



*Transportation Association of Canada*

*Synthesis of Practices  
for Implementing  
Public-Private Partnerships in  
Transportation Related Projects*

*November 2012*

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ISBN 978-1-55187-348-6

# TAC REPORT DOCUMENTATION FORM

<p>Title and Subtitle</p> <p>Synthesis of Practices for Implementing Public-Private Partnerships in Transportation Related Projects</p>		
<p><b>Report Date</b></p> <p>November 2012</p>	<p><b>Coordinating Agency and Address</b></p> <p>Transportation Association of Canada 2323 St. Laurent Boulevard Ottawa, ON K1G 4J8</p>	<p><b>ITRD No.</b></p>
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<p><b>Abstract</b></p> <p>Canada is one of the leading practitioners of public-private partnerships (P3) in the transportation sector. Some provinces have adopted this delivery format for infrastructure including hospitals, municipal buildings and detention centres. More recently, this format is increasingly used for larger transportation infrastructure projects.</p> <p>As these larger infrastructure projects are completed, and as their operations and concessions begin and evolve, there are opportunities to determine if a project is successful during the implementation phase both for the public and the private side of the equation. In order to capture these relevant experiences the document synthesizes lessons learned from the implementation of P3 projects for transportation infrastructure, with a focus on roads and highways.</p> <p>Most of the information to prepare this synthesis was gathered through a comprehensive literature review and from public entities that have managed or are about to implement road transportation projects using a form of P3 delivery.</p> <p>The synthesis:</p> <ul style="list-style-type: none"> <li>• Describes P3 projects and their key components;</li> <li>• Outlines and discusses the key steps and considerations to initiate, develop and implement transportation P3 projects; and,</li> <li>• Provides an overview of the recent experience Canadian and American public sector agencies have gained in relation to the administration of transportation P3 projects.</li> </ul>		<p><b>Keywords</b></p> <p>Economics and Administration</p> <ul style="list-style-type: none"> <li>• Administration</li> <li>• Construction</li> <li>• Evaluation (Assessment)</li> <li>• Financing</li> <li>• Highway</li> <li>• Public Private Partnership</li> <li>• Specifications</li> <li>• Textbook</li> </ul>
<p><b>Supplementary Information</b></p>		



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## ACKNOWLEDGEMENTS

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The development of the *Synthesis of Practices for Implementing Public-Private Partnerships in Transportation Related Projects* was undertaken with funding provided by several agencies. TAC gratefully acknowledges the following funding partners for their contribution to the project.

Transport Canada

Alberta Transportation

Manitoba Infrastructure and Transportation

New Brunswick Department of Transportation & Infrastructure

Nova Scotia Department of Transportation & Infrastructure

Ministry of Transportation of Ontario

Ministère des Transports du Québec

Ville de Montréal

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## Executive Summary

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Canada is one of the leading practitioners of public-private partnerships (P3) in the transportation sector. This document synthesizes lessons learned from the implementation of P3 projects for transportation infrastructure, with a focus on roads and highways.

Transportation P3 projects have been implemented or are underway in eight provinces across the country. The growth of the Canadian transportation P3 market is evident in the number of projects and the establishment of specialized P3 agencies. The key provinces (British Columbia, Alberta, Ontario and Québec) and the federal government (the PPP Canada agency) have been proactive in establishing their respective guidelines for the assessment and management of P3 projects, and are following their guidelines to ensure that consistent and systematic processes are followed. Their guidelines may be updated on an on-going basis with experiences gained from relevant projects.

Across jurisdictions, there are still differences in terms of the definition of P3 and delivery models considered for P3. Nonetheless, it is apparent from actual project implementation that transportation roads and bridges P3 projects have been delivered most often using a design-build-finance-operate-maintain model. The inclusion of operation and maintenance components, which typically go hand-in-hand in roads and bridges projects, provides the private partner with an incentive to account for the infrastructure's lifecycle and to design and construct to the highest quality within a prescribed budget and schedule. This model also encourages private partner's innovation to create efficiency between the design and build stages and to reduce construction time, as it bears the responsibility of delivering the project to an operational stage within budget and is paid only when the infrastructure reaches the operational stage.

Authorities that use or consider the P3 approach have guidelines that require the development of a business case and commonly a value for money assessment. The business case typically evaluates options and sets out justification to the type of P3 business model to be used. While there is a wide range of business models that fall within the definition of a P3, one of the commonly used approaches across Canada is that of an availability payment structure, where the private party enters into a long term (typically 20-30 year) contract and is paid the capital, operating, maintenance and rehabilitation (OM&R), and financing costs over the life of the contract. Under the availability payment model, the private partner retains the risk of capital cost and OM&R cost overruns, and is subject to defined deductions if it does not meet performance standards. Another approach is a completion payment model where the concessionaire receives a payment covering the privately financed capital costs as soon as the infrastructure is open.

The other end of the P3 business model spectrum in terms of transferring the revenue risk is the structuring of a toll. Under this model, the public sector may not incur any capital or operating payment obligations, with the private sector's costs being covered by the users of the toll road or bridge. This model has been used in the U.S. and internationally. In Canada, the Autoroute 25 and Autoroute 30 highway projects in Québec incorporated partial toll revenue/risk into the payment structure.

P3 projects almost always involve non-recourse project financing. Non-recourse means that the project's debt is sustained by the revenues or the payments that the project generates. Project

financing requires that projects have a mix of debt and equity, much like a mortgage on a house. Debt is provided in the form of either bank debt or bonds that are amortized over the life of the project. The level of equity is typically in the range of 10% of total financing and depends, amongst other factors, on the risk profile of the project. Lenders to P3 projects add an additional level of due diligence and risk assessment as they scrutinize the project risks and risk allocation with the help of independent technical advisors. Several projects in Canada have also had funding contributions during the construction period to improve the value for money proposition or to incorporate contributions from other levels of government.

Public agencies must ensure a fair and transparent process in the identification and selection of the best private partner. Many provinces that use the P3 model have adopted the process of holding workshops or collaborative meetings with shortlisted bidders to facilitate the exchange of information, provide more clarity to the bidders on the public partner's expectation of the project, and to develop the necessary relationship with the bidder who may eventually become the successful proponent.

The public partner's role in a P3 project is different from its role in a conventional project. In a P3 project, the public partner is responsible for managing the project agreement and retains an Owner's Engineer to be an objective third party that checks for compliance against the contract requirements. The public partner takes on a quality audit role and retains the overall responsibility and control over the delivery of the project. While this may reduce the resource needs of the public partner, public agencies face unique challenges in the project management stage depending on the nature of the P3 concessionaire agreement (for example, length of contract and established performance standards). It is also difficult to incorporate changes that correspond to future needs, such as legislative, environmental and technological changes, and future requirements of utilities, transit systems and municipalities.

The P3 delivery model has distinct advantages over conventional design-bid-build and design-build methods – allowing risk transfer to the private partner, and improving price and schedule certainty, to name a few – but such an arrangement can only be successfully implemented under the right circumstances. That is, appropriate institutional, economic and social environments. Some of the critical success factors identified in this review are: government and political support, demonstrated value for money, a competitive market, private sector financing, project complexity which may benefit from private sector innovation, and public sector capabilities in project delivery.

## 1.0 Introduction

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Canada is one of the leading practitioners of public-private partnerships (P3) in the transportation sector (Deloitte, 2006). This is demonstrated by the number of transportation P3 projects that have been successfully implemented or are underway in eight provinces across the country.

In order to capture these relevant experiences, this document synthesizes lessons learned from the implementation of P3 projects for transportation infrastructure, with a focus on roads and highways.

This synthesis:

- Describes P3 projects and their key components;
- Outlines and discusses the key steps and considerations to initiate, develop and implement transportation P3 projects; and,
- Provides an overview of the recent experience Canadian and American public sector agencies have gained in relation to the administration of transportation P3 projects.

## 1.1 Background

Transportation infrastructure projects in Canada have historically been implemented using the design-bid-build and more recently design-build methods. These methods of implementation were successful in the past and are currently used widely across the country. However, the tightening of capital spending budgets, the advent of innovative financing in the private sector, the need for accelerated project delivery and schedule certainty, and other factors, have resulted in the use of public-private partnership or alternative financing and procurement (also known as P3 and AFP) for larger transportation projects.

P3 projects are not a new phenomenon in Canada, with projects being implemented since the 1980's. Some Canadian provinces have also adopted this delivery format for other types of infrastructure implementation including hospitals, municipal buildings and detention centres. More recently, this format is increasingly used for larger transportation infrastructure projects.

As these larger infrastructure projects are completed, and as their operations and concessions begin and evolve, there are opportunities to determine if a project is successful during the implementation phase both for the public and the private side of the equation. This synthesis of practices for implementing P3 type projects in the transportation field seeks to uncover the lessons learned from these projects to date.

Most of the information to complete this document was gathered based on a comprehensive literature review and from public entities that have managed or are about to implement road transportation projects using a form of P3 delivery. The Transportation Association of Canada seeks to further define the P3 process in Canada

for roads and bridges projects and to gather input from public sector agencies in order to provide a current picture of the P3 world in which Canada continues to grow.

### **P3 Project Delivery – Always the Solution?**

While public sector agencies often consider the P3 delivery method as a means to fill the “funding gap” (through private sector financing) to implement large infrastructure projects, there are both drawbacks and key advantages to adopting the process. P3 delivery methods are not appropriate for all infrastructure projects.

In general, successful P3 projects require appropriate institutional, economic and social environments, characterized by the following:

- Institutional
  - Commitment and support of the sponsoring government, including a degree of sophistication in the realities of the process and agreement
  - Supportive legal frameworks and associated policies
  - Consistency and standardization of processes to better manage cost and duration
  - Promotion of transparency and fairness in processes
  - Establishment of specialized agencies with mandate to facilitate P3 projects
  - Public sector capacity in negotiation and contract management
  - Stakeholder support
  - Equitable Project Agreements
- Economic
  - A robust and competitive market
  - Achieving better value-for-money compared to other procurement methods
  - Appropriate timing of the project’s placement into the market
  - Known revenue stream to cover project financing
- Social
  - Public acceptance, through engagement, awareness and proper disclosure

Essentially, the formation of a partnership between the public and private sectors must satisfy the criteria set by each partner and balance the strengths of both partners. Examples of the criteria/motivation for public and private partners to engage in a P3 project include:

- Public sector partner
  - To reduce public capital investment and lifecycle costs
  - To save time in overall project delivery through integration of project phases
  - To increase certainty in meeting project budget and schedule
  - To promote creativity and innovation in project delivery
  - To structure efficient risk transfer and enhance project cost certainty
- Private sector partner
  - To benefit from for-profit investments
  - To secure long term project commitment
  - To increase the number or size of projects in production

## 1.2 Scope and Methodology of this Synthesis

Two main streams of work were conducted in parallel to compile the information contained in this synthesis: a literature review and an agency survey.

The scope of the literature review included relevant reports, papers, articles and publications available in the public domain by government authorities and academic/research agencies. Appropriate North American publications were also included.

In preparing this synthesis, an attempt has been made to review and reference the most up-to-date literature. However, P3 projects are developing in North America in a rapidly changing environment and new practices may develop quickly, superseding existing practices and guidance.

The agency survey focused mainly on North American jurisdictions and the public sector agencies involved in transportation P3 projects. The survey, consisting of four questionnaires covering four key elements of P3 projects, was distributed to specialized P3 agencies as well as the provincial or state transportation agencies which have direct, day-to-day responsibility in the management of P3 projects.

It is acknowledged that the term “AFP” (alternative financing and procurement), which is specifically used in the province of Ontario, has essentially the same meaning as the term “P3” that is used in all other provinces. In this report, “P3” is a generic term that covers “AFP”.



## 2.0 Definition and Application of Public-Private Partnerships

### 2.1 History and Definition of Public-Private Partnerships

#### 2.1.1 History

##### The Canadian Experience

The history of P3 projects in Canada dates back to the 1980's. For the transportation sector, specifically for roads and bridges, some of the earliest P3 projects included the Confederation Bridge between New Brunswick and Prince Edward Island (1993), the Charleswood Bridge in Manitoba (1995) and Highway 104 in Nova Scotia (1996). These projects, along with the Fredericton-Moncton Highway in New Brunswick (1998) and Highway 407 ETR in Ontario (1999), are known as the “first wave” of Canadian P3 projects (Iacobacci, 2010).

As described in the Conference Board of Canada document titled “Dispelling the Myths: A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments” (January 2010), the “first wave” projects were characterized by:

- A widespread practice of off-balance-sheet treatment of public sector liabilities;
- An attempt by the public sector to transfer all the revenue (i.e. use) risk to the private partner; and,
- The financing risk was sometimes not fully transferred to the private partner.

In contrast, the “second wave” of Canadian P3 projects, those that occurred from 2000 to 2005, faced a different procurement environment characterized by the emergence of dedicated provincial P3 agencies, more rigorous risk identification and allocation, and the support through legislative reform. The roads and bridges P3 projects that were procured in this period include the Sierra Yoyo Desan Road in British Columbia (2004), the Trans-Canada Highway in New Brunswick (2005), the Edmonton Southeast Leg Ring Road (2005) in Alberta, as well as the Sea-to-Sky Highway, William R. Bennett Bridge and Kicking Horse Canyon – Phase 2 in British Columbia (all in 2005).

The Canadian P3 market has continued to mature. In the years since 2006, roads and bridges P3 projects have been procured in more Canadian provinces. While British Columbia's P3 profile was enhanced by the Golden Ears Bridge (2006) and South Fraser Perimeter Road (2010) projects, Alberta carried out P3 procurement for the Calgary Northeast Ring Road (2007), Northwest Anthony Henday Drive (2008), and Southeast Stoney Trail (2010).

Québec procured through P3 the Autoroute 25 (2007) and Autoroute 30 (2008) projects, while the Route 1 Gateway Project in New Brunswick, as well as the Disraeli Bridges and Chief Peguis Trail Extension in Manitoba, are P3 projects undergoing construction as of March 2011.

One of the most recent highway P3 projects is the Windsor-Essex Parkway in Ontario. A summary of the number of Canadian roads and bridges P3 projects to date, and the delivery models that have been utilized, is shown in Table 1. It is observed that Canadian P3 roads and bridges projects have been limited to three delivery models: Design-Build-Finance-Operate, Design-Build-Finance-Maintain, and Design-Build-Finance-Operate-Maintain. In fact, these model names are used somewhat interchangeably by jurisdictions. The nature of P3 delivery models is further described in Section 2.1.2.

Specialized public sector P3 agencies have been established in several Canadian provinces. These include Partnerships BC, Alberta Transportation Major Capital Projects Branch, Infrastructure Ontario, and Infrastructure Québec. Partnerships New Brunswick was recently established with the mandate to administer P3 projects for the province.

Table 2 is a summary of the key specialized P3 agencies. These agencies may be involved in one or more duties such as reviewing, assessing, approving, and advising on P3 projects. In addition to the specialized P3 agencies, provincial governments assign roles and responsibilities to other public sector entities to assist in one or more P3 project phases such as project assessment, procurement, implementation, operation and post-implementation evaluation. For example, provincial transportation agency offices typically have direct responsibility in overseeing the procurement and implementation phases of P3 projects for roads and bridges.

At the federal government level, PPP Canada (a crown corporation) was established with a mission to foster the development of the P3 market in Canada and to encourage consideration of the use of P3 as an alternative to traditional procurement processes.

More detailed information on P3 projects and specialized P3 agencies can be found in Appendix A.

**TABLE 1. COMPLETED AND ONGOING CANADIAN ROADS AND BRIDGES P3 PROJECTS**

Province	Number of Projects (as of March 2011)	Delivery Models*
BC	5	Design-Build-Finance-Operate-Maintain
AB	4	Design-Build-Finance-Operate
MB	3	Design-Build-Finance-Operate (1) Design-Build-Finance-Maintain (2)
ON	3	Design-Build-Finance-Operate-Maintain (1) Design-Build-Finance-Maintain (2)
QC	2**	Design-Build-Finance-Operate-Maintain
NB	3	Design-Build-Finance-Operate-Maintain
NS	1	Design-Build-Finance-Operate
PEI	1	Design-Build-Finance-Operate

\* P3 models are further described in Section 2.1.2.

\*\* In addition, seven motorway service areas were implemented using a P3 approach.



**TABLE 2. CANADIAN PUBLIC SECTOR SPECIALIZED P3 AGENCIES**

Province	Specialized P3 agency	Year Established
BC	Partnerships BC	2002
AB	Alberta Transportation Major Capital Projects Branch	2003
ON	Infrastructure Ontario	2005
QC	Infrastructure Québec	2009
NB	Partnerships New Brunswick	2009
PPP Canada (Federal)		2008

### The United States Experience

Compared to Canada and other international jurisdictions, the United States (U.S.) has less experience in using the P3 process to implement road and bridge projects. However, some States have historically built highways and tolled them to pay for them. Therefore, they have the basic funding or payback mechanism already in place to make P3 projects possible provided there is enough political will and public support to make the P3 model the choice for infrastructure implementation or re-building.

Some States began exploring the potential for the private sector to augment State highway construction programs in the late 1980's (United States Department of Transportation, 2004). Beginning in the year 1990 with Federal Highway Administration's (FHWA's) Special Experimental Project No. 14 titled "Alternative Contracting", several Acts have been adopted which expanded private entities' involvement in public transportation infrastructure, including financing and project delivery.

As of May 2004, 20 roads and bridges transportation projects procured through P3 were in or through the implementation phase (United States Department of Transportation, 2004). These projects covered the States of Texas, Colorado, Virginia, Utah, California, Washington, Massachusetts, New Mexico, and Minnesota.

In the U.S., the federal government has a limited role in the administration of P3 projects. The role of the federal government is to the extent of influencing States' use of the P3 delivery method through guidelines for federal funds and federal-aid highways, innovative financing tools, experimental pilot programs and provision of information (Farber, Rall and Reed, 2010).

Individual States own, operate and finance transportation assets. State-level policy makers decide whether and how each state will allow P3 projects, including authority

over whether to implement tolls or congestion pricing. The State executive agencies, for example the Department of Transportation, often act as the project sponsor. The State legislative and executive agencies work together on a decision to engage in P3; creation of a policy framework; establishment of P3 program; development, evaluation and selection of projects; procurement, negotiation and bidding processes; contracting; and managing and overseeing contracts.

California was the first State to enact P3 legislation, more than 20 years ago. As of October 2010, 29 States have enacted laws authorizing the P3 delivery method for highway and bridge projects and 38 States have specifically authorized design-build approaches.

According to literature (Farber, Rall and Reed, 2010), there are many variations in laws from State to State reflecting the varying “local” attitudes towards P3. Some States provide enabling legislation on a project-by-project basis, while others authorize an ongoing P3 program.

Literature (Farber, Rall and Reed, 2010) further identified the key provisions in State enabling legislature, as listed below. Typically, State statutes set broad guidelines while the executive agencies will retain some flexibility to determine how those guidelines are implemented in the various project stages.

- Project selection and approval
- Proposal review process
- Funding requirements and restrictions
- Procurement and project management
- Toll management, authority to collect tolls or fares
- Authorization to mix public and private funds
- Bidding procedures
- Process for contract award based on best value or other factors, not just lowest price
- Unsolicited proposals
- Tax provisions
- Bonding and debt
- Transparency and public participating
- Contract provisions
- Designation or creation of a lead executive agency
- Dispute resolution
- Reporting and review requirements
- Cost-benefit or other analysis

A list of websites providing relevant P3 guidelines and legislation of Canadian and U.S. public sector agencies has been included in the Reference section of this report. Readers may also wish to contact the individual public sector agencies to confirm the latest practices with respect to P3 projects.

