



UNDERSTANDING PUBLIC PRIVATE PARTNERSHIPS IN CANADA



ASSOCIATION OF CONSULTING
ENGINEERING COMPANIES | CANADA

ASSOCIATION DES FIRMES
D'INGÉNIEURS-CONSEILS | CANADA



Foreword

Public-Private Partnerships (P3s) of many forms are seeing increased use in the delivery of public infrastructure in Canada and in many cases include the maintenance and operation of the asset for a lengthy period of time after construction is completed.

The Association of Consulting Engineering Companies (ACEC) is a not-for-profit organization representing companies across Canada that provide professional engineering services to both public and private sector clients. ACEC established a Task Force to explore P3s and the implications for consulting engineers, and to recommend strategies to support the membership.

This report was commissioned by ACEC to synthesize the key information about P3s in a single document that will help position ACEC to:

- assist the Task Force in developing its recommendations
- support its members in informing themselves about P3s as they are used in Canada, and understanding why P3s are now considered, under the right circumstances and properly executed, a viable alternative to more conventional project delivery models for successfully delivering infrastructure projects
- inform public owners, consulting engineers and others about some of the opportunities and challenges, benefits and risks related to P3s based on Canadian experience
- advise owners, their advisors, consulting engineers, and others who are considering employing or participating in P3s of best practices identified through significant and successful Canadian experience with P3s
- provide information to assist public owners in determining when P3 or other delivery models will result in the most successful project outcomes
- provide guidance, based on Canadian experience, to owners and to consulting engineering companies considering involvement in P3s

This document is not intended to advocate for or against the use of P3s. It is intended to educate and stimulate discussion on P3s.

It is also important to note that this document reflects the industry's level of experience with different aspects of P3s at the time of publication. At this time there is substantial experience with the design and construction aspects of P3s. However, proven experience with long term operations and maintenance within P3 projects is less extensive at this time.

While this report focuses on consulting engineering services, much of the content is applicable to other professional service providers involved in design and construction.

An extensive body of knowledge has developed on P3s in Canada with the result that there are many resources readily available for those who may wish to learn more about P3s. Appendix A to this report lists many of those Additional Resources and Sources.

Use of terminology related to P3s in Canada varies widely. To avoid confusion, the report has adopted a single set of terms, providing commonly-used alternative terms the first time each is used in the report. Appendix B is a Glossary of Terms where readers will find the terms used in the report defined, together with their alternates.

Appendix C is the corporate profile for Strategies 4 Impact!, which prepared the report under the direction of the ACEC P3 Task Force. Principal author of this report is Brian Watkinson who has extensive experience researching, monitoring, teaching and writing about P3s in Canada.

Appendix D profiles the Association of Consulting Engineering Companies (ACEC).

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Executive Summary

The use of Public Private Partnerships (P3s) to deliver infrastructure in Canada is not new. Various forms of P3 have been employed in Canada for many years, and it is reported that over 100 infrastructure projects have been procured using P3s since the early 1990's. Most acknowledge that since 2004 we are in the 'second wave' of P3 in Canada.

From this experience we have identified some key 'best practices' for delivering the most successful P3 projects.

P3 is a valid form of project delivery when used in the appropriate circumstances. P3 is not a panacea. Owners must carefully assess each project to determine whether a conventional delivery model like "design bid build" or a P3 will deliver greatest value for money.

Using P3 on projects where it is not the most appropriate delivery model or where it will not deliver best value for money, or executing a P3 poorly, risks the credibility of P3 as a process. It can also have serious negative consequences for the public owner and its project, end-users and the public, as well as the private sector P3 partner and its team, including the consulting engineer. This could result in negative consequences for the entire design and construction industry.

Properly executed, conventional delivery models can deliver many of the benefits of P3s. For example, the use by public owners of Qualification Based Selection (QBS) to procure consulting engineering services will result in innovation and high quality engineering delivering optimum value for money in infrastructure projects.

Obtaining that professional technical advice from designers at the very outset of the project is an investment in project success.

Experience in Canada shows that the greatest benefit for both the public owner and the private sector P3 partner generally occurs when the private sector is contracted to maintain and operate the asset for 25 to 35 or more years in addition to designing, building and providing the

financing for the asset. The public owner can benefit from efficiencies and innovations brought to the project by the private sector partner and cost certainty over the term of the contract, while the private sector partner can rely on a long-term source of revenue that is reasonably secure.

The role of the consulting engineer working with the private sector P3 partner to design the asset is very different from the designer's role in conventional delivery models. In P3s, the designer represents the interests of the private sector P3 partner. In conventional delivery, the designer represents the interests of the public owner. As a result, in P3s, the public owner typically engages a team of professionals, including an owner's engineer, to advise it and represent its interests.

