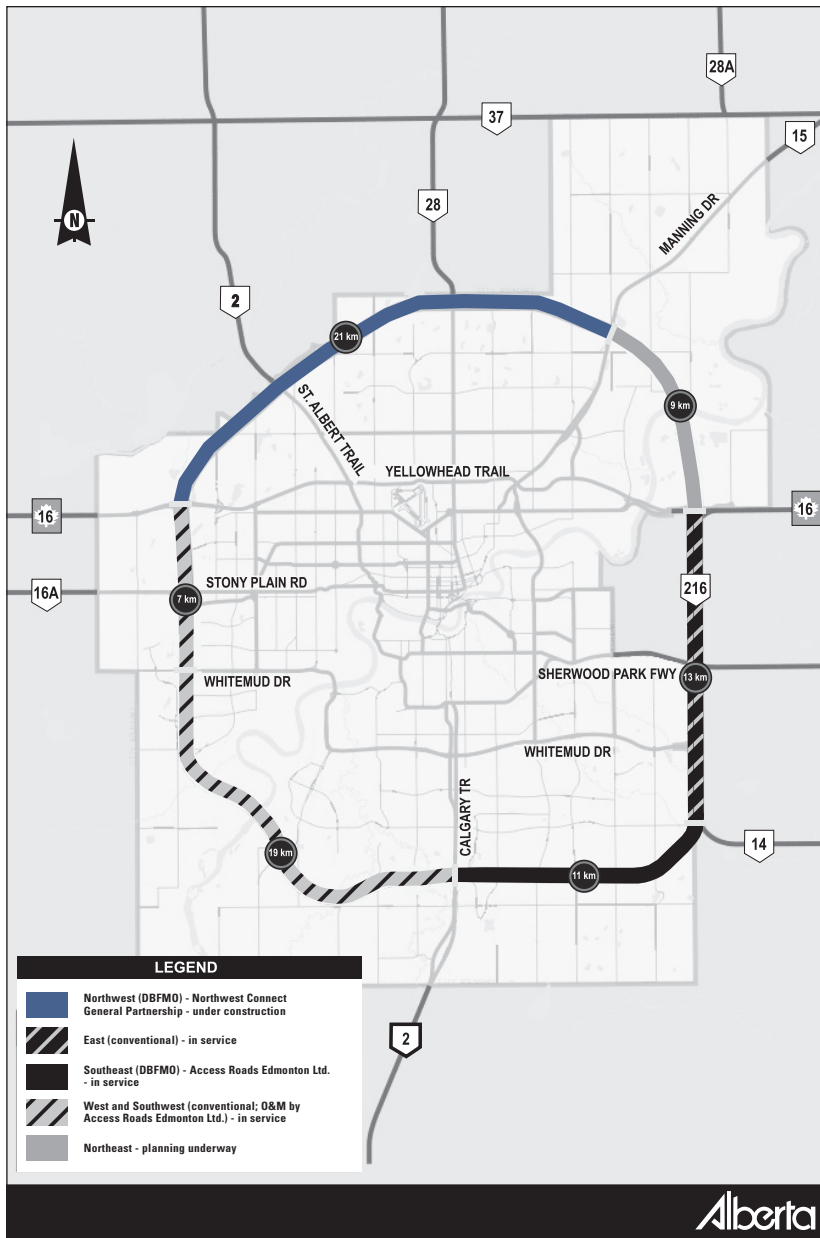
The City of Edmonton, the capital of the Province of Alberta (the Province), and the City of Calgary are two of the six largest cities in Canada with metropolitan-area populations exceeding one million each.

Alberta Transportation is responsible for the operation of 25,000 kilometres (km) of paved and 5,000 km of gravel highway network in Alberta, including 3,800 bridge structures. This highway network has a depreciated value of about \$20 billion. Alberta Transportation is expanding its transportation network throughout Alberta. In 2005, the Alberta Government's (the Government) Throne Speech stated that one of its goals is to complete the ring roads around Edmonton and Calgary by 2015.

The project furthers a number of the Government's objectives as articulated in its 2005-2008 Business Plan by:

- engaging in a process that ensures best value for the taxpayers of Alberta;
- reducing traffic, especially truck traffic, on key arterial roads within Edmonton by making a major addition to its road network that will be a major connector for the north-south trade corridor;
- improving air quality and reducing greenhouse gas emissions through reduced traffic congestion and reduced stop-go traffic; and
- providing job opportunities and enhancing the movement of export goods and tourism, thereby contributing to growth in the Gross Domestic Product (GDP).

Anthony Henday Drive – Map of Segments



Description of the Project

Anthony Henday Drive is the official name of the entire Edmonton ring road and is a key component of Edmonton's transportation plan addressing future transportation needs. The Government began constructing the ring road in the mid-1990s in segments. There are six distinct segments. The first three, in the west, east and southwest, were completed by 2006 using traditional government procurement methods. The Government was responsible for the design and financing components and established contracts to build, maintain and operate the roadways.

The fourth segment, in the southeast, was completed using a public-private partnership (P3) DBFMO model. In addition to building and maintaining a certain component of infrastructure, the contract included maintaining an additional portion of existing and adjacent infrastructure to gain economies of scale. The private partner, selected in 2004 through a competitive bidding process, is Access Roads Edmonton Ltd.

The subject of this case study is the fifth segment – the northwest segment. Planning is still underway for the sixth and final northeast segment. The map on the previous page identifies the six segments.

The project covers a 22-km segment of the ring road. It will become part of a key transportation route around Edmonton and involves the design and construction of approximately eight km of a new six-lane divided roadway and 13 km of a new four-lane divided roadway between Highway 16 and Manning Drive. The new road facility will include eight interchanges, five flyovers, and two railroad crossings with a total of 29 structures.

The diagram below shows the project details:

Northwest Anthony Henday Drive Project Map



Procurement Process

Selecting the P3 model

Alberta Transportation determined, through a comprehensive evaluation process and recommendations from the Alberta Advisory Committee on Alternative Capital Financing that delivering the project as a P3 would provide clear benefits to both the Government and taxpayers.

Some identified benefits for the public include:

- | project completion two years sooner than what could be achieved through the traditional government process of design-bid-build delivery;
- | a guaranteed fixed price and delivery date for the project;
- | a transfer of risks, such as inflation and weather-related delays, to the private contractor;

- the ability to penalize the private contractor for late delivery or substandard service; and

- value for money.

Through the P3 Agreement (the Agreement), the Government will also receive a 30-year warranty on the work. Under traditional delivery, warranties are usually only one to two years.

Likewise, the contractor's control of the overall schedule provides the flexibility to innovate, take advantage of economies of scale, and use resources more efficiently. For a project of this scale, traditional design-bid-build delivery does not provide this flexibility.

Selecting a partner

The Government structured the project's procurement process and Agreement to meet a number of specific objectives:

- to complete the procurement process expeditiously;
- to complete construction of the project so that it is ready for traffic availability by November 1, 2011;
- to achieve "value for money" during the design-build phase and for a 30-year term thereafter;
- to ensure that the project is designed, built and operated in an environmentally sound manner and in a manner that ensures the safety of the traveling public; and

- to ensure that the highway infrastructure is handed back to Alberta Transportation in the required specified condition at the end of the 30-year term.

Competitive process

The procurement process for the project was based in large part upon the successful processes developed for the \$493 million (NPV 2004) Southeast Anthony Henday Drive DBFMO that closed in January 2005 and the subsequent \$650 million (NPV 2007) Northeast Stoney Trail project in Calgary that closed in February 2007.

The procurement process had two stages: a Request for Qualifications (RFQ) stage followed by a Request for Proposals (RFP) stage.

Request for qualifications

At the outset of the Northwest Anthony Henday Drive project, the RFQ, RFP and DBFMO Agreements from the previous Southeast Anthony Henday and Northeast Stoney Trail projects were made available to the respondents. This was done to demonstrate Alberta Transportation's objective of establishing consistency with its DBFMO process. Further, it gave the consortia the opportunity to anticipate the general form of the final agreement as early as possible.

Three consortia (listed in the following table) responded to the RFQ.

RFQ Respondents for Northwest Anthony Henday Drive Project

	NorthwestConnect (NWC)	North Edmonton Road Consortium (NERC)	Plenary Roads Edmonton (PRE)
Equity	Bilfinger Berger Project Investments Inc.	SNC-Lavalin / Acciona S.A.	Plenary Group (Canada) Inc.
Design-Build Joint Venture (DBJV)	Flatiron Construction Corp. Graham Construction and Engineering Inc. Parsons Overseas Company of Canada Ltd.	SNC Lavalin Inc. Acciona Infrastructures Canada Inc.	PCL Construction Management Ltd. Kiewit Management Co.
Operations & Maintenance (O&M) Provider	Carmacks Enterprises Ltd.	SNC-Lavalin ProFac Inc. Acciona S.A. Ledcor Alberta Ltd.	Transportation System Management Inc.
Financial Advisor	CIT Group Securities (Canada) Inc.	SNC-Lavalin Capital Inc. Acciona S.A.	Plenary Group / Deutsche Bank

The qualifications of the consortia teams that responded to the RFQ were evaluated using the scoring matrix shown below, and on a pass-fail basis, using the Government's assessment of

financial capacity to successfully design and construct the project and ability to arrange the financing required for the project.

RFQ Scoring Matrix	
Evaluation Category	Weighting (%)
Project Lead	
▶ Organization and Plan	10
▶ Team Members' Experience	10
▶ Key Individuals' Experience	5
	Sub total = 25
Design-Construction Team	
▶ Organization and Plan	10
▶ Team Members' Experience	10
▶ Design Key Individuals' Experience	5
▶ Construction Key Individuals' Experience	5
	Sub total = 30
Operation and Maintenance Team	
▶ Organization and Plan	10
▶ Team Members' Experience	5
▶ Key Individuals' Experience	5
	Sub total = 20
Financing Team	
▶ Organization and Plan	10
▶ Team Members' Experience	10
▶ Key Individuals' Experience	5
	Sub total = 25
	Total = 100

Following the RFQ evaluation, all three consortia were invited to submit proposals in response to the RFP.

Request for proposals

During the RFP stage, the selection process consisted of three mandatory submissions (SR Package 1, 2, and 3), due in stages. There was also an Optional Innovation Submission after SR Package 1.

Proponents were also invited to submit comments on a draft Agreement, which was released with the RFP. Proponents were provided with an opportunity to provide a detailed markup of the Agreement and to meet with Alberta Transportation officials to discuss their markup. Alberta Transportation released a revised agreement following these discussions and proponents were then provided with a second opportunity to mark up and discuss the Agreement during the RFP phase.

Alberta Transportation was very open in the negotiation period with all three proponents. During the meetings with each proponent, the key elements of risk transfer were discussed and Alberta Transportation officials actively sought proponents' views on which risks, if transferred, would result in unduly high cost. Alberta Transportation officials believed that through these discussions optimal risk transfers were achieved. These discussions also developed a level of trust between Alberta Transportation and proponents that the process was fair and transparent.

A final Agreement was released to proponents, providing them with sufficient time to finalize their proposals and to provide Alberta Transportation with the level of commitment required. The objective of the Alberta process was to ultimately produce a project agreement that:

1. was acceptable to lenders;
2. achieved an optimal allocation of risks;
3. was acceptable to all three proponents; and
4. protected the interests of the Government.

Evaluation of Submission Requirement (SR) packages

The Alberta process required proponents to commit to their pricing and to execute the Agreement without any amendments upon preferred proponent selection. To achieve this, the procurement process was progressive, with proponents having to pass through several stages. All three proponents had to commit to a firm price, incorporating all financing costs by the final pricing stage (SR Package 3). This, in conjunction with a tightly run procurement process, resulted in Alberta Transportation receiving three competitive proposals with a high degree of commitment.

- SR Package 1 required general information, including management plans, and was evaluated on a pass/fail basis.
- Optional Innovation Submissions included innovative design solutions for early feedback by Alberta Transportation as to their likely acceptability.
- SR Package 2 required detailed technical plans and detailed designs, as well as an Indicative Financial Model and an Indicative Financing Plan, and was evaluated on a pass/fail basis.
- SR Package 3 required a Final Financial Model, a Final Financing Plan, a Financial Offer, and a Proposal Deposit of \$1 million. Specified components from SR Packages 1 and 2, as clarified and updated, were resubmitted as part of SR Package 3.
- Proponents were also invited to attend two rounds of engineering/construction meetings with Alberta Transportation officials.

Alberta Transportation’s key objective in the design of the procurement process was to maximize competition while at the same time eliminating the need for negotiations after selecting the preferred proponent.

Competitive tension was maintained on the project until submission of final bids by:

- | holding to the principle of “lowest compliant bid wins”;
- | insisting that all negotiations on the contract terms be completed prior to final bid submission; and
- | declining to accept any element of financing risk, other than movement in the underlying Canadian base interest rates between final bid submission and financial close.

Financial and commercial close

One stipulation leading to financial close was the provision of a deposit of \$5 million by the preferred proponent within five business days of notification.

Once the successful proponent was selected, financial and commercial close was met within approximately 60 days. This was in large part due to efficiencies realized through the standardization of the Agreement and the level of preparedness of both parties.

The overall timeline for the procurement process for the project was 12 months from the issuance of the RFQ to signing of the Agreement.

Timelines

2007	July 25	RFQ issued
	August 30	RFQ submission deadline
	September 28	RFP short list announced
	October 1	RFP issued
	October 25	SR1 submission deadline
2008	November 15	Innovation submission deadline
	February 14	SR2 submission deadline
	March 14	Final DBFMO Agreement issued
	May 15	SR3 submission deadline
	May 30	Preferred proponent notified
	July 29	Agreement signed & financial close

Name of private partner

The successful proponent was Northwest Connect General Partnership (NWC), which is a wholly owned company of Bilfinger Berger Projects S.à.r.l.(Bilfinger).

Fairness of the process

Alberta Transportation retained GGC Consultants Inc. as Fairness Auditor to oversee and report upon the RFQ and RFP processes. The Fairness Auditor's role included observation and monitoring of the activities throughout the procurement process, and providing an opinion as to whether all proponents were dealt with consistently, fairly and in an unbiased manner. As part of the procurement phase, a process was in place that permitted proponents to seek a fairness opinion from the Fairness Auditor on matters relating to the RFQ and RFP. No fairness issues were raised by any proponent during the procurement phase.

Overall Structure of the Agreement

The Agreement has a total term of 33.25 years with two components:

- 3.25-year design-build period from Agreement signing on July 29, 2008 to Traffic Availability, November 1, 2011; and
- 30-year operations and maintenance period from November 1, 2011.

Headed by Bilfinger as the overall project lead and equity sponsor, the prime team members of the bid consortium included:

- Flatiron Constructors Canada Limited (Flatiron), Design-Build Joint Venture (DBJV) Lead Member;
- Graham Infrastructure (Graham), AJV, DBJV Member;
- Parsons Overseas Company of Canada Ltd. (Parsons), DBJV Member; and
- Carmacks Enterprises Ltd. (Carmacks), Operations and Maintenance.

The bid consortium was further supported by a group of designers, engineers, construction companies and specialist subcontractors. These additional team members were:

- Earth Tech Canada Inc., lead designer and sub-consultant;
- The McElhanney Group Ltd., roadways and configuration;
- EBA Engineering Consultants Ltd., geotechnical and materials;
- Spencer Environmental Management Services Ltd., environmental consultant;
- Opus International Consultants, safety auditor;
- Carmacks Enterprises Ltd., structural surfacing; and
- Patching Associates Acoustical Engineering Ltd., acoustical engineering.

With the successful execution of financial and commercial close, Bilfinger assumed the role of DBFMO Contractor and will carry out its duties via NWC, a special purpose company. NWC is responsible for:

- acting as a single point of contact for Alberta Transportation during the design-build, the operations and maintenance, and the rehabilitation phases;
- meeting the requirements and standards set out in the Agreement;
- ensuring contract compliance and delivery of service from the design-build contractor and operations and maintenance contractor;
- managing the relationships and reporting requirements to Alberta Transportation and its representative;
- reporting to the lenders and managing the project financing; and
- planning and executing the rehabilitation activities in compliance with the project requirements.

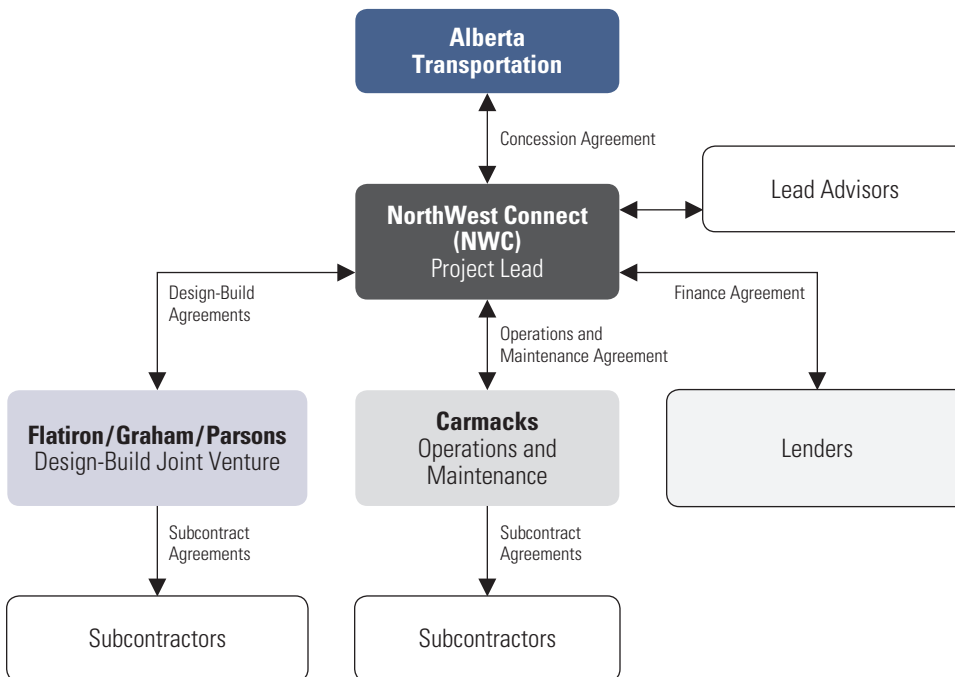
In order to achieve the appropriate risk transfer approach, Bilfinger negotiated two major subcontracts: one with a DBJV comprised of Flatiron, Parsons and Graham for the provision of construction works; and one with Carmacks, to undertake the operating activities during the life of the Agreement.

In order to mitigate construction risks, Bilfinger negotiated a robust security package to be provided by the DBJV. This includes:

- a DBJV whose constituent entities will be jointly and severally liable for performance in all aspects of construction;
- a lump-sum turnkey contract with date certainty and liquidated damages penalties for late completion; and
- liquidated damages and performance obligations of the DBJV, secured by a highly rated (AA-) letter of credit issued by a major financial institution, which will stay in place until 24 months post-construction completion.

Organizational and contractual relationships for the project are illustrated in the figure on page 58.

Northwest Anthony Henday Drive Organizational & Contractual Relationships



Financial Arrangements

The project is Alberta Transportation's single largest P3 transaction to date, valued at \$1.42 billion NPV¹. Financing a project of this size was challenging, particularly within the context of financial market conditions at the time (summer 2008). As a result, an innovative solution was developed that included both public and private components.

¹ NPV as at May 15, 2008.

Public financing component

The Government will make a substantial construction progress payment, as well as payments during the operating period for capital, major rehabilitation, operating and maintenance costs. These include:

- Construction Progress Payments – the Government will contribute \$500 million during the construction period for a portion of the capital costs of the new infrastructure;

- Capital Payments for the remaining capital costs of the new infrastructure during the operating period;
- Major Rehabilitation Payments for the new infrastructure during the operating period; and
- Operations and Maintenance (O&M) Payments during the operating period.

Private financing component

The \$500 million in progress payments from the Government represents approximately 43 per cent of total funding required for the project. Bilfinger was responsible for securing the balance of the financing through an equity component, and two tranches of debt under a Capital Markets Platform or a “Bank-Bond” solution.

Equity

Bilfinger contributed \$57 million in equity in the following manner:

- The equity was contributed into NWC at financial close and the equity was funded by an inter-company loan between Bilfinger and NWC. From NWC’s perspective, the equity contribution is delayed until the end of the construction period (when the inter-company loan is repaid) and doesn’t require an equity rate of return until that time. From the lenders’ and Government’s perspective, the equity is fully funded at financial close. This approach ensures the necessary equity capital is invested in NWC at financial close, but also provides some of the economic and value-for-money benefits of an equity bridge facility.

Senior Debt

Bilfinger undertook a competitive, dual-track process to source the project’s senior debt. As a result of this competitive process, Bilfinger selected a final financing solution (Bank-Bond Solution) comprised of two tranches as follows: a fully underwritten long-term bank loan (Bank Senior Debt) and a fully underwritten bond issue (Bond Senior Debt). The Bank-Bond Solution is structured as follows:

- \$353 million in the form of Bank Senior Debt, collectively underwritten by DEPFA Bank plc (DEPFA), Dexia Crédit Local S.A. (Dexia) and Fortis Bank S.A./N.V. (Fortis);
- \$266 million in the form of Bond Senior Debt, underwritten by RBC Capital Markets (RBC).