#### Key North American Organizations

In addition to public sector agencies, there are two key organizations in Canada and U.S. with a mandate in promoting the use of public-private partnerships. Information on their vision, mission and key activities are included in Appendix A.

**TABLE 3. P3 INDUSTRY ORGANIZATIONS**

Organization	Year Established	Membership
Canadian Council for Public-Private Partnerships	1993	Over 320 members across Canada from the public and private sector (as shown on Council website)
National Council for Public-Private Partnerships (U.S.)	1985	159 members (according to Council 2009 Annual Report)

Both Councils have issued a significant number of publications covering different topics related to P3.

### **2.1.2 Definitions of Public-Private Partnerships**

“P3” was a general term used throughout Section 2.1.1 to describe what in fact constitutes a range of project procurement models that have been adopted by Canadian and U.S. public sector agencies.

The focus of this section is to summarize the definition of P3 and procurement models considered as P3.

#### **What is a P3?**

From the literature review, it was evident that the definition of P3 differs somewhat from one jurisdiction to the next. The Conference Board of Canada document (Iacobacci, 2010) states that, for example, Québec’s definition does not necessarily entail private financing. Examples of Canadian P3 definitions are shown in Table 4. A more complete list of definitions, including U.S. definitions, is presented in Appendix A.

**TABLE 4. P3 DEFINITIONS**

Agency (source)	P3 definition
<p><b>PPP Canada</b> (<a href="http://www.p3canada.ca/faq.php">http://www.p3canada.ca/faq.php</a>)</p>	<p><i>“a long-term performance-based approach for procuring public infrastructure where the private sector assumes a major share of the responsibility in term of risk and financing for the delivery and the performance of the infrastructure, from designing the concept, architectural and structural planning to its long term maintenance.”</i></p>
<p><b>Partnerships BC</b> (<a href="http://www.partnershipsbc.ca/files/faqs.html#2">http://www.partnershipsbc.ca/files/faqs.html#2</a>)</p>	<p><i>“a legally binding contract between government and business for the provision of assets and the delivery of services. The contract allocates responsibilities and business risks among the various partners.”</i></p>
<p><b>Government of Alberta</b> (<a href="http://www.treasuryboard.alberta.ca/1159.cfm">http://www.treasuryboard.alberta.ca/1159.cfm</a>)</p>	<p><i>“a different, non-traditional way for government to create capital assets (such as roads, schools, and other types of government facilities). A P3 can save time, money and reduce risk to the government by having one contractor design, build, finance, and maintain, and in some cases operate, a facility. In the case of roads projects in Alberta the government entered into one agreement with a contractor responsible to design, build, partially finance, maintain and operate roads and in the case of schools, one agreement to design, build, partially finance and maintain the infrastructure over the life of the contract.”</i></p>
<p><b>Infrastructure Ontario</b> (<a href="http://www.infrastructureontario.ca/en/projects/afp.asp">http://www.infrastructureontario.ca/en/projects/afp.asp</a>)</p>	<p><i>“Alternative Financing and Procurement is an innovative way for the government to deliver on its commitment to maintaining and expanding public infrastructure. Infrastructure Ontario’s AFP model uses private financing to strategically rebuild vital infrastructure, on time and on budget, while ensuring appropriate public control and ownership.”</i></p>
<p><b>Government of Québec</b> (Framework Policy for the Governance of Major Public Infrastructure Projects - 2010)</p>	<p><i>“Public-private partnership approach (PPP), in which a public body enters into a partnership with a private sector enterprise, with or without a financial contribution from the latter, for designing, constructing, and operating a public infrastructure.”</i></p>
<p><b>Government of New Brunswick</b> (Guidelines for public-private partnerships)</p>	<p><i>“a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards.”</i></p>
<p><b>Canadian Council for Public-Private Partnerships</b> (<a href="http://www.pppcouncil.ca/resources/about-ppp/definitions.html">http://www.pppcouncil.ca/resources/about-ppp/definitions.html</a>)</p>	<p><i>“A cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards.”</i></p>

Further to the definitions shown in Table 4, the Canadian Council for Public-Private Partnerships (CCPPP) website indicates “The term ‘public-private partnership’ carries a specific meaning in the Canadian context. First, it relates to the provision of public services or public infrastructure. Second, it necessitates the transfer of risk between partners. Arrangements that do not include these two concepts are not technically ‘public-private partnerships’...”

Rather than providing a distinct definition of P3, the Conference Board of Canada document (Iacobacci, 2010) states that the distinction between P3 and conventional procurements is not clear-cut, and some approaches lie between the two. It points out the following key features of P3 projects:

- Integration of two or more phases
  - Services can include design, build, through to maintenance
  - Long-term contracts covering large part of the economic useful life of the infrastructure, which may exceed 30 years
- Output-based contracts
  - Deliverables are specified in terms of the outputs required, leaving the private partner to put forward the best solution for meeting the output specifications
  - Output-based specifications are particularly important for the operational phase of the contracts
- Payment upon delivery
  - The private firm is paid only for defined assets or services once construction has been completed (in some cases, partial payments have been arranged at key milestones during the construction phase)
- Private financing
  - A substantial share of the project is financed through project-specific equity and debt

### **What procurement models are considered P3?**

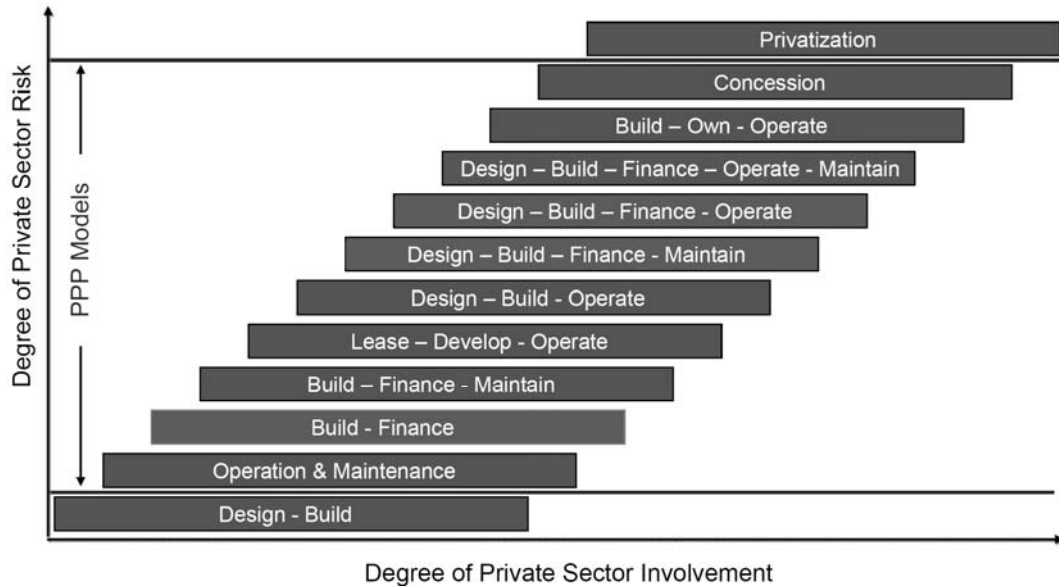
P3 includes a spectrum of project delivery models with varying degrees of public and private sectors involvement. Literature (Farber, Rall and Reed, 2010) further points out that many more project delivery models are available for “greenfield” projects. A “Greenfield” project refers to projects where:

- The infrastructure to be constructed is new (not an upgrade to existing infrastructure).
- In the case of transportation infrastructure – where the road or highway is located in a corridor which does not have a traffic history, offering no proof that future traffic forecasts for that road or highway would materialize as projected.

Nevertheless, all P3 project delivery models share common characteristics, including:

- Ultimate public sector responsibility for and ownership of the infrastructure;
- Contractual agreement between public and private partners;
- Sharing and allocation of risk among public and private entities;
- Contribution of resources by both public and private partners; and,
- Transfer to the private sector of traditionally public responsibilities.

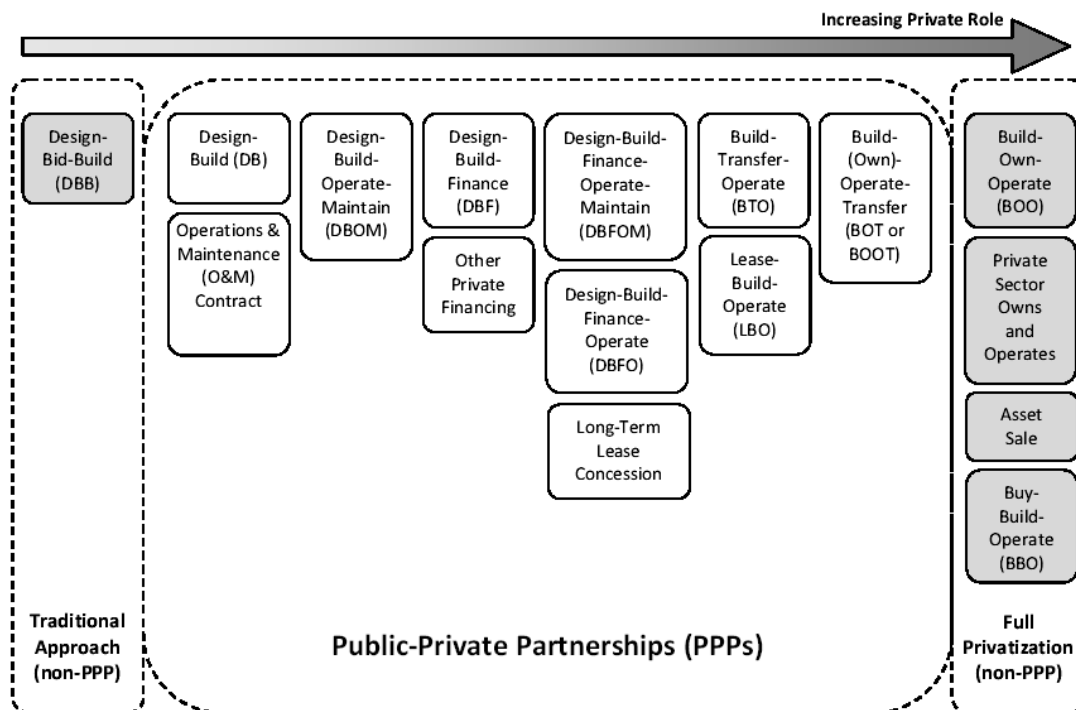
Potential delivery models are presented in the two figures that follow; the first figure is from a Canadian source while the second is from a U.S. source.



(Source: Canadian Council for Public-Private Partnerships presentation titled *Public-private partnerships in Canada*, dated June 17, 2010)

**FIGURE 1. POTENTIAL P3 PROJECT DELIVERY MODELS (CANADA)**

Design-Build is considered outside the spectrum of P3 in Canada. In the U.S. diagram below, Design-Build is considered a P3 model.



(Source: "Public-private partnerships for Transportation A Toolkit for Legislators")

**FIGURE 2. POTENTIAL P3 PROJECT DELIVERY MODELS (US)**

The models shown in Figure 1 do not represent the definitive list of partnership models currently considered by Canadian agencies. Table 5 summarizes the potential P3 models that are mentioned in several Canadian guiding documents (guiding documents refer to frameworks/guidelines published by public sector agencies and are briefly described in Section 2.2). It should be noted that the guiding documents are general in the sense that they provide guidance on P3 projects, but not specifically transportation roads and bridges P3 projects.

The delivery model selected for a particular project depends on the ideal allocation of responsibilities and risks between the public and private partners in the particular instance. As the focus of this synthesis is on delivery models that are considered by Canadian agencies to be suitable for P3 implementation in transportation roads and bridges projects, the agency survey included a question on the P3 models that have been considered or evaluated by agencies. The responses to that question are also presented in Table 5.

The key findings that can be interpreted from Table 5 are:

- DBFO and DBFOM have been considered or evaluated by most provinces including B.C., Alberta, Ontario, Québec and New Brunswick. In Alberta specifically, the DBFO model includes all maintenance activities. Thus DBFO is used interchangeably with DBFOM.

- Eleven P3 models are recognized by CCPPP. Each recognized model has been documented and/or considered by at least one Canadian province.
- In terms of the number of P3 delivery models considered by individual provinces, B.C. and Ontario both have eleven, Québec has six, New Brunswick has three, Alberta has one and Nova Scotia has one. The P3 models that have been considered by at least four of the six provinces are: DBO, DBFO and DBFOM.

It can be concluded from Tables 4 and 5 that there are differences among Canadian agencies in the definition of P3, as well as the delivery models that are considered as P3. However, based on actual implementation of P3 roads and bridges projects to date, it is apparent that the Design-Build-Finance-Operate-Maintain model has been implemented most often.

The inclusion of operation and maintenance components provides the private partner with the incentive to account for the infrastructure's lifecycle and to design and construct to the highest quality within a prescribed budget and schedule. This model also encourages the private partner's innovation to create efficiency between the design and build stages and to reduce construction time, as it bears the responsibility of delivering the project to an operational stage within budget.

For the purpose of this synthesis, a definition of Public-private partnerships presented in the Glossary (Section 7), based upon the actual P3 implementation in roads and bridges projects to date.



**TABLE 5. DELIVERY MODELS CONSIDERED AS P3**

Name of Guiding Document (Year Published)		BF	DBO	BOO	DBF	DBM	BFM	BLOT	DBFM	DBFO	DBOO	DBOM	DBFOM	Concession	O&M	Finance	Lease
Canadian Council of Public-Private Partnerships (consolidated from various resources)		■	■	■			■		■	■			■	■	■	■	■
Federal	PPP Canada	+	+	+	+	+	+	+	+	+	+	+	+	+			
British Columbia	Capital Asset Management Framework (2002)		◆	◆				◆									
	Guidance for Quantitative Procurement Options Analysis (2010)				●	◆			◆	●		●	●	◆			●
Alberta	Management Framework: Assessment Process (2006)									●							
Ontario	Building a Better Tomorrow: An Infrastructure Planning, Financing and Procurement Framework for Ontario's Public Sector (2004)		◆							◆	◆				◆	◆	●
	Assessing Value for Money (2007)	●			●		●		◆				●				
Québec	Framework Policy for the Governance of Major Public Infrastructure Projects (2010)		◆							●		●	●	◆			
Nova Scotia	No formal guiding document; information based on Agency Survey		●														
New Brunswick	Public-private partnership Protocol (2010)				◆								◆		◆		

■ CCPPP is a member association and does not directly work with public agencies or private partners in any aspect of the P3 process. The models noted were identified from available CCPPP resources.

+ To receive funding from the P3 Canada Fund, a project must have meaningful private sector involvement in at least two of the following elements: design, build, operate/maintain or finance, one of which must include operate/maintain or finance.

◆ Model is mentioned in the Provincial guiding document but has not been considered or evaluated according to survey response by the provincial agencies (refer to Sections 3 and 4)

● Model has been considered or evaluated according to the survey response by an agency in the respective province (refer to Section 4)

The following interpretations apply in Tables 5 and 6:

BF = Build-Finance

DBO = Design Build Operate

BOO = Build Own Operate

DBF = Design Build Finance

DBM = Design Build Maintain

BFM = Build Finance Maintain

BLOT = Build Lease Operate Transfer

DBFM = Design Build Finance Maintain

DBFO = Design Build Finance Operate

DBOO = Design Build Own Operate

DBOM = Design Build Operate Maintain

DBFOM = Design Build Finance Operate Maintain

O&M = Operation and Maintenance

### Defining P3 Models

Based on available literature, the most common interpretations of the roles of the public and private partners in P3 models are summarized in Table 6.

**TABLE 6. ROLES OF PUBLIC AND PRIVATE PARTNERS IN P3 DELIVERY MODELS**

P3 Model	Role of Public Partner	Role of Private Partner
BF	<ul style="list-style-type: none"> <li>Develop design and specifications</li> </ul>	<ul style="list-style-type: none"> <li>Build and finance during construction</li> </ul>
DBO	<ul style="list-style-type: none"> <li>Finance project</li> <li>Owner of infrastructure immediately upon completion of construction</li> </ul>	<ul style="list-style-type: none"> <li>Design, build and operate/maintain under long-term agreement</li> </ul>
BOO	<ul style="list-style-type: none"> <li>Regulatory authority (set objectives and constraints)</li> </ul>	<ul style="list-style-type: none"> <li>Build, finance, own and operate in perpetuity (time without end)</li> </ul>
BFM	<ul style="list-style-type: none"> <li>Develop design and specifications</li> </ul>	<ul style="list-style-type: none"> <li>Build, finance and maintain infrastructure</li> </ul>
DBFM	<ul style="list-style-type: none"> <li>Owner of infrastructure at the end of the contract term*</li> </ul>	<ul style="list-style-type: none"> <li>Design, build, finance, and maintain the infrastructure (hard infrastructure management or maintenance services) under a long-term agreement</li> </ul>
DBFO	<ul style="list-style-type: none"> <li>Owner of infrastructure at the end of the contract term*</li> </ul>	<ul style="list-style-type: none"> <li>Design, build, finance and operate under a long-term agreement</li> </ul>
DBFOM	<ul style="list-style-type: none"> <li>Owner of infrastructure at the end of the contract term*</li> </ul>	<ul style="list-style-type: none"> <li>Design, build, finance, operate and provide hard (hardware) and/or soft (day-to-day) infrastructure management services under a long-term agreement</li> </ul>
Concession	<ul style="list-style-type: none"> <li>Owner of infrastructure at the end of the contract term</li> </ul>	<ul style="list-style-type: none"> <li>Undertakes investments and operates the infrastructure for a fixed period of time</li> </ul>
O&M	<ul style="list-style-type: none"> <li>Owner of infrastructure throughout the contract term</li> </ul>	<ul style="list-style-type: none"> <li>Operate and/or maintain an infrastructure under an agreement</li> </ul>
Finance	<ul style="list-style-type: none"> <li>Project specific</li> </ul>	<ul style="list-style-type: none"> <li>Funds a project directly or uses various mechanisms such as long-term lease or bond issue</li> </ul>
Lease	<ul style="list-style-type: none"> <li>Lease an infrastructure from the private sector</li> </ul>	<ul style="list-style-type: none"> <li>May operate the infrastructure</li> </ul>

\* In Québec, the public partner is the owner of the infrastructure during the contract term.

## 2.2 Application of Public-Private Partnerships

### 2.2.1 *Guiding Documents*

Most Canadian jurisdictions active in P3 procurement have explicit frameworks/guidelines related to the various stages of a P3 project. Public sector agencies (specialized P3 agency and/or other government entities) follow the frameworks/guidance in such documents in reviewing, assessing, approving, managing and/or advising on P3 projects.

The guiding documents serve as the means for public agencies to assure consistency in processes, following systematic procedures that are thorough and disciplined. Such procedures are updated as necessary to incorporate experience gained during application. They provide some assurance of fairness and transparency to all proponents.

Table 7 lists the titles of the Canadian guiding documents. An overview of the content of each document can be found in Appendix A. Examples of U.S. guiding documents and industry publications are also included in Appendix A.

**TABLE 7. CANADIAN GUIDING DOCUMENTS**

#		Name of Guiding Document	Published By (Date)
Federal	1	P3 Canada Fund Program Overview, Submission Guide & Project Submission Form: Round Two (May – June 2010)	PPP Canada (2010)
	2	P3 Canada Fund Application Guide and Application Form Round Three (May – June 2011)	PPP Canada (2011)
British Columbia	3	Capital Asset Management Framework	B.C. Ministry of Finance (May 2002)
	4	An Introduction to Risk Management in a Public Private Partnership	Partnerships BC (July 2006)
	5	Office of the Comptroller General Practice Guideline 1 Public-Private Partnerships	B.C. Ministry of Finance (May 2009)
	6	Guidance for Quantitative Procurement Options Analysis	Partnerships BC (January 2010)
	7	Procurement Related Disclosure for Public Private Partnerships	Partnerships BC (April 2007)
Alberta	8	Management Framework: Assessment Process	Alberta Infrastructure and Transportation (September 2006)
	9	Management Framework: Procurement Process	
Ontario	10	Building a Better Tomorrow: An Infrastructure Planning, Financing and Procurement Framework for Ontario's Public Sector	Ontario Ministry of Public Infrastructure Renewal (2004) (now Ontario Ministry of Infrastructure)
	11	Assessing Value for Money: A Guide to Infrastructure Ontario's Methodology	Government of Ontario (2007)
Québec	12	Public-private partnership Framework Policy (replaced by the more current document in the next row)	Government of Québec (June 2004)
	13	Framework Policy for the Governance of Major Public Infrastructure Projects	Government of Québec (2010)
	14	Guide d'élaboration du dossier d'affaires des grands projets d'infrastructure publique (Business Case Development Guide for Major Public Infrastructure Projects)	Government of Québec, Treasury Board Secretariat (2011)
New Brunswick	15	Public-private partnership Protocol	Government of New Brunswick (October 2010)

## 2.2.2 *Benefits and Concerns Related to P3*

The potential benefits and concerns/controversies related to P3 projects are documented in various documents. Some examples are given below.

### **Perceived Benefits**

- Cost savings
- Time savings
- Project acceleration
- Effective risk transfer
- Value for money
- Improved price and schedule certainty
- Less government expenditure
- Infrastructure funds attractive to investors
- Economic efficiency (project funded by users, e.g. toll)
- Innovation / integration of project phases (lifecycle efficiencies)
- Redeployment of government resources
- Improved asset maintenance
- Improved quality of infrastructure
- Lifecycle costs consideration

### **Perceived Concerns/Controversies**

- Additional cost for public sector, including risk premium, higher financing cost of the private sector, higher transaction cost for government to procure, monitor, etc
- Due to longer upfront procurement/negotiation efforts and rigorous risk assessment, one project may delay the next one from happening
- Long term contracts may result in high cost to re-negotiate when changes to policies happen. Projects may undergo complex and costly termination.
- Labour concerns, such as wage and employment conditions
- Foreign companies involvement, such as foreign control of domestic assets and national security issues
- The public may not be willing to accept the proposed role of the private sector in the project
- Environmental issues generated by the use of less environmentally friendly methods of construction and maintenance
- Risk of private partner bankruptcy
- Transparency / protection of public interest, such as loss of control of public assets and profit motives becoming the first priority
- The lack of an institutional framework characterized by the commitment and support of the sponsoring government, standardization of processes, and knowledgeable government staff with the necessary skills in procurement, negotiation and project management, etc, may prevent P3 opportunities from being realized

### 2.2.3 P3 Project Cycle

P3 procurements are not appropriate for all infrastructure projects, nor are they appropriate for all roads and bridges projects. Therefore, as a first step, it is important for governments to develop methodologies for screening and identifying projects that are most suitable for P3 procurement; that is, projects that are likely to provide the most “value for money” for the public through P3 over traditional forms of project delivery.

After a project has been identified for P3 implementation, the next steps typically involve the public agency issuing a request for qualifications (RFQ), then the request for proposals (RFP), for a competitive procurement process. Sometimes a request for expression of interest (REOI) may be issued before the RFQ. A winning private sector proponent is selected at the end of the RFP process. It is noted that a cost-benefit analysis by the public sector agency is typically carried out well before the RFQ or REOI, and before engaging the market in a competitive bid process.

The selection of the preferred private sector proponent is followed by the closing period, with both the commercial close and the financial close. At the end of the Closing period, a contract between the public partner and the preferred private partner is established.

A well-drafted contract between the public and private partners is the primary means to define performance standards, project term, risk allocation, revenue sharing, indemnities, penalties, and other provisions and requirements, and to protect public interest. For example, the contract typically includes key performance indicators to define the desired project outcomes that are to be achieved by the private partner. The public partner may use these key performance indicators as the basis for private sector incentives and penalties. Contract terms may also be included to minimize the perceived concerns identified in Section 2.2.2.

Once the contract is signed, the project implementation phase is initiated with the private partner delivering project requirements. In P3 roads and bridges projects, the private sector is typically responsible for designing, building, financing, operating and/or maintaining the infrastructure. The public partner manages the contract and monitors the private partner’s compliance with the contract terms.

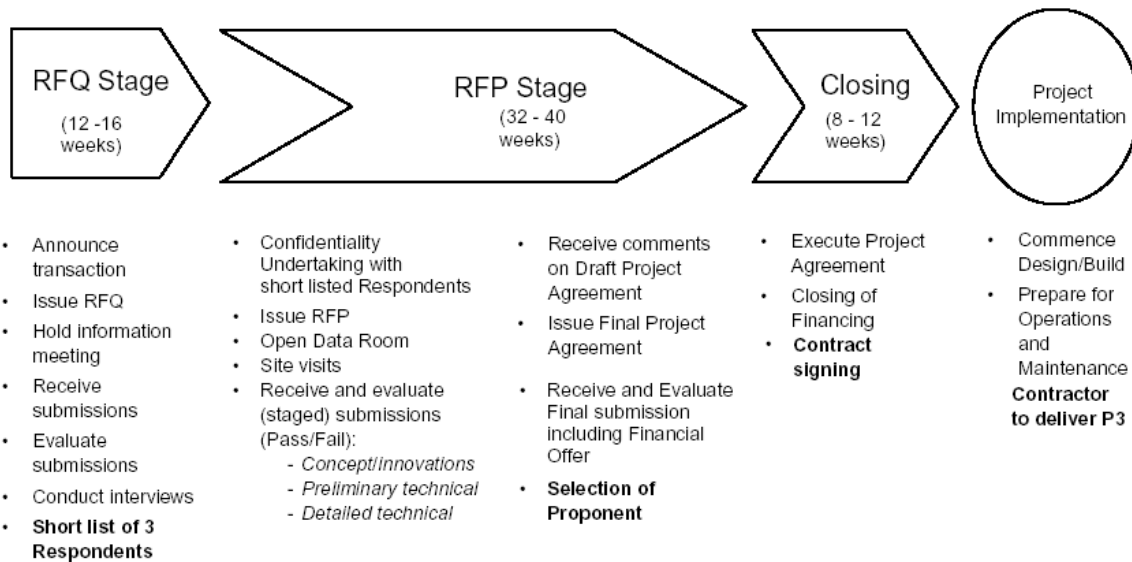
The design stage is characterized by the private partner delivering a final design typically based on a preliminary design concept. This is the stage where the potential for innovative cost savings and reduced construction time is identified. The building stage is characterized by the private partner constructing the infrastructure.

The operating and maintenance stages are characterized by the private partner operating and maintaining the infrastructure to meet prescribed performance standards as specified in the contract. When a private partner is responsible for operations and maintenance, there is incentive to account for the infrastructure’s lifecycle and to design and construct to the highest quality.

At the end of the contract, the asset is handed back to the public sector which retains responsibility for and ownership of the asset.

As an example, Figure 3 presents an overview of a typical Government of Alberta P3 transaction process, from the RFQ stage (beginning of Procurement) to project implementation.

In summary, there are four key elements of the P3 project cycle, namely 1) assessment of project suitability, 2) business analysis, 3) project procurement and 4) project management. Information synthesized from the literature review and the agency survey covering each of these four elements is documented in Section 4.0.



(Source: "Management Framework: Procurement Process")

**FIGURE 3. P3 PROJECT PROCUREMENT AND IMPLEMENTATION – ALBERTA EXAMPLE**





### 3.0 Agency Survey

As part of this synthesis, an agency survey was conducted among the staff in the specialized P3 agencies as well as provincial transportation agency staff who typically have direct responsibility in overseeing the procurement and implementation phases of P3 roads and bridges projects.

#### 3.1 Survey Structure

The primary objective of the survey was to gather input from agencies across Canada and the U.S. on their recent experiences and lessons learned in relation to four key elements of P3 implementation:

- Assessment of P3 Project Suitability
- Development of Business and Financial Models
- Project Procurement
- Project Management

As such, the survey is comprised of four individual questionnaires, each focusing on one of the four key P3 elements. The questions seek to identify how agencies approach P3 projects and their preferences and reasons for following certain procedures.

A complete survey questionnaire can be found in Appendix B.

#### 3.2 Responses

The survey was initially sent to 25 agencies across Canada and the U.S. and this synthesis is based on information collected from 12 agency offices that responded.

These were:

<b>Canada</b>
Partnerships BC
BC Ministry of Transportation and Infrastructure – Kicking Horse Canyon Project
BC Ministry of Transportation and Infrastructure – Evergreen Line Project
Alberta Transportation, Major Capital Projects Branch
Alberta Transportation, Technical Standards Branch
Infrastructure Ontario
Ontario Ministry of Transportation
Ministère des Transports du Québec
Nova Scotia Department of Transportation & Infrastructure Renewal
Public-Private Partnerships Canada
<b>United States</b>
Virginia Department of Transportation
Minnesota Department of Transportation



## 4.0 Analysis and Findings

Sections 4.1 to 4.4 present the synthesis of information gathered from the literature review and agency survey on four key topics: Assessment of P3 Project Suitability, Development of Business and Financial Models, Project Procurement and Project Management.

Unique lessons learned shared by Canadian agencies in the Agency Survey are included where available. Supplementary information related to current practices of Canadian agencies can be found in Appendix C.

The standard templates and tools mentioned throughout Section 4.0 can be found within the guiding documents listed in Section 2.2.1. A list of the websites for accessing the Canadian guiding documents is provided in Section 8.0.

### 4.1 Assessment of P3 Project Suitability

#### 4.1.1 Literature Findings

##### Eligibility Criteria

The benefits of procurement via P3 do not always outweigh the costs. Therefore, the issue of how projects are selected to be procured via P3 is important. It is a standard practice for public agencies to undertake early screening of projects to determine the suitability of a project for the P3 procurement process.

Successful P3 projects require appropriate institutional, economic and social environments. For example, the P3 delivery method may be more appropriate when it is feasible to develop output specifications and performance requirements, and identify risks which can be transferred to the private partner. The deal size must exceed a minimum threshold to justify the public partner's and private partner's transaction costs. Furthermore, there is sufficient complexity such that efficiencies may be gained by integrating project phases. A competitive market, where the project attracts an adequate number of bids (to allow a public agency to systematically evaluate and narrow the competition), is also an important factor which validates the interest of the private sector in a project.

The process by which public agencies choose to consider P3 as the procurement option is neither arbitrary nor ad hoc (Iacobacci, 2010). The choice stems from an early screening process that considers the criteria described above. The review conducted as part of the a research document (Iacobacci, 2010) identified several examples of projects which were initially considered for P3 procurement but were subsequently rejected because they failed to meet one of the criteria mentioned above.

P3 projects must also support public interest. A report indicates that policy decision is the key and primary driver for P3 (Farber, Rall and Reed, 2010). A project must meet public sector goals and objectives, and generate intended results and public benefit, prior to the assessment of delivery structure and financing tools.

According to a U.S. literature (Farber, Rall and Reed, 2010), less than 20 percent of transportation infrastructure is likely to be deliverable through P3.

### Public and Private Sector Participation

The public and private sectors participate in P3 projects for different reasons. Reasons for the public sector to participate in P3 projects may include:

- To avoid bonded indebtedness
- To construct new infrastructure with minimal initial public investment
- To reduce cost of new facility to general taxpayers
- To gain access to non-traditional revenue sources (e.g. tolls)
- To enhance production resources (private industry staff)
- To save time in overall project delivery
- To permit concurrent design and construction activities (which may have been done sequentially otherwise)
- To promote private sector creativity and innovation in project delivery
- To permit a project to proceed as a whole rather than in phases

Reasons for the private sector to participate in P3 projects may include:

- To increase number or size of projects in production
- To operate toll highways as long term, for-profit investments
- To direct or encourage development of properties in a given area through new facility construction
- To secure long term project commitment and Operations and Maintenance contracts

There are various factors that the private sector considers when evaluating a P3 investment opportunity:

- Level of investment and technical risk in project execution
- The availability of an honorarium for unsuccessful bidders, and a “break fee” to all bidders if the RFP is cancelled, may be part of the consideration.
- Assignment of risk between public and private parties
- Strength of public sector project management
- Project size
- Length of time for return on investment
- Clarity of enabling legislation

### Size of Project

Experiences in P3 projects over time have allowed public agencies to identify the optimal project size (project value) which supports procurement via the P3 approach:

- A Canadian document (Iacobacci, 2010) indicates \$40-100 million, depending on the jurisdiction.

- The B.C. Capital Asset Management Framework, which was revised in 2008, makes it mandatory for the P3 model to be considered whenever the Provincial contribution exceeds \$50 million.
- Projects must be at least \$100 million for the Government of Alberta to consider, given the transaction costs involved (Alberta Infrastructure and Transportation, 2006).

### Evaluation Tools

While P3 generates cost and time savings, among other benefits, additional costs are borne by the public sector in P3 procurement compared to conventional projects:

- Risk transfer: the public partner pays a “risk premium” for the risks transferred to the private partner
- Higher costs of private financing: the private partner borrows money at higher rates compared to the public partner
- Higher transaction costs: the public partner incur costs in developing, monitoring and managing P3 contracts

As such, positive value for money (VfM) must be achieved for a project to be procured via P3. VfM compares total costs of procurement by P3 (a “shadow bid”) against procurement under conventional approach (the “public sector comparator”).

Value for money is the main evaluation tool used by all Canadian jurisdictions. Formal, quantitative risk assessment processes/templates have been developed by several Canadian P3 procurement agencies and are applied in the VfM evaluation process. A project risk matrix is the primary tool used by Partnerships BC to manage risks throughout its involvement in a project. The identified risks are quantified and added to the analysis to compare procurement models.

## **4.1.2 Overview of Current Canadian Practices**

### Screening Criteria

A total of 16 screening criteria have been identified by the survey agencies. They are listed here in the order of the number of times mentioned, from most to least:

- Project generates value for money
- Project allows risk transfer to the private partner
- Project has schedule certainty
- Sufficient project size/scope
- Sufficient private sector competition
- Project generates benefits for taxpayers
- Costs (capital, construction, operations and maintenance, rehabilitation)
- Project accommodates private sector innovation
- Project has measurable outputs
- Ultimate public ownership of the infrastructure
- Project involves operations and maintenance components

- No outstanding condition or issue that would prevent the project from being constructed
- Presence of legislative and legal impediments
- Able to define private partner’s responsibilities
- Maintaining accountability
- Process is transparent

Minimum Threshold Value

Province	Minimum threshold value
British Columbia	\$50 million
Alberta	\$100 million
Ontario	\$50 million
Québec	\$40 million
Nova Scotia	\$50 million
(Federal) PPP Canada	\$40 - \$50 million

Agencies have, through experience, identified the optimal project size (project value) which would support procurement via the P3 approach. Two provinces, British Columbia and Québec, have established policies around the project value at which an assessment of procurement using P3 would be compulsory.

In B.C., it is a provincial policy that all capital projects with a provincial contribution of \$50 million or more will be considered first by Partnerships BC to be built via P3 unless there are compelling reasons to do otherwise. According to Infrastructure Québec, a “major project” is defined as a project with an estimated capital cost equal to or greater than \$40 million. All major projects are subject to an evaluation of the mode of delivery, including P3.

According to Infrastructure Ontario, the threshold has been set at \$50 million based on experience for projects to achieve value for money.

According to the Alberta Transportation Major Capital Projects Branch, the province would consider projects with a value of greater than \$100 million for P3 procurement, as stated in the *Management Framework: Assessment Process* guiding document. However, actual projects delivered to date using the P3 delivery model all had value in excess of \$100 million (up to \$300 million).

PPP Canada indicated that the minimum threshold value is typically \$40 to \$50 million to support procurement expenditure.

Nova Scotia, while not actively engaged in P3 projects but nevertheless had implemented a P3 project in the past (Highway 104), indicated that the minimum threshold is \$50 million but may vary based on market sounding and the level of private sector competition.

In terms of potential ways to lower the minimum threshold value, the ideas put forward have included:

- Bundling of two or three projects into a single project under a single contract would simplify the public sector partner's contract management task and associated cost
- Using standardized documents to reduce transaction cost
- Accepting project delivery using P3 as long as a project (where the cost is lower than the typical threshold value) demonstrates positive value for money under P3
- Creating shorter term concessions to avoid the high costs associated with making changes to the contract in response to changes in service requirements

### Evaluation Methods and Tools

The survey confirmed that value for money assessment is widely adopted by Canadian agencies. Risk analysis is conducted as part of the value for money assessment where retained risks (by the public partner), shared risks and transferred risks (to the private partner) are all quantified.

The development of a business case is also a standard practice. It is ultimately submitted to Cabinet by the sponsoring agency in seeking approval for the project, first having been reviewed by the provincial specialized P3 agency and other government entities, per the processes established in the respective jurisdiction.

Some agencies, including B.C., Québec and PPP Canada, conduct an assessment that includes qualitative criteria in addition to quantitative criteria. For example, PPP Canada considers public benefits generated by the infrastructure, quality of the governance of the client, and clarity around the procurement process.

### Critical success factors

Agencies surveyed were asked to share the critical success factors that contribute to the effective screening of projects that are suitable to be delivered via P3. A total of 11 critical success factors have been identified. They are listed here in the order of the number of times mentioned, from most to least:

- Project allows risk transfer to the private partner
- Application of realistic economic/financial assumptions in the evaluation to ensure credibility of the analysis
- Support by the private sector where the market delivers competition
- Project generates value for money
- Support by government/political will with supporting frameworks and policies
- Proper management of the Project Agreement by the public partner
- Project is well defined
- Optimize private sector financing to anchor risk without taking on undue financing charges
- Able to draft performance-based specifications in the Project Agreement
- Sufficient project size

- Having a dedicated/competent public sector project team to advance the project in a timely manner

In general, all surveyed agencies indicated that they seek to learn from previous experiences, and would update their guiding documents as necessary to improve process efficiency and project success. Agencies' collaboration on lessons learned contributes to consistency in P3 application.

#### **4.1.3 Lessons Learned by Agencies**

##### ***British Columbia***

According to the Ministry of Finance "Core Policy and Procedures Manual", Policy 5 Capital Asset Management, a P3 must be considered the base case procurement option where the provincial contribution to the capital cost exceeds \$50 million. This threshold value was established through careful consideration of a number of factors (such factors were not disclosed in the survey). Projects with provincial funding of between \$20 and \$50 million will be screened to determine whether a more comprehensive assessment of the project as a P3 is warranted.

##### ***Alberta***

The Major Capital Projects Branch indicated that project value less than \$300 million may be better suited for design-bid-build or design-build delivery modes. In other words, based on actual projects, the minimum threshold value would be more suitably described as \$300 million rather than the \$100 million that is documented in the *Assessment Process* guiding document.

##### ***Ontario***

Infrastructure Ontario indicated that while historically the minimum threshold value has been set at \$50 million, all major capital projects are assessed for alternative financing and procurement potential.

##### ***Québec***

Bureau des Partenariats Public-Privé indicated that sensitivity analysis is an important part of the value for money assessment in testing the impact of the main assumptions. While interested in assessing socio-political relevance of projects, and associated strategies and implementation plans, the agency recognizes that more development is needed to define the needs and desired results generated by projects.

##### ***PPP Canada***

PPP Canada has indicated that it may be difficult to reduce the minimum threshold value as the lower it gets, the more difficult it is to transfer risk and to anchor them adequately. It is also more difficult to find an interested lender.