This combination of a Bank-Bond Solution provided capital that:

- maximized the certainty of funding;
- maximized the debt tenor in order to minimize NPV; and
- minimized the cost of debt capital (i.e., base rate and credit spread).

The senior debt was raised on a fully secured, non-recourse basis. The basic structure of the senior debt is a result of the detailed analysis and sensitivities that were performed. Both tranches of debt will have a term of 32.75 years.

Payment structure

Construction payments

The Government will make construction progress payments during the construction period, based on percentage completion of the design and construction of the roadway. The first progress payment of \$75 million will be made upon certification of 30 per cent completion and, thereafter, payments will be made on a quarterly basis until the road is available for traffic. Schedule 9 (S 2.2) of the Agreement states the amount of each quarterly progress payment will be:

“A. \$625,000 for each tenth of a percentage of completion in excess of 30 per cent, until 90 per cent completion;

B. \$500,000 for each tenth of a percentage of completion in excess of 90 per cent, until traffic availability (100 per cent completion);

less the sum of all previous quarterly payments.”

Availability payments

From the date on which traffic availability is achieved, the Government will make monthly availability payments for the remaining term of the Agreement. For commercially sensitive reasons, the amount of these payments has not been released. They cover:

1. scheduled payments to bondholders, lenders and hedge providers;

2. payments to the operator under the O&M contract;
3. payments for certain administrative expenses; and
4. distributions to the Equity Sponsor.

In summary, the monthly payments are calculated as follows with certain components of the monthly payments being subject to indexation:

Monthly Payment Components



A 5 per cent traffic-volume adjustment will be added to the O&M Payment if the average annual daily traffic at a specified location exceeds 75,000 vehicles a day. Deductions may be made for any failure by the private partner to meet various performance and availability criteria; and other adjustments may be applied, based on the Government's contractual rights to hold back and set off payments under the Agreement.

Examples of incidents leading to performance-based adjustments include but are not limited to:

- ▮ deviations from design or specifications;
- ▮ failure to provide service within specified time frames; or
- ▮ lane closures (other than for incidents outside the control of the private partner such as accidents).

The Agreement, which can be found on Alberta Transportation's website at: www.transportation.alberta.ca/1704.htm contains the triggers for, and amounts of, adjustments to the payments otherwise payable to the private partner.

Monthly capital payments will be made in constant fixed monthly amounts over the operating period. Thus, late project completion will shorten the operating period and reduce the number of payments. The monthly amount payable will be the amount stated in the financial offer of the private partner, subject to the price adjustment for interest rate changes from bid submission to financial close if elected by the private partner. The O&M Payment and the performance/availability-based deductions are indexed according to the Maintenance Price Index calculated by Alberta Transportation, based on a weighted combination of a number of inflation indices.

Revenue Sharing

There is no revenue-sharing component in the financial structure of the project.

Risk Allocation

The table below contains a general summary of the allocation of risks for the project.

Allocation of Risks		
	Gov't of Alberta	NWC
Design and construction risks		
Design & construction approvals – environmental		■
Design deviation from concept approval		■
Design error		■
Patent infringement		■
Weather		■
Historical resources and environmental (known and disclosed)		■
Historical resources and environmental (unknown)	■	
Water/air/soil pollution – unknown pre-existing	■	
Water/air/soil pollution – known pre-existing or arising from work		■
Land acquisition by the Government for road right-of-way within the transportation and utility corridor (TUC)	■	
Obtaining ministerial consent to use additional TUC land (permanent additional road right-of-way)		■
Obtaining ministerial consent to use additional TUC land (temporary use of land for construction purposes)	■	
Land acquisition outside of TUC that the Government has identified it will acquire	■	
Land acquisition outside TUC (if proposed)		■
Cost of utility permits		■
Delays by agencies other than the Government (e.g., utilities)	■	■
Delays by the Government	■	
Construction cost and time overrun		■
Latent defects (new infrastructure)		■
Adequacy of insurance		■
Subcontractor insolvency		■

(continued on page 63)

Allocation of Risks (continued)

	Gov't of Alberta	NWC
Changes in design and construction standards during the construction period	■	
Geotechnical and soil conditions		■
Labour disputes	■	■
Damage to works, however caused		■
Traffic accidents during construction period		■
Damage/injury to third parties		■
Damage/loss to utilities		■
Utility relocation and protection	■	■
Defective materials		■
Quality assurance and quality control		■
Achieving construction standards and specifications		■
Injunctions against construction (not caused by the successful proponent)	■	
Labour and material availability		■
Workplace Health and Safety		■
Change in law (general – successful proponent; discriminatory – the Government)	■	■
Force majeure	■	■
Facility expansion risks		
Operational improvements at ramps, terminals, and at-grade intersections, due to traffic growth		■
Future interchanges or additional lanes and ramp or expansion	■	
Operation risks		
Changes in standards, depending on nature of change	■	■
Weather		■
Labour disputes		■
Actual maintenance costs higher than anticipated		■
Damage/injury to third parties		■

(continued on page 64)

Allocation of Risks (continued)

	Gov't of Alberta	NWC
Damage to works	■	■
Water/air/soil pollution		■
Third party claims and accidents		■
Increased usage of authorized overload vehicles		■
Increased legal load limits	■	
Increased maintenance due to traffic volume or facility expansion	■	■
Traffic accidents during operating period due to the performance of the successful proponent		■
Meeting handback standards		■
Meeting performance requirements		■
Labour and material availability		■
Workplace health and safety		■
Change in law (general – successful proponent; discriminatory – the Government)	■	■
Force majeure	■	■
Other risks		
Discriminatory acts and discriminatory change in law	■	
Financial risks		
Market interest rate changes between the time of the Financial Offer and the date two days after execution of the DBFMO Agreement (depending on the proponent's election of options)	■	■
Interest spread risk (credit spread/margin risk)		■
All other financing risks		■
Inflation on construction costs		■
Inflation on O&M payments (based on Index Factor)	■	

Benefits

Cost savings/value for money

The Government undertook a value-for-money (VFM) analysis comparing the cost of the private partner's financial offer to the cost of the Public Sector Comparator. NWC's bid of \$1.42 billion NPV fell well below the estimated cost of undertaking the project through traditional delivery methods, which was estimated at \$1.66 billion NPV. This will result in savings of \$240 million to Alberta taxpayers.

In addition to the financial savings gained by using a P3 procurement model, the Government can have confidence in a fixed cost, a fixed completion and opening date (which will be two years earlier than if delivered under a traditional procurement model) and a 30-year warranty by the private partner.

Other benefits

Once the northwest portion of Anthony Henday Drive is completed, the local community and, more broadly, all regional road users will benefit from an integrated ring road corridor around Edmonton.

In addition, it will significantly improve traffic flow in Edmonton's north end when the roadway opens in 2011, lowering local commute times, lessening environmental impacts associated with idling, creating safer communities by encouraging freight through-traffic to remain on the city's perimeter, and generally improving connectivity within the city's overburdened transportation network.

Movement of local traffic around Edmonton will improve by helping to remove trucks from currently congested urban routes and Highway 16, which runs through Edmonton. Connectivity with the regional highway network will be improved with new interchanges proposed at St. Albert's West Regional Road and Highway 28 (97 Street).

Communications

Between the partners

A system was established to communicate with the bidders in order to guide them through the various submission stages, to allow for negotiating terms of the Agreement, and to allow for engineering discussions. This element of the process proved its value in previous P3 projects and is being standardized and repeated by the Government. It is a key aspect of a process that has eliminated the "best and final offer" step and that does not allow post-selection negotiations.

During this communications process, there were a number of instances where Alberta Transportation officials and the proponents interacted with each other, for example at pre-scheduled engineering and Agreement meetings, through requests for information by proponents, and through clarification requests from Alberta Transportation. This communications process allowed for the development of an Agreement that suited all three proponents and that protected the interests of the Government.

With the public

For all ring road P3s, the Government completed a functional planning study before entering into the procurement process. All public consultation was done during this functional planning work. None was required during the procurement process. Public communication, rather than consultation, became a requirement of the private partners once the construction phase began.

NWC has implemented a public communication plan to develop and deliver communication services such as media releases, press kits, mail-outs and other tangible communication products. In addition to this, NWC has established a project website which provides highlights and aerial photographs, traffic updates, notices to stakeholders and well as a Question & Answer section which is updated regularly.

During the operating period, Carmacks will be responsible for addressing the day-to-day communication requirements associated with the ongoing operations and maintenance. Over this period, various communications will be required with the public, Alberta Transportation, utility companies, railway companies, the City of Edmonton and other stakeholders.

Labour

There were no workforce transition issues. Alberta Transportation is a 100 per cent outsourced organization, meaning all design, construction and maintenance services are provided by contracting with the private sector. Thus, government jobs are not impacted, whether a project is delivered through a P3 or a traditional method.

The timing of the project coincides with the completion of construction of various components of the Northeast Stoney Trail Project in Calgary, which will allow for the transference of labour resources to this project. The DBJV anticipates that many of the workers currently employed at the Northeast Stoney Trail location will move over to the Northwest Anthony Henday Drive project. The DBJV also has access to local workforces in the Edmonton area.

Monitoring

Several procedures and processes will be implemented over the term of the project to monitor performance in accordance with the Agreement specifications and to meet the expectations of both partners and stakeholders. A number of documents were required to be developed by the private partner during the RFP phase. These include: Safety Plan; Construction Management Plan; Operation and Maintenance Plan; Infrastructure Wholelife Management Plan; Quality Management System; Environmental Management System; Public Communications Strategy; and Collaboration Strategy.

Alberta Transportation hired an engineering consultant (AECOM Canada Ltd.) to assist the Government through both the procurement phase and the construction phase. The same consultant is retained through each phase for consistency. During construction, the consultant provides design review and construction audit services. Alberta Transportation has one full-time construction manager who oversees the project, drawing on internal technical resources on an as-needed basis.

For the O&M phase, performance will be monitored through Alberta Transportation's regional maintenance inspection program. Staff and processes are in place to handle oversight responsibilities as Alberta Transportation's highway maintenance program is already outsourced to maintenance contractors responsible for various regions in the province. The engineering consultant is not involved in the O&M period.

For the private partner, construction monitoring is handled by NWC. A full-time site Project Director and Safety and Quality Assurance staff have been hired to monitor the progress and quality of the work to ensure it meets the requirements of the Agreement. In addition, regular meetings are held between NWC and the DBJV to ensure the normal construction-related issues are dealt with in an expeditious manner. NWC also holds interface meetings with the DBJV and Carmacks to make sure all parties are aware of the progress of the project.

In addition, the lenders have a technical advisor (LTA) who visits the site on a regular basis to confirm the works are proceeding as intended. The LTA is responsible for approving the progress draws from the contractor to enable them to be paid for the past month's work activities.

NWC will be responsible for overall management of Carmacks' performance during the O&M phase. A NWC representative will visit the site as required to ensure compliance is being maintained.

Adherence to the required plans by the private partner, coupled with auditing activities that will be conducted by Alberta Transportation, will assist in ensuring the successful delivery of the project.

Other Issues

Innovative features

Interest rate protection was offered as an option to the successful proponent whereby the Government would hedge the risk on movements in base interest rates between bid submission and financial close. This was achieved by providing an adjustment to capital payments to accommodate the change in interest costs. This interest rate protection mechanism was used to hedge both the bank and bond financings. As proponents were only permitted to select interest rate protection based on the type of financing (bank or bond), Bilfinger, together with the Mandated Lead Arrangers (MLAs), the bond underwriter and financial advisor, and with the cooperation of Alberta Transportation, developed a hedging mechanism that allowed the bond to be hedged using the interest-rate protection offered to bank lenders, while still adhering to the rules of the RFP (i.e., interest-rate protection based on either bank debt or bond financing).

Key innovations are as follows:

- the financing for the project employed a hybrid Bank-Bond solution, facilitated with the use of a Capital Markets Platform that included a rated broadly marketed bond, along with a tranche of bank financing (swapped bank debt), a first for Canadian P3 projects;
- simultaneous financial close of both the bank debt and bond issue;

- | registration of the bond with Canadian Depository for Securities (CDS) in record time compared to typical bond pricing (which is usually three days after pricing);² and
- | the ability to raise a significant amount of private financing in difficult credit markets with a tenor of 32.75 years.

In addition, financing for the project had to be concluded within 60 days of preferred proponent notification. This meant that after the 60-day period, the interest rate protection provided by the Government would expire, leaving the private partner with an interest rate risk that would be difficult to manage. Bilfinger was able to complete all documentation relating to the financing, including a confidential offering memorandum, in order to avoid this risk and close within the allotted time frame.

Multiple maintenance contracts

As noted earlier, Anthony Henday Drive has six distinct segments: two and a possible third being designed, built, financed, maintained and operated under P3 contracts; the other three having been completed using a traditional government procurement method. The maintenance companies of the Government and of the two private partners are different. To ensure all segments of the highway are properly maintained with no gaps, the Government clearly identified the interface areas in each of the P3 contracts and described the obligations of each party.

Lessons learned

Since the financing had two separate tranches of debt, there were significant inter-creditor issues with key principles identified early in the process and completed during the financial close stage. Without identifying and agreeing to these key issues, the task of reaching financial close in 60 days would not have been possible.

In addition, the bond filing process was critical because without registration, the bond issue could not close, and therefore the banks could not close. The filing of the bond also added additional complexity around the Government's rate set process. Feedback from the private partner to allow simultaneous use of two types of interest rate hedges for hybrid transactions like this project financing will assist the Government with future similar projects.

The Government's P3 process is flexible enough to allow for modifications based on this experience for go-forward projects which may involve combined bank/bond deals.

Applicability outside Canada

The project can most notably be applied in any jurisdiction with tight credit markets. The financing for this project was designed and executed in tight credit markets with cost certainty for both the public partner and the equity sponsors through the use of two funding solutions under a capital markets transaction platform.

² For public bonds, a registration is required with CDS to hold the bond security on behalf of bondholders. This process generates a CUSIP number that is used to identify the bonds. This is not required for certain other bonds such as those privately placed with life insurance companies.

Concluding Comments

The Northwest Anthony Henday Drive project is the largest P3 undertaken by Alberta Transportation. The Government completed two similar P3 projects in previous years (2004 and 2007) in which they had developed and refined their procurement process. Learning from this experience was a key factor in running a smooth process to select a private partner. However, the unanticipated changes in the credit markets taking place during the period leading up to financial close created a number of challenges. As a result, an innovative financing plan was developed for the project that can be used for future P3 projects with similar characteristics.

The innovative combination of the Bank-Bond solution had a number of positive outcomes for the project:

1. maximized the certainty of funding;
2. maximized the debt tenor in order to minimize NPV;
3. minimized the cost of debt capital (i.e., base rate and credit spread); and
4. minimized pricing uncertainty by eliminating market flex provisions which could have applied in a syndicated bank financing solution.

Testimonials

Public sector

I am pleased that the Alberta Government continues to develop public-private partnerships (P3s) for its major provincial highway projects.

The recent signing of the Agreement for the Northwest Anthony Henday Drive in Edmonton marks the beginning of this department's third P3 project. This recent achievement, coupled with the opening of the department's first P3 in southeast Edmonton in fall 2007 and the highly anticipated opening of the department's second P3 in northeast Calgary in fall 2009, clearly indicates that Alberta Transportation's P3 model provides cost effective and faster project delivery than could be achieved using conventional methods.

Based on the success experienced with these past three projects, I am confident that P3 project delivery will continue to serve a significant role as the Government of Alberta addresses its infrastructure challenges.

Jay G. Ramotar, P.Eng.
Deputy Minister
 Alberta Ministry of Treasury Board
 and former Deputy Minister,
 Alberta Ministry of Transportation

Private sector

Bilfinger Berger Project Investments, through Northwest Connect, is excited to partner with the Government of Alberta for the Northwest Anthony Henday Drive project. This project, the single largest P3 transaction for Alberta Transportation, valued at \$1.42 billion NPV, shows the commitment and tenacity of a strong partnership developed with the Government and the private sector to deliver true value for the citizens of Edmonton to enhance this crucial transportation link.

John McArthur
President and CEO
 Bilfinger Berger Project Investments Inc.

Glossary of Terms

– Northwest Anthony Henday Drive Case Study

Agreement – Public-Private Partnership Agreement

CDS – Canadian Depository for Securities

GDP – Gross Domestic Product

LTA – Lenders' Technical Advisor

NWC – Northwest Connect General Partnership

TUC – Transportation Utility Corridor

Public Sector Contact

Mr. Kip Hritzuk, M.Eng., P.Eng.
Director, Major Capital Projects Branch
 Alberta Transportation
 3rd Floor, Twin Atria Building
 4999-98 Avenue
 Edmonton, AB T6B 2X3
 780-427-2670
kip.hritzuk@gov.ab.ca

Private Sector Contact

Mr. Steve Small, P. Eng
Senior Vice-President, Development, Transport Infrastructure
 Bilfinger Berger Project Investments Inc.
 Suite 2610, Park Place
 666 Burrard Street
 Vancouver, BC V6C 2X8
 604-678-6532
Steve.small@pi.bilfinger.ca

Project Website

www.transportation.alberta.ca/1704.htm

**WILLIAM R. BENNETT BRIDGE,
BRITISH COLUMBIA**

2008 Silver Award for Infrastructure



Quick Facts – William R. Bennett Bridge

Project type

Design-Build-Finance-Maintain-Operate (DBFMO)

Contract length

30 years

Years

2005-2035

Asset/Service

A new five-lane floating bridge across Lake Okanagan on Highway 97 in Kelowna, BC

Partners

Public Sector

British Columbia Ministry of Transportation and Infrastructure

Private Sector

Okanagan Lake Concession Limited Partnership

Other participants

Public Sector

Partnerships BC – owner’s representative
 Macquarie North America – business advisor
 Westmar Consultants Inc. – engineering/design/technical consultant
 Geoplan Consultants Inc./Opus – operations and maintenance advisor
 Miller Thompson LLP – legal advisor
 Halcrow Holdings Ltd./Tsi Consultants – traffic consultants

Private Sector

SNC-Lavalin Constructors Pacific Inc. – design-build
 CMIR OKB Holdings Ltd. (Vancouver Pile Driving Ltd.) – design-build
 Buckland and Taylor Ltd. – lead designer
 SNC-Lavalin ProFac Services – operations and maintenance
 Sun Life Assurance Company of Canada – finance
 Ontario Teachers’ Pension Fund – finance
 SNC-Lavalin Capital – financial advisor
 Davis and Company LLP – legal advisor

Financing

Capital cost of the bridge was \$144.5 million. Total project funding of \$170 million (net present value) was provided by SNC-Lavalin through a combination of equity and long-term debt.

Other features

- ▶ the only floating bridge in Canada and one of only nine in the world
- ▶ 1,060-metre bridge includes nine floating concrete pontoons, a 52-metre-long high level navigation span for marine traffic and sidewalk for pedestrians and cyclists
- ▶ 30-year concession includes a 27-year operational phase
- ▶ project completed on budget and 108 days ahead of schedule

Overview



The Okanagan Lake bridge is part of Highway 97 and the only crossing of the 120-km-long lake. It is a vital link in the B.C. transportation network, serving the fastest growing region in the province's interior. It connects the city of Kelowna and points north on the lake's eastern side to the Westside communities, southern communities along Highway 97 to the U.S. border and Highway 5.

The old floating bridge opened to traffic in 1958 as a two-lane facility and was modified to provide a three-lane counter-flow service in 1984. Since then, traffic flow has doubled to an average of almost 47,000 vehicles a day, with flows of more than 57,000 vehicles a day in the peak summer months. Volume delays were exacerbated by up to eight bridge span lifts a day to permit boat traffic and frequent closures of the centre lane for emergency vehicles.

The safety record of the bridge and its approaches was poor, with accident rates higher than the provincial average. The structure itself had deteriorated so badly that anything beyond short-term repair was considered impractical.

In 2002, the Government of British Columbia announced the decision to build a new lake crossing at a location adjacent and parallel to the old structure, which would then be demolished. The Ministry of Transportation and Infrastructure established several objectives for the new lake crossing:

- | satisfy immediate and medium-term traffic demand
- | ensure the usable 75-year design life of the bridge
- | improve and ensure long-term safety of the crossing
- | achieve value for money for taxpayers

A design-build-finance-maintain-operate public-private partnership was the procurement model deemed best suited to the unique characteristics of the project.

Description of the Project

The new William R. Bennett Bridge, named after the former B.C. Premier and native of Kelowna, William Richards Bennett, is the only floating bridge in Canada and one of only nine in the world. Its five lanes – three westbound and two eastbound – are designed to handle 80,000 vehicles a day. It has an elevated span to allow for the passage of marine traffic and a three-metre-wide sidewalk for pedestrians and cyclists.