## 4.2 Development of Business and Financial Models

### 4.2.1 *Business Case, Payment Model and Innovative Financing Structures*

A Canadian document (Iacobacci, 2010) indicates that private financing is the glue that binds the key elements of a P3 approach to procurement; the private sector has the incentive to deliver per contract requirements and potentially ahead of time to avoid higher debt-servicing costs and to be paid back sooner (in the form of service payments) when the construction is complete sooner. Delays may result in penalties. The same document also points out that cost savings compared to projects carried out by conventional approach range from 0.8 to 61.2 percent of the public sector comparator for the projects that were reviewed.

#### Procurement Model Business Case

Authorities considering P3 procurement typically produce a procurement business case and value for money assessment to assess whether a P3 model could deliver value for money and analyze the merits of various forms of P3 business model structures. An example of these assessment techniques is documented by Partnerships BC in “Methodology for Quantitative Procurement Options Analysis Discussion Paper” (2010). At this early stage of analysis, the basic business model (form of P3), applicable affordability ceilings, and any applicable public funding arrangements are developed.

Projects are assessed if there is any possibility for a revenue component (e.g. from tolls), and if not, availability or shadow tolling payments are the default model. Sometimes availability payment based projects are structured with a volume usage payment component that either represents the increased costs due to usage, or is in place to provide the concessionaire with an incentive to attract ridership, or a combination of both.

Funding envelopes are sometimes explicitly stated. In this case, procurements are either structured to have bidders compete on how much value they can deliver within the envelope, or bid within the envelope by delivering the required scope at the lowest cost. Examples of projects with set financial ceilings are the South Fraser Perimeter Road and Sea-to-Sky Highway projects in B.C., and the Communications Security Establishment Canada facility in Ottawa, Ontario.

Business models and procurement evaluation criteria can be structured to target the achievement of specific project objectives. An example of this is the Sea-to-Sky Highway project in B.C., where the bidders were scored based on bid attributes that included maximizing delivered scope related to safety and capacity. The project used a published affordability ceiling and the shortlisted bidders competed on the amount of ‘value’, in the form of predefined safety features and additional scope that they were able to deliver above the minimum scope requirements and within the affordability ceiling.

P3 projects across Canada have had varying levels of public funding contributions combined with private finance. The ratio of public to private financing generally increased

during and following the financial crisis as a means to preserve value for money in light of increasing financing costs (higher credit spreads) and to address the capacity limitations in the debt markets. The form of contributions also varies between jurisdictions. Ontario has used substantial completion payments at the end of construction, while B.C., Alberta and Québec have used progress or milestone payments through the construction period.

A Canadian reference (Iacobacci, 39) indicates that governments have dealt with the credit crisis by contributing before completion of construction, shortening the period between selection of preferred bidder and financial close to avoid credit spread impacts, and attracting new types of lenders e.g. Canadian pension funds. The level of public contributions has varied depending on the size of project and the specific business case for each project.

### Business Models

#### Payment Mechanisms:

In the case of private financing, the private sector will need to cover costs and also make a return on investment. To do so, there will need to be a revenue stream generated by the facility (e.g. tolls) or from public sector compensation.

Some P3 projects in Canada are procured using an availability payment model, where the concessionaire receives a payment, usually paid monthly, which covers the amortization of the privately financed capital costs, operations and maintenance costs, and capital rehabilitation costs throughout the term of the project. The payments are subject to performance deductions if specified levels of service and performance measures are not met. The pre-determined payments commence only when the project is available for use, which creates an incentive for the private partner to complete on time (or earlier than planned to potentially receive an early opening bonus) and on or below budget. Other P3 projects in Canada are procured using a completion payment model where the concessionaire receives a payment covering the privately financed capital costs as soon as the infrastructure is open.

#### Demand/Volume Risk:

A handful of projects with some component of revenue risk have been procured in Canada. In Québec, the Autoroute 25 and the Autoroute 30 highway projects, procured in 2007 and 2008, respectively, have a hybrid payment model that includes milestone payments during the construction periods, payment to the private sector from toll revenue, and the remainder from availability payments from the public partner. Other non-tolled projects in Canada have applied a smaller (in the order of 10%) volume component as part of the overall payment structure; these include the Canada Line rapid transit project and the W.R. Bennett Bridge project in B.C.

Canada's first attempted full toll revenue risk P3 project was the Port Mann-Highway 1 project. This project was converted to a Design-Build delivery after the preferred proponent was unable to reach Financial Close during the height of the financial crisis.

The Highway 407 project in Ontario is an example of a full toll risk project but it was structured as a 99-year asset lease after it was built, financed and commissioned by the Province of Ontario.

Currently, global lenders are reluctant to lend to projects with significant volume risk. A limited number of projects with demand risk (tolls) have been procured globally. Only two toll road P3 projects have been procured since 2008, both are in Texas (North Tarrant Expressway and Lyndon B. Johnson Freeway 635) and both included significant contributions of public funds and federal loan program funding.

A handful of failed toll road P3 projects around the world has led to reluctance by lenders to accept volume risk. Examples of projects where volumes did not materialize as forecast include: State Route 125 in California, and the Lane Cove and Cross City Tunnels in Sydney, Australia. In those three cases, the sponsors lost all equity in the projects and debt had to be restructured.

A recent example that demonstrates lenders' reluctance to take on long-term volume risk was the 2010 procurement of the McGill University Hospital Centre in Montreal, Québec. Parking revenues were removed from the deal structure during the procurement. The initial deal structure, in addition to designing, building, financing and maintaining Canada's largest hospital under an availability payment model, included transferring full responsibility, including revenue risk, for a 2,000 space parking facility at the hospital. The forecast revenue component from the parking amounted to a sizeable portion of the overall payment, which in turn increased the risk profile in the view of the potential lenders and would have limited the interest and driven up the cost of financing. The parking revenue collection was ultimately retained by the public sector.

#### Innovative Financing Structures and Approaches

P3 projects almost always involve non-recourse project financing. Non-recourse means that the project's debt is sustained by the revenues or the payments that the project generates. The lender's collateral is limited to the project assets (subject to the project agreement) and sponsors, or concessionaires, are typically not exposed beyond the equity that they have contributed to the project. To provide certainty to lenders in a non-recourse project finance environment, only credit worthy sponsors and constructors that can arrange suitable security packages are able to raise financing.

Capital structures (the mix of debt and equity) and financing plans are typically structured to support the project and optimize value for money by maximizing the amount of the lowest risk-adjusted cost funding. Risks are allocated to the parties best able to manage them and the equity component is kept to a minimum. Lenders scrutinize the project risks and risk allocation with the help of independent technical advisors. The lender's assessment of the project structure dictates the pricing (or credit spreads above government lending rates) that they offer to the sponsors.

Funding solutions for each project will vary depending upon the nature of the project and competitiveness of debt markets. Debt capital structures are typically comprised of one or more of (a) long-term amortizing bank debt; (b) long-term bonds issued pursuant to a narrowly marketed private placement; (c) long-term bonds issued pursuant to a broadly marketed private placement; and (d) short term financing.

- a) Bank debt: Prior to the financial crisis, select European and Japanese banks could loan funds at long tenors (20 years+). Currently, the long-term lending market has capacity to finance relatively large projects, but the loans are typically structure as 'soft mini-perms', which are structured as long-term debt but include incentives to refinance, usually after seven years, involving an increase in margins, or aggressive cash sweeps of any free cash flow.
- b) Long-term bonds, narrowly marketed: Privately placed bonds are typically sold to life insurance companies in Canada. These have been used on projects such as the W.R. Bennett Bridge in Kelowna, B.C.
- c) Long-term bonds, broadly marketed: Broadly marketed P3 bonds are a relatively new fixture in Canada, with the McGill University Hospital Centre project in Québec being the first to place a bond with over 50 investors, including pension funds, money managers, and life insurance companies, as opposed to a limited placement with two to four investors.
- d) Short-term financing: Short term financing, both bank and bond, is sometimes used to cover construction period costs, especially when a substantial completion payment is made by the authority at the completion of construction. This in effect can be structured to pay out the short term borrowing with the remainder of the borrowing covered by a long tenor loan. In P3 projects, Canadian banks tend to participate only in short term debt.

PPP Canada is a relatively new source of potential funding to Canadian P3 projects. This agency provides grants to public sector agencies to fund projects based on an application and business case process.

A primary difference between bank debt and bonds are that bond proceeds are typically received all at once at the start of construction. Interest begins accumulating on the borrowed funds despite the fact that the full amount of funds may not be required for a few years as construction progresses. The cost is termed "cost of carry". Bank debt on the other hand, is drawn as it is required through the construction period. The cost of carry trade-off, amongst other considerations, is typically evaluated when structuring financing on most projects.

The ability to implement innovative financing solutions, and the range of possible solutions, depends on a number of factors, including:

- Financial stability of the sponsors, constructors, and operations and maintenance team;
- Financial stability of the public authority;
- Terms and conditions of the project agreement;
- Financial security packages (letter of credit, guarantees, and reserve accounts) for both the constructor and operator; and,
- Certainty of revenues/payment, allocation of risks, and project risk profile specifics.

## 4.3 Project Procurement

### 4.3.1 Literature Findings

#### Process

Once it has been established that the P3 approach is preferable to other available alternatives, a public agency proceeds to identify and select the best private sector partner. To ensure that the procurement process is fair, open and transparent to all bidders, it is essential to maintain documents and records including the names of respondents in the REOI, RFQ and RFP stages, the reasons for the elimination of potential partners at each stage of the evaluation process, minutes of all meetings, and information that is disclosed in response to questions from potential partners and how the requests are handled.

The following ways were identified to streamline the procurement process:

- Procure P3 projects through dedicated agencies, or ensure there are adequate capacity and skills in the public service to effectively negotiate the P3 contract
- To minimize transaction cost, P3 agencies should consider meeting and discussing the content of the agreement with each short-listed bidder. The short-listed bidders submit proposals based on a common draft agreement.

There are now standards of transparency to the public that are employed in the P3 procurement process. The goal is to disclose as much as possible in the public interest without jeopardizing the ability of the government to generate the best value agreement for taxpayers. For example, Partnerships BC has published a paper titled “Procurement Related Disclosure for Public Private Partnerships” (updated March 2007) which provides an overview of the approach developed and adopted by the agency. Disclosure guidelines and rationale for the key stages in the procurement process (Request for Expressions of Interest, Request for Qualifications, Request for Proposals, Selection of Preferred Proponent, Final Value for Money Report, and Final Agreement) are described in the Partnerships BC paper.

Procurement documentation has also evolved to become more standardized. The objectives of standardization, according to “Building a Better Tomorrow: An Infrastructure Planning, Financing and Procurement Framework for Ontario’s Public Sector” are to:

- Reduce the period and costs of negotiation;
- Promote a common understanding of the major risks in various procurement approaches; and
- Provide a consistent approach to procurement.

#### P3 Contract

To ensure that the desired outputs in a P3 project are achieved, Performance Indicators, which define the target performance level, are stipulated in P3 contracts and serve as the basis for incentives or penalties primarily during the operational phase.

Literature suggests that there should be appropriate provisions in the contract to help protect the public interest. The inclusion of hand-back provisions in the contract add certainty as to the condition of an asset that will revert to the public sector at the end of the contract term.

Concession length may be used in creative ways in P3 contracts. For example, longer concessions may be used to provide the concessionaires with the incentive to achieve key performance indicators; contract extension may be granted after key performance indicators have been met for the majority of the initial contract term. On the other hand, long concessions may result in the public sector losing flexibility in making changes and achieving less realization of the benefits of competitive bidding.

#### **4.3.2 Overview of Current Canadian Practices**

In general, Canadian agencies indicated that the request for qualifications (RFQ) process is sufficient to screen in the most qualified proponents. Agencies indicated the following criteria being included in the RFQ evaluation:

- Financial capacity
- Management capacity
- Technical (design and construction) capacity
- Relevant experiences/projects
- Applicant's approach to partnering
- Skills and experience of team members

Weightings to the evaluation criteria may or may not be applied; this depends on the project and weightings may be set according to project characteristics.

Agencies indicated the following evaluation criteria being included in the RFP evaluation:

- Proposed schedule
- Proposed work methodology
- Experience of team members
- Technical and financial compliance against RFP requirements

The requirements of the request for proposal are generally carried through to the final contract. Several agencies have identified procedures which help to smooth the process:

- Holding workshops / collaborative meetings with shortlisted bidders (this is conducted in B.C., Alberta, Ontario, Québec and by PPP Canada).
- Holding commercially confidential meetings with shortlisted bidders.
- Including a final draft Project Agreement as the basis for the RFP.
- A Fairness Advisor may be assigned to oversee the procurement process.

The workshops and collaborative meetings allow the exchange of more sensitive information with the bidders without threatening the confidentiality of the information; to give more clarity to the bidders on the public sector's expectation on the project; and to

develop the necessary relationship with the bidder who may eventually become the successful proponent.

The terms that are mutually agreed to during discussions in workshops and collaborative meetings will be embodied in the final Agreement. Minor terms may be removed after the workshops.

Negotiations are generally not preferred, or in some cases, not allowed. Bidders respond to RFQ and RFP documents with definitive terms (including the criteria which will be used to evaluate proposals), which minimizes negotiation. Infrastructure Ontario and Nova Scotia Department of Transportation and Infrastructure Renewal indicated that negotiations have taken place with the highest ranked bidder, but the negotiation was not part of the evaluation process.

Most Canadian agencies do not deal with unsolicited proposals except for Nova Scotia Department of Transportation and Infrastructure Renewal which has a specific policy in this regard (dated 2009).

### **4.3.3 Lessons Learned by Agencies**

#### ***British Columbia***

Partnerships BC indicated that the evaluation criteria might be set according to the project, but at the same time the agency wishes to maintain consistency between procurements to ensure a familiar process for bidders.

Furthermore, the critical success factors of the procurement process are: sticking to the schedule, having collaborative meetings, and including a final draft Project Agreement as the basis for the issued RFP.

Conducting reference checks is an important element of the evaluation of nominated project team members.

#### ***Alberta***

Alberta Transportation Technical Standards Branch indicated that vague responses in the RFQ submissions may potentially cause good proponents to be screened out. The same agency has also experienced issues during the project operational stage where definitions/understanding of how work is to be carried out get lost in the process and are not fully realized. The agency is finding it necessary to be increasingly prescriptive when drafting the project terms.

The potential change of team members by proponents is seen as taking away the integrity of the procurement process.

#### ***Ontario***

Infrastructure Ontario routinely conducts commercially confidential meetings, design meetings, and evaluation orientation sessions in the procurement stage:

- Commercially confidential meetings allow for dialogue with the proponents to discuss issues
- Design meetings ensure that Infrastructure Ontario receives compliant bids and entertain innovative suggestions early to enhance the bid.
- Evaluation orientation sessions are facilitated by both the Procurement office and the Process Transaction Advisor to ensure that the evaluators are aware of their roles and responsibilities during the process.

In addition, a Fairness Monitor oversees the entire procurement process.

In the evaluation of proposed team members in the RFP stage, Infrastructure Ontario requests that the proponents not make any changes or substitutions but if necessary, the substitution must be of equal or higher value to the project.

### **Québec**

Bureau des Partenariats Public-Privé indicated that while the RFQ generally applies the same evaluation criteria for all projects (firm's experience in similar projects, skills and experiences of the proposed team, and financial strength of the company, all with the same weighting), the focus of the RFP evaluation may vary. For example, more attention is paid to the team members that construct the highway in a build-operate project, whereas the attention is focused on the team that operates the facility in the case of a build-operate project related to an elderly facility.

### **PPP Canada**

PPP Canada indicated it is crucial for the RFP requirements to be carried through to the final contract. This is a fairness issue and more important, it gives a clear message that the public sector is fully knowledgeable of the project being considered.

PPP Canada holds workshops with the bidders during the RFP stage.

The key project staff receive a lot of attention in the RFP evaluation. If their replacement is required, the replacement must be of equal value to the project, and the replacement is subject to the agency's approval. To date, one road project has been submitted and approved under the P3 Canada fund.

## **4.4 Project Management Elements**

### **4.4.1 Literature Findings**

#### Public Agency Management Capacity

With regard to public sector expertise, a U.S. document (KCI Technologies Inc., 2005) indicates that "...implementation of P3 projects typically requires a dedicated staff of State employees with a willingness to be pioneers and commitment to making the project succeed....the selection of project staff was noted as critical in every State



visited....most States supplement the internal team with specialized consultants, most notably for financing, legal issues and negotiation”.

Another U.S. study (Brown et al., 50) that attempts to capitalize on the lessons learned from international jurisdictions notes that deliberate actions have been taken by public sector agencies with more extensive experience in P3 projects to build and improve the public sector capacity, by establishment of best practices groups, development of principles and guidelines, and creation of standard procedures, for example. Nevertheless, the need for specialized expertise in areas such as legal and financial matters will not cease.

Interviews conducted as part of a U.S. study (Czerwinski and Geddes, 2010) indicate that agencies agree on the importance of managing the public-private relationship over the life of the contract, and confronting and rebalancing issues as they arise rather than waiting until very large contractual changes become necessary.

### Owner's Engineer

While the concessionaire is responsible for self monitoring and reporting (quality control and quality assurance) throughout the contract period, an Owner's Engineer is often retained by the public partner and serves as an objective third party to check compliance with the requirements stipulated in the P3 contract.

The role of the Owner's Engineer typically involves checking and commenting on the various design and proposed methods of construction by the shortlisted proponents during the RFP design development phases to ensure compliance with the objectives and performance specification, and making site visits, reviewing progress reports prepared by the concessionaire for design, construction and start-up, reporting to the public partner on the construction progress, certifying completion of work for the purpose of making payments to the concessionaire, and providing technical advice to the project owner during the project implementation phase.

The use of an Owner's Engineer eliminates the day-to-day responsibility of the public partner for supervising project delivery, as is the situation in conventional projects. Nonetheless, the public partner retains overall responsibility and control over the delivery of the project and is charged with a quality audit role.

#### **4.4.2 Overview of Current Canadian Practices**

The provincial transportation agency offices, rather than specialized P3 agencies, have direct responsibility in overseeing the implementation phase of P3 roads and bridges projects. The specialized P3 agencies may be involved, but only as a source of guidance and support to the Owner.

In general, Canadian agencies have implemented various processes to facilitate the turn-over from the design/build phase to the operational and maintenance phase of a P3 project. For example:

- In BC, Partnerships BC is in the process of developing guidance documents to aid clients, including the B.C. Ministry of Transportation and infrastructure, in better managing the transition from procurement to design and construction; and from design and construction to operations
- In Alberta, operations staff is involved during the RFP review and made familiar with the Design/Build details prior to opening of the facility
- In Ontario, as part of the Highway 407 ETR project, most Subject Matter Experts that were involved in the design/build and commissioning process continue to take part in the operational phase by taking part in random audits
- In Québec, a number of staff members in the Ministère des Transports du Québec manage the checks, changes and decisions related to a P3 project. Knowledge transfer is possible due to a number of available staff and resources remaining available from one phase to another

In terms of differences in the management of P3 projects versus traditional design-bid-build mode of delivery, agencies indicated that the role of the public agency is different in a P3 project but the resource requirement is the same or less in a P3 project (same level of due diligence, but the level of oversight from an asset management perspective is reduced or eliminated). The public agency manages an Agreement and must have established procedures in place, including the appointment of an Owner's Engineer, to confirm that the private partner has met its obligations.

Changes in a P3 project, according to agencies, occur less frequently compared to traditional mode of delivery. Changes are minimized due to the performance requirements being clearly defined in the RFP stage. When they do occur, they are often due to outside influences. In dealing with change, the Project Agreement would have already defined what constitutes a change and how it is to be valued, or the request is reviewed and decision made by the representative of the Minister based on quantifying the financial impact.

Survey agencies were asked to share the major issues and concerns that they have experienced with regards to managing P3 projects. The responses included:

- There have been challenges for the public partner in having the private partner correct errors found in the final details
- There have been situations where the private partner has initiated minor construction work (at its own risk) prior to the full design details being submitted to the public partner for review
- Poor design decisions, where the private partner is pushing the limits (designing for minimum standards) in order to save money
- Poor construction and resulting performance
- Inadequate level of customer service provided by the infrastructure
- Disagreement on contract terms and meaning
- Need to create a contract methodology to address changes during the operational and maintenance phase, such as new infrastructure and/or new service/output levels. The elements to consider include cost of latent risk, resulting operations, maintenance and rehabilitation procedures changes, and

hand back conditions modifications. The concessionaire's responsibilities must be defined, along with the process for dealing with change.

- Legislative, environmental and technological changes occur overtime and the ability to amend the concession agreement for these changes, which may spread over a long term, is of concern. Such changes may also be difficult to incorporate unless they generate benefits to both parties.
- It is impossible to anticipate all of the future needs of external agencies, such as municipalities, utilities and transit systems. To mitigate difficulty in including such changes, when they were not anticipated in the original agreement, the concession length must be reduced.

#### **4.4.3 Lessons Learned by Agencies**

##### ***Alberta***

Alberta is investigating ways to improve staffing, training and continuity in support of a smoother transition from the Design/Build phase to the Operations phase. Increased involvement by Operations staff during the Design/Build stage is desirable to reduce the time that Design/Build administrators spend on operational issues.

More extensive quality control and quality assurance programs are in place in a P3 project compared to traditional delivery.

##### ***Québec***

The Ministère des Transports du Québec acknowledges that P3 projects require a new business relationship, where both partners have responsibilities, obligations and specific rights. It is important to be aware of them and respect them.



## 5.0 Additional Input on Lessons Learned by the Author

To enhance the information provided in this synthesis on the different perspectives related to P3 projects, this section highlights some key lessons learned by the author of this report.

### *P3 Project Procurement*

- While the public agency is seeking innovations from the bidders, it is important to provide clarity in the RFP documents on the minimum scope or baseline design that is required. The evaluation process should be set so that disqualification will happen if a bid does not achieve the defined baseline design. This also speaks to the importance of clear communication on the evaluation process. For example, in the Sea-to-Sky Highway Improvement project in B.C., the Owner had determined criteria which would meet the project objectives and these criteria were included as the basis for proposal evaluation.
- Dialogue between the public sector agency and the concessionaire during the procurement process is essential to achieve project success. The dialogue can take place in the form of design review meetings and project agreement comment meetings, for example, and it helps to build a partnership and develop understanding between the parties that are involved.
- Having a formalized process to discuss innovations and a formalized procedure to submit innovations as part of a bid will create benefit for the parties and the project.
- In order to meet project timelines, the Owner may have to accommodate some flexibility in the process. For example, in the Sea-to-Sky project in B.C., the Owner pre-selected and constructed some sections of the corridor to mitigate the impact caused by potential delays in the procurement process. The pre-selected segments were turned over to the concessionaire for operation and maintenance.
- Right-of-way acquisition is usually carried out by the Owner. Realizing that such acquisition may be costly in urban areas, the Owner should encourage the concessionaire to come up with innovative design and/or construction solutions that would minimize right-of-way acquisition.

### *Stakeholder Involvement*

- Using the Sea-to-Sky project in B.C. as an example, two years were spent on extensive consultation and workshops with the impacted municipalities and communities along the corridor. It was a challenge to reach a sufficient level of consensus on the project scope among all those that are involved in order to complete the preliminary design. Ideally, relationship building begins and community support is sought at an early stage but this is often easier said than done. In the Sea-to-Sky project in B.C., the initial municipal and community consultation had to be completed in time to finalize the preliminary design which was included as part of the RFP package. The Owner continued to carry out consultation during the construction stage. The lesson learned from this project was that the higher the level of consensus attained from the Communities prior to issuing the RFP, the smoother the Project will proceed during the construction stage.
- The above lesson learned was also apparent in the W.R. Bennett Bridge project in B.C. where the community raised issue with sinking 50% of the old bridge pontoons into

Okanagan Lake (concern with potential drinking water contamination), despite that this procedure had acquired the necessary permits from approving government agencies. This speaks to the importance of carrying out public consultation, and of documenting the results in a timely and diligent manner.

### *P3 Project Management*

- To facilitate the transition from the design/build stage to the operational and maintenance stage in the W.R. Bennett Bridge project in B.C., and to obtain a higher level of comfort and assurance that experienced and knowledgeable staff will be looking after the infrastructure, technical staff from the construction stage was retained for the operational and maintenance phase to carry out inspections and supervision for the preventative maintenance programme. In addition, a marine works sub-contractor, who had a major role in constructing the bridge, was recruited to fill the operations and maintenance manager's position, approximately six months prior to substantial completion. These are examples that demonstrate quality assurance and lifecycle cost savings generated by employing the most knowledgeable staff at the right time.
- The success of the Canada Line Rapid Transit Project in B.C. was partly attributed to an effective project management scheme characterized by flexibility (which allowed it to readily adapt and make changes in plan as necessary to address issues as they arose) and an experienced, strong and dedicated team (many people at all levels of the project had previous experience on rapid transit projects in Vancouver and elsewhere).

### *Innovation*

- For the W.R. Bennett Bridge project in B.C., there are huge penalties for lane closures during heavier traffic periods during both the design/build and operations and maintenance stages. For example, the operations and maintenance service is based on virtually all maintenance works which require lane closure to be carried out at night during the period where the remaining open lanes can handle the traffic with minimal delays. As an innovation, components such as expansion joints have been designed so that they can be replaced in smaller sections which can be carried out overnight with all lanes put back into operation for traffic the next morning. Most of the expansion joints on a typical bridge in B.C. require much longer periods to replace with lane closures remaining during daytime hours, causing major traffic disruption, despite it may only take place every 10 to 15 years.

## 6.0 Conclusions

This synthesis focused on the state of practices and lessons learned in P3 transportation roads and bridges projects in a Canadian context. The key conclusions from this review are:

### Assessment of P3 Project Suitability:

- There are differences among Canadian agencies in the definition of P3, as well as in the delivery models that are considered P3. Agencies that are most active in P3 projects have all established guidelines that set out the assessment and management processes related to P3 projects. Their guidelines help to ensure that public agencies carry out processes in a consistent, thorough and disciplined manner. Surveyed agencies have commonly indicated that they seek to learn from previous experiences and would update their guidelines as necessary to improve process efficiency.
- Based on actual implementation, design-build-finance-operate and design-build-finance-operate-maintain delivery models are most commonly applied in P3 transportation roads and bridges projects in Canada. In fact, these model names are used somewhat interchangeably by Canadian jurisdictions. In roads and bridges projects, “operate” and “maintain” typically go hand-in-hand.
- Agencies have adopted the use of multiple phases in the assessment process to systematically analyze feasibility, first at a higher level using prerequisites for screening (the Alberta process, for example) or a strategic presentation document that assesses the project’s relevance and identify options and cost estimates on a preliminary level (the Québec process, for example), then proceed to detailed assessments that involve quantitative assessments of lifecycle costs and benefits, as well as risks.
- The minimum threshold value at which a project would be considered for P3 procurement ranges from \$40 million to \$100 million. The value establishes the baseline level at which risk transfer to the private partner can be anchored, while justifying the required transaction cost to the public partner. Two provinces, B.C. and Québec, have established policies around the project value at which an assessment of procurement using P3 would be compulsory. In the case of B.C., that value is \$50 million; in Québec, that value is \$40 million.

### Development of Business and Financial Models:

- P3 projects in Canada are procured using two different models: availability payment model and completion payment model.
- The ability to implement innovative financing strategies, and the range of possible solutions, depend on a number of factors. They include: financial stability of the sponsors, constructors, and operations and maintenance team; financial stability of the public authority; terms and conditions of the project agreement; financial security packages for both the constructor and operator; and, certainty of revenues/payment, allocation of risks, and project risk profile specifics.

### **Project Procurement:**

- Agencies have adopted the use of a sequential procurement process for the selection of a project partner. Many provinces have adopted the process of holding workshops or collaborative meetings with shortlisted bidders to facilitate the exchange of information, provide more clarity to the bidders on the public partner's expectation on the project, and to develop the necessary relationship with the bidder who may eventually become the successful proponent.
- It is important to ensure a fair and transparent procurement process for all bidders. Public agencies also need to address the issue of providing transparency to the public through appropriate disclosure.

### **Project Management:**

- Implementation of P3 projects typically require a dedicated staff of public sector employees with a commitment to making the project succeed.
- Key agencies have identified ways to facilitate the turn-over from the design/build phase to the operational/maintenance phase of projects, most often by having operations staff participate during the design/build phase or even earlier at the RFP review stage, and vice versa (design/build staff are retained to assist in the operational phase).
- As reported in the survey, public agencies face unique challenges in the project management stage depending on the nature of the P3 concessionaire agreement (for example, length of contract and established performance standards). It is also difficult to incorporate changes that correspond to future needs, such as legislative, environmental and technological changes, and future requirements of utilities, transit systems and municipalities.



## 7.0 Glossary of Terms

Term Used in Report	Definition
Alternative Financing and Procurement	<p>A term for P3 used by the Ontario government</p> <p>A range of infrastructure project delivery methods which use private expertise and financing to strategically rebuild vital infrastructure, on time and on budget, while ensuring appropriate public control and ownership.</p>
Availability payments	<p>In availability PPPs (no revenue/market risk transferred to the private partner) the availability payment is a periodic payment by the Procuring Authority to the Project Company to cover the project's capital, operational and maintenance costs. The availability payment is used as a performance incentive in a PPP project because it includes penalties for non performance (availability, service and quality failures) and in certain cases, bonuses for exceeding performance standards.</p>
Build	<p>The private sector partner will be responsible for the overall construction of the bid design, including such areas as engineering and architectural responsibilities and permits. Incorporated in this risk will be a commitment by the private sector partner, to deliver the public infrastructure for a fixed price and date. Any cost overruns or savings will be to the private sector partner's account. If the delivery date is missed, financial penalties may be imposed on the private sector partner. In a P3 project the private sector partner takes on both design and construction, and it has the ability to work concurrently on the design and construction phases to generate time and cost savings.</p>
Commercial Close	<p>Execution of the project agreement</p>
Concession length	<p>The length of the PPP contract term</p>
Credit spread refresh	<p>Refers to updating the financial model, as submitted at bid submission, at Financial Close with the current market pricing for the debt product proposed. The time between the date of submitting a financial bid and reaching financial close can be several months and market pricing on debt can shift. This mechanism is used as lenders are reluctant to hold pricing for extended periods of time.</p>
Credit spread clearing process	<p>The Credit Spreads clearing process is the process that defines how to treat gains or losses associated with bond pricing from the time a commitment is made for a transaction (credit spread lock in date) until it is settled (Financial Close) with the bondholders.</p>

<b>Term Used in Report</b>	<b>Definition</b>
Debt	Funds in the form of bonds or bank lending used to finance a project.
Design	The public sector partner will undertake a base level design to define the project scope, which allows sufficient room for the market to demonstrate efficiencies and innovation. Respondents will be responsible for ensuring all design requirements outlined in the RFP documents have been incorporated in their final bid price. The successful private sector partner will be responsible for completing and delivering on the final design.
Equity	Unsecured funds provided by the private sector partner used to finance a portion of a project. Equity typically forms a minority share of financing and is subordinate to debt.
Finance	<p>Private financing can take two forms. Under the first scenario, the private sector partner arranges the construction financing until substantial completion. During construction, the public sector partner can make milestone/ progress payments or a lump sum at substantial completion. A P3 model involving the design, build and short term financing is known as the DBF approach.</p> <p>If the public sector wishes to transfer further financial risk to the partner, then a long term private financing approach should be considered. Under this scenario, the private sector provides financing during the construction phase with a percentage that could be carried over through the end of the concession period. Securing private financing during the concession period anchors the risks transferred during the operational period. This model is known as the DBFO/ DBFOM.</p>
Financial Close	Execution of lending agreements following Commercial Close. A point at which construction can begin.
Handback requirements	The P3 contract states the condition in which the asset must be in at the end of the concession period. These conditions must be laid out in detail with definable metrics illustrating not only specific values, but also the processes by which these values will be assessed. Typically, asset audits will begin several years before the end of the concession period to allow the Project Company the opportunity to remedy any hand back requirements that are not met.
Honorarium	A payment made to unsuccessful shortlisted bidders in a request for proposals process as partial compensation for expenses incurred in submitting a compliant proposal.

<b>Term Used in Report</b>	<b>Definition</b>
Maintain	<p>This project structure includes transfer of risk and responsibility related to the long term lifecycle requirements to the private sector partner. Because appropriate and timely lifecycle investment is applied throughout the concession period, the condition of the public infrastructure may be in a better state than if it remained under public management. If Maintenance is included as part of the performance payment then it becomes part of the operating costs of the building. This model is known as DBFOM.</p> <p>For roads and bridges, examples of maintenance activities include: replacing bulbs in light standards, power washing the roadway, painting lines, repaving, filling potholes.</p>
Market sounding	<p>Market sounding often follows the completion of a feasibility study. The market sounding informs prospective private sector proponents and sector specialists of the impending project, and provides an outline of the project including the potential procurement process and the commercial structure. The aim of the market sounding is to receive feedback through confidential meetings from the private sector market on various aspects of the project, including testing or confirming assumptions, an opportunity to identify issues of concern from the private sector's perspective and receive early intelligence on the potential level of interest the project could attract in the market. Typically the market sounding document includes a project profile, a potential procurement process and the high level commercial structure.</p>
Mini-perm solutions	<p>A mini-perm (perm short for permanent) in the context of a long term project financing, is a loan that is either 'hard' meaning it has a tenor of five to seven years, at which time the bulk of the loan is still outstanding and the loan must be refinanced or the borrowers will default, or "soft" where the legal maturity of the loan is long (e.g. 20 years) but incentives to refinance are structured into the loan starting at about year five. These incentives could include ratcheting up the margin on the loan at specified dates, and cash sweeps, where any project free cash flow automatically used to pay down the loan.</p>
Non-recourse finance	<p>A loan where the lending bank is only entitled to repayment from the profits of the project the loan is funding, not from other assets of the borrower.</p>

Term Used in Report	Definition
Operate	<p>A variety of responsibilities for the facility can be considered under this component. Security, janitorial, landscaping/snow removal, programming etc. are typical service options. The public sector partner can chose to select and transfer one or several of these responsibilities to the private sector partner to manage. Once these service options have been determined, the public sector partner will need to establish performance specifications in the RFP document. Under this model, the operator provides an agreed upon operating cost throughout the concession period. One of the major benefits of including Operations in the P3 approach is the early involvement of the operator as part of the design and construction team for the facility. This early involvement could translate into a more efficiently built and operated facility.</p> <p>For roads and bridges, operation means activities that are required to maintain traffic flow. Examples of such activities include: responding to clear disabled vehicles, managing lane closures required for maintenance activities, operating a counter flow lane.</p>
Performance-based contracts	<p>The agreement between the public partner and the private partner in a public-private partnership where payment to the private partner is based on performance. The service delivery standards are stipulated in the agreement.</p>
Public-Private Partnerships	<p>In the context of Canadian transportation roads and bridges projects implemented to date, a public-private partnership is a mode of delivery characterized by the private sector's involvement in the design, construction, financing, operation and/or maintenance of the infrastructure.</p> <p>The term "public-private partnership" and "alternative financing and procurement" are interchangeable in the Canadian context.</p>
Public sector comparator	<p>The public sector comparator is a financial model of the risk adjusted lifecycle cost under a traditional delivery model (construction plus maintenance and any rehabilitation during the period of analysis) for a reference concept project, prepared for the purposes of comparing the same project procured as a P3.</p>
Risk management	<p>The culture, processes and structures directed to the effective management of potential opportunities and adverse effects. This includes a systematic process for the identification, analysis of, and response to risk factors throughout a project's lifecycle.</p>

<b>Term Used in Report</b>	<b>Definition</b>
Shadow Bid	A financial model developed to represent the procurement of a project using a P3 approach. The Shadow Bid is used to develop a cost estimate to be compared to the Public Sector Comparator as a means of evaluating potential differences in the present value of the risk adjusted costs between traditional and P3 procurement.
Shadow tolls	Payments made by the government to a concessionaire based, at least in part, on the number of vehicles using a road. No tolls are collected from the drivers. This model of compensation has been used several times in the UK.
Sponsor	In the context of P3 project management, the project sponsor is the private sector executive agency that manages, administers and monitors a project, and is responsible for the overall project delivery.
Transfer	In the context of risk, risk transfer refers to risk associated with delivering a project that is typically borne by the public sector under traditional procurement that is transferred to the private sector under a P3.
Unsolicited proposals	A bid by a private company to the government for a project for which bids have not been solicited.
Value-for-Money	Also commonly referred to as value for taxpayer dollars, VFM describes the benefits to the public expected to be realized through a particular procurement method, and can be quantitative and/or qualitative in nature. Quantitative value for money is achieved through a procurement method that results in a lower project cost, whereas qualitative value is achieved when a particular procurement method better supports the goals and objectives of a project without necessarily costing less.



## 8.0 References

### *Bibliography*

Alberta Infrastructure and Transportation. September 2006. *P3 Public Private Partnerships - Alberta Transportation and Infrastructure Management Framework: Assessment*. Edmonton, AB: Alberta Infrastructure and Transportation

Weingart Brown, Janice et al. March 2009. *Public-Private Partnerships for Highway Infrastructure: Capitalizing on International Experience*. Washington, DC: United States Department of Transportation, Office of International Programs.

Czerwinski, David and Geddes, R. Richard. July 2010. *Policy Issues in U. S. Transportation Public-Private Partnerships: Lessons from Australia*. San José, CA: San José State University, Mineta Transportation Institute.

Eggers, William D. and Startup, Tom. 2006. *Closing the Infrastructure Gap: The Role of Public-Private Partnerships*. Washington, DC: Deloitte Research.

Rall, Jaime, Reed, Jim B., and Farber, Nicholas J. October 2010. *Public-private partnerships for transportation a toolkit for legislators*. Washington, DC: National Conference of State Legislatures.

Iacobacci, Mario. January 2010. *Dispelling the Myths: A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments*. Ottawa, ON: Conference Board of Canada.

KCI Technologies. 22 June 2005. *Current Practice in Public-Private Partnerships for Highways Draft Report*. Baltimore, MD: Maryland Transportation Authority.

Department of Transportation. December 2004. *United States Department Report to Congress on Public-Private Partnerships*. Washington, DC: United States Department of Transportation, Federal Highway Administration.