Various types of bridge were considered but site conditions and alignment constraints made it impractical to install the piers and pile foundations needed to support the entire alignment of the bridge. A floating bridge suits the location because Okanagan Lake is a very deep, steep-sided glacial lake in a valley, with heavy sediment and very soft soils. Both design firms involved in the project – Westmar Consultants, which completed a preliminary design for the Province, and the DBFMO design partner Buckland and Taylor Ltd. – recommended a floating structure as the best solution.

The crossing is approximately 1,060 metres long. It consists of: 697 metres of floating concrete pontoons with an elevated deck; two 54-metre transition spans; and a 277-metre-long western approach ramp structure, which includes a 52-metre-long high level navigation span. The contract also included reconstruction of the Highway 97-Abbot Street intersection and approximately 800 metres of road from this intersection to the eastern end of the bridge. At the western end, the project included installation of expanded polystyrene fill to minimize future subsidence of the 150-metre approach embankment.

The 697-metre floating section consists of nine continuous post-tensioned floating concrete pontoons, which were built in a specially built graving dock near the construction site. The pontoons are 25 metres wide, between 30 and 90 metres long and weighing up to 7,000 tonnes each.

Connecting the pontoons into one continuous section was the major challenge facing the constructor. Each pontoon had to be positioned

precisely against adjoining sections, using tugboats and barges. To secure the sections together, a combination of steel bars and strands was used to create more than 160 connections. The floating sections are held steady by 24 steel cables connected to 75-ton steel-reinforced concrete anchors embedded in the lake bed.

A relatively shallow area at the western end of the crossing was able to support a 277-metre fixed elevated section. It rests on steel pipe piles and accommodates the new marine navigation channel with an 18-metre vertical clearance.

The contract also includes construction of access ramps and abutments at both ends of the new bridge and decommissioning of the old bridge and approaches, slated for completion in 2009. Complementary upgrading of the western and eastern approaches to the new bridge has been undertaken by the Ministry of Transportation and Infrastructure and the City of Kelowna.

Protrans BC (a subsidiary of SNC-Lavalin ProFac) will be responsible for operating, maintaining and rehabilitating the crossing during the 27-year operations phase and for ensuring that the bridge meets the specified turnover conditions at the end of the contract period. This contract covers the bridge itself, about 150 metres of the western approach roadway and 800 metres of the eastern approach between the bridge and Abbott Street. It includes responsibility for the operation and maintenance of all highway infrastructure within these project limits, including illumination, traffic signals, signage, traffic counter, closed-circuit television systems and various other instruments located in the bridge or approach road segments.

Procurement Process

Selecting the P3 model

Consistent with the requirements of the Province's Capital Asset Management Framework, the public sector project team considered two traditional procurement models and a Design-Build-Finance-Maintain-Operate (DBFMO) public-private partnership model for the Okanagan Lake bridge project. After a qualitative and financial analysis of the three options, the project team recommended the DBFMO model because it would offer better value for money by providing:

- | incentives for the private partner to manage the project and the facility efficiently. Payment would not begin until the bridge was operational, encouraging completion on budget and on schedule. The payment mechanism would also include incentives for the private partner to achieve operating and maintenance standards.
- | flexibility to allow private sector innovation in a project with significant design and construction challenges.
- | allocation of risks to the partner in the best position to manage them, with the private partner assuming risks associated with design, construction, facility operation and maintenance and the Province retaining risk for changes to legislation and events beyond the control of either partner.

| significant equity and debt investment by the private partner with returns dependent, to some extent, on performance.

| retention of oversight by the Province, which is accountable for ensuring that the project meets its objectives.

Selecting a partner

The procurement process, managed by Partnerships BC, took 20 months from the issue of a Request for Expressions of Interest (RFEI) to financial close. A governance and management structure established to guide procurement and project development included a project board that was responsible for all major procurement decisions. The board consisted of the Deputy Minister of Transportation and Infrastructure, the Assistant Deputy Minister of Operations (Ministry of Transportation and Infrastructure) and the Chief Executive Officer of Partnerships BC.

The project attracted strong initial interest in the marketplace with 17 companies responding to the RFEI. Five prepared formal responses to the Request for Qualifications and three of these proponents were short-listed for the Request for Proposal stage. Bouygues Travaux Publics withdrew from the competition before the RFP deadline, leaving Okanagan Crossing Group and Okanagan Lake Concession Limited Partnership to submit detailed proposals.

Both groups were given access to a completed design for a new Okanagan bridge, which the Province had commissioned from Westmar Engineering Consultants before the decision to proceed with a DBFMO. Proponents were informed that they could use the whole design, some of it or none of it. Whatever they decided, all design risk would be theirs. (The final design was close to the original with minor alterations to the footings at one end and some changes to address geo-technical challenges.)

Competitive process

The Evaluation Committee reported to the Project Board. Evaluations were carried out by:

- representatives of the Ministry of Transportation and Infrastructure, Ministry of Attorney General and Partnerships BC
- Macquarie North America Ltd. - financial/business advisor
- Westmar Consultants Inc. - engineering/design/technical consultant
- Geoplan Consultants Inc./Opus - operations and maintenance advisor
- Miller Thompson LLP - legal advisor
- Halcrow Holdings Ltd./Tsi Consultants - traffic consultant

Evaluation criteria were divided into two broad categories:

1. technical: evaluated as a pass/fail determined by the Ministry's baseline expectations related to functional and detailed design.
2. legal and commercial: also measured against the Ministry's baseline requirements in areas including consortium legal organization (joint venture, limited partnership or incorporation); level and type of contractor participation; parent company financial guarantees; minimum equity levels and equity payback period; and committed financing packages.

Proponents were required to present their pricing as a stream of performance-based payments over the term of the Agreement and value for money was calculated by comparing the net present value (NPV) of this stream to the benefits of each proposal. The NPVs were compared to each other and to the Public Sector Comparator that estimates the cost of the project procured using the conventional design-build model.

Financial and commercial close

Okanagan Lake Concession Limited Partnership was chosen as the preferred proponent at the best and final offer stage in March 2005. After intensive negotiations with the public sector project team lasting until mid-April, commercial and financial close was reached on June 30, 2005.

Procurement Timelines

2003	October 28	Request for Expressions of Interest (RFEI) issued
	November 25	RFEI closes with 17 companies expressing interest
	December 30	Request for Qualifications (RFQ) issued. Five proponents respond.
2004	May	Submissions evaluated and three proponents short-listed
	May 31	Request for Proposals (RFP) issued
	December 1	RFP closes. Two proposals received.
2005	January	Both proponents proceed to best and final offer stage
	March	Best and final offers received
	April	Okanagan Lake Concession Limited Partnership selected as preferred proponent
	April 21	BC Premier Gordon Campbell officially renames Okanagan Lake Bridge the William R. Bennett Bridge
	June 30	Commercial and financial close
	July	Construction begins, starting with graving dock
2008	May 24	Bridge opens to traffic, 108 days ahead of schedule
2009	September 12 (target date)	Contract completion (old bridge and approaches decommissioned)

Procurement costs

Capitalized as part of the project and including the costs of engineering, transaction and legal advisors from RFP to financial close, procurement costs were \$5.3 million. This represents about 3 per cent of the project's net present value or 4 per cent of the capital cost. For evaluation purposes, the cost of procurement was added to Okanagan Lake Concession Limited Partnership's proposal to ensure that these costs were included in the value-for-money assessment.

Early in the planning stages, the Province spent about \$7 million on advance planning and feasibility studies, which were used to make the decision to proceed with the procurement.

Name of private partner

The concessionaire is Okanagan Lake Concession Limited Partnership, a sole purpose limited partnership established by the Montreal-based engineering conglomerate SNC-Lavalin Inc. The construction joint venture partners are Vancouver-based SNC-Lavalin Constructors (Pacific) Inc. and Vancouver Pile Driving Ltd. (operating as CMIR OKB Holdings Ltd.). SNC-Lavalin ProFac Services Inc. (operating as Protrans WRB Bridge) will operate and maintain the bridge for 27 years.

Fairness of the process

The public sector project team engaged Joan M. Young, of the law firm Swadden Virgin Young, to act as Fairness Auditor during the procurement process and ensure that it was open, fair and equitable. Ms. Young has monitored several other public-private partnership procurements in B.C., including the Britannia Mine Water Treatment Plant and the Charles Jago Northern Sport Centre.

In her report, Ms. Young recommended that future procurements include a provision in the Relationship Disclosure and Conflict of Interest forms which specifically asks evaluators and advisors about any "financial" interest in the various companies or parties involved in the bidding process. She also recommended adoption of a standard Confidentiality and Conflict of Interest/Relationship Disclosure form for all projects involving the Province and Partnerships BC. [After Ms. Young flagged this issue during the RFQ, the suggested form was introduced at the RFP stage and is now used in all Partnerships BC projects.]

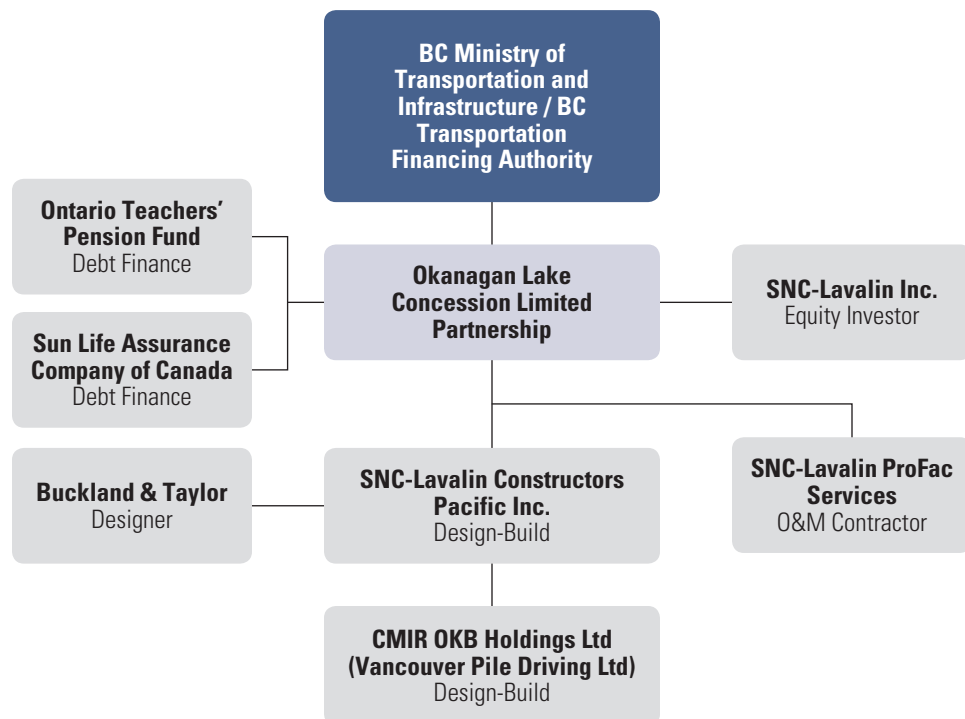
Her report stated: "To the extent I have noted some matters in my comments and suggestions for improvements, they were resolved reasonably or did not materially impact on the overall fairness of the procurement process. At all stages, those individuals participating in the procurement activities appear to have been conducting themselves professionally, with integrity and absence of bias, and in accordance with the standards of evaluation that were established for the procurement process."

Overall Structure of the Agreement

The 30-year Concession Agreement was signed in June 2005 by the BC Ministry of Transportation and Infrastructure, the BC Transportation Financing Authority (the Crown Corporation that owns all provincial highways, including Highway 97, which crosses the bridge) and Okanagan Lake Concession Limited Partnership. Under the Agreement, the concessionaire will:

- | design and construct the bridge;
- | decommission the existing bridge once the new bridge is open to traffic;
- | provide financing for the design, construction, operation, maintenance and rehabilitation of the new bridge and for decommissioning the existing bridge;
- | provide the operation, maintenance and rehabilitation services for the new bridge, based on requirements specified by the public sector; and
- | ensure that, at the end of the Agreement, the bridge meets the turnover conditions specified by the public sector.

Structure of the Agreement



Financial Arrangements

The bridge was constructed under a fixed-price contract for a capital cost of \$144.5 million. Okanagan Lake Concession Limited Partnership committed to fund the total project cost through a combination of equity and long-term debt. The net present value cost for the project, as delivered by SNC-Lavalin, is estimated at \$170 million.

Equity was provided by SNC-Lavalin Inc., while the concessionaire's sole financial advisor, SNC-Lavalin Capital Inc., structured and arranged the debt offering. The William R. Bennett Bridge is the only floating bridge with investment grade rating (Standard & Poors "A -") worldwide. This private placement was underwritten by two Canadian institutions, Sun Life Assurance Company and Ontario Teachers' Pension Fund.

The bridge will be treated as an asset by the British Columbia Transportation Financing Authority. Performance payments will be classified as an obligation. The component of those payments related to capital costs will be treated as debt and consolidated into the financial statement of the Province. The recorded book value of the asset is being amortized over 40 years for bridge structures and roadbed and over 15 years for paving, fencing, signage, traffic control equipment and most other assets related to the project.

Payment structure

The performance payment structure is based on traffic volume and quality of service. Monthly payments began only when the bridge opened to traffic, no portion of the payment is guaranteed and deductions are incurred with lane closures, accidents or unsatisfied users. All of these factors provide incentives for the concessionaire to deliver a first-class crossing on schedule and to maintain it in a safe and reliable condition.

Performance payments are divided into four categories:

- 1. Traffic volume:** This is based on the volume of traffic using the bridge and is calculated using per vehicle rates stipulated in the Concession Agreement. Payments are made monthly and the private partner assumes the risk that volume may be unpredictable.
- 2. Lane availability:** This is based on the ability of traffic to use the bridge. If there is a lane closure, this payment is reduced by an amount that is based on the number of lanes closed, the time of day (peak, shoulder or non-peak) and the duration. If lanes are closed at night, the penalty is minimal or zero, depending on the time and traffic flow. This encourages the operations and maintenance contractor to undertake necessary maintenance at times when it won't have a negative impact on bridge users.

The following table gives some examples of lane closure penalties.

Lane Closure Penalties			
Event	Peak	Shoulder	Non-peak
4 lanes open, 1 closed	\$150/hour	\$75	No penalty
3 lanes open (at least one in each direction), 2 closed	\$400/hour	\$200	\$100/hour
2 lanes open (1 in each direction), 3 closed	\$1,200/hour	\$400	\$200/hour
Eastbound or westbound lanes closed	\$2,400/hour	\$1,200	\$400/hour
All lanes closed	\$6,000/hour	\$4,000	\$2,400/hour

Peak = more than 4,000 vehicles/hour

Shoulder = 1,001 – 4,000 vehicles/hour

Non-peak = fewer than 1,000 vehicles/hour

3. Safety performance: This payment, measured on a three-year rolling average, is based on the number and severity of accidents on the bridge and its approaches.

4. User satisfaction: This payment is based on the results of an independent annual survey of bridge users and other stakeholders. The risk associated with these payments is borne solely by the concessionaire, since the surveys measure operations and maintenance issues such as public communication, bridge maintenance and other factors such as snow removal.

Because the concessionaire's payment is linked to traffic volume, the Concession Agreement contains a provision to address a potential "traffic volume change event" such as construction of a second crossing across Lake Okanagan. Under this provision, the payment parameters can be adjusted if capital works undertaken by a government authority result in the net present value of payments rising or falling by more than 3 per cent.

Risk Allocation

In general, the private partner bears all risks associated with design, construction, operations, maintenance and rehabilitation of the new bridge. The public sector retains risks that are outside the control of the private sector, including most of the risks resulting from legislative changes, authorizations from government departments and agencies and archaeological issues.

The public sector also assumed risks related to surrounding works completed prior to the Agreement, such as causeway fill and preload (completed as a separate contract in the summer of 2005) and bridge approach roads. The Ministry of Transportation and Infrastructure committed to have these available and able to accommodate pre-defined traffic levels by an agreed date.

As mentioned earlier, the concessionaire assumes traffic volume risk but the Concession Agreement provides for compensation should the Government take any action that causes a reduction in bridge traffic. A traffic study prepared for the Province by Halcrow Group and Tsi Consultants indicates that bridge traffic will increase from the 2004 annual average of 46,000 vehicles a day to more than 69,000 vehicles a day by 2017 and will continue to grow well into the future. The report suggests that by 2041 more than 100,000 motorists might want to make the lake crossing each day, an indication that the William R. Bennett Bridge and its approaches could reach capacity well before the end of the Concession Agreement in 2035.

There is no provision in the Agreement for payment adjustments in the event that the composition of bridge traffic changes significantly. Thus the private partner assumes the risk of an increase in number of heavy vehicles using the bridge and the resulting accelerated wear and tear on the road deck.

Inflation is a shared risk. The private partner assumes inflation risk during construction but performance payments during the operation phase will be partially indexed.

The partners agreed to share the graving dock risk, with the public partner providing the site and the private partner assuming responsibility for designing, building and then dismantling the dock and complying with all required permits.

Risk Allocations

Risk	Public	Private	Shared
Design of bridge and long-term impacts		■	
Design standards prescribed in the Concession Agreement	■		
Design to meet required obligations (e.g., noise, vibration)		■	
Geotechnical or subsurface			■
Construction costs and schedule		■	
Construction safety		■	
Construction materials		■	
Completion of bridge in accordance with standards		■	
Causeway fill and preload (completed as separate contract)	■		
Availability of approach roads	■		
Graving dock			■
Unexpected site conditions (e.g., rock and soil quality)		■	
Environmental issues related to construction, operation and environmental monitoring			■
Permits			■
Traffic management during construction or during operations		■	
Force majeure			■
Inflation and financing costs			■
O&M – equipment availability, labour action		■	
O&M – latent defects discovered in bridge		■	
O&M – changes in traffic composition impacting O&M costs		■	
O&M – changes in required standards	■		
O&M risk associated with existing bridge	■		

Benefits

Cost savings/value for money

The Province's business advisor during the bridge procurement, Macquarie North America, compared the cost of the final P3 Agreement to hypothetical traditional public sector procurement – the Public Sector Comparator – and concluded that “the project represents good value for money for the Province relative to conventional delivery.”

The Province also commissioned an independent third-party review of the final Agreement by Ernst and Young Orenda Corporate Finance Inc., which concluded that the project “provides a robust value-for-money proposition” and that the final Agreement “represents a reasonable commercial transaction for the Province when taking into account the risks of the project.”

The project will cost an estimated \$170 million (net present value) over the 30-year life of the Agreement, a \$25 million saving on the estimated \$195 million cost if it was delivered by the public sector. This saving is the result of:

- | using a whole lifecycle costing approach over the Agreement term to optimize capital, operating, maintenance and rehabilitation costs; and
- | achieving optimal allocation of risks between the public and private partners through the competitive procurement process.

Other benefits

Better service – The old three-lane Okanagan Lake crossing was the second worst gridlock site in the province. With five vehicle lanes, the new bridge has dramatically reduced congestion on Highway 97 on both sides of the lake.

The new bridge is also cyclist and pedestrian friendly, with a three-metre-wide bikeway and sidewalk separated from the vehicle lanes by a concrete barrier.

Lake boat traffic gets the benefit of a larger, permanent 44-metre-wide by 18-metre-high navigation channel. This replaces the old bridge's lift span, which stopped vehicle traffic when deployed, and a second low-clearance channel suitable only for small boats.

Enhanced safety – The number of accidents on the bridge and its approaches is being reduced with improved signage and lighting, better lines of sight and the provision of a fixed median barrier.

The new bridge is also closely monitored and maintained to ensure safe driving conditions. Sensors embedded in the bridge deck send continuous reports to Protrans WRB Bridge staff, who also monitor conditions using 14 cameras. Protrans has a de-icing vehicle, two blade-equipped trucks that can also spread sand and salt and smaller sidewalk plows dedicated to keeping the bridge safe in winter weather.

In a December 15, 2008 report on the region's first big storm of the winter, the Kelowna Daily Courier said: "The clearest and safest stretch of road in the Central Okanagan through a cold and snowy weekend was likely the W.R. Bennett bridge. While city streets and Highway 97 were packed with snow and ice, the bridge had no slippery sections and its paved and concrete portions offered no challenges to drivers."

Communications

The partners shared responsibility for communicating project information to the public. This process began with a series of provincial press releases outlining the procurement process and key events leading up to the signing of the Concession Agreement.

Both partners organized several open house events and public consultations allowing residents at both ends of the crossing, as well as other stakeholders, to learn about the project and its intended benefits to the region. The high-profile project generated considerable media interest, helping to keep the public informed about project activities and progress. This was complemented by a regularly updated website – www.th.gov.bc.ca/WilliamRBennettBridge – featuring two construction site webcams. With the bridge now operational, the website provides information for users with links to four traffic cams and progress reports on work to decommission the old crossing.