**Guiding Publications (as numbered in Section 2.2.1)**

1. P3 Canada Fund Program Overview, Submission Guide & Project Submission Form: Round Two (May – June 2010)  
<http://www.p3canada.ca/news.php>
2. P3 Canada Fund Application Guide and Application Form Round Three (May – June 2011)  
<http://www.p3canada.ca/p3-canada-fund-info-applicants.php>
3. Capital Asset Management Framework  
<http://www.fin.gov.bc.ca/TBS/camf.htm>
4. An Introduction to Risk Management in a Public Private Partnership  
<http://www.partnershipsbcc.ca/pdf/risk-management-ppp-28-jul-06.pdf>
5. Office of the Comptroller General Practice Guideline 1 Public-Private Partnerships Guidance for Quantitative Procurement Options Analysis  
<http://www.fin.gov.bc.ca/ocg/fras/capitalization/Downloads/P3%20Practice%20Guidelines%20May%202009.pdf>
6. Guidance for Quantitative Procurement Options Analysis  
[http://www.partnershipsbcc.ca/files/documents/pbc-methodology-quantitative-procurement-options-analysis-29jan10\\_000.pdf](http://www.partnershipsbcc.ca/files/documents/pbc-methodology-quantitative-procurement-options-analysis-29jan10_000.pdf)
7. Procurement Related Disclosure for Public Private Partnerships  
[http://www.partnershipsbcc.ca/files/documents/pbc-disclosure-guidance-19jan10-update\\_000.pdf](http://www.partnershipsbcc.ca/files/documents/pbc-disclosure-guidance-19jan10-update_000.pdf)
8. Management Framework: Assessment Process  
<http://www.infrastructure.alberta.ca/Content/doctype309/production/ait-p3-assessmentframework.pdf>
9. Management Framework: Procurement Process  
<http://www.infrastructure.alberta.ca/Content/doctype309/production/ait-p3-procurementframework.pdf>
10. Building a Better Tomorrow: An Infrastructure Planning, Financing and Procurement Framework for Ontario's Public Sector  
[http://www.mei.gov.on.ca/en/pdf//infrastructure/BBT-Framework\\_EN.pdf](http://www.mei.gov.on.ca/en/pdf//infrastructure/BBT-Framework_EN.pdf)
11. Assessing Value for Money: A Guide to Infrastructure Ontario's Methodology  
<http://www.infrastructureontario.ca/en/projects/files/VFM%20GUIDE%20WEB.pdf>
12. Public-Private Partnership Framework Policy  
[www.infra.gouv.qc.ca](http://www.infra.gouv.qc.ca)
13. Framework Policy for the Governance of Major Public Infrastructure Projects  
[http://www.tresor.gouv.qc.ca/fileadmin/PDF/publications/Politique-cadre\\_2010\\_ANG.pdf](http://www.tresor.gouv.qc.ca/fileadmin/PDF/publications/Politique-cadre_2010_ANG.pdf)



14. Guide d'élaboration du dossier d'affaires des grands projets d'infrastructure publique  
*<http://www.tresor.gouv.qc.ca/nouvelles/article/mise-en-ligne-du-guide-delaboration-du-dossier-daffaires/>*
  
15. Public-private partnership Protocol  
*<http://www.gnb.ca/0158/reports/protocol/protocol.htm>*

**Websites of Agencies (as listed in Appendix B)**

Partnerships BC

<http://www.partnershipsbc.ca/>

BC Ministry of Transportation and Infrastructure

[www.th.gov.bc.ca](http://www.th.gov.bc.ca)

Alberta Infrastructure and Transportation

<http://www.infrastructure.alberta.ca>

Infrastructure Ontario

<http://www.infrastructureontario.ca/en/index.asp>

Ontario Ministry of Transportation

<http://www.mto.gov.on.ca/english/>

Ministère des Transports du Québec

[http://www.mtq.gouv.qc.ca/portal/page/portal/entreprises\\_en/zone\\_fournisseurs/c\\_affaires/partenaire\\_public\\_privé\\_ppp](http://www.mtq.gouv.qc.ca/portal/page/portal/entreprises_en/zone_fournisseurs/c_affaires/partenaire_public_privé_ppp)

Nova Scotia Department of Transportation & Infrastructure Renewal

<http://www.gov.ns.ca/tran/>

PPP Canada

<http://www.p3canada.ca/home.php>

Virginia Department of Transportation

[http://www.virginiadot.org/default\\_noflash.asp](http://www.virginiadot.org/default_noflash.asp)

Minnesota Department of Transportation

<http://www.dot.state.mn.us/>

## **APPENDIX A**

### **SUPPLEMENTARY INFORMATION ON P3 PROJECTS, P3 AGENCIES, P3 DEFINITIONS AND P3 GUIDING DOCUMENTS**

Six tables are included in this Appendix that provides supplementary information on:

Table A-1: Canadian roads and bridges P3 projects (project stage as of March 2011)

Table A-2: Canadian specialized P3 agencies' roles and enabling legislations

Table A-3: North American P3 organizations' vision and key activities

Table A-4: North American P3 definitions

Tables A-5 and A-6: Overview of the Content of Canadian and American P3 Guiding Documents

**Table A-1: Canadian Roads and Bridges P3 Projects**

Province	Project Name	P3 Delivery Model*	Project Stage <i>(as of March 2011)</i>
BC	Sierra Yoyo Desan Road	Design-Build-Finance-Operate-Maintain	Operational
	William R. Bennett Bridge	Design-Build-Finance-Operate-Maintain	Operational
	Sea-to-Sky Highway Improvement Project	Design-Build-Finance-Operate-Maintain	Operational
	Golden Ears Bridge	Design-Build-Finance-Operate-Maintain	Operational
	South Fraser Perimeter Road	Design-Build-Finance-Operate-Maintain	Construction
AB	Anthony Henday Drive Southeast	Design-Build-Finance-Operate**	Operational
	Stoney Trail Northeast	Design-Build-Finance-Operate**	Operational
	Anthony Henday Drive Northwest	Design-Build-Finance-Operate**	Construction
	Stoney Trail Southeast	Design-Build-Finance-Operate**	Construction
ON	Highway 407 ETR	Design-Build-Finance-Operate-Maintain	Operational
	Highway 407 East Extension	Design-Build-Finance-Maintain	RFQ closed
	Windsor-Essex Parkway	Design-Build-Finance-Maintain	Construction
NB	Fredericton-Moncton Highway	Design-Build-Finance-Operate-Maintain	Operational
	Trans-Canada Highway (New Brunswick)	Design-Build-Finance-Operate-Maintain	Operational
	Route 1 Gateway Project	Design-Build-Finance-Operate-Maintain	Construction
QC	Autoroute 25	Design-Build-Finance-Operate-Maintain	Construction
	Autoroute 30	Design-Build-Finance-Operate-Maintain	Construction
PEI	Confederation Bridge	Design-Build-Finance-Operate-Maintain	Operational
NS	Highway 104	Design-Build-Finance-Operate	Operational
MB	Charleswood Bridge	Design-Build-Finance-Operate	Operational
	Chief Peguis Trail Extension	Design-Build-Finance-Maintain	Construction
	Disraeli Bridges	Design-Build-Finance-Maintain	Construction

\* P3 models are further described in Section 2.1.2.

\*\* In Alberta, DBFO is used interchangeably with DBFOM. The DBFO model includes all maintenance activities.

Table A-2: Canadian Public Sector Specialized P3 Agencies

Province	Specialized P3 agency	Year Established	Legislation for the Creation of the Agency	Role of Agency
BC	Partnerships BC (Wholly owned by the Province of British Columbia and reports to its shareholder, the Minister of Finance)	2002	B.C. Business Corporation Act	<p>Involvement can include some or all of the following:</p> <ul style="list-style-type: none"> <li>- Business case analysis to determine the best model for delivering a project</li> <li>- Management of the competitive selection process, including writing and issuing requests for qualifications and requests for proposals, facilitation of fair evaluation of proposals, and final negotiations to reach a contract that meets the project objectives and delivers value to BC taxpayers</li> <li>- Project and contract management throughout the life of the project</li> </ul> <p><i>(Source: Partnerships BC website)</i></p>
AB	Alberta Transportation Major Capital Projects Branch	2003 (the year when the agency's mandate expanded into P3)	<i>Alberta Partnership Act</i>	<ul style="list-style-type: none"> <li>- Recommends the inclusion of projects with P3 potential in the Government of Alberta Capital Plan</li> <li>- Reviews detailed P3 business case assessments and approves P3 projects to proceed to the procurement phase based on the risk profile and the cost estimate presented in the business case</li> <li>- Receives status reports on individual P3 projects</li> </ul> <p><i>(Source: Alberta Infrastructure and Transportation Management Framework: Assessment Process, September 2006)</i></p>
ON	Infrastructure Ontario (A corporation without share capital, and composed of the members of its board of directors. The members are appointed by the Lieutenant Governor in Council. The Chair and Chief Executive Officer are designated and appointed by the Lieutenant Governor in Council respectively. Infrastructure Ontario reports to the Minister of Infrastructure.)	2005	Ontario Infrastructure Projects Corporation Act	<ul style="list-style-type: none"> <li>- Organized into six functional areas: Project Delivery, Nuclear Procurement Project Team, IT Project Delivery Group, Project Assessment, Infrastructure Lending, and Human Resources and Information Technology.</li> <li>- Work is guided by principles outlined in the province's Building a Better Tomorrow framework.</li> <li>- Involvement can include some or all of the following: <ul style="list-style-type: none"> <li>• Project assessment</li> <li>• Managing procurement and negotiating contracts</li> <li>• Project management</li> <li>• Provision of loans through the Loan Program</li> </ul> </li> </ul> <p><i>(Source: Infrastructure Ontario 2008/09 Annual Report)</i></p>

Province	Specialized P3 agency	Year Established	Legislation for the Creation of the Agency	Role of Agency
QC	<p>Infrastructure Québec (Replaced the former Agence des partenariats public-privé. Infrastructure Québec's mandate increased beyond P3 and include working with public agencies to prepare a business case for all projects over \$40 million, regardless of delivery mode)</p>	2009	Bill 65	<ul style="list-style-type: none"> <li>- Advises the Government on any matter of public infrastructure projects</li> <li>- Provides expert services to public bodies in respect of any public infrastructure project, in particular with regard to identifying the elements to be taken into consideration in assessing project relevance, to identifying the options available to meet the need with due regard for the functional, durable and harmonious nature of the proposed infrastructure, and to determining the preferred option and the project delivery approach</li> <li>- Provides public bodies with strategic, financial and other advice with regard to public infrastructure projects</li> <li>- Participates in the meetings of the committee responsible for the follow-up of public infrastructure projects, including with regard to scheduling and budget control</li> <li>- Operates a documentation centre accessible to all interested persons on matters related to the planning, carrying out and management of public infrastructure projects; for that purpose, Infrastructure Québec collects and analyzes information on similar experiences in Canada and abroad</li> <li>- Exercises any other function assigned to it by the Government</li> </ul> <p><i>(Source: Bill 65, Parliament of Québec)</i></p>
<p>PPP Canada (Federal) (A crown corporation managing a \$1.2 billion fund in support of P3 infrastructure projects)</p>	2008	Canada Business Corporation Act	<p>Established for the purpose of Part X (except Section 90) of the Financial Administration Act, the agency serves four principle functions:</p> <ol style="list-style-type: none"> <li>1) Investment of \$1.2 billion to catalyze the use of P3 by other levels of government</li> <li>2) Review large infrastructure projects over \$50 million from other levels of government seeking funding from federal programs</li> <li>3) Assess public-private partnerships opportunities at the federal level in accordance with the criteria established by the Treasury Board</li> <li>4) Act as a source of expertise and advice on P3 matters</li> </ol> <p><i>(Source: Summary Corporate Plan 2010-2015, Operating and Capital Budget 2010/11)</i></p>	

**Table A-3: Key North American Organizations**

Organization	Vision / Mission	Key Activities / Objectives
<p>Canadian Council for Public-Private Partnerships</p>	<p>To influence the way in which public services are financed and delivered in Canada by:</p> <ul style="list-style-type: none"> <li>- Encouraging public-private partnerships</li> <li>- Providing information on public-private partnerships</li> <li>- Sponsoring conferences and seminars on partnerships</li> <li>- Stimulating dialogue between public and private sector decision-makers on the financing and delivery of public services</li> <li>- Educating the public</li> <li>- Conducting objective research on key issues that influence the effective use of partnerships</li> </ul> <p><i>(Source : <a href="http://www.pppcouncil.ca/about-ccppp.html">http://www.pppcouncil.ca/about-ccppp.html</a>)</i></p>	<ul style="list-style-type: none"> <li>- Promotion and facilitation of public-private partnerships across Canada</li> <li>- Compilation of a resource library on PPP issues and projects</li> <li>- An annual conference and regional events on a wide variety of PPP topics</li> <li>- Informative newsletters (P3 Quarterly) on Council activities, news and issues discussed at the national conference</li> <li>- Workshops and seminars that allow participants to share innovative ideas and solutions through a national network</li> <li>- Council-sponsored publications, including research papers, case studies, guidelines, opinion surveys and national inventories on key public-private partnership subjects</li> </ul> <p><i>(Source: <a href="http://www.pppcouncil.ca/about-ccppp.html">http://www.pppcouncil.ca/about-ccppp.html</a>)</i></p>
<p>National Council for Public-Private Partnerships (U.S.)</p>	<p>The mission of The National Council for Public-Private Partnerships is to advocate and facilitate the formation of public-private partnerships at the federal, state and local levels, where appropriate, and to raise the awareness of governments and businesses of the means by which their cooperation can cost effectively provide the public with quality goods, services and facilities.</p> <p><i>(Source: <a href="http://ncppp.org/AboutUs/index.shtml">http://ncppp.org/AboutUs/index.shtml</a>)</i></p>	<ul style="list-style-type: none"> <li>- To serve as an advocate of public-private partnerships.</li> <li>- To provide complete, objective, timely and useful information on the utilization of public-private partnerships to provide services and facilities to the general public.</li> <li>- To facilitate communications between public- and private-sector members with respect to issues related to the implementation of public-private partnerships.</li> <li>- To conduct educational, training and other activities on public-private partnerships.</li> <li>- To provide input to the public dialogue in support of the use of public-private partnerships and removal of impediments to their implementation.</li> <li>- To facilitate an international dialogue on public-private partnerships in support of the foregoing objectives.</li> </ul> <p><i>(Source: <a href="http://ncppp.org/AboutUs/index.shtml">http://ncppp.org/AboutUs/index.shtml</a>)</i></p>

**Table A-4: North American P3 Definitions - Examples**

Agency (source)	P3 Definition
<p><b>Canadian Council for Public-Private Partnerships</b> (<a href="http://www.pppcouncil.ca/resources/about-ppp/definitions.html">http://www.pppcouncil.ca/resources/about-ppp/definitions.html</a>)</p>	<p><i>"A cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards."</i></p>
<p><b>PPP Canada</b> (<a href="http://www.p3canada.ca/faq.php">http://www.p3canada.ca/faq.php</a>)</p>	<p><i>"a long-term performance-based approach for procuring public infrastructure where the private sector assumes a major share of the responsibility in term of risk and financing for the delivery and the performance of the infrastructure, from designing the concept, architectural and structural planning to its long term maintenance."</i></p>
<p><b>Partnerships BC</b> (<a href="http://www.partnershipsbc.ca/files/faqs.html#2">http://www.partnershipsbc.ca/files/faqs.html#2</a>)</p>	<p><i>"a legally binding contract between government and business for the provision of assets and the delivery of services. The contract allocates responsibilities and business risks among the various partners."</i></p>
<p><b>Government of Alberta</b> (<a href="http://www.treasuryboard.alberta.ca/1159.cfm">http://www.treasuryboard.alberta.ca/1159.cfm</a>)</p>	<p><i>"a different, non-traditional way for government to create capital assets (such as roads, schools, and other types of government facilities). A P3 can save time, money and reduce risk to the government by having one contractor design, build, finance, and maintain, and in some cases operate, a facility. In the case of roads projects in Alberta the government entered into one agreement with a contractor responsible to design, build, partially finance, maintain and operate roads and in the case of schools, one agreement to design, build, partially finance and maintain the infrastructure over the life of the contract."</i></p>
<p><b>Infrastructure Ontario</b> (<a href="http://www.infrastructureontario.ca/en/projects/afp.asp">http://www.infrastructureontario.ca/en/projects/afp.asp</a>)</p>	<p><i>"Alternative Financing and Procurement is an innovative way for the government to deliver on its commitment to maintaining and expanding public infrastructure. Infrastructure Ontario's AFP model uses private financing to strategically rebuild vital infrastructure, on time and on budget, while ensuring appropriate public control and ownership."</i></p>
<p><b>Government of Québec</b> (Framework Policy for the Governance of Major Public Infrastructure Projects - 2010)</p>	<p><i>"Public-private partnership approach (PPP), in which a public body enters into a partnership with a private sector enterprise, with or without a financial contribution from the latter, for designing, constructing, and operating a public infrastructure."</i></p>
<p><b>Government of New Brunswick</b> (Guidelines for public-private partnerships)</p>	<p><i>"a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards."</i></p>
<p><b>U.S. Department of Transportation</b> (Report to Congress on Public-Private Partnerships (U.S.DOT 2004))</p>	<p><i>"a contractual agreement formed between public and private sector partners, which allows more private sector participation than is traditional. The agreements usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. While the public sector usually retains ownership in the facility or system, the private party will be given additional decision rights in determining how the project or task will be completed."</i></p>
<p><b>Federal Highway Administration</b> (<a href="http://www.fhwa.dot.gov/ipd/p3/defined/index.htm">http://www.fhwa.dot.gov/ipd/p3/defined/index.htm</a>)</p>	<p><i>"Public-private partnerships (P3) are contractual agreements formed between a public agency and a private sector entity that allow for greater private sector participation in the delivery and financing of transportation projects."</i></p>



**Table A-5: List of Canadian P3 Guiding Documents and Industry Publications**

#	Name of Guiding Document (Canadian)	Published By (Date)	Overview of Content
1	P3 Canada Fund Program Overview, Submission Guide & Project Submission Form: Round Two (May – June 2010)	PPP Canada (2010)	The Guide is intended for provincial, territorial, municipal, First Nations and other public authorities seeking to procure public infrastructure as P3 or Alternative Financing and Procurement. The Guide provides support to these agencies in determining whether a planned infrastructure project may qualify for financial support from the P3 Canada Fund Round Two, including an assessment framework and submission guidelines.
2	P3 Canada Fund Application Guide and Application Form Round Three (May – June 2011)	PPP Canada (2011)	For Round Three, PPP Canada has updated: the Application Guide to provide more information on the success factors of P3 projects and the type of information required from applications to support an investment decision under the P3 Canada Fund; the Application Form which now requires more detailed information in several areas, such as the proposed P3 model and the rationale behind that choice, the proposed transaction structure of the project, and a status report on the advancement and planning of the project; the list of contacts for potential applicants to submit the Application Form and accompanying documents.
3	Capital Asset Management Framework	B.C. Ministry of Finance (May 2002)	These guidelines were developed to support provincial public-sector agencies to find the best solutions and apply best practices in managing capital assets on behalf of British Columbians. The framework was further revised in 2008 with the requirement that a P3 be considered for procurement where the Provincial contribution exceeds \$50 million, unless a different procurement model will generate better value for money.
4	An Introduction to Risk Management in a Public Private Partnership	Partnerships BC (July 2006)	This document assists public sector agencies in understanding essential risk management issues pertaining to infrastructure procurement and P3 in particular. Risk management objectives are discussed in various P3 stages, such as feasibility analysis/strategic options, business case, procurement, contract award and contract management.
5	Office of the Comptroller General Practice Guideline 1 Public-Private Partnerships	B.C. Ministry of Finance (May 2009)	This document provides information to organizations within BC's reporting entity on the appropriate accounting treatment for P3 arrangements. Content also includes background information on P3 and direct users to other relevant resource material. Topics include funding analysis, cost determination and accounting treatment, guidance and governance (rules and roles).
6	Guidance for Quantitative Procurement Options Analysis	Partnerships BC (January 2010)	This document describes the recommended methodology and rationale for Partnership BC's best practice for the quantitative analysis of infrastructure project procurement options.
7	Procurement Related Disclosure for Public Private Partnerships	Partnerships BC (April 2007)	This paper provides an overview of disclosure practices for public-private partnerships, including legislative and non-legislative disclosure related to project plans and procurement-related documents and activities.

#	Name of Guiding Document (Canadian)	Published By (Date)	Overview of Content
8	Management Framework: Assessment Process	Alberta Infrastructure and Transportation (September 2006)	A guide to Alberta Infrastructure and Transportation's assessment and approval process for P3 for capital infrastructure projects. The framework consists of standard procedures and defines program ministries' and stakeholders' involvement, as well as P3 characteristics, prerequisites and procedures related to evaluating value for money.
9	Management Framework: Procurement Process		A guide to Alberta Infrastructure and Transportation's procurement process for P3 for capital infrastructure projects. The framework consists of a series of recommended procedures and protocols in the procurement process, including process overview, project team roles and responsibilities, project plan and schedule, evaluation guidelines, communications, project agreement and value for money report.
10	Building a Better Tomorrow: An Infrastructure Planning, Financing and Procurement Framework for Ontario's Public Sector	Ontario Ministry of Public Infrastructure Renewal (2004) (now Ontario Ministry of Infrastructure)	This document sets out a framework and clear guidelines for infrastructure planning, financing and procurement for the provincial and municipal governments, and broader public-sector partners.
11	Assessing Value for Money: A Guide to Infrastructure Ontario's Methodology	Government of Ontario (2007)	This document describes the detailed methodology by which the agency determines if value for money is demonstrable by procuring a project using Alternative Financing and Procurement.
12	Public-Private Partnership Framework Policy	Government of Québec (June 2004)	A policy document stating the goals and principles of P3 procurement and defining the framework that governs the implementation of P3 projects. Ten guidelines are provided: five to support public bodies to give precedence to the best possible practices, and five to encourage the participation of the stakeholders.
13	Framework Policy for the Governance of Major Public Infrastructure Projects	Government of Québec (2010)	P3 is one of the delivery approaches allowed under this framework policy. The policy introduces a systematic process to plan and carry out major projects, including the preparation of a business case, risk assessment and estimation of cost and timeframe.
14	Guide d'élaboration du dossier d'affaires des grands projets d'infrastructure publique (Business Case Development Guide for Major Public Infrastructure Projects)	Government of Québec, Treasury Board Secretariat (2011)	The guide is intended to facilitate the development of the business case under the framework policy. It provides guidance on considerations and studies that should be carried out as part of planning a major project. It offers tailor-made solutions, as each business case requires a unique approach and customized execution.
15	Public-Private Partnership Protocol	Government of New Brunswick (October 2010)	Protocols were established to reflect the best practices developed by the Province of New Brunswick and to ensure that the P3 objectives and guiding principles are met, including project definition, competitive private sector market, value for money, transfer of risks, due diligence, contract administration and communications.

#	Name of Guiding Document (Canadian)	Published By (Date)	Overview of Content
16	Successful Transportation Public-Private Partnerships in Canada and the USA	Canadian Council for Public-Private Partnerships (November 2002)	Case studies with explanation on how projects were carried out and the agreement between the public and private partners. Comments from both parties concerning the project are included as well as a summary of the project results and impacts. The roads and bridges projects covered in this report include: the Confederation Bridge, Charleswood Bridge, Highway 104, Highway 407, and Alberta Highway Maintenance.
17	National Award Case Studies (various)	Canadian Council for Public-Private Partnerships (various)	<p>The following Transportation projects received awards and have been described, including lessons learned:</p> <ul style="list-style-type: none"> <li>- Confederation Bridge</li> <li>- Anthony Henday Drive Northwest</li> <li>- William R. Bennett Bridge</li> <li>- Highway 407 ETR</li> <li>- Autoroute 25</li> <li>- Kicking Horse Canyon - Phase 2</li> <li>- Golden Ears Bridge</li> <li>- Sea-to-Sky Highway Improvement Project</li> <li>- Anthony Henday Drive Southeast</li> <li>- Sierra Yoyo Desan Road</li> <li>- Fredericton-Moncton Highway</li> </ul>

**Table A-6: Examples of United States P3 Guiding Documents and Industry Publications**

#	Name of Guiding Document (United States)	Published By (Date)	Overview of Content
18	Public-Private Transportation Act of 1995 Implementation Manual and Guidelines	Virginia Department of Transportation (December 2010)	This document provides guidance regarding Public-Private Transportation Act (PPTA) project development and implementation for both solicited PPTA projects and unsolicited proposals across all modes of transportation.
19	Transportation Public-Private Partnership Guidelines	Maryland Transportation Authority (1990's)	This document includes the guidelines set by the Maryland Transportation Authority with regards to P3 projects, as to proposal submission and the criteria used to evaluate solicited and unsolicited proposals.
20	Public-Private Partnership Project Screening and Assessment	Parsons Brinckerhoff for Minnesota Department of Transportation (December 3, 2010)	Minnesota DoT developed a list of 38 transportation projects from among its state-wide priority investments and retained Parsons Brinckerhoff to screen these projects and identify the best candidates for P3 delivery and develop recommendations to analyze further and implement these projects. The report describes near- and medium-term actions, and the next steps towards a P3 program.
21	Transportation Infrastructure Case Studies (Available on agency website)	National Council for Public-Private Partnerships (various)	Case studies available for the following roads and highway projects: <ul style="list-style-type: none"> <li>- Highway 63, Missouri</li> <li>- Pocahontas Parkway, Virginia</li> <li>- NM44 Highway, New Mexico</li> <li>- Route 3 North, Massachusetts</li> </ul>
22	Case studies (Available on agency website)	U.S. Department of Transportation Federal Highway Administration Innovative Program Delivery (various)	Case studies for new-build facilities <ul style="list-style-type: none"> <li>- Design Build Operate (Maintain) – 4</li> <li>- Design Build Finance Operate - 11</li> </ul> Case studies for existing facilities <ul style="list-style-type: none"> <li>- O&amp;M Concession - 2</li> <li>- Long Term Lease – 2</li> </ul> Case studies for hybrid <ul style="list-style-type: none"> <li>- Lease Develop Operate - 1</li> <li>- Other Innovative P3 projects - 7</li> </ul>

**APPENDIX B**

**SURVEY QUESTIONNAIRE**

### Agency Information:

1) Please tell us about the role of your agency in P3 project development/implementation.
Name of your office:
To which office/ministry/government department does your office report to:
What is the primary mandate of your office as it relates to P3 project development/implementation?
How many staff do you have in your office?
<p>Is your office involved in any of the following P3 activities (check all that apply)?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Assessment of P3 Project Suitability (If yes, please complete Questionnaire 1 on pages 3 to 6)</li> <li><input type="checkbox"/> Development of Business and Financial Models (If yes, please complete Questionnaire 2 on pages 7 to 9)</li> <li><input type="checkbox"/> Project Procurement: RFQ and RFP processes (If yes, please complete Questionnaire 3 on pages 10 to 12)</li> <li><input type="checkbox"/> Project Management: Design/Build/Operate/Maintain, etc. (If yes, please complete Questionnaire 4 on pages 13 to 15)</li> </ul>
2) Is there another agency/office within your jurisdiction that you would recommend for completing this survey? If so, please assist by forwarding the questionnaire(s) and provide us the contact information so that we can follow-up with that agency/office.
3) Please tell us about your position and role in your office.
Your name and title:
Briefly describe your responsibilities:
<p>Your contact information</p> <p style="padding-left: 20px;">Phone/Fax:</p> <p style="padding-left: 20px;">Email:</p> <p style="padding-left: 20px;">Mailing Address:</p>
4) Do you have other comments or thoughts you would like to share?

### Questionnaire 1: Assessment of P3 Project Suitability

Please tell us about the role of your agency/office in P3 project development/implementation. (Do not fill in this section if you have already completed the Agency Information sheet)
Name of your office:
To which office/ministry/government department does your office report to:
What is the primary mandate of your office as it relates to P3 project development/implementation?
How many staff do you have in your office?
Please tell us about your position and role in your office.
Your name and title:
Briefly describe your responsibilities:
Your contact information Phone/Fax: Email: Mailing Address:

1) What types of procurement models have been considered/evaluated in your office? Select all that apply:

<input type="checkbox"/> Design-Build	<input type="checkbox"/> Design-Build-Finance
<input type="checkbox"/> Design-Build with a Warranty	<input type="checkbox"/> Design-Build-Finance-Operate
<input type="checkbox"/> Construction Manager at Risk	<input type="checkbox"/> Design-Build-Finance-Operate-Maintain
<input type="checkbox"/> Maintenance Contract	<input type="checkbox"/> Long Term Lease Agreement/Concessions
<input type="checkbox"/> Design-Build-Operate-Maintain	<input type="checkbox"/> Build-Own-Operate
<input type="checkbox"/> Design-Build Transfer	<input type="checkbox"/> Asset Sale
<input type="checkbox"/> Build-Transfer-Operate	<input type="checkbox"/> Others:

2) What are the initial screening criteria used to determine the suitability of a project for P3 implementation (please list the top 5 criteria used in your jurisdiction)?


3) If a minimum threshold value is used for assign a project's suitability for P3 implementation, then what is that value and what are the reasons for selecting that value?

--

3a) What are some ways that would make it feasible to lower the minimum threshold value so that more projects may be included in the screening for P3 consideration?

--

3b) Are you aware of any organizations or jurisdictions in North America that are making significant progress in reducing the minimum threshold value and if so, what are the reasons for their success?

--



4) Beyond the initial screening for P3 project suitability, what other tools or evaluation methods are used to support or reject the initial P3 decision? Please discuss the use of the following tools in your jurisdiction.

Value for Money/Public Sector Comparator:

Cost/Benefit Analysis/Business Case:

Risk Matrix/Register:

Multiple Criteria Analysis:

Others:

5) After the initial screening and evaluation methods, what is the process for selecting the project structure and granting the project approval?

6) Reflecting on the project selection and evaluation process used, what are the critical success factors and lessons learned in assessing P3 suitability? List the top 3 critical success factors and/or lessons learned.

7) Are there specific P3 project case studies which you wish to refer to that highlight the inputs provided in Question 6) above?

## Questionnaire 2: Development of Business and Financial Models

Please tell us about the role of your agency/office in P3 project development/implementation. (Do not fill in this section if you have already completed the Agency Information sheet)
Name of your office:
To which office/ministry/government department does your office report to:
What is the primary mandate of your office as it relates to P3 project development/implementation?
How many staff do you have in your office?
Please tell us about your position and role in your office.
Your name and title:
Briefly describe your responsibilities:
Your contact information Phone/Fax: Email: Mailing Address:

1) If your organization uses a value for money analysis, what is the basis (e.g. based on private sector Weight Average Cost of Capital or public borrowing rates) for the discount rate that your organization uses in the value for money analysis?

2) Has your organization considered or implemented projects with a revenue risk component, e.g. tolls, user fees, parking revenue, shadow tolling? What have been the main impediments to implementation of these models?

3) Does your organization have preference on the use of milestone payments, progress payments or substantial completion payments during the construction phase to reduce the amount of private finance? Are any of these likely to affect the efficiency benefits from P3?

4) Does your organization require that the private partner share refinancing gains? Why or why not?

5) For availability payment projects with lifecycle rehabilitation requirements, does your organization prefer averaged unitary payments (same base payment every month, before indexing and deductions) or sculpted payments (proposed by bidders to reflect spending requirements) over the contract life? Why?

6) Does your organization offer a credit spread refresh between submission and financial close to account for changes in financial markets? Why or why not?

7) For bond solutions, does your organization offer a gain share/ pain share mechanism on the credit spread clearing process? Why or why not?

8a) Does your organization allow change in controls of the concession? If no, why?

8b) If 8a) is yes, after how many years from substantial completion is the change allowed and is there gain share mechanism?

9) Does your organization penalize in the RFP evaluation the use of mini-perm solutions? Why or why not?

10) Are there specific P3 project case studies which you wish to refer to that highlight the key lessons learned with regards to the development of business and financial models?

11) Based on your recent P3 project development experience and the questions answered above, how or what element might you modify (do differently) to improve the development and implementation process?

### Questionnaire 3: Project Procurement

Please tell us about the role of your agency/office in P3 project development/implementation.  
(Do not fill in this section if you have already completed the Agency Information sheet)

Name of your office:

To which office/ministry/government department does your office report to:

What is the primary mandate of your office as it relates to P3 project development/implementation?

How many staff do you have in your office?

Please tell us about your position and role in your office.

Your name and title:

Briefly describe your responsibilities:

Your contact information

Phone/Fax:

Email:

Mailing Address:

1) Reflecting on the current procurement process for P3 projects in your jurisdiction, please comment on the critical success factors and lessons learned in each of the following stages:

a. Overall Process (for example, are the requirements of the Request for Proposals adequately carried through the final contract?)

b. Request for Qualifications (for example, is the RFQ sufficient to screen the best proponents? Does your RFQ screening process apply specific weightings to business, technical and other criteria? Why are certain criteria weighted more heavily than others?)

c. Evaluation of Qualifications (for example, how much attention is paid to the evaluation of the individuals who will be providing services in the construction and operations of the project?)

d. Request for Proposals (for example, do all the commitments set out in the RFP get embodied in the final contract?)

e. Evaluation of Proposals (for example, does the evaluation balance the various aspects, from the proponent business capacity, through to construction and the operational and maintenance phases? Are there compromises that cause issues later on? Is negotiation seen as an important aspect in the process of selecting the preferred bidder, despite that it may cause additional time and cost?)

f. Others (for example, how does your jurisdiction deal with unsolicited proposals?)

2) Are there specific P3 project case studies which you wish to refer to that highlight the inputs provided in Question 1) above?



#### Questionnaire 4: Project Management Elements

Please tell us about the role of your agency/office in P3 project development/implementation.  
(Do not fill in this section if you have already completed the Agency Information sheet)

Name of your office:

To which office/ministry/government department does your office report to:

What is the primary mandate of your office as it relates to P3 project development/implementation?

How many staff do you have in your office?

Please tell us about your position and role in your office.

Your name and title:

Briefly describe your responsibilities:

Your contact information

Phone/Fax:

Email:

Mailing Address:

1) For project management and contract administration, how is the project organization structured for the specific P3 projects? What are the areas where there are potential changes or improvements?

During the design/build phase (Specifically, are the agency operations staff involved in the design/build phase at all?)

During the operational/maintenance phase (Specifically, are the agency design/build staff involved in the operation/maintenance phase at all?)

At the end of the concession period:

Please describe processes that have been applied to facilitate the turn-over from one phase to the next (for example, retaining a key individual from the design/build phase in the operational/maintenance phase to ensure transfer of knowledge and for better coordination and communication). Please also identify things that you would do differently or that have not been done but would potentially have improved the overall P3 project administration by the agency.

2) In your experience are there management practices carried out in your P3 projects that you believe are different from the management of conventional projects (Design Bid Build)?

During the design/build phase:

During the operational/maintenance phase:

At project close-out:

3) How may the following be managed differently in P3 projects as compared to conventional projects? What are the critical success factors and lessons learned from P3 projects?

Process / change orders (for example, do change orders on P3 reflect issues with scoping the original work? What is the basis for determining that a contract change is warranted? Are the dollar values significantly different between the original and modified contracts?)

Quality control and quality assurance (for example, have there been issues in obtaining the desired quality? Does the audit, typically done by the owner, follow performance indicators that are set out in the contract?)

Role of Owner's Engineers (P3 versus traditional Design Build):

4) What are some major issues and concerns in the management of P3 projects that your office has experienced so far? Please list and describe the top 3 issues/concerns (or more if you wish), and how they might be avoided in future projects.

5) Are there specific P3 project case studies which you wish to refer to that highlight the inputs provided in Question 4) above?

## Agencies that Responded to the Survey

<b><i>Canada</i></b>
Partnerships BC
BC Ministry of Transportation and Infrastructure – Kicking Horse Canyon Project
BC Ministry of Transportation and Infrastructure – Evergreen Line Project
Alberta Transportation, Major Capital Projects Branch
Alberta Transportation, Technical Standards Branch
Infrastructure Ontario
Ontario Ministry of Transportation
Ministère des Transports du Québec
Nova Scotia Department of Transportation & Infrastructure Renewal
Public-Private Partnerships Canada
<b><i>United States</i></b>
Virginia Department of Transportation
Minnesota Department of Transportation

## APPENDIX C

### SUPPLEMENTARY INFORMATION ON CURRENT CANADIAN P3 PRACTICES

## **Assessment of Project Suitability**

### ***British Columbia***

According to literature, the development of public-private partnerships in consultation with Partnerships BC, where appropriate, is a key strategy under Goal 1 of the Ministry of Transportation and Infrastructure's 2011/12 – 2013/14 Service Plan.

### ***Alberta***

Alberta Transportation and Infrastructure's "Management Framework: Assessment" (2006) documents the agency's approach to assessing and approving P3 for capital infrastructure projects.

In 2003, the Cabinet established a process for approving capital projects and alternative financing, including P3, for government-owned capital projects as well as government-supported projects owned by school boards, health authorities and post-secondary institutions.

The Advisory Committee on Alternative Capital Financing was established by the Minister of Finance in the same year with the role to:

- Provide recommendations to Treasury Board regarding guidelines for alternative funding of capital projects;
- Evaluate capital projects and supporting business case and make recommendations to Treasury Board;
- Provide support to Ministries on the advantages and limitations of alternative funding and the relationship to the delivery of the government's multi-year capital plan; and,
- Maintain an ongoing overview of public policy developments both nationally and internationally concerning the various funding approaches supporting public infrastructure development.

The committee consists of private sector individuals with expertise in finance, investment management, real estate development and commercial law.

There are two phases to the assessment process. First is the preparation of a feasibility analysis by the project sponsor to assess the potential for the project to provide value of money when carried out by P3 versus by tradition procurement process. The results from this feasibility analysis, documented in an Opportunity Paper, are reviewed by Alberta Infrastructure and Transportation's P3 Review Committee and the Capital Planning Committee.

There are prerequisites (quoted from the Assessment document) which a project must satisfy in order to be considered feasible for using the P3 approach:

- Project has sufficient size and complexity (greater than \$100 million)
- Provision of the capital asset can be defined in a performance or output specification;
- There are significant associated ongoing operation, maintenance, and/or service requirements;
- The long term operation or service needs can be clearly defined in a performance or output specification;
- The performance requirements must be relatively stable throughout the duration of the contract or changes need to be predictable upfront.
- Payment (and/or revenue) can be tied to performance.
- A fair, accountable and transparent selection process can be used;

- It can be demonstrated that the P3 approach is likely to offer greater value for money to the Government compared to other forms of procurement;
- The private sector has the expertise to deliver;
- There is sufficient interest in the private sector to compete for the project (minimum of 3 qualified proponents desirable);
- The bundling of design, build and operate will likely result in an expedited completion of the capital asset, and will likely result in innovation, reduced cost and reduced duplication in the assumption of risk;
- On-time/on-budget delivery and protection against scope creep is important;
- The nature of the assets and services are capable of being costed on a whole of life, long-term basis. Investments with a time horizon of 5 to 10 years is unlikely to benefit from a P3 approach;
- Risk allocation can be clearly determined;
- Competitive private sector financing can be obtained, and the cost of private sector financing will be offset by delivery and/or user savings.

The Assessment document acknowledges the use of P3 will be unsuccessful where:

- Accountability in public service could not be met, as in most forms of frontline service delivery;
- Private sector investment is not available or cannot be obtained at an acceptable cost;
- The transaction costs of pursuing the P3 are disproportionate compared to the value of the investment;
- The fast pace of technological change makes it too difficult to establish long term requirements, such as Information Technology;
- High levels of systems integration make risk allocation difficult;
- The form of the capital asset will be chosen through a design competition;
- There are substantial regulatory or legal restrictions on the provision of the service;
- There is insufficient support within the department to champion and resource the P3 procurement.