The bridge operator Protrans WRB Bridge (a division of SNC-Lavalin ProFac Services Inc.) also maintains a website – www.protranswrbbbridge.com – providing information about the bridge, including notifications of proposed lane closure and links to traffic cams.

Labour

About 250 people were employed during the construction phase of the project. Now that the bridge is in use, Protrans WRB Bridge employs nine people in operations, maintenance and administrative functions with occasional assistance from subcontractors when required. No bridge maintenance workers employed by the contractor on the old bridge, Argo, were retained.

The only employees impacted in the transition were the control tower tenders who operated the lift span that allowed the passage of marine traffic and the changeable lane control system managing traffic flow on the old three-lane structure. At least one was offered a position with Protrans. The others sought other work or retired.

Monitoring

Since payments to the concessionaire consist of a base amount augmented by performance payments in four categories – traffic volume, lane availability, safety and user satisfaction – the Ministry of Transportation and Infrastructure has established protocols to monitor performance throughout the 27-year operational phase of the Agreement.

The Ministry's operations manager and team are based in its Okanagan District office where they oversee all aspects of the bridge's operations. The concessionaire is responsible for operating the automated traffic counters and video monitors that generate traffic volume and lane availability data, as well as providing a monthly report to the Ministry, which uses it to calculate the monthly performance payment. The Ministry is entitled to audit these reports to verify their accuracy.

The safety payment is made annually and will depend on the number and severity (classified by property damage, injury or fatality) of accidents occurring on the bridge and its approaches. The user satisfaction payment is also made annually based on an independent survey of bridge users and other stakeholders.

In the event the concessionaire fails to perform to the specified standard, the Concession Agreement sets out the remedial measures available to the Province – including warnings and default notices – and how the private partner should deal with them.

Under certain circumstances – e.g., if total availability/performance deductions in any month exceed 10 per cent of the maximum performance payment or if the concessionaire's data contain discrepancies leading to overpayment – the Province is entitled to increase its level of monitoring with the extra cost to be borne by the concessionaire.

Other Issues

Environmental concerns

At the time of writing, work on decommissioning the old bridge had slowed to a crawl pending a decision on how to dispose of its 12 floating concrete pontoons and two 21-metre bridge piers. Contractor SNC-Lavalin had planned to offer the six pontoons in good condition for reuse (as marine breakwaters, etc.), while the other six, in fair to poor condition, would be towed to the deepest parts of the lake and sunk in 150 metres of water.

But local environmental groups have raised concerns about the impact on water quality and the precedent of in-lake disposal. Jon Buckle, the Ministry of Transportation and Infrastructure project manager on the William R. Bennett Bridge, said the alternative is to tow the large concrete structures to the graving dock to be broken up and recycled, an expensive operation that could take up to a year to complete.

"There will be a process of consultation to address the environmental concerns," said Buckle. "It will take time. If sinking the pontoons is ruled out, then there will need to be further negotiations between the Province and the concessionaire regarding the extra cost of removing and disposing of them."

First Nations

The Campbell Road interchange on Highway 97 at the western approach to the new bridge is located on the land of the Westbank First Nation and was originally intended to be built as part of the DBFMO. However, after negotiations with the Band, the Province signed a milestone agreement authorizing the Band to undertake a design-build procurement to deliver the interchange and a 2-km truck passing lane up the hill to the west of the bridge.

It was the first time a First Nation in British Columbia had undertaken delivery of a large design-build project on a major highway. Westbank First Nation awarded a \$12.97 million contract to Emil Anderson Construction Ltd. The project was completed, on time and on budget, and was turned over to the Province in May 2008.

Band chief Robert Louie said: "This interchange really demonstrates how governments can work with First Nations as partners to deliver projects that everyone can benefit from. By being involved, right from the pre-design phase and in every step along the way, Westbank First Nation has ensured good access to reserve lands, resolved some cultural and archaeological concerns and set the stage for future partnerships. We are very pleased with the result."

Lessons learned

Get the figures right and create an affordability ceiling

At the end of the RFP process, the public sector found itself with two strong proponents, both with bids priced much higher than the Ministry's cost estimate. Among the reasons for this were the spiralling costs of material and labour then being experienced in the province's red-hot construction market. In addition, the project's transferred and retained risks had not been properly quantified. "A floating bridge is a risky undertaking," said Steve Hollett, who represented Partnerships BC in the negotiations. "The engineering is very complex. Floating bridges built in other jurisdictions have failed; the Province ensured that the design of the new crossing addressed the causes of such incidents but it was clear that the Government had underestimated the full risk-adjusted cost of the project."

Partnerships BC addressed the problem by inserting a Best and Final Offer (BAFO) stage into the procurement process. In subsequent P3s, there has been greater focus on eliminating any potential surprises surrounding affordability during the RFP phase, firstly by developing accurate cost estimates and then establishing an affordability ceiling that is usually expressed in total service payments for the first year.

In that way, affordability issues can be addressed collaboratively during the RFP phase, eliminating the need for the BAFO process.

Reap the rewards of the lifecycle approach

Close collaboration between designer, builder and operator is not integral to the traditional Design-Build procurements process. But when these three components come together under the auspices of a DBFMO project team, good things happen. Designer, constructor and operations contractor communicate early and often on issues affecting “constructability,” quality and durability with a view to reaching the ideal balance between capital costs and the cost of operating and maintaining the asset over the life of the concession.

The project director on the William R. Bennett Bridge, Tom Tasaka of SNC-Lavalin, said there were many examples of money-saving and time-saving collaboration between his company, its design-build partner Vancouver Pile Driving, designers Buckland and Taylor, and the operations and maintenance contractor SNC-Lavalin ProFac.

In one such exchange, SNC-Lavalin engineers constructed a mock-up of the complicated joints connecting the nine huge concrete pontoons into a continuous 697-metre-long section. They discovered that, with a few design adjustments, the task of securing the massive floating sections to each other could be achieved much more easily and quickly. “We passed this on to the designers, who incorporated the changes and this was a big factor in getting the bridge finished so far ahead of schedule,” said Tasaka.

“Builders know what’s easy to build, operations people know what it takes to keep lifecycle costs down and the designers have open access to their input. It’s where the public-private partnership approach really comes into its own.”

Concluding Comments

The William R. Bennett Bridge project was a learning experience for all concerned. It was among the first transportation public-private partnerships undertaken by the BC Government and its P3 agency, Partnerships BC. It was also SNC-Lavalin’s first P3 project in the province.

Some lessons were learned the hard way. The procurement ran into problems during the RFP, necessitating insertion of a best and final offer stage. This was followed by an extended round of intense negotiations between the Province’s project team and the preferred proponent before financial close was achieved.

It is a testament to the resilience of the P3 procurement model that, despite the early difficulties, the project stayed on track and on budget, and motorists were driving across Okanagan Lake on a first-class piece of floating bridge engineering almost four months ahead of schedule.

Testimonials

Public sector

The William R. Bennett Bridge, one of the first three Public-Private Partnerships in the BC transportation sector, represents the Province's choice to have most major infrastructure delivered through a P3 process. This project comes at a critical time for the rapidly growing Central Okanagan region of the province where a 1950s vintage bridge on Highway 97 was previously the only access across the 120-km-long Okanagan Lake.

The BC Provincial Government tasked the Ministry of Transportation and Infrastructure together with Partnerships BC to proceed with the P3 procurement process in 2003 after it was determined that the bridge could be most effectively and economically delivered in this manner.

Several of the Province's key objectives for proceeding with a P3 delivery model included:

- | allowing for private sector innovation to bring together designing, building, operating and financing a large floating bridge structure that is unique in Canada;
- | shifting risk to a private sector contractor for 30 years to provide this facility while retaining only some land, environmental and force majeure-type risk;

- | building in a performance payment mechanism allowing incentives/penalties to address the level of service the contractor provides once the facility is complete and operating; and

- | spreading the payment of the facility out over the life of the concession, with no payments until the structure is in service.

The Province retains a strong role in the project to ensure the P3 contractor, SNC-Lavalin, meets or exceeds the commitments of the Concession Agreement. This role extends through the 27-year period that the concessionaire operates the finished structure. The bridge opened in May 2008, 108 days ahead of schedule, and in 2035 the facility will be turned back to the Province in conjunction with a detailed condition survey.

The Ministry of Transportation and Infrastructure has been very pleased to work with SNC-Lavalin and its team of partners, subcontractors and suppliers to deliver this challenging and urgently-needed bridge that will address the traffic, safety and service needs of the Okanagan's primary corridor.

Jon Buckle, P.Eng
Project Director, William R, Bennett Bridge
 BC Ministry of Transportation and Infrastructure

Private sector

The William R. Bennett Bridge was SNC-Lavalin's first P3 project in British Columbia, and we are very pleased to have worked with the Province to deliver this critical piece of infrastructure for British Columbians. The bridge was completed and opened for traffic in May 2008, 108 days ahead of schedule.

The fact that a single entity, SNC-Lavalin, completed the design and construction, and remains responsible for the operations and maintenance over the 30-year concession period, indicates that the DBFO structure provides a complete alignment of interests between the concessionaire and the Province as the ultimate owner.

A major contributor to the project's success was the P3 process, which allowed for private sector innovation and transfer of risk. This allowed for a true partnering arrangement to be formed.

SNC-Lavalin sees the project as a great success and is pleased with the P3 arrangement between the company and the Province.

Douglas Hoskin
Vice President, Finance and Contracting
 Transportation Division
 SNC-Lavalin Inc.

Public Sector Contact

Jon Buckle

Project Director
 BC Ministry of Transportation and
 Infrastructure
 300-1358 St. Paul Street
 Kelowna BC V1Y 2E1
 250-712-3660
 Jon.buckle@gov.bc.ca

Private Sector Contact

Tom Tasaka

Project Director
 SNC-Lavalin
 1800-1075 West Georgia Street
 Vancouver, BC V6E 3C9
 604-662-3555
 Tom.tasaka@snclavalin.com

Project Website

www.th.gov.bc.ca/WilliamRBennettBridge

ABBOTSFORD REGIONAL HOSPITAL & CANCER CENTRE, BRITISH COLUMBIA

2008 Silver Award for Infrastructure



Quick Facts – Abbotsford Regional Hospital & Cancer Centre

Project type

Design-Build-Finance-Maintain-Operate (DBFMO)

Contract length

33 years and five months (30-year operations)

Dates

December 2004-May 2038

Asset/Service

A new 300-bed acute care regional referral hospital integrated with a cancer centre

Partners

Public Sector

- Abbotsford Regional Hospital and Cancer Centre Inc.
- ▶ B.C. Ministry of Health Services
 - ▶ Fraser Health Authority
 - ▶ Provincial Health Services Authority
 - ▶ BC Cancer Agency
 - ▶ Fraser Valley Regional Hospital District
 - ▶ Partnerships BC

Private Sector

- AHA Access Health Abbotsford Ltd. (AHA)
- ▶ Design: Musson Cattell Mackey/Silver Thomas Hanley
 - ▶ Construction: PCL Constructors Westcoast Inc.
 - ▶ Finance: Abbotsford Health Holdings Ltd.
 - ▶ Facilities Management and Operation: Johnson Controls International (hard FM), Sodexo Canada (soft FM), Intercon Security (security), Impark (parking)

Other participants

Public Sector

- ▶ Fasken Martineau DuMoulin LLP – legal advisors
- ▶ Ernst & Young Orenda Corporate Finance – financial and business advisors
- ▶ SNC-Lavalin Inc. – technical, financial and business advisors
- ▶ Partnerships BC – procurement and project manager
- ▶ National Education Consulting Inc. – process monitor

Private Sector

- ▶ Davies Ward Phillips & Vineberg LLP – legal advisors

Financing

Total net present cost over the 33-year term of the concession is \$424 million (\$2004). The construction and equipment cost was \$355 million. Fraser Valley Regional Hospital District contributed \$71 million and AHA financed the remainder through an equity investment and a bond issue underwritten by ABN AMRO.

Other features

- ▶ Integrated acute care hospital and cancer care facilities, a new approach for B.C.
- ▶ Integrated facilities management services through a single help desk.
- ▶ Numerous design features and innovations; first Canadian hospital to achieve Leadership in Energy and Environmental Design (LEED) Silver standard.
- ▶ Project delivered on time, on budget and within scope.
- ▶ Named North American PPP Deal of the Year for 2005 by *Project Finance* magazine and winner of a number of construction awards.

Overview



Abbotsford's population had increased by 250 per cent since 1980, the year of the last major renovation to the 50-year-old 188-bed Matsqui-Sumas-Abbotsford (MSA) Hospital. Doctors, nurses and staff struggled to provide proper patient care in a dilapidated building with inadequate space and technology. The results were long wait lists, problems with infection control and a poor healing environment.

Planning for replacement of the MSA Hospital started in the 1980s and the decision to build a new facility was first announced in 1990. Plans were developed, including full working drawings ready for tender, but the project was put on hold in 1997. It was reviewed again three years later when it was decided to include a cancer centre.

In spring 2001, the Government of British Columbia approved a business case to procure the hospital and cancer centre as a traditional capital project. Later the same year, the Government ordered another review of the project plan, focusing on the feasibility of increasing private sector involvement to help reduce public sector costs and risks while maintaining or improving quality. This analysis led to the decision to build the new Abbotsford Regional Hospital and Cancer Centre as the province's first hospital public-private partnership.

The Government's broad goals for the new facility were to provide publicly funded, accessible health care for the Fraser Valley, reduce wait times, enhance and improve health services, apply innovation, best practice and research, and focus health dollars on patients.

Construction started in 2004 and the facility was completed on May 6, 2008. The first hospital patients were admitted on August 24, 2008 and the next day the cancer centre received its first patient intake. The new facility serves a population of more than 150,000 in the greater Abbotsford area and 330,000 in the Fraser Valley, providing several enhanced programs, including a new cancer treatment centre that will be part of the provincial network operated by BC Cancer Agency.

The new hospital provides MRI services, general surgery and all inpatient and outpatient surgical services, including vascular procedures, a full renal dialysis program, specialized obstetrics and nursery care, pediatric services and special adult medical services.

Description of the Project

The Abbotsford Regional Hospital and Cancer Centre (ARHCC) is a 300-bed acute care regional referral hospital integrated with a cancer centre. Situated on a 10-hectare site in Abbotsford, B.C., the 60,000-square-metre state-of-the-art facility is three times the size of the old MSA Hospital it replaces. It is the first regional hospital to open in B.C. in more than 30 years.

The facility is a public-private partnership (P3) between ARHCC Inc. – the decision-making and contractual entity acting on behalf of the Ministry of Health Services, Fraser Health, Provincial Health Services Authority/BC Cancer Agency, Fraser Valley Regional Hospital District and Partnerships BC – and AHA Access Health Abbotsford Ltd. (AHA), the private partner. In the facility's operational phase, the shareholders of ARHCC Inc. are Fraser Health Authority and the Provincial Health Services Authority/BC Cancer Agency.

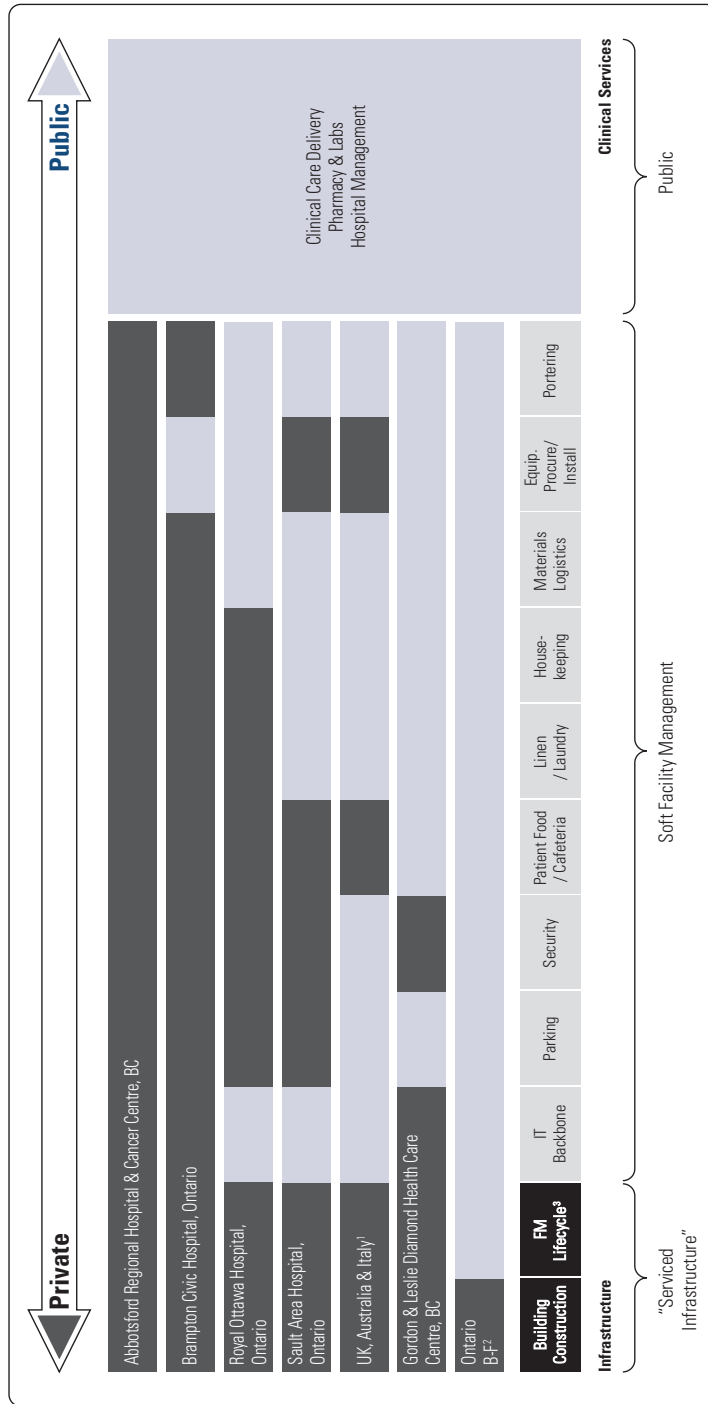
The public-private partnership operates on a performance-based agreement under which the public sector provides all clinical services and the private partner designs, builds, finances, operates and maintains the facility and provides comprehensive (hard and soft) facilities management services for 30 years, comprising: general management (administration of all facilities management services); building repairs and upgrades; helpdesk; food (patient and non-patient); housekeeping; laundry/linen; materials management; plant (maintenance, repair, replacement); protection (security and safety); patient portering; utilities management; and parking.

Facilities Management Definitions

- | | |
|----------------|---|
| Hard FM | ▶ routine maintenance of the facility's buildings, equipment, grounds and gardens, plus energy and utilities |
| Soft FM | ▶ services connected with the facility such as helpdesk, parking, security, food, linen and laundry, housekeeping and patient portering |

Canadian PPP/AFP Hospital Chart of Services (Public vs. Private)

The chart below compares the ARHCC service delivery bundle with some other recent Canadian P3 health projects.



¹ Information for the UK, Australia & Italy provided by Plenary Group ² B-F: Ontario Build-Finance Model ³ FM Lifecycle: Facilities lifecycle (HVAC, lighting, etc.)

Private sector delivery (dark grey) Public sector delivery (light grey) May also be contracted out in conventional models (medium grey)



Procurement Process

Selecting the P3 model

In accordance with the Province's Capital Asset Management Framework, the project team evaluated four delivery options:

- | Traditional capital project – public sector owns, finances, operates and maintains the facility with private companies engaged in design and construction under separate contracts.
- | Design-Build-Maintain – public sector owns, operates and finances the project but engages a private partner to design, construct and maintain the facility for a specified period.
- | Design-Build-Operate-Maintain – public sector owns and finances the project while the private partner designs, constructs, maintains and operates selected facilities management services for a set period.
- | Design-Build-Finance-Maintain-Operate – private partner designs, constructs, finances, operates selected facilities management services and maintains the facility.

The project team's analysis concluded that, although estimated total project costs of the four options were similar, the design-build-finance-maintain-operate (DBFMO) model had the potential to deliver value for money through innovation, timely completion and the most effective risk transfer to the private sector.

Other expected benefits of P3 delivery included:

- | faster construction and commissioning after financial close
- | greater emphasis on performance standards and outcomes and improved cost effectiveness
- | increased financial discipline
- | design innovation through competition
- | lifecycle maintenance program ensuring the facility is kept in good condition for the life of the agreement
- | opportunity for the public sector to transfer risks that it cannot easily manage to the private partner, including construction, cost overrun and operating risks

Selecting a partner

The project team, with extensive input from its legal advisors and process monitor, designed a four-stage procurement – request for expressions of interest (RFEI), request for proposals (RFP), contract finalization and project development – aimed at achieving a competitive, rigorous, fair and transparent process.

Competitive process

The release of the RFEI in January 2003 generated considerable interest with 61 company representatives attending a respondents' information meeting. Eventually, four expressions of interest were received and evaluated. All four qualified to move on to the proposal stage of the competition, bringing with them a range of B.C., Canadian and international experience in design, construction financing and facilities management.

The RFP and draft Project Agreement were issued in September 2003. Proponents were allowed to review the draft Agreement and notify the project team of amendments they would need to participate in the competition. This step was designed to remove any barriers caused by unidentified but fundamental issues and to ensure that proponents were happy with the proposed risk allocation. More than 400 amendments were requested. Following a review of these requests by the project team with health authority and ministry representatives, an amended draft Project Agreement was approved.

In November 2003, two of the four proponents – AHA Access Health Abbotsford Ltd. and The HealthCare Infrastructure Company of Canada – signed the proposal competition agreement and provided ARHCC Inc. with letters of credit confirming their participation in the competition. Partnerships BC implemented a process allowing the controlled flow of information between proponents and the project team during proposal development. Between October 2003 and April 2004, the project team responded to 188 requests for information and 14 addenda to the RFP document.

In January 2004, The HealthCare Infrastructure Company of Canada withdrew from the competition. Partnerships BC responded by retaining the RFP framework and strengthening the evaluation process, putting more emphasis on the Public Sector Comparator (PSC).

Evaluation process

A proposal evaluation committee and six sub-panels were convened to evaluate the proposal and ensure that it met all mandatory requirements and expectations set out in the RFP. The Proposal Evaluation Committee comprised representatives from the Fraser Health Authority, Provincial Health Services Authority, BC Cancer Agency, Ministry of Health Services and Partnerships BC. A Process Monitor was also appointed to oversee the entire evaluation.

Evaluation was undertaken in two stages: preliminary review and initial confirmation of affordability; and detailed review of proposal against the evaluation criteria.

The six sub-panels evaluated the proposal in seven categories:

Evaluation Criteria

Category	Factors considered	Points
1. Clinical operations, efficiency and design	<ul style="list-style-type: none"> ▶ key building design and operations requirements as they related to the project Vision and Guiding Principles ▶ performance statements in the output specifications, such as a healing environment, indoor air quality, acoustics, ergonomics and design standards for the disabled ▶ the approach to functional planning, such as patient flows, clinical and non-clinical staff flows and interdepartmental relationships ▶ the method of equipment selection and procurement 	30
2. Facility management services and human resources	<ul style="list-style-type: none"> ▶ innovation in design and delivery of each of the facilities management (FM) services ▶ knowledge, qualifications, experience capabilities and reputation of proponent team members ▶ recruitment and retention strategies ▶ round-the-clock responsiveness to end-users' needs 	25
3. Construction	<ul style="list-style-type: none"> ▶ methodology for moving from design to construction ▶ understanding of commissioning requirements ▶ key construction management and supervisory personnel committed to the project 	10
4. Finance	<ul style="list-style-type: none"> ▶ affordability of the proposal compared to the Annual Service Payment Affordability Threshold and the Public Sector Comparator ▶ total cost of the proposal in both net present value terms as well as on an annual basis 	20
5. Partnering relationship	<ul style="list-style-type: none"> ▶ innovative measures to foster and promote a partnering relationship ▶ flexible approach to the changing requirements of the health authorities, especially as needs change over time 	5
6. Risk transfer and commercial considerations	<ul style="list-style-type: none"> ▶ legal issues, including procedures for managing each risk ▶ qualitative review of the proposal's commercial aspects 	5
7. Team integration and delivery	<ul style="list-style-type: none"> ▶ ability to provide a cohesive team approach through the conceptual, design, construction and service delivery phases 	5
Total		100

The Evaluation Committee then convened to review the recommendations of the sub-committees. At the end of this process, the Evaluation Committee recommended the start of contract negotiations with AHA.

A Partnerships BC team handled contract negotiations for the public partners and instituted a process to ensure that they were updated on progress and consulted on important operational issues. Negotiations continued from May to July 2004; final negotiations and due diligence were completed between July and December 2004.

Changes to the FM bundle

During the RFP stage, biomedical engineering and medical record transcription were removed from the FM bundle to be provided by the private partner. This followed feedback from proponents that they would be unlikely to offer value for money in these areas. This table summarizes changes to the FM services bundle during the competitive process.

Changes to FM Services Bundle during Procurement		
Expression of Interest January 2003	Request for Proposals September 2003	Final Agreement December 2004
<ul style="list-style-type: none"> ▶ general management ▶ helpdesk ▶ food services (patient and non-patient) ▶ housekeeping ▶ laundry/linen ▶ materiel services ▶ plant services ▶ protection services ▶ patient portering ▶ utilities management ▶ parking services ▶ biomedical engineering ▶ transcription ▶ FM services for Worthington and Cottage Pavilions (existing extended care facilities) ▶ central processing and sterilization ▶ redevelopment of existing MSA site 	<ul style="list-style-type: none"> ▶ general management ▶ helpdesk ▶ food services (patient and non-patient) ▶ housekeeping ▶ laundry/linen ▶ materiel services ▶ plant services ▶ protection services ▶ patient portering ▶ utilities management ▶ parking services ▶ biomedical engineering ▶ transcription 	<ul style="list-style-type: none"> ▶ general management ▶ helpdesk ▶ food services (patient and non-patient) ▶ housekeeping ▶ laundry/linen ▶ materiel services ▶ plant services ▶ protection services ▶ patient portering ▶ utilities management ▶ parking services

Adjustments to the cost estimate and project budget

Between the release of the RFP and the pricing of the proposal, B.C. experienced a building boom and a dramatic increase in construction cost inflation. Project estimates of 2.5 per cent inflation were replaced with actual and forecast rates ranging from 3 to 7 per cent to 2008. The project's cost consultant concluded that construction inflation would add about \$25 million to the estimated cost.

Before the proposal was received, Partnerships BC found a number of items that needed to be included in the public-sector-comparator capital estimate to provide a meaningful comparison with the P3 cost estimate. These included public sector management costs (estimated at \$8 million for a traditionally procured project), FM equipment (about \$6 million) and about \$1 million for the equipment procurement team.

Further items identified by the proponent that only came to light during detailed evaluation of the AHA proposal included about \$2 million

for off-site hydro requirements, \$1.5 million for municipal levies, \$2 million for soil surveys and an extra \$1 million to meet LEED Silver standard requirements.

The resulting \$25 million increase in the PSC estimate was partially offset by a \$9 million reduction in risk valuation. The final PSC capital cost estimate was \$369 million.

Capital cost of the AHA proposal exceeded the RFP target but a review by an independent cost consultant concluded that the proposal pricing was consistent with current market conditions. Following negotiations, the capital construction and equipment component of the AHA contract was set at \$355 million.

Financial and commercial close

The AHA proposal included committed finance which enabled the partners to achieve commercial and financial close on the same day – December 7, 2004. After 41 months of construction, substantial completion was achieved on May 6, 2008, beginning the 30-year operating phase.

Procurement Stage Definitions

Commercial close	▶ signature of the project contracts subject to completion of the financing ¹
Financial close	▶ date at which all project contracts and financing documentation have been signed, and conditions precedent to initial drawing of the debt have been fulfilled ²
Substantial completion	▶ date on which the project is complete to the extent it can be occupied or used for its intended purpose in accordance with the project contracts

¹ Yescombe, E.R., *Public-Private Partnerships: Principles of Policy and Finance*, First Edition, (Oxford, UK: Elsevier Butterworth-Heinemann, 2007), p. 336.

² *Ibid*, p. 340.

Competitive selection costs

Procurement costs, including payments to transaction and legal advisors, were \$14.5 million, which represents about 3.4 per cent of the project's net present value or 4.1 per cent of the construction capital cost of the facility and equipment.

As the ARHCC was the province's first P3 hospital project, more than half of these costs represent an investment in establishing best practices that are now being used to reduce procurement costs on subsequent P3s, including the successful Britannia Mine Water Treatment Plant completed in 2005.

Timelines

2003	January 23	Request for Expressions of Interest (RFEI)
	May 26	RFEI deadline. Four respondents qualify for proposal stage.
	September 25	Request for Proposals (RFP) and draft Project Agreement released
	November 19	Two proponents sign Proposal Competition Agreement
2004	January	One proponent withdraws
	April 16	AHA submits proposal
	December 7	Contract agreement finalized. Commercial and financial close.
2005	December 8	Groundbreaking ceremony marks start of construction
	March 11	ARHCC named North American PPP Deal of the Year by <i>Project Finance</i> magazine
2007	December 28	Macquarie Bank buys 81% of AHA from ABN AMRO
	January	Macquarie sells AHA stake to John Laing Investments
2008	February	Laing completes acquisition of AHA and assumes overall responsibility for project
	June 20	\$30 million medical technology deal signed with GE Healthcare
	May 6	Substantial completion and start of operational readiness process
	August 24	Hospital admits first patients
	August 25	Cancer centre admits first patients
	September 9	Official opening ceremony

Name of private partner

AHA Access Health Abbotsford Ltd. was created as a special-purpose entity to bid on the ARHCC project. The consortium comprised ABN AMRO Bank N.V. (finance), PCL Constructors Westcoast Inc. (constructor), Musson Cattell Mackey/Silver Thomas Hanley (design), Johnson Controls International (hard facilities management) and Sodexo (soft facilities management).

In December 2005, Macquarie Bank bought 81 per cent of the project from ABN AMRO, which it then sold in January 2007 to John Laing Investments Abbotsford Ltd., a subsidiary of the major British infrastructure company John Laing plc. Laing completed its acquisition of AHA in February 2007 and assumed responsibility for completion of construction and overall project management of the AHA team.

Fairness of the process

Partnerships BC engaged process monitor Gerald Smeltzer, of National Education Consulting Inc., to advise the project team on developing documents and processes during the competition and to act as an independent observer through the evaluation phase.

The selection process included:

- extensive due diligence in developing and implementing a relatively new procurement process for B.C.
- direct engagement of the Ministry of Health Services, health authorities and Fraser Valley Regional Hospital District in structuring the project and defining its objectives.

- maintaining competitive pressure on a single proponent by using the Public Sector Comparator and committing to an agreement only after a full evaluation and negotiation process.

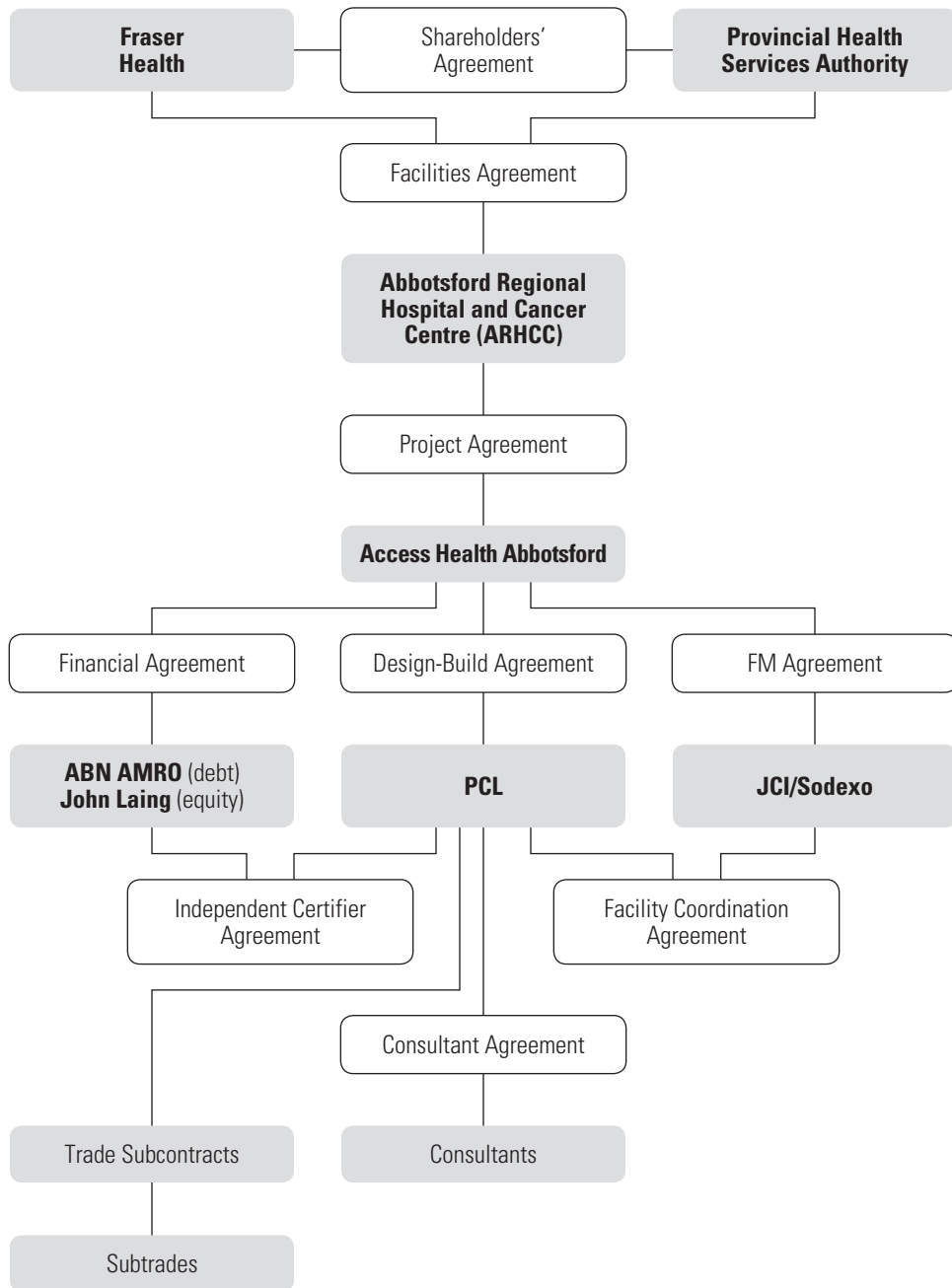
The monitor concluded that the RFEI and RFP stages complied fully with the Government's policy concerning fairness, transparency and accountability and were carried out in accordance with best practices for government procurement in Canada.

Overall Structure of the Agreement

To deliver a public-owned and well-maintained hospital and cancer centre with quality facilities management services over 30 years, the final Project Agreement:

- specifies detailed performance and facility management requirements the private partner must meet;
- establishes a performance-based payment system with incentives for the private partner to meet or exceed contractual requirements and deductions when performance does not meet these requirements;
- requires integrated facilities management services to be delivered through a single point of contact; and
- defines required standards for the functionality and condition of the facility at the end of the agreement.

Abbotsford Regional Hospital and Cancer Centre Agreement Structure



Financial Arrangements

The Fraser Valley Regional Health Authority contributed \$71 million towards total capital and equipment costs of \$355 million. Maximum financial benefit was obtained by investing these funds early in the construction process and risk was minimized by flowing the funds to AHA as quarterly construction progress payments, based on the assessed value of completed work on-site.

AHA provided the remainder of the finance through an equity investment of \$60 million and by placing \$209 million of fully amortizing fixed indexing annuity bonds, series A with a 33.25-year maturity, as the first tranche of a \$329 million bond offering. The second placement, \$120 million in series B notes with a 32.25-year maturity, was placed a year after financial close. Equity and debt was 100 per cent underwritten by ABN AMRO at financial close, ensuring that construction could proceed immediately.

The partnership agreement stipulates that AHA must obtain prior written consent from AHRCC Inc. before it can undertake refinancing and that any resulting gains must be shared equally between the public and private partners.

Payment structure

ARHCC Inc. began making performance-based payments to AHA for the hospital, its maintenance and facilities management upon substantial completion. For the first full year of operations, assuming no deductions or bonuses, the payment will be \$41 million.

The payment mechanism provides for a broadly constant annual service payment (in real terms) with repair and replacement payments “sculpted” to cover major asset maintenance costs when they are expected to occur, rather than prepaying them.

The 13 actual payments each year are based on a contractual mechanism that incorporates facility availability and service quality, with deductions for non-availability and failure to reach defined service quality levels.

For example, the contract specifies that heating, air conditioning, humidity and mechanical ventilation systems are functioning at all times. If a problem is not rectified within the specified time, it is categorized as a failure event. Payment deductions are based on the severity of the failure, the importance of the affected room and its degree of availability. The deduction for one full day of unavailability would be \$80 for a public washroom, \$800 for a patient bedroom and \$2,040 for an MRI procedure room.

AHA can also receive bonus payments for consistently good performance, judged through quality satisfaction surveys.

Revenue sharing

AHA has the rights to certain commercial opportunities in the hospital – the coffee shop and restaurant, patient entertainment and retail space in the atrium. The Project Agreement also allows AHA to propose other commercial opportunities with details – profit sharing or the commercial structure for such opportunities, for example – to be negotiated at the time.

Risk Allocation

Project risks were allocated to the partner in the best position to manage them cost-effectively. So the public sector was deemed better able to determine whether facility design will meet health authorities’ clinical functionality needs while the private partner could ensure operational and maintenance efficiency over the facility’s lifecycle.

Risk allocation is reinforced by contractual provisions:

- the public partner starts making performance-based payments only when substantial completion is independently certified;

- the agreement has a fixed expiry date so any completion delays would reduce payments to AHA; and

- there are provisions for reduced payments if AHA does not meet agreed standards for facility operation and maintenance.

In the case of shared risks – energy consumption, for example, with the partners sharing the costs of inefficiencies and benefits of conservation – the contract stipulates how the risk is shared by providing thresholds for each partner’s responsibility.

Risk Allocations			
Risk Factor	ARHCC	AHA	Shared
Financing		■	
Design – clinical functionality	■		
Design – fitness for purpose		■	
Construction – schedule and cost		■	
Equipment and procurement installation			■
Facilities management services – standards and cost		■	
Maintenance/latent defects		■	
Relief events, e.g., earthquake or flood			■

ARHCC = Abbotsford Regional Hospital and Cancer Centre Inc. (public partner)
 AHA = AHA Access Health Abbotsford Ltd. (private partner)

Benefits

Cost savings/value for money

The Partnership Agreement, which includes the financing for building, maintaining and operating the facility, will cost the public sector about \$424 million (net present cost) over 33 years, assuming no bonuses or penalties are applied to the annual service payments to the private partner. This represents a \$39 million saving on the estimated \$463 million NPC of the Public Sector Comparator.

Community benefits

Health care benefits: The hospital offers residents of the region greatly improved access to a range of services. The new cancer centre means that patients no longer have to travel 45 km to Surrey or even further to Vancouver for treatment.

The new facility is three times the size of the old MSA Hospital and is staffed by double the number of health care professionals. It opened with 261 beds and there is provision for future growth to 300 beds. Capacity has increased in every facet of hospital operations, including: more maternity; special care nursery and pediatric beds; expanded ICU; four more operating rooms, including a dedicated maternity operating room; more cardiac care and telemetry beds; and expanded capacity for mental health, acute geriatric and palliative care.

The new cancer centre will handle an estimated 60,000 patient visits annually, with 12 chemotherapy chairs, four linear accelerators for radiation therapy and a range of patient support and rehabilitation programs.

Economic benefits: The project has generated a number of economic benefits for the local economy. ARHCC was the largest construction project in the history of the Fraser Valley, with more than 500 construction workers on site, most of them hired locally. PCL Constructors Westcoast Inc. also made it a priority to use locally produced building materials, including brick, steel fabrication, cast-in-place concrete and pre-cast concrete products. The modern facility has also attracted world class clinical staff looking to work at an integrated hospital and cancer centre.

Environmental benefits: ARHCC was designed and built to minimize its ecological footprint. The design incorporates the natural geography of the land with more than half the site left undeveloped or restored as open space.

It is the first Canadian hospital designed to achieve the Leadership in Energy and Environmental Design (LEED) Silver standard and is expected to consume nearly 40 per cent less energy compared to a Model National Energy for Buildings-compliant hospital. This will save about 3,100 tons of carbon dioxide emissions and cut costs by about \$500,000 a year. ARHCC Inc. is confident that AHA will meet the LEED requirements as specified in the Project Agreement.

Other environmentally friendly features include:

- use of natural light with large windows and views, as well as rooftop gardens, green spaces and courtyards;
- a retention pond to collect rainwater used to irrigate landscaped courtyards, healing gardens and roof terraces;
- provision for 28 electric vehicle charging stations;
- carpets, paints and adhesives containing low amounts of chemicals with possible health impacts;
- Forest Stewardship Council certification for more than half of wood-based products used, recycled content for 35 per cent of all materials and over 70 per cent of construction waste sorted and shipped to recycling stations.

Other benefits

Operational efficiency and clinical functionality: Traditional delivery of healthcare facilities achieves good results by carefully defining scope and through close cooperation between clinical planners, health authorities and architects. The partnership model enhances this prescriptive approach by encouraging the private sector to focus on outcomes and suggest new ideas for meeting performance requirements.

During negotiations and the detailed design development phase, AHA's clinical planner worked with the AHCC project team and more than 240 health care professionals to fine-tune its strong preliminary design. The results have been well received by health authorities and clinicians.