The Framework also indicates the asset classes which may be more suitable to be delivered by P3. For example, for urban highway, the use of P3 for delivery may be more successful with a proven model, well defined requirements, stable long-term operations and maintenance, innovation and economies of scale, low financial risk and government payment stream.

A quantitative assessment, through a full evaluation of costs and benefits on a whole lifecycle basis, must be conducted.

The results of qualitative and quantitative feasibility assessment are documented in the Opportunity Paper. The P3 Review Committee is charged with recommending which projects are suitable for P3 and should proceed to the development of a detailed Business Case by the project sponsor, which is the second phase of the assessment process.

### ***Ontario***

“Building a Better Tomorrow” (2004) sets out the comprehensive framework followed by the Ontario government in planning, financing and procuring public infrastructure. Public-sector partners work with their Provincial Ministry and the Ministry of Infrastructure to identify strategic infrastructure investment priorities for the medium-term (3 years) and long-term (10 years). To identify the priorities, a needs assessment is conducted, with the analysis of factors driving the need, state of the existing asset base, and future infrastructure asset needs, including maintenance costs and funding options available.

After a project has been identified as a priority, a business case is developed to support decision making. The key elements of the business case include a review of the needs assessment, strategic options analysis and evaluation, recommending an approach, and proposing an implementation strategy.

Financing and procurement models come into play in the strategic options analysis and evaluation stage. Ontario acknowledges that there are at least nine infrastructure financing and procurement (IFP) models that are available, with varying degree of private sector involvement. Transportation roads and bridges projects are often new construction which is considered as one category of major investment (the other category being major redevelopment). The guiding document suggests that all nine IFP's may be applicable for major investment.

The guiding document acknowledges that the engagement of the private sector is generally more successful when:

- Significant opportunities exist for private-sector innovation in design, construction, service delivery and/or asset use;
- Clearly definable and measurable output specifications (i.e. service objectives) can be established, which are suitable for payment on a services/delivered basis;
- A market for bidders can be identified or can be reasonably expected to develop;
- There is potential to transfer real risk to the private sector;
- The private-sector partner has an opportunity to generate non-government streams of revenue; and/or
- Initiatives of a similar nature have been successfully procured using a similar method.

These considerations appear to be the same as those identified in the B.C. Capital Asset Management Framework document.

Quantitative assessment is conducted as part of developing a Business Case.

### *Québec*

The "Public-Private Partnerships Framework Policy" published in 2004 identifies the following characteristics of projects that would be selected for assessment using the P3 approach:

- Improve service delivery to the population;
- Involve significant financial commitments by government;
- Are technically complex and high-risk;
- Have a potential for creativity and innovation likely to take advantage of the know-how of [the] private sector;
- Reflect an existing, competitive market.

Bill 65 (2009, chapter 53), titled "An Act respecting Infrastructure Québec", requires a public body planning a major public infrastructure project to work with Infrastructure Québec to prepare a business case that assesses the project's relevance, identifies the options available to meet the need and determines the preferred option and the project delivery approach.

The "Framework Policy for the Governance of Major Public Infrastructure Projects" (updated in 2010) applies to the major projects as defined in Bill 65. A major public infrastructure project is a project considered major by the Government, the purpose of which is the construction, maintenance, improvement or demolition of a building, facility or civil engineering structure, including a transportation infrastructure, and to which the Government contributes financially, either directly or indirectly. The Order in Council dated March 10, 2010 further stipulates that a public infrastructure project be considered



major for the purposes of applying Bill 65 if it presents an estimated capital cost equal to or greater than \$40 million.

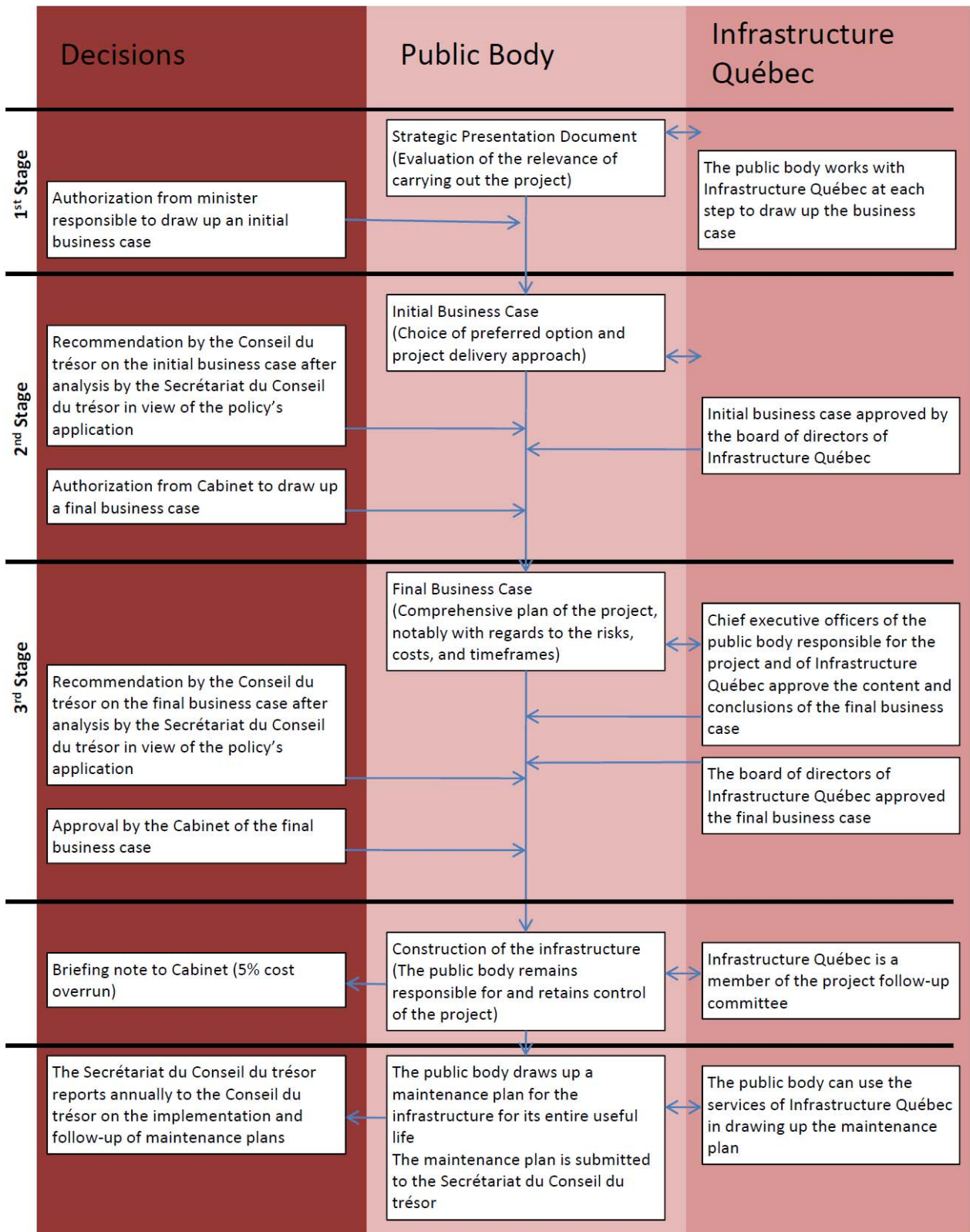
Section 3 of Framework Policy indicates that P3 is one of the allowed approaches for the delivery of major public infrastructure projects (the others being traditional approach, construction management approach and turnkey approach where a single or group of enterprises prepare the plans and specifications (i.e. design) and construct the infrastructure).

There are three mandatory steps for planning a major project, as described below.

1. Developing a strategic presentation document
  - Purpose is to assess the project's relevance
  - Includes project description and justification, preliminary identification of options and order of magnitude capital cost estimate, studies related to socio-political issues management and communications management, and cost estimates and timelines of studies required to develop an initial business case
2. Develop an initial business case
  - Purpose is to identify the preferred option for meeting the need and determine the delivery approach
  - Includes detailed evaluation of options, definition of project requirements, cost estimates and budget impact assessment, updates to the initial reviews covered in the strategic presentation document, and evaluation of delivery approaches. Cost estimates and timelines of studies required to develop the final business case are also determined.
  - If P3 is considered a potential delivery approach, it must be compared (qualitatively and quantitatively) with at least two other approaches, including the turnkey and the public body's usual approach. Quantitatively, the preferred mode is the one that allows the lowest financial cost in Net Present Value for a horizon of 30 years. A multitude of qualitatively criteria is considered, including, for example:
    - Does the project have a potential for significant innovation and could this be exploited via a specific delivery mode?
    - Does the delivery mode facilitate government or departmental budgeting?
    - Does the length involved in the procurement of a specific delivery mode create a constraint on the desired schedule?
3. Develop the final business case
  - Purpose is to present the entire project in the most comprehensive, realistic way possible, to facilitate approval by the Cabinet to carry out the project.
  - For the P3 or turnkey approach, the public body determines the performance specifications, prepares plans for project management, risk management and communications, identifies human resources requirements, and updates cost estimates and budget impact assessment. Additionally, for projects using the P3 approach, the final business case comprises the draft P3 agreement.

Infrastructure Québec, the provincial specialized P3 agency, has set up a very complete evaluation process which is consistent with the processes followed by the Ministère des Transports du Québec as described above.

Infrastructure Québec assists public bodies, including the Ministère des Transports du Québec in evaluating projects and preparing documents for Treasury Board approval purposes. The framework policy followed in Québec (as shown in the 2010 Framework Policy document) is reproduced below to illustrate the comprehensive framework.



## Development of Business and Financial Models

The agency survey questions were designed to solicit information on:

- Practice used by the various procurement agencies in developing and analyzing procurement model;
- The range of models use, and,
- Financing and funding approaches used by the public sector.

Below are the observations made from the survey responses.

### Discount Rate

The two main approaches to selecting a discount rate for both value for money analyses prior to procurement, and calculating the net present value of a bid, are to either use the government's cost of borrowing or a private sector/project cost of borrowing. The former is used by some as it reflects the government's funding that is used to pay for the project. The latter is preferred by others to provide a measure of the inherent risk of the project and that the financing cost premium is a proxy for the risks that the public sector takes on with each project, i.e. cost overruns. Generally speaking, choice of discount rate is a philosophical issue as it only affects the evaluation of projects and not the actual costs. In value for money analyses, use of the government's rate of borrowing to discount the public sector comparator does make it more difficult to demonstrate value in using a P3 approach as the cost of financing must be overcome by lower capital or operating costs.

The majority of Canadian procurement agencies use the public sector cost of borrowing as the discount rate.

### Use of Tolls

Transferring revenue risk through the use of tolls on P3 projects is uncommon in Canada. Provinces such as Ontario and Alberta have embraced the AFP/P3 model as a viable procurement method for delivering large transportation infrastructure projects as a means of delivering value for money through risk transfer and efficiencies. The programs are not driven by a need to access private sector capital and transferring revenue risk, as for example, has been used on U.S. toll roads, or for accounting or budgetary reasons. The only province that has implemented a revenue risk (tolling) arrangement is Québec on the Autoroute 25 and Autoroute 30 projects. B.C. had attempted this model on the Port Mann/Highway 1 project but later converted back to design-build delivery, and Nova Scotia has considered the model.

### Public Sector Contributions during Construction

The timing and form of public sector contributions vary across the country. Progress payments are used by Alberta, milestone payments are used by Québec, and substantial completion payments are used in Nova Scotia and Ontario. All of the models have been accepted by the private partners and lenders. Earlier payments generally make for more efficient financing costs. The substantial completion payment is essentially structured on a payment for work completed type of model.

### Refinancing Gain Sharing

Refinancing gain sharing between the private partner and the public sector is used by all of the Canadian respondents except for Alberta.

### Availability Payments

Availability payments by the public sector are either sculpted, to account for the lumpy nature of costs over the term, or unitary, in that they are essentially averaged over the term to provide a stable amount. The former has the benefit of being more efficient from a NPV cost basis and the latter allows for more even payments over the term, which may simplify budgeting. Alberta and Ontario have used the sculpted approach; Nova Scotia and B.C. have used the unitary approach. Québec has used both approaches.

#### Credit Spread Refresh Mechanism

The approach to a credit spread refresh mechanism varies across the country. Alberta does not use this approach but is used in Québec, Ontario and by PPP Canada. B.C. also uses the approach but generally on projects with larger amounts of private financing.

#### Bond Benchmarking Gain Share/Pain Share Mechanism

A bond benchmarking gain share/pain share mechanism is used to deal with changes in bond rates between submission and financial close is offered as an option by Alberta, considered on a case-by-case basis in Nova Scotia, and accepted by PPP Canada. B.C., Ontario and Québec have not used this mechanism.

#### Changes in Control of Concessions

Changes in control of concessions is universally accepted with certain restrictions that vary between provinces (e.g. minimum ownership period, equivalent quality of consortia, etc.).

#### Mini-Perms

Mini-perms, or financing that has mechanisms to incent a refinancing within 7-10 years, are accepted in the market with the acknowledgment that the refinancing risk lies with the private partner. Only Ontario has recently applied a small penalty to the scoring of the financing plan in the evaluation for proposing such financing mechanisms in order to encourage proponents to arrange long-term financing without refinancing risk.

## Project Procurement

### ***Alberta***

Alberta Transportation and Infrastructure's "Management Framework: Procurement" (2006) documents the agency's procedures for P3 procurement.

The public agency project team must include expertise in all aspects of the procurement and it is acknowledged in the Procurement document that it may be necessary to retain external consultants, particularly in the technical, process, and financial areas, as well as a fairness auditor. These positions are to be retained prior to the issuance of any project specific procurement documents. For example, there is heavy reliance on the service of an Owner's Engineer in the RFP process.

Alberta Infrastructure and Transportation has the following preferences with regards to procurement:

- A multi-stage submission process involving first the RFQ and then the RFP;
- Information meetings and interviews may be held during the RFQ stage;
- Usually the top three Respondents from the RFQ stage are invited to respond to the RFP;
- During the RFP stage, technical proposals are evaluated on a pass/fail basis on pre-defined project requirements;
- The Preferred Proponent is selected among those with acceptable technical proposals based on the best price;
- Honoraria are generally paid to the unsuccessful Proponents who submit a compliant proposal to partially offset their costs.

The use of a Best and Final Offer (BAFO) approach, where the public agency narrows the selection to two finalists and carries out parallel negotiations before the finalists submit a final financial offer, is not recommended for various reasons. Reasons include, for example, potential lengthy negotiation periods and perception of unfairness. The use of BAFO would entail the involvement and recommendation of Alberta Justice and Alberta Finance, and the decision must be made at the Business Case stage (i.e. the Assessment stage).

The financial submission from the Preferred Proponent is compared to the Business Case to ensure that the government is receiving the anticipated Value for Money.

During the Closing period, the Project Agreement is executed by signing of the contract by the public and private partners.

### ***Ontario***

There are five guiding principles to public infrastructure procurement, as documented in "Building a Better Tomorrow":

- Fair, open and transparent process;
- Opportunities must be tendered publicly, using a competitive process;
- Process should support the efficient and cost-effective participation of bidders;
- Decision must be based on Value-for-Money assessments;
- Allocate risks to the party that is best able to manage them.

The "Building a Better Tomorrow" document also indicates that the private sector already performs a lead role in the provision of project advice to the government, and the design and construction of major infrastructure assets. The government envisages the private sector taking a lead role in the areas of:

- Overall procurement management of major infrastructure initiatives;

- Sourcing and managing initiative finance;
- Management of infrastructure assets;
- Providing services associated with specific infrastructure.

At the onset of the procurement process, the public agency would identify all the skills input, consult with other government agencies that have completed similar initiative, identify the in-house expertise available, ensure an open and fair process for the selection of external advisers, if needed, and appoint a Manager as well as decide on the management structure and membership.

To facilitate the retaining of external expertise, the Ministry of Infrastructure intends to maintain a roster of advisory firms to select from, to avoid the time and resources needed for each potential transaction.

The development and adherence to standard processes and documentation is important to Ontario, while the government recognizes that some flexibility is needed to accommodate more complex procurements where negotiation of terms and conditions may be necessary. Currently, there are standard templates for the key stages in the bidding process: Requests for Expressions of Interest (RFEI), Requests For Qualifications (RFQ), Requests For Bids/Proposals (RFB/P), risk management materials and vendor contracts.

RFEI may not always be issued. When it is issued, a RFQ may follow, or the RFQ may be issued without a preceding RFEI. The purpose of the RFQ is to ensure potential bidders have the technical and financial capacity to undertake the task and a track record in performing similar tasks.

In submitting to a RFP, bidders are asked to focus on their past performance, in terms of their technical and operational competence. Bidders may be asked to make an oral presentation. Selection of the preferred bidder is based on the criteria set out in the RFB/P.

### *Québec*

The procurement strategy of a P3 project generally consists of three steps:

1. Request for Information
  - Purpose is to seek the level of interest in the business community; may also obtain industry's feedback related to future projects
2. Request for Qualification
  - Purpose is to assess potential candidates on their technical capacity to design, construct, operate and maintain the infrastructure under a P3, as well as their ability to finance the project
  - Three proponents are selected from the Qualification stage
3. Request for Proposals
  - Purpose is to evaluate potential candidates on the technical and financial aspects of the project
  - Bilateral workshops are held with the bidders to discuss the engineering aspects of the project, as well as the partnership agreement
  - Technical proposals are evaluated on a pass/fail basis; the lowest bid among those that received a pass on the technical criteria and financial criteria is the preferred proponent.

A fairness advisor is retained to oversee the three steps to ensure conformance with principles of integrity, equity and transparency.

## Project Management

### *Ontario*

Where innovative financing and procurement models are being used, Infrastructure Ontario will coordinate a project delivery team.

A contract management team is established prior to the execution of the final contract. To ensure a smoother transition from procurement to project execution, the contract management team will consist of members from the procurement team to continue the working relationship with the private sector and to maintain project direction. The composition of the contract management team changes throughout the project lifecycle to reflect the movement of the project.

Negotiation may take place with the preferred bidder in the period between contract award and signing of the contract. To minimize the risk of scope changes and delays, the public sector agency may require detailed and firm evidence at the bidding stage that financial closure can be reached within specified period, prepare a draft contract, and keep the runner-up in the bidding process ready to replace the winning bidder.

A project continuation document is prepared and updated throughout the life of the project to enable and facilitate the transfer of knowledge regarding the project within the agency.

The key day-to-day responsibility of the contract manager is to make sure that risks from both external and internal sources that were identified in the risk assessment process are properly managed. The contract manager follows a reporting regime to monitor the performance of the contractor. Proponents are asked to provide regular updates on the project status, and also report key issues and associated implications to the risk profile or the contract terms. Quarterly monitoring is seen as an important auditing tool to ensure the project is meeting contractual obligations.

As part of succession planning, a review is conducted to review successes and failures, and the issues that arose to determine if they have resulted from the initial tender specifications or the signed contract itself.

The Ministry of Infrastructure will coordinate a post-implementation review of the project, within 12 months of implementation, to identify successes and failures that occurred over time, to ensure value for money was achieved, and for developing best-practice precedents.

### *Québec*

In managing the P3 project, aside from the contract management team, the public body sets up a follow-up committee that oversees the project and ensure that it is conducted according to the final business case, especially with regards to timeframe and budget.

A representative from Infrastructure Québec, and a representative of the Secretariat du Conseil du trésor if necessary, is also on the committee.