Design and construction: The integrated nature of the Project Agreement balances short-term design and construction imperatives with the need to consider the future costs of facility management, service provision, maintenance and repair. Extra discipline is provided by lenders who focus on meeting the construction budget and schedule as well as longer term costs. The final agreement incorporates design and technical solutions that have never been used in B.C.

Schedule: Traditional project delivery, with separate contracts for design and construction, was expected to take 63 months from contract signing to commission, compared with the 41-month schedule of the partnership agreement.

Integrated facilities management: With a single facilities management helpdesk to handle requests for linens, portering, housekeeping and other services, staff will have more time to devote to direct patient care.

Communications

Both partners are represented on the fully resourced communications team established by ARHCC. The Communications Protocol schedule to the Project Agreement sets out the partners' specific communications roles and responsibilities.

The public partner assumes the lead role, taking primary responsibility for all communications matters and for performing the specific tasks of:

- | providing lead communications contacts and media spokesperson available 24/7 on applicable aspects of communications and acting as primary media contact for the project;
- | providing final review and approval of all communications materials;
- | communicating promptly with all relevant parties on crisis issues and within 24 hours on general issues;
- | maintaining and updating project website; and
- | providing updates to internal and external stakeholders.

The private partner assumes a support role and is responsible for:

- | providing communications contacts and a lead media spokesperson with backup media-trained personnel as required, available 24/7 on applicable aspects of communications;

- | responding to communications issues in accordance with agreed time frames;
- | reviewing and/or providing communications and technical materials, including requests for website content;
- | updating internal/external stakeholders, including participation in community events.

During the procurement, design and construction phases, the communications team developed a website at www.abbotsfordhospitalandcancercentre.ca and organized community open houses and presentations to local government, community and health care groups to ensure that all stakeholders and the public were kept informed. In addition, there were public celebrations of key project milestones, such as the awarding of a \$30 million GE equipment contract, the 100-day countdown to opening and grand opening events.

In spring 2008, more than 750 people attended three public information forums to inform Abbotsford and Fraser Valley residents about the status of the project, as well as about new programs and services to be offered at ARHCC. More than 7,000 people toured the facility during two public open house events in May and June 2008.

The local community newspaper published monthly articles about the facility's new and expanded health care services and carried four major inserts containing detailed information about design and construction, health and cancer services and the building's environmentally friendly features.

Labour

The construction phase of the ARHCC project created about 550 jobs. PCL Constructors Westcoast Inc., the construction contractor, estimates that over 95 per cent of its more than 200 hourly workers on site were locally hired labour. A large proportion of the subcontractor workforce was also locally hired.

Thirty-one public sector positions were eliminated in the move from the old MSA Hospital to the new facility. Although there was no formal transition plan for these workers, some have found jobs at the new facility.

About 240 workers are involved in providing facilities management services at ARHCC: 201 work for Sodexo, 29 for Johnson Controls International, and separate security and parking contracts account for nine more positions.

The health authorities continue to deliver all clinical services. Fraser Health Authority, which is responsible for the acute-care hospital, employs 1,400 staff at ARHCC, an increase of 450 on the level at MSA. The cancer centre has 194 full-time and part-time staff and these are all new positions.

Monitoring

The Project Agreement contains a number of provisions to ensure that each phase of the Agreement is implemented as intended.

The detailed design development process – a collaboration between the public sector’s project team and health authority users and the private partner’s architects, constructors and facilities management service providers – ensured that the facility met clinical functionality requirements. During construction, the project team closely monitored progress and an independent certifier confirmed that milestones were met.

After substantial completion, the independent certifier was also fully engaged during the operational readiness testing phase that preceded the arrival of the first patients. This involved exhaustive trials of all hospital systems and services.

According to Bob Smith, interim general manager of ARHCC Inc., the contractual requirement for the owner to sign off on all aspects of the project (reinforced by the presence of the independent certifier and his team) was important in giving the health authorities confidence that everything was in place and operational. “The P3 process brings added discipline to the readiness testing and commissioning process,” he said.

Every aspect of the operation was thoroughly scrutinized. The inspection team ran a simulated fire, flood and patient evacuation (with volunteers acting as patients), as well as test simulations of soft FM services such as housekeeping, patient portering and the helpdesk.

“Overall, through some of the most rigorous testing I’ve ever seen, the project came through very well,” said Smith. “Challenges that were identified were addressed quickly and effectively.”

After commissioning, the health authorities assumed ownership of ARHCC Inc. and responsibility for administering the Project Agreement. Three full-time health authority employees will perform the key functions involved in implementing a contractually mandated performance monitoring program to ensure that AHA is meeting performance standards. This will be supplemented by quality satisfaction surveys that will solicit feedback from patients, visitors, medical staff and health authority staff.

Partnerships BC will work with the Ministry of Health Services and health authorities to undertake higher level reviews of the overall project at five-year intervals to ascertain whether the agreement is functioning properly and the expected benefits are being realized.

Dispute resolution

Not only did the project reach substantial completion with zero net change orders, but neither partner had to resort to the contract’s dispute resolution provisions during construction.

The dispute resolution procedure is set out in a separate schedule to the Project Agreement, in which the parties undertake to make every effort to resolve any disputes by amicable negotiation and to have all disputes resolved at the lowest level of management before engaging the prescribed dispute resolution process.

In the event that the problem cannot be resolved in this way, the contract requires the disputing party to deliver an official Notice of Dispute to the other partner, setting out the particulars of the matter and describing the remedy being sought.

Once notice has been served, the contract sets out several possible methods of resolving the issue with detailed guidelines for each method: amicable resolution by party representatives; amicable resolution by senior officers of each party; expert determination; referral to arbitration; and litigation.

Other Issues

Flexibility of the Project Agreement

Rapid change is a fact of life in the health care sector. The ARHCC concession agreement reflects the reality that in May 2038 (when the operations contract ends), the hospital and cancer centre will be a very different facility from the one that opened in the fall of 2008.

Under the terms of the contract, the public partners, acting through the health company ARHCC Inc., are entitled to pursue any changes they deem necessary to implement innovative medical programs or improved service delivery protocols.

If a new piece of diagnostic equipment becomes available, for example, and a change to the hospital layout is needed to accommodate it, then the contract requires ARHCC Inc. to send a request to the concessionaire, explaining the proposed change and asking how much it will cost to implement it. If the proposed change

has lifecycle or service implications – if office space is converted to clinical space, for example, necessitating a more rigorous cleaning regimen – then the concessionaire is entitled to negotiate an increase in its monthly payment to reflect the enhanced service.

Although the final decision on these matters rests with ARHCC Inc., the concessionaire is also encouraged to propose changes designed to improve service delivery, promote efficiency or introduce better ways of working. Not all of these changes will have cost implications, but when they do, an appropriate change to the monthly service charge will be negotiated.

Transfers of ownership

Control of the ARHCC project changed hands twice before the facility admitted its first patient. Macquarie Bank bought an 81 per cent interest from ABN AMRO in December 2005 – about a year after financial close – and then sold it to John Laing 13 months later, still a year before substantial completion. Laing completed its acquisition soon afterwards.

Under the terms of the ARHCC agreement, the public partner could only withhold consent for these transactions under certain circumstances, including if the person acquiring control had an external credit rating less than A1 (Moody's); or had a standing or activities "inconsistent with [ARHCC's] role as a hospital and cancer centre and the mandate of the Health Authorities so as to potentially compromise the reputation or integrity" of the hospital, the health company or the health authorities.

The first ownership change was announced in a Macquarie Bank press release issued on December 28, 2005. John Laing publicized its equity purchase in a press release dated February 2, 2007.

From the owner's point of view, the primary concern in assessing the impact of these transfers of control was that they should have no detrimental effect on project risk and management. In both transactions, Partnerships BC undertook due diligence on the financial terms and also to ensure that the owner's management team was satisfied with the changeover.

However, there was concern that the work of undertaking due diligence on these deals was disruptive at a time when the project team needed maximum focus on the project itself. Consequently, Partnerships BC has adjusted the terms of subsequent concession agreements to ensure that there is no change of control for at least a year after substantial completion.

For example, the contract for the Royal Jubilee Hospital on Vancouver Island, awarded to ISL Health on July 18, 2008, stipulates that the private partner may not dispose of any interest in the project until the "Transfer Restriction Date that is one year after the Service Commencement Date [substantial completion] with the written consent of the [public partner] which may be given or withheld at the [public partner's] discretion."

Competitive tension

Competition is a cornerstone of the P3 process. However, the competitive tension in the ARHCC procurement threatened to evaporate in January 2004 when one of the two remaining proponents, the HealthCare Infrastructure Company of Canada, dropped out during the RFP phase, leaving AHA as the only bidder.

After reviewing its options, Partnerships BC decided to go forward with the RFP process, which provided a rigorous framework of proponent requirements and a comprehensive evaluation process to be completed before a final agreement could be negotiated.

To inject some competitive pressure into the proceedings, it was decided to strengthen the evaluation process by increasing the weighting of the Public Sector Comparator as the primary financial benchmark. Strict confidentiality was maintained regarding both the PSC and the project team's evaluation of project risks.

Lessons learned

Prepare a solid business case: The ARHCC business case was underpinned by a vision and guiding principles developed collaboratively by the project's many partners and stakeholders – doctors, nurses, community leaders, elected officials and three levels of government. This guided decision-making throughout the process and was critical in defining success criteria and designing the evaluation process.

Clear contractual outcomes, in particular output specifications that are at least 80 per cent complete, are key to the creation of reliable capital and operating cost estimates. The P3 budgeting process provided a clear understanding of all costs, particularly those related to risk and lifecycle elements such as ongoing maintenance.

Design a clear procurement process: The simultaneous release of the RFP and the draft Project Agreement gave proponents clear information on the project's parameters, such as the proposed risk transfer valuation criteria and submission requirements. The amendment period for identifying potential deal-breakers significantly reduced the negotiation period and provided proponents with information and clarification as they developed their proposals.

It is important to get lenders involved early in the process. Early lender involvement in the ARHCC project resulted in financial close seven months after designation of the preferred proponent. Similar UK projects without strong lender involvement have taken as long as 18 months to close.

Focus on project governance and

management: The ARHCC governance model was streamlined as the project development and requirements changed. The result, an overall project board (ARHCC Inc.) for all decision-making and contracting, proved very effective and could be replicated in other projects involving a large number of government stakeholders.

Facilities Management – hard, soft or both?:

The facilities management (FM) component of the ARHCC concession agreement covers the gamut from the “hard” FM services, such as building and equipment maintenance, energy and utilities, grounds and gardens, to the “soft” FM of car parking, food services, security, patient portering and laundry. Subsequent hospital projects have been prepared with more hard versus soft in the FM mix because health authorities now prefer to provide soft FM on a regional rather than site-specific basis.

Looking at different equipment financing

options: More than 14,000 pieces of medical equipment, valued at \$85 million, were bought and installed before ARHCC opened its doors to patients. This included a \$30 million contract with GE Healthcare to provide medical imaging systems and patient monitoring equipment. For ARHCC, this was financed through a cash allowance as part of the build portion of the contract. But Partnerships BC is now looking at the specific nature of medical equipment procurement and financing to see if there are other arrangements – perhaps a separate P3 just for the equipment – that could deliver better value.

Concluding Comments

There were several reasons to fear that the Abbotsford Regional Hospital and Cancer Centre project would run into problems. Not only was it British Columbia’s single largest capital investment in health care, but it was also the first new regional facility in more than three decades. And it was the province’s first health care project delivered using a public-private partnership.

All such fears proved unfounded. The project reached substantial completion on May 6, 2008, the exact day specified in the contract. It was completed on budget and with zero net change orders, an extraordinary achievement in such a large and complex health care project.

The facility itself has won unstinting praise for a cutting-edge design that makes optimum use of its 10-hectare site and meets stringent environmental standards while delivering state-of-the-art health care and cancer care services to the surrounding community.

The lessons learned from ARHCC are now being put to good use throughout the Government’s ambitious P3 program in both health and non-health projects (the Britannia Mine Water Treatment Plant, for example). It has even been emulated elsewhere in Canada. The ARHCC concession agreement formed the basis for the University of Montreal Hospital and Research Centre procurement.

ARHCC is a partnership that brings together the needs of a growing community, multiple levels of government, several different public health authorities and the innovation of the private sector to provide Fraser Valley residents with a sustainable, first-class health care facility.

Testimonials

Public sector

The opening of the Abbotsford Regional Hospital and Cancer Centre was truly an historic event. It is the first new regional hospital to be opened in British Columbia in over 30 years and represents the single largest health care capital investment in the history of the province. I am pleased to say that this world-class facility, procured with and managed by Partnerships BC as a public-private partnership, was completed on time, on budget and within scope – an unprecedented achievement in a health care project of this size and complexity.

The 300-bed Abbotsford Regional Hospital and Cancer Centre provides enhanced and specialized health and cancer care services to more than 150,000 people in Abbotsford and up to 330,000 in the Fraser Valley, one of the fastest growing regions in the province.

For the first time in Western Canada, a cancer centre has been integrated with a hospital from the ground up. The Abbotsford Centre is an integral part of our provincial cancer control system, providing care and research for the people of British Columbia. The new cancer centre has already had a tremendous impact on the lives of people living with cancer, as they can now receive their treatments closer to home.

The success of this project has served as the foundation for future investments in health care infrastructure public-private partnerships. There are currently five other public-private partnership health projects either in the market or under construction and all of these projects are benefiting from the important lessons and innovative solutions learned from our experience with the Abbotsford Regional Hospital and Cancer Centre.

Hon. George Abbott
B.C. Minister of Health Services

Private sector

AHA Access Health Abbotsford Ltd. is proud to be involved in British Columbia's flagship public-private partnership (P3) project, the Abbotsford Regional Hospital and Cancer Centre. The AHA team includes John Laing Investments Abbotsford Ltd., PCL Constructors Westcoast, MCM/Silver Thomas Hanley, Johnson Controls, Sodexo and ABN AMRO Bank N.V.

Under the P3 arrangement, AHA was selected to design, build, finance and maintain the new hospital and cancer centre for a 30-year period, while all public health services are provided by the Fraser Health Authority and the BC Cancer Agency.

The project was completed on budget and on schedule, reaching substantial completion on May 6, 2008. The successful delivery of the project demonstrated that P3 projects provide public sector partners certainty, while also protecting taxpayers. Under the terms of the agreement, risks around construction schedule and budget were transferred to the private sector.

The construction of the project created over 500 jobs at its peak and was the largest single construction project ever undertaken in the city of Abbotsford.

Our work with Partnerships British Columbia, Fraser Health Authority, Provincial Health Services Authority, BC Cancer Agency and Fraser Valley Regional Hospital District resulted in an innovative P3 that brought together the best of both worlds, public and private.

With the opening of the facility in August 2008, AHA is proud of its role in the design-build phase and looks forward to providing facilities management services for the operational phase. Since August 24, when the patients were moved in to the facility, AHA and its service providers have been delivering a high level of service to the people of Abbotsford and the Fraser Valley.

It is widely accepted that the measure of success of a P3 project is the quality of the relationship between the public sector and the private sector. The relationship between ARHCC Inc. and AHA is exceptional. Built on genuine partnership and teamwork, it is one to which we are all proud to belong.

James Bennett
Investments Director Canada
 John Laing Investments Ltd.

Public Sector Contact

Larry Blain

Chief Executive Officer
 Partnerships BC
 Suite 2320 – 1111 West Georgia Street
 Vancouver, BC V6E 4M3
 604-660-1087
 Larry.Blain@partnershipsbc.ca

Private Sector Contact

Marcus Akhtar

Site Director
 AHA Access Health Abbotsford Ltd.
 32900 Marshall Road
 Abbotsford, BC V2S 0C2
 604-484-1967
 marcus.akhtar@laing.com

Project Website

www.abbotsfordhospitalandcancercentre.ca

Glossary of Terms

– Abbotsford Regional Hospital & Cancer Centre Case Study

AHA – AHA Access Health Abbotsford Ltd.

ARHCC – Abbotsford Regional Hospital
& Cancer Centre

MSA – Matsqui-Sumas-Abbotsford Hospital

HIGHWAY 407 ETR, ONTARIO

2008 Silver Award for Service Delivery



Quick Facts – Highway 407 ETR

Project type

Design-Build-Finance-Maintain-Operate (DBFMO)

Service

99-Year Concession and Ground Lease Agreement from May 5, 1999 to May 4, 2098, to:

- ▶ design, build and finance two extensions (39 km), seven interchanges and all expansions to an existing 69-km electronic toll highway; and
- ▶ maintain and operate the completed 108-km highway.

Partners

Ontario Government, represented by the Ministry of Transportation
407 ETR Concession Company Ltd.,
a subsidiary of 407 International Inc.

Other participants

Public Sector

Advisors

- ▶ Merrill Lynch – financial advisor
- ▶ RBC Dominion Securities – financial advisor
- ▶ Goldman Phillips & Vineberg LLP – legal advisor
- ▶ Fasken Campbell Godfrey LLP – legal advisor
- ▶ KPMG – process advisor
- ▶ ADR Chambers – conflict-of-interest advisor
- ▶ PricewaterhouseCoopers LLP – independent process auditor
- ▶ Dillon Consulting Ltd. – engineering consultant
- ▶ Parsons Brinckerhoff FG Inc. – engineering consultant
- ▶ Wilbur Smith Associates – traffic forecasting consultant

Private Sector

Participants

- ▶ Cintra Concesiones de Infraestructuras de Transporte (Cintra), a subsidiary of Grupo Ferrovial
- ▶ SNC Lavalin
- ▶ Capital d'Amérique CDPO, a subsidiary of Caisse de dépôt et placement du Québec (replaced by Macquarie North America Ltd., April 26, 2002)

Advisors

- ▶ Nesbitt Burns – financial advisor
- ▶ SNC Lavalin Capital Inc. – financial advisor
- ▶ Halcrow Fox – traffic advisor
- ▶ MVA – traffic advisor
- ▶ Parkman – operations and maintenance advisor
- ▶ Fraser Milner LLP – legal advisor
- ▶ Ernst & Young – tax advisor
- ▶ Bank of Montreal – lead bank
- ▶ Royal Bank of Canada – lead bank
- ▶ Citibank – lead bank

Financing

Purchase price: \$3.107 billion (in 1999).

- ▶ The purchase and start-up costs were financed by 407 International Inc. with a combination of debt (\$2.3B) and equity (\$1.55B).
- ▶ Since then, all capital and service improvement costs have been funded by 407 International Inc. through shareholder equity, toll revenue and debt.
- ▶ A customer rewards program is funded through toll revenues and a third-party Partnership Agreement.

Other features

Service delivery investments since 1999:

- ▶ \$110 million for customer-service improvements
- ▶ \$1.18 billion for extensions, interchanges, lane expansions and building additions
- ▶ \$40 million over 4 years for ETR Rewards (as of February 2009, \$20 million had been offered)

Supplementary Agreement signed in March 2006, focusing on settling all outstanding matters between the partners, new consumer benefits and accelerated highway expansion.

Overview



The Highway 407 project (the project) is being delivered through a design, build, finance, maintain and operate (DBFMO) public-private partnership (P3) with a 99-year term. The private partner – 407 ETR Concession Company Ltd. (407 ETR) – provided financing, maintenance and operation of the existing 69-kilometre Central section of Highway 407 (the 407), and was obligated to finance, build and operate two new extensions of 24 and 15 kilometres (km).

Parts of the Central section had been built by the Government of Ontario (the Government), using a traditional procurement method, and parts were built through an earlier P3 process. The entire highway would be a fully electronic open-access toll highway which, for the most part, runs parallel to Highway 401 (the 401), a free alternative just 5 km south.

It was expected that having the private partner responsible for the continuous 108-km highway between Burlington and Pickering would provide long-term economies of scale. This project, which to date still represents the largest P3 project in Canadian history, reached financial close on May 5, 1999.

The partners faced a number of challenges at the beginning of the concession term that were addressed by both partners in a number of ways, including in a Supplementary Agreement signed in March 2006 (the Supplementary Agreement). The project is now one of the more mature and successful P3 service-delivery projects in Canada.

Background and rationale

Planning for the 407 started in the 1950s when the Government began acquiring land for a new highway north of Toronto in anticipation of major growth in the area. Construction began in 1987 with a 9-km section between Highway 427 (the 427) near Pearson International Airport and Highway 400 (the 400). This section was scheduled to be completed by 1996.

Other sections of the Central 69-km section were planned to be completed in stages with an estimated completion date of 20 years. At the time, the existing multi-lane east-west route, the 401, was congested during peak hours, with average weekday traffic of 350,000 vehicles. Commercial and passenger vehicles driving across Toronto were losing valuable time and energy. Also, concerns were growing that the traffic gridlock would drive jobs and investment away from the GTA, thus jeopardizing the future growth of the area.

To address these concerns, the Government undertook a number of studies in the late 1980s and early 1990s. In February 1993, the Government announced that construction of the 407 would be accelerated and would be financed by tolls collected electronically. The Central section of the highway would be completed by the private sector through a design-build-finance-operate P3.

This first partner selection process included a two-phase Request for Qualifications (RFQ) and Request for Proposals (RFP) process. Bids were required to be submitted so the various design-build, finance, operate and tolling system components could be disaggregated. The Government selected a design-build-operate partner and decided to retain the financing component internally, as its internal cost of borrowing was lower than that of the private sector. The Government also elected not to award the tolling system component. Instead, it undertook separate negotiations with the tolling system provider from the unsuccessful bid team.

Thus, two separate contracts were awarded in 1994 as follows:

1. \$930 million design-build-operate (DBO) contract for the Central section – awarded to Canadian Highways International Corporation (CHIC), a consortium led by Agra Monenco Inc. and including Armbro Construction Ltd., BFC Construction Corporation and Dufferin Construction Company (a division of St. Lawrence Cement Inc.); and
2. \$72 million tolling system contract – awarded to Bell Canada, Bell Sygma, Hughes Transportation Management System (a division of Hughes Aircraft of Canada Ltd.), and Mark IV Industries.

The Government raised the necessary funds from the capital markets through the Ontario Financing Authority (OFA). It also created a special purpose body, the Ontario Transportation Capital Corporation (OTCC) to construct, own and operate the 407.

The Central section would be completed by 1997 instead of almost 20 years later. In June 1997, the first 36-km portion of the Central section was opened and others were added as construction was completed. The total cost of the 69-km Central section was approximately \$1.5 billion.

In 1995/1996, the Provincial Auditor for Ontario assessed the competitive selection process in awarding the 407 contracts. The 1996 Annual Report¹ concluded that “significant financial ownership and operation risks remained with the Province – a public-private partnership (involving the sharing of risks and rewards) was not established,” and recommended that “in future partnership agreements, the Government should strive for a better balance of risks and rewards.”

Subsequently, in 1997, the Government announced it would review the privatization options for the 407 under the Ontario Privatization Framework. This review was followed by an announcement in February 1998 that the Government would privatize the operations of the 407 to retire the debt associated with the construction of the Central section and to transfer the cost of operations, maintenance and financing the West and East-Partial extensions to the private sector.

These extensions were critical to relieving congestion as the Central section could not accomplish this objective without a fuller integration with the broader GTA highway network.

¹ 1996 Annual Report, Office of the Provincial Auditor for Ontario.

Project Objectives

- ▶ The accelerated completion of the 407 would enhance the provincial transportation infrastructure by reducing congestion on surrounding GTA highways (Hwy 401, Hwy 403, Hwy 7 and Queen Elizabeth Way (QEW)).
- ▶ Businesses and individuals would save time and money through faster travel to their destinations.
- ▶ Construction of the extensions was expected to create 6,000 new construction jobs in the province.
- ▶ Completion of the 407 extensions would stimulate new economic activity in communities across the GTA and throughout the province.

Description of the Project

The 407 is the world's first all-electronic open-access toll highway. It runs for 108 km through the GTA, from Burlington in the west to Pickering in the east through suburbs just north of the City of Toronto (see map on page 122). It was constructed in three main sections:

1. The Central section – 69 km from Highway 403 (the 403) to Highway 48 (Markham Road)
2. The West section – 24 km from Brant Street in Burlington to the 403
3. The East-Partial section – 15 km from Highway 48 (Markham Road) to Brock Road in Pickering

The 401 runs parallel to the 407, approximately 5 km to the south, and is a toll-free alternative for GTA drivers.

Procurement Process

Selecting the P3 model

The Government decided on a DBFMO model that included the obligation to build two extensions and expand the highway so that the 407 would be completed quickly and begin to relieve congestion sooner than had the Government proceeded with the traditional public-sector approach to highway construction. Completion of the extensions through a P3 was intended to gain maximum value and bring congestion relief earlier on the 401 and other GTA highways.

Highway 407 Project Map



Selecting a partner

Competitive process

On October 19, 1998, the Government introduced the *Highway 407 Act, 1998, An Act to Improve Transportation Infrastructure, Reduce Congestion, Create Jobs and Stimulate Economic Activity Through the Sale of the 407 (the Highway 407 Act)*. It provided statutory authority to sell the 407 to a private sector purchaser, was passed by the Ontario Legislature and received Royal Assent in December 1998.

The partner selection process was in two-stages. A Request for Expressions of Interest (RFEI) was issued on October 26, 1998. Following evaluation of the responses to the RFEI, a Confidential Information Memorandum (CIM) was issued to the qualified sale bidders and a Design-Build Request for Proposals (RFP) was issued to qualified design-build bidders on December 24, 1998.

The process involved opportunities for bidders to comment on draft legal agreements. Final bids were to be made on the basis of a final set of legal agreements which would not be amended after the contract was awarded. The final selection of the successful bidder was to be determined by highest price. Maximum value was obtained by having a bid improvement process that provided an opportunity for bidders within 5 per cent of the highest initial bid to submit best and final offers.

Financial and commercial close

The winning bidder was announced by the Government on April 13, 1999, with financial close occurring on May 5, 1999.

Timelines

1998	October 19	Highway 407 Act introduced into Ontario Legislature
	October 26	RFEI issued
	November 27	RFEI closed
	December	Highway 407 Act received Royal Assent
1999	December 24	CIM issued to qualified sale bidders Design-Build RFP issued to qualified design-build bidders
	March 30	Bids submitted
	April 13	Winning bidder announced
	May 5	Financial Close

Name of private partner

The successful bidder was 407 ETR International Inc., a consortium comprised of:

- | Grupo Ferrovial and its subsidiary, Cintra Concesiones de Infraestructuras de Transporte (Cintra);
- | SNC-Lavalin; and
- | Capital d'Amérique CDPQ (CDPQ), a subsidiary of the Caisse de dépôt et placement du Québec.

Fairness of the process

The Government retained PricewaterhouseCoopers as process auditors to ensure the process was fair and equitable to all bidders. Their report said that the selection of 407 International Inc. as the successful bidder was “determined in a fair, thorough and consistent manner.”

Overall Structure of the Agreement

The purchase price was \$3.107 billion, including a 99-year land lease and the concession to toll, operate and maintain the 407. At the end of the 99 years, the 407 reverts to the Government. The Government retains ownership of the 407 lands.

The Partnership Agreement (the Agreement) required 407 International Inc. to purchase 407 ETR (formerly the OTCC, which owned and operated the 407 at the time). 407 ETR was obligated to:

- | maintain and operate the existing 69-km Central section;
- | design, build, finance, maintain and operate two extensions (the 24-km West extension and the 15-km East-Partial extension), seven interchanges and all lane expansions for the completed 108-km highway; and
- | set and collect tolls.

The extensions and interchanges were to be completed by December 31, 2001. The Agreement also included an innovative toll-rate, congestion-relief and expansion mechanism aimed at relieving traffic congestion on existing major routes.

The toll-rate mechanism is market driven as long as the 407 continues to provide congestion relief, mainly in peak hours. The congestion-relief toll mechanism requires that segments be widened when peak-hour traffic flows regularly exceed certain thresholds. As long as the highway is absorbing the targeted volume of traffic from the surrounding highway network, there is no cap on toll rates. Significant congestion payments or penalties are due to the Government if these traffic volumes are not met. To date, 407 ETR has not been required to pay congestion payments. Appendix 1 has further discussion of the toll-rate mechanism.

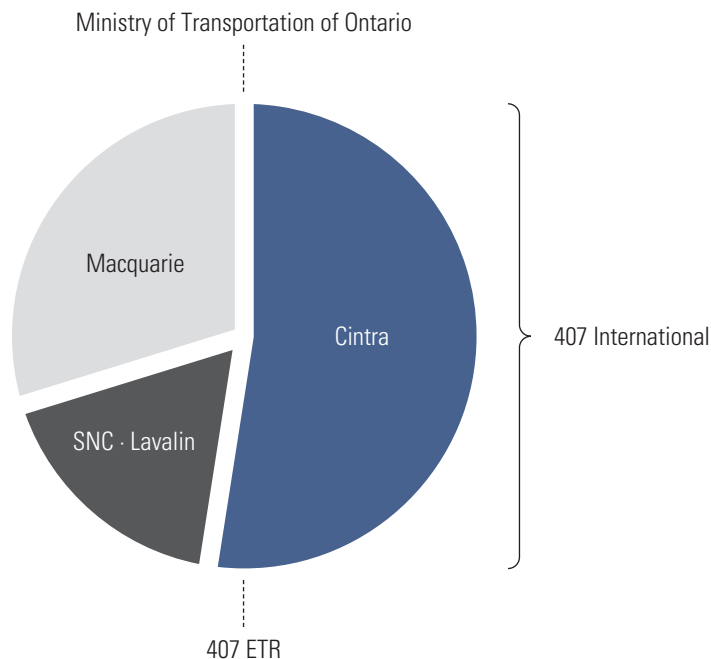
The entire contract, made public in 2002, is complex. It consists of over 600 pages with 32 schedules² and is in two main parts:

1. The Share Purchase Agreement
2. The Concession and Ground Lease Agreement

The consortium incorporated as 407 International Inc. for the purpose of the bidding process. The 407 International Inc. purchased the shares of the 407 ETR Concession Company Ltd.

Since the Agreement was signed in 1999, there have been changes in the consortium's ownership structure. Macquarie North America Ltd. (Macquarie) acquired indirect ownership of 407 ETR through the acquisition of 40 per cent of Cintra on January 15, 2002. On April 26, 2002, CDPO sold its ownership in 407 ETR directly to Macquarie. The 407 International Inc. is now comprised of Cintra (53 per cent), Macquarie (30 per cent) and SNC-Lavalin (17 per cent). This structure is shown in the diagram below:

Highway 407 Project Organizational & Contractual Relationships



² See Appendix 2 for a list of Schedules available to the public.

Financial Arrangements

The purchase and start-up costs were financed by 407 International Inc. with a combination of debt (\$2.3 billion) and equity (\$1.55 billion). The total investment of the owners was approximately \$4 billion, including the cost of designing and building the two extensions and the additional seven interchanges, plus financing and other costs.

A three-bank group, including Bank of Montreal (BMO), Royal Bank of Canada (RBC) and Citibank, underwrote the senior debt and provided bridge financing in two- and three-year tranches.

Risk Allocation

The Government achieved a high level of risk transfer with the Agreement. There were no guarantees on future traffic, on technological risk or on future upgrades of the tolling system. Key risks and responsibilities transferred to 407 ETR include:

- day-to-day operations and maintenance of the highway;
- 100 per cent of the cost of policing by Ontario Provincial Police (OPP) and Ontario Ministry of Transportation (MTO) Enforcement Services;
- designing, building and financing West and East-Partial extensions by December 31, 2001;

- designing, building and financing specific interchanges by December 31, 2001;
- designing, building and financing lane expansions at specified traffic levels and by specified dates;
- setting toll rates by a specified congestion-relief toll-rate mechanism; and
- collecting tolls and other charges.

The Government retained the air and sub-service rights over and under the highway right-of-way and it reserved the right to cross and use the right-of-way for a transitway in the future. The terms of this condition are set out in Section 2.12 and in Schedule 3 of the Concession and Ground Lease Agreement. There is no restriction on the Government's ability to develop and expand whatever roads and highways it needs in order to relieve ongoing and developing congestion in the GTA.

The Government reduced the risk of collecting unpaid tolls by establishing a plate-denial process in Section 22 of the *Highway 407 Act*. The legislation requires the Registrar of Motor Vehicles to deny vehicle permits if a toll or charge is unpaid and the private partner has gone through a series of steps to collect the unpaid toll or charge from the person responsible for the payment. The steps include requirements for the private partner to provide timely notification and information about the dispute resolution process. The person responsible for payment may initiate the dispute resolution process. If, after going through this process, a toll or charge is deemed fair and remains unpaid, the Registrar may refuse to issue a vehicle permit.

Section 54 (5) of the *Highway 407 Act* provides for the sharing of personal information (e.g., names and addresses of licence plate holders) between the Ministry of Transportation and the private partner:

- “1. To assist the owner in the collection and enforcement of tolls, fees and other charges owing with respect to Highway 407;
2. To assist the owner in traffic planning and revenue management with respect to Highway 407;
3. To assist the owner in communicating with users of Highway 407 for the purpose of promoting the use of Highway 407; and
4. To assist an entity with whom the owner or the Ministry of Transportation has an agreement relating to the collection and enforcement of tolls.”

This section also obligates the private partner to be subject to the Ontario Freedom of Information and Protection of Privacy Act. Schedule 18 of the Concession and Ground Lease Agreement sets out further authorizations and obligations for both parties with respect to the electronic data transfer of the personal information and establishes timelines, fees and a dispute resolution process.

Benefits

Cost savings/value for money

In 1999, the Government achieved significant value for the 407, which at the time was an unproven highway in terms of traffic. It also needed extensions built on either end to achieve its intended purpose of congestion relief in the GTA. The \$3.107 billion purchase price was the highest bid, based on what the market determined at the time, and was just over twice the highway’s book value of \$1.5 billion. No one knew if drivers would move from the free alternative highways in the surrounding area to a toll road to avoid traffic congestion.

Since 1999, 407 ETR has invested an additional \$1.18 billion in infrastructure improvements and \$110 million in customer service improvements. It has also committed \$40 million to an innovative customer rewards program and has spent \$860 million on annual operating expenses. This additional \$2.19 billion has been funded by 407 International Inc. through shareholder equity, toll revenue and debt and is money saved by the Ontario taxpayer.

The table below shows the capital investments made by 407 ETR to extend, expand and improve the 407.

Capital Additions to Highway 407 (1999 – 2008)

Year	Capital Investment \$ millions	Highway (Hwy) Improvement	Contractual Requirement
1999	127.8	▶ 200 new lane kilometres: 24-km West extension & 15-km East-Partial extension	Yes
2000	387.0		
2001	263.4	▶ 5 interchanges	Delivered ahead of deadline
2002	34.1	▶ 2 interchange ramps (Hwy 407 W/Mavis Rd.; Hwy 403 E/Hwy 407 W/Winston Churchill Blvd.)	Yes
2003	45.3	▶ 7 km of new lanes between Hwy 427 & Hwy 400	Above contract requirements
		▶ one interchange ramp (Woodbine Ave. N/Hwy 407 W)	Above contract requirements
		▶ widening of six existing bridge structures between Hwy 401 and Hwy 410	Above contract requirements
2004	55.9	▶ 22 new lane kilometres between Hwy 401 and Hwy 410	Yes
		▶ Woodbine Ave./Miller Ave./Burncrest Rd. intersection	Expedited
		▶ Hwy 407/Markham Bypass interchange	Expedited
2005	43.4	▶ widening of 22 existing bridge structures between Hwy 407 and Hwy 404 commenced	Expedited
2006	107.4	▶ 50 new lane kilometres between Hwy 427 and Hwy 404	Expedited as part of 2006 Supplementary Agreement
		▶ 4 new lane kilometres between McCowan Rd. and Markham Rd.	Above contract requirements
2007	89.4	▶ 50 new lane kilometres between Hwy 401 and Hwy 427	Expedited as part of 2006 Supplementary Agreement
		▶ 1.2-km auxiliary lane from Hwy 407 exit onto westbound Hwy 401, through to Trafalgar Rd interchange	Above contract requirements and in partnership with MTO
2008	25.8	▶ widening of remaining four existing bridge structures between Markham Rd. and York Durham Line	Above contract requirements
Total	1,179.5		

Infrastructure service improvements

Since the Agreement was signed in 1999, 407 ETR has built 428 km of new lanes and ramps. The Agreement required all work on the extensions to be completed by December 31, 2001. By August 31, 2001, 407 ETR had completed the required extensions and, in agreement with the MTO, five of the seven interchanges.

The Agreement also requires 407 ETR to build new lanes where certain congestion thresholds are reached. Because use of the 407 has consistently exceeded expectations, 407 ETR had to regularly build new lanes to meet the congestion-relief requirement. As of fall 2008, 129 km of new-lane expansions had been built. More than half of these lanes were built ahead of what was contractually required and some were in addition to what was required.

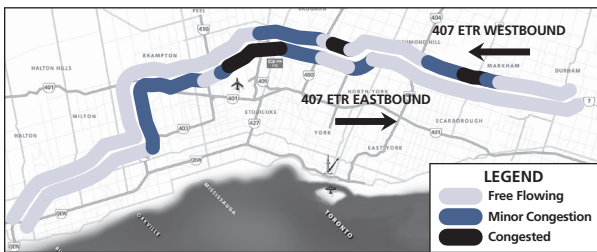
Of note is the 2006/07 expansion project which was expedited as part of the Supplementary Agreement. 407 ETR agreed to make commercially reasonable efforts to build 100 new lane kilometres between the 401 and Highway 404 (the 404) before October 2007 to relieve congestion in the busiest section of the highway. In addition to being undertaken earlier than was contractually required, this project was completed in record time, under budget and with minimal customer impact, due to the implementation of innovative construction techniques.

The following diagram shows the level of service before and after the lane expansion project undertaken in 2006 and 2007. In particular, areas that had been experiencing some congestion are now flowing freely.

Opportunities for collaboration between the partners have provided benefits for all drivers. For instance, in 2007, 407 ETR and the MTO partnered to construct a new 1.2-km auxiliary lane from the 407 exit onto the westbound 401 through to the 401/Trafalgar Road interchange in Mississauga. Working in partnership, 407 ETR and the MTO completed in nine months what would have been a two-year project if undertaken solely by the MTO. The project included development, design and construction; costs not obligated under the Agreement were split by 407 ETR and the MTO. The end result was that both parties benefited with substantial traffic congestion relief on their respective infrastructure.

These infrastructure improvements have resulted in less congestion on other public highways throughout the GTA, less congestion and better traffic flow on the 407 and higher levels of customer satisfaction with the highway and the company.

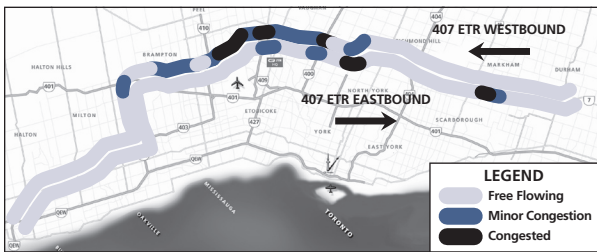
407 ETR Average Weekday Level-of-Service Improvements



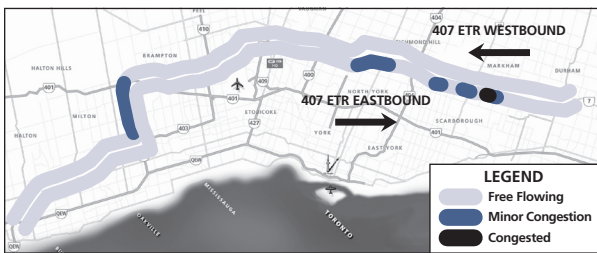
AM Peak-Hour Level of Service (LOS)
October 2005



AM Peak-Hour Level of Service (LOS)
May 2008



PM Peak-Hour Level of Service (LOS)
October 2005



PM Peak-Hour Level of Service (LOS)
May 2008

Customer service

Since 1999, 407 ETR has spent \$110 million on new projects aimed at serving its customers better. Enterprise software was upgraded with an investment of \$50 million and an additional \$60 million was invested on improving customer service practices.

Ten years after the Agreement was signed, the customer service arrangements are significantly changed compared to the system in place in 1999. The table below provides an overview of these enhancements.

In the last three years, the number of customers calling 407 ETR has decreased by 44 per cent and customer complaints have fallen by 28 per cent. In 2006, 407 ETR was awarded the most improved call centre for first-call resolution by Service Quality Management (SQM), a company that measures performance at call centres across North America.

407 ETR has also installed closed-circuit television cameras (CCTV) at regular intervals along the entire length of the highway. This has benefited customers by improving safety, allowing for faster emergency response times and identifying weather-related or traffic problems quickly.

Customer Service History (1999 – 2008)

1999

- ▶ 21 workstations
- ▶ 21 telephone lines
- ▶ long wait time
- ▶ 1,400 sq. ft. call centre
- ▶ legacy computer system
- ▶ telephone-only customer service channel
- ▶ 300,000 transponders issued
- ▶ no escalations or business units

2008

- ▶ 174 workstations
- ▶ 640 telephone lines
- ▶ less than 30 sec. wait since 2003
- ▶ 13,800 sq. ft. call centre
- ▶ \$50M new billing system
- ▶ multiple customer service channels: online, Interactive Voice Recognition (IVR), email, epost, etc.
- ▶ over 900,000 transponders issued
- ▶ customer advocacy group, business accounts unit, ombudsman

Customer benefit program

In January 2007, 407 ETR launched an innovative loyalty program – ETR Rewards – for light vehicle customers. Arising from the Supplementary Agreement, this program gives frequent customers savings of up to 15 per cent of their tolls through discounts on gas, and free weekend travel. By February 2009, 407 ETR, in partnership with Petro-Canada, had offered over \$20 million in savings to its customers.

Customer satisfaction

Over the 10 years of the partnership, 407 ETR's customer satisfaction levels have increased. Annual market research conducted by 407 ETR shows that customer attitudes have improved dramatically in recent years. As the partnership matured and the partners worked out the initial challenges, customers have significantly increased their level of trust in the organization.

Economic and environmental

Since 1999, the partnership has delivered a range of economic benefits. Infrastructure improvements have saved travel time and total construction spending has created 4,000 jobs in addition to the initial 6,000 new construction jobs projected at the time of the sale.

Time saved by drivers travelling on the 407 has also resulted in fuel-cost savings and positive environmental benefits. The Markham Economist & Sun has estimated that a typical trip on 407 ETR uses 40 per cent less gas and results in a 40 per cent reduction in carbon emissions compared to driving on an alternate route.

407 ETR integrates advanced environmental management systems into all operations. For example, wildlife passages have been set up at various locations along the entire route, so that the highway does not isolate adjoining environments. Storm-water runoff ponds minimize water runoff and naturally improve the water quality. 407 ETR was first in Ontario to use unique salt-brine spreading machines which use 30 per cent less salt and can be sprayed across multiple lanes at once. The MTO now uses these machines on some of its highways.

Communications

Between the partners

Regular meetings of the partners help resolve current issues and establish agreed communications protocols on: customer service, emergency planning, roadside development, and new municipal crossings and interchanges. When appropriate, the partners collaborate on news releases to inform the public of joint Government and company initiatives.

With the public

During the construction of the West and East-Partial extensions and of the Central section lane expansions, 407 ETR established formal stakeholder consultation processes. For all projects combined, the company hosted 20 Public Information Centres, held focus groups/workshops with principal community leaders and interest groups to address specific local issues, consulted directly with government agencies and First Nations, and employed public relations professionals to oversee communications and stakeholder relations.

When undertaking infrastructure improvements, 407 ETR communicates details about the construction to its customers with roadside signage, radio advertisements and bill inserts. The company also hosts community information meetings to advise residents in affected areas of construction plans and timelines.

407 ETR's 1.3 million customers also receive information on rate changes and customer service initiatives through monthly bill inserts and quarterly newsletters. Information on policies, programs, consumer benefits and general news is available to the public on its website. Multimedia advertising (e.g., radio, newspaper, web) is also used to help inform the public of customer benefit programs.

Labour

407 ETR was obligated to make job offers to OTCC employees at the time the Agreement was signed in 1999. Of the approximately 70 affected staff, several elected to take a position with the new owner, while others chose to either move to other positions within the Ontario Public Service or exercise options such as early retirement.

407 ETR currently has 500 employees. The call centre employs approximately 125 people who have been represented by Canadian Auto Workers (CAW) Local 414. The most recent of four collective agreements to date was signed for a three-year term and was ratified by employees on February 13, 2009. Relations between 407 ETR and the union are good and there have been no labour disruptions or work stoppages.

Monitoring

The MTO ensures that 407 ETR is complying with the Agreement through a thorough audit process by auditing design, construction, operation and maintenance activities. Ministry officials also liaise with 407 ETR on customer service, communications and information technology.

407 ETR is responsible for the implementation of effective management and control processes to ensure compliance with the MTO standards for the operation, maintenance, construction and rehabilitation of the 407. This includes preparation of an operations safety control plan, a safety improvement and rehabilitation program, construction safety control plan and design safety control plan.

These plans include an extensive list of activities covering snow removal, pavement and structure rehabilitation, inspection and reporting systems, traffic management and safety improvements. As an example, the Agreement requires 407 ETR to implement improvements within one year when the collision rate for any section of the 407 exceeds the threshold of 0.9 collisions/million vehicle kilometres of travel. The average collision rate along the highway is 0.3 collisions/million vehicle kilometres and, since 1999, no section of the 407 has exceeded the threshold.

In addition to the implementation of control processes, 407 ETR is required to provide reports, on an annual and quarterly basis, showing traffic levels reflecting highway use. These include actual and forecast traffic volumes for each section and interchange. An annual report, audited by an external independent auditor, is also presented to the MTO four months after the end of each calendar year. This report indicates whether 407 ETR met the requirements of the Agreement. As part of this annual report, 407 ETR is required to designate any future lane expansions.

Other Issues

Innovative features

The DBFMO model

This project was one of the first highway privatization projects in Canada to bundle the design-build with maintain-operate functions in one contract. This element has been repeated in many projects since then, in particular in three other provinces in Canada – British Columbia, Alberta and Québec (see relevant case studies in this publication).

Long-term planning for maintenance and emergencies

In choosing a 99-year lease, the Government achieved value and certainty. Since the 407 has a specific purpose to relieve congestion on surrounding highways, the lease period provides the necessary time and funding to continually expand and rehabilitate the highway. When concessions reach their later years in shorter-term projects, capital investment becomes harder for the concessionaire to justify economically. A longer concession term creates greater certainty that the highway will be maintained and improved as needed with no additional government expenditure.

The Government also had forethought in planning for emergencies. The Act calls for an emergency plan to be made in consultation with 407 ETR. Section 53 (1) of the Highway 407 Act provides for Government use of the 407 in declared emergencies. The Section says: "The Minister of Transportation has the authority to include Highway 407 in developing an emergency plan for highway and other transportation services and Highway 407 may be incorporated into the plan and be used in the case of an emergency as if it were part of the King's Highway and not a private toll highway."

Customer service

The 407 ETR Rewards Program is a unique and innovative consumer benefit program. It is the only rewards program of its kind for a toll highway. While other loyalty programs exist in many other

business sectors, what is most innovative and groundbreaking is the fact that a concession company implemented this loyalty program for a toll highway, passing on savings to its most frequent customers. The company partnered with Canada's largest gas retailer to provide meaningful rewards which benefit drivers.

Construction techniques

Historically, construction work zones are not ideal for traffic safety and can have a negative impact on traffic volumes, due to temporary lane realignment shifts and reduced lane widths typically associated with construction zones. 407 ETR uses innovative construction techniques and timelines for lane closures to minimize customer inconvenience during lane expansions. Examples of these techniques are listed below:

- Closing the entire highway for a weekend during construction, instead of having multiple partial closures so that drivers are inconvenienced just once
- Keeping all existing lanes open in peak hours during construction
- Removing existing pavement markings entirely with water blasting to improve lane visibility and avoid driver confusion during lane realignment
- Creating a paved shoulder during a recent lane expansion project, so there will be no temporary lane realignment shifts when it comes time to widen the highway again

Lessons learned

Customer service

Throughout the first few years of the partnership, both partners realized that customer service issues and the associated risks were more significant than originally anticipated. Even though 407 ETR was essentially responsible for all operating and capital expenditures, customers often turned to the Government to resolve issues. As a result, a number of challenges and issues emerged along the way, inducing the partners to determine the best way to handle them.

407 ETR worked both independently and with the MTO to implement a series of initiatives to respond to the issues and to improve customer service. In 2006, the partners signed the Supplementary Agreement, settling all outstanding matters between them, accelerating lane expansions and establishing a number of additional customer service initiatives, including the appointment of an Ombudsman to provide additional assistance to customers.

The Supplementary Agreement did not amend the original contract. Both can be found on 407 ETR's website at: www.407etr.com/about/sale_agreement.htm (1999 Agreement); and www.407etr.com/documents/news/Settlement_Agreement.pdf (2006 Supplementary Agreement).

Both partners learned that recognizing customer service risk is a key component of a successful service-delivery P3.

Applicability outside Canada

407 ETR President, Antonio de Santiago, said that in the past 10 years, the company has opened its doors to thousands of visitors from around the world who have come to tour the highway and company headquarters to learn more about 407 ETR's technology and systems.

The innovative construction techniques developed by 407 ETR to minimize customer inconvenience can be used by governments and private industry involved in highway construction throughout the world – they are not limited to toll highways.

It is Mr. de Santiago's view that all of 407 ETR's customer service initiatives can be exported to other jurisdictions with toll highways. In particular, he says, "a loyalty program is relevant and applicable in jurisdictions where toll operators need to grow traffic and revenue, improve their relationship among customers and non-users, and strengthen relations with external stakeholders and government partners."

Concluding Comments

As the first all-electronic, open-access toll highway in the world, the 407 has broken ground at almost every stage of its evolution. The P3 between the MTO and 407 ETR was the first for a toll highway in Canada and is still the largest in the country's history. The Agreement made a number of assumptions and set out expectations for the 99-year duration of the concession, which dealt with what the parties knew at the time regarding operations, tolling, traffic levels, future construction and other matters.

The 407 was unproven from a traffic perspective. Traffic forecasters could not predict how many drivers would pay a toll to use the highway when there were free alternatives surrounding it. Financial forecasters could not predict whether the Government's initial investment could be fully recovered or whether it could be guaranteed that the West and East-Partial extensions could be financed and built within the Government's deadline. It was also unknown if the projected economic growth in the area north of Toronto would materialize after the extensions were completed.

These unknowns contributed to the growing pains experienced throughout the first few years of the partnership. Both partners could deal with the technical issues of building and operating a traditional highway; however, the combination of an open all-electronic toll highway and how customers would use that highway, pay their bills and interact with the company created some unforeseen challenges.

Close co-operation and extended effort was contributed by both partners to get to the root of the problems. Recognizing that the core business of 407 ETR was to serve customers rather than the highway itself was a turning point for 407 ETR. The company invested millions of dollars in improving customer service, which enhanced the company's overall service delivery obligations under the Agreement and which has resulted in more drivers using the 407 more frequently, thus achieving the Government's objective to relieve congestion.

The partners now collaborate when needed to meet the Agreement's objective of ensuring the highway remains a viable, congestion-free alternative for businesses and commuters in the GTA. This provides opportunities to exchange innovative ideas and for MTO to communicate their most current standards. The Government will continue managing the relationship now and, for the effective development of the highway, into the future.

Testimonials

Public sector

MTO employees are proud of the work that went into the initial planning, construction and operation of the 407. While the highway was privatized in 1999, the Ministry of Transportation continues to play a large and important role in the highway's operations to this day.

As outlined in the award application, 407 ETR has come a long way in the past nine years.

At the outset, 407 ETR was the world's first all-electronic, open-access toll highway, the only toll highway in Ontario and the largest privatization in Canadian history. While the agreement with the 407 ETR was comprehensive, not every issue could be foreseen completely. Particularly after the sale, 407 ETR and the MTO recognized the importance of providing excellent customer service. After some challenges at the beginning of the concession term, 407 ETR and the MTO have worked together to make significant improvements in service delivery. The 407 partnership is now recognized as a global leader in service delivery for a toll highway.

We look forward to working with 407 ETR for many more years to provide excellent service both on and off the highway.

Bruce McCuaig
Deputy Minister
Ontario Ministry of Transportation

Private sector

The partnership between 407 ETR and the Ontario Ministry of Transportation is a unique success story that shows the power of partnerships and demonstrates what the public and private sectors can accomplish when they combine expertise.

When 407 ETR took ownership of the highway in 1999, the company faced many unknowns. We were managing the world's first all-electronic, barrier-free toll highway which meant working with new, leading-edge technology, as well as introducing the concept of road tolls to the public.

In the first few years of operations, 407 ETR dealt with many unexpected challenges. I was at 407 ETR for a period of time between 1999 and 2001. When my responsibilities concluded in 2001, the company was focused on facing these issues head on and learning how to more efficiently run the highway. As time passed, the organization was able to identify areas of improvement and understand that providing excellent customer service is imperative to the success of the highway.

When I returned to 407 ETR in 2006, I found a completely different company – one dedicated to providing first-class service and ensuring that all customers have the best experience possible, whether travelling the highway, speaking with a call-centre representative or using our on-line services.

As a result of this commitment to customer service, 407 ETR was the choice for over 112 million drivers last year, has been internationally recognized for its call-centre and first-call resolution improvement, and maintains a successful relationship with our partners at the Ontario Ministry of Transportation.

407 ETR is proud to deliver what we truly believe to be the best highway in the world.

Antonio de Santiago
President and CEO
407 ETR Concession Company Ltd.

Public Sector Contact

Mr. Bruce McCuaig
Deputy Minister
Ontario Ministry of Transportation
Ferguson Block
3rd Flr, 77 Wellesley St. W.
Toronto ON M7A 1Z8
416-327-9162
Bruce.McCuaig@ontario.ca

Private Sector Contact

Mr. Antonio de Santiago
President and CEO
407 ETR Concession Company Ltd.
6300 Steeles Ave. West
Woodbridge, ON L4H 1J1
905-265-4070

Project Website

www.407etr.com

Appendix 1

Tolling, Congestion Relief and Expansion Agreement

Schedule 22 of the Concession and Ground Lease Agreement for 407 ETR sets out the terms of the Tolling, Congestion Relief and Expansion Agreement. It establishes the obligations placed upon 407 ETR (the “Concessionaire”) to:

- provide open access to all vehicles;
- set tolls for certain vehicles;
- relieve congestion;
- inform the public of toll rates and administration fees; and
- widen the highway at certain traffic thresholds.

It contains an extremely complex set of definitions and conditions governing the Concessionaire’s actions in operating the highway. Section 1.22 states:

The purpose of the Agreement is to establish a regime which offers the Concessionaire flexibility to manage the basis on which tolls will be established, the assurance of a minimum level of tolls, administration fees and charges which will be acceptable, regardless of traffic levels and the freedom to establish higher tolls if prescribed traffic levels are achieved, while offering to the Grantor the assurance that the

Concessionaire will be financially motivated to provide congestion relief to other roads and highways by achieving prescribed traffic levels, providing open access to all vehicles permitted to travel on Comparable Controlled Access Highways, providing access on reasonable terms to trucks and expanding Highway 407 as required.³

This Agreement establishes the mechanism by which the Government’s main objective of congestion relief is accomplished. The terms of the Agreement give the Concessionaire the right to establish, collect and enforce payment of tolls and administration fees for the use of Highway 407 as follows:

- There is no statutory or contractual cap imposed on the toll rate that can be charged for standard automobiles.
- The Agreement sets out a concept of a “Toll Threshold” and “Traffic Threshold” whereby if the toll rate in any given year is greater than the Toll Threshold for that year and actual traffic flow rate is less than the Traffic Threshold for that year, it will be deemed that a “Congestion” event has occurred and a Congestion Payment may become payable by the Concessionaire to the Province.
- Congestion Payments may also be triggered if certain other limitations in the Agreement are exceeded (e.g., charging a higher toll rate during off-peak hours than during peak hours of the day).

³ Schedule 22: Tolling, Congestion Relief and Expansion Agreement between The Crown in Right of Ontario, as represented by the Minister without Portfolio with Responsibility for Privatization and 407 ETR Concession Company Limited.

- For automobiles with transponders during peak hours, the initial Toll Threshold was essentially the same as the existing toll rate in 1999.
 - The Concessionaire is restricted in the level of surcharges to video (i.e., non-transponder) users.
 - Toll rates for trucks continue to be limited to two times the standard automobile toll rate for single unit trucks and three times the standard automobile toll rate for multiple unit trucks.
 - Outside of peak hours, the Concessionaire may not charge a higher toll rate than during peak hours.
 - Advance notice of any change in any toll rate or an administration fee must be given to the Crown at least four weeks prior to the implementation of such change and a description of any pending change must be included on or with all invoices or statements sent to users of Highway 407. The Concessionaire has to maintain a website on the internet that discloses all toll rates and administration fees and any pending changes. The Concessionaire must also make known to the public and maintain a telephone number to enable any person to request a printed description of all tolls, administration fees, temporary discounts and pending toll changes.
 - The Toll Threshold will grow by 2 per cent per annum to a maximum of 14.3 cents per kilometre, subject to CPI adjustment.
 - The initial Traffic Threshold was set at 95 per cent of the actual traffic flow rate for the Base Year where the Base Year was 2002.
 - The Traffic Threshold is increased, from year to year, by (a) 3 per cent if the previous year's Traffic Threshold was less than 4,500 vehicles per hour; (b) 2 per cent if the previous year's Traffic Threshold was between 4,500 and 6,000 vehicles per hour; and (c) 1 per cent if the previous year's Traffic Threshold was greater than 6,000 vehicles per hour, to a maximum of 7,500 vehicles per hour.
- The Agreement also obligates the Concessionaire to widen segments of the highway to their ultimate number of lanes as required based on prescribed levels of traffic.

Appendix 2

Contract & Schedules Available to the Public⁴

Share Purchase Agreement	
Schedule 1.1(ar)	Description of Highway 407 Central
Schedule 1.1(bi)	Pro Forma Balance Sheet
Schedule 1.1(bt)	Restriction on Transfer Agreement
Schedule 4.1(ab)	Insurance
Schedule 4.1(ad)	Material Contracts
Schedule 4.1(ae)	Litigation
Schedule 4.1(af)	Terms of Employment
Schedule 4.1(i)	Consents
Schedule 4.1(o)(i)	Historical Traffic Data
Schedule 4.1(o)(ii)	Historical Revenue Data
Schedule 4.1(w)	Lease of Real Property
Schedule 6.1.3	Form of Concessions Agreement and Amendment thereto respecting the Highway 407 East Completion
Schedule 6.1.4	Legal Opinion of Counsel to Vendor
Schedule 6.3.4	Legal Opinion of Counsel to Purchaser and Equity Participants
Schedule 8.5	Rules of Procedure for Arbitration

⁴ See: www.407ETR.com/about/sale_agreement.htm

Ground Lease Agreement

Schedule 1	Affected Highway Protocol
Schedule 2	Affected Landowner Protocol
Schedule 3	Corridor Management Protocol
Schedule 4	Delivery Plan
Schedule 5	Description of Highway 407 Central
Schedule 6	Description of Highway 407 East Partial
Schedule 7	Description of Highway 407 Lands
Schedule 8	Highway 407 Lands Availability Schedule
Schedule 9	Description of Highway 407 West
Schedule 10	Known Archaeological/Historical Finds
Schedule 11	Known Hazardous Substances
Schedule 12	Management Plan
Schedule 13	Terms of MTO Enforcement Services Agreement
Schedule 14	Permits
Schedule 15	Police Services Agreement
Schedule 16	Description of Province Completed Facilities
Schedule 17	Reference Documents
Schedule 18	Requester Agreement
Schedule 19	Restrictions on Transfer Agreement
Schedule 20	Safety and Standard Protocol
Schedule 21	Description of Toll System
Schedule 22	Tolling, Congestion Relief and Expansion Agreement
Schedule 23	Toll Collection/Enforcement Procedures
Schedule 24	Documents on Completion

Glossary of Terms

– Highway 407 ETR Case Study

Agreement – Partnership Agreement signed in 1999

Central section – 69-km Central section of Highway 407, running from Highway 403 in the west to Highway 48 (Markham Road) in the east

CIM – Confidential Information Memorandum

East section – 15-km East section of Highway 407, running from Highway 48 (Markham Road) to Brock Road in Pickering

GTA – Greater Toronto Area

MTO – Ontario Ministry of Transportation

OFA – Ontario Financing Authority

OPP – Ontario Provincial Police

OTCC – Ontario Transportation Capital Corporation

QEW – Queen Elizabeth Way

Supplementary Agreement – Supplementary Agreement signed in 2006

the 400 – Highway 400

the 403 – Highway 403

the 404 – Highway 404

the 407 – Highway 407

the 410 – Highway 410

the 427 – Highway 427

West section – 24-km West section of Highway 407, running from Brant Street in Burlington to Highway 403

Definitions

– Document-wide

Announcement of preferred proponent:

No documents signed.

Commercial close¹: Project contracts signed subject to completion of financing.

Financial close²: All project contracts and financing documents have been signed, and conditions precedent to the initial drawing of the debt have been fulfilled.

Substantial completion: Date on which the project is complete to the extent it can be occupied or used for its intended purpose in accordance with the project contracts.

Glossary of Terms

– Document-wide

DBFMO – Design-Build-Finance-Maintain-Operate

DBFMOR – Design-Build-Finance-Maintain-Operate-Rehabilitate

DBJV – design-build joint venture

FM – facilities management

Government – the respective provincial government partner mentioned in each case study

km – kilometre

NPC – net present cost

NPV – net present value

O&M – Operations & Maintenance

P3 – public-private partnership

PPP – public-private partnerships

Province – the respective provincial government partner mentioned in each case study

PSC – Public Sector Comparator

RFEI - Request for Expressions of Interest

RFP – Request for Proposals

RFQ – Request for Qualifications

VFM – Value for Money

¹ Yescombe, E.R., *Public-Private Partnerships: Principles of Policy and Finance*, First Edition, (Oxford, UK: Elsevier Butterworth-Heinemann, 2007), p. 336.

² *Ibid*, p. 340.

Extra copies of this publication may be purchased by contacting:

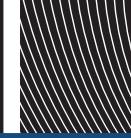
The Canadian Council for Public-Private Partnerships

Telephone: 416.861.0500

Facsimile: 416.862.7661

E-mail: partners@pppcouncil.ca

Website: www.pppcouncil.ca



Design: ARTICULATION Group, Toronto Printed in Canada