In any form of project delivery, including P3s, the best results are achieved when there is a fair sharing of risk and reward among the parties, including the consulting engineer, and when risk is allocated to the party best able to manage that risk.

Consulting engineers and design professionals must understand that there are risks specific to P3 projects that are very different from those encountered in conventional delivery models. Principal among those risks are very high pursuit costs which are typically not compensated at the engineer's usual rates, and a strategy on the part of the public owner to transfer its risks to the private sector P3 partner. That private sector partner will in turn seek to transfer those risks to its team, including the consulting engineer.

Engineers and design professionals must be prepared to negotiate reasonable limits on the risk they take on, and appropriate compensation for those risks they choose to accept.

The success of a P3 is highly dependent upon the team that the private sector P3 partner assembles to fulfill its obligations to the public owner. Consulting engineers must carefully consider the qualifications and expertise of all others on the team before deciding to participate. Underperformance by one member of the team will have serious negative consequences for others on that private sector team, and for the public owner.

The designers of the asset will be part of that private sector team in most P3s. The owner is relying heavily on the team to design and deliver an asset that best meets its needs based on the project requirements in the project agreement. Owners must be very diligent in assessing the qualifications of the private sector team, and must recognize that they are making a 'leap of faith' in the selection of their private sector partner on a P3 project.

There are a number of models of P3s in use in Canada, and those may vary depending on circumstances of a specific project. Therefore, all potential participants in a P3 project must clearly understand their roles, responsibilities and risks before considering participating in a P3 project.

P3s can be an effective alternative for delivery of infrastructure that delivers best value for dollar when implemented appropriately on the right projects.

1.0 What is a Public Private Partnership (P3)?

There are many definitions of P3s in Canada. (P3s are called Alternative Financing and Procurement (AFP) in Ontario)

The Canadian Council for P3s (CCPPP) offers a very broad definition:

“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.”

Partnerships BC, the agency created by that province to manage P3 delivery, focuses the definition a bit more tightly:

“A public private partnership is a partnership arrangement in the form of a long-term performance-based contract between the public sector (any level of government) and the private sector (usually a team of private sector companies working together) to deliver public infrastructure for citizens. A public private partnership could be any kind of infrastructure or service such as a new hospital or bridge or highway, a new type of technology that delivers services in a faster and more efficient manner, or a new federal government building – anything that citizens typically expect their governments to provide.”

PPP Canada (or P3 Canada), which advises the federal government, manages P3 procurements for it, and administers the P3 Canada Fund, offers this definition:

“Typically, an eligible P3 or AFP will be a procurement where a private proponent designs, builds, finances and operates/maintains a given infrastructure asset.”

There are a number of models of P3 in use in Canada, as well as variations on those models among government jurisdictions. There can also be variations based on specific project circumstances.

2.0 The Context

Before discussing those models and variations, and prior to exploring the reasons why public owners are using P3s, it is useful to review some of the circumstances and industry trends that are behind this interest in exploring alternatives to conventional delivery models such as P3s.

2.1 Concerns with Conventional Delivery Models

Public owners have expressed concerns about the cost and schedule overruns they are experiencing on infrastructure projects. At times, they have also expressed disappointment with the performance, maintenance and operation of the assets that have been delivered through so-called “conventional” delivery models like Design-Bid-Build or Engineer-Procure-Construct. They maintain that some assets are not performing to their expectations, or that maintenance and operational costs are greater than anticipated, recognizing that those costs carry through the whole life of the asset.

Meanwhile, the private sector has its own concerns with conventional delivery models for infrastructure delivery.

For example, consulting engineers are frustrated with procurement processes that are largely based on lowest fee, rather than on the value that the consulting engineer will deliver to its client. Professional fees that accurately reflect that value constitute an investment by the client in the success of its project.

Many conventional delivery models have become increasingly adversarial with client-engineer agreements and owner-construction contracts that attempt to shift risk unreasonably from party-to-party and fail to adhere to long-established industry practices.

Engineers have observed that many public owners have tended not to be structured to account for life cycle costing in procuring infrastructure. Instead the focus during engineering and construction has been solely on capital cost with little or no consideration given to modest investments in the design and capital cost that will yield high returns over the life of the asset through efficiencies in maintenance and operation.

Both public owners and the private sector that provides design and construction services to them share the concern that the public is not receiving best value for money.

None of this is unique to Canada.

In the late 1990's in the U.K., similar frustrations were being expressed by owners, design professionals, contractors and their subcontractors and suppliers, as well as by the end-users of infrastructure assets and those that were required to maintain and operate them. The government, recognizing that a large sector of the economy was underperforming, set up a Construction Task Force to look into the performance of the construction sector, identify key concerns that were leading to underperformance, and offer recommendations to address them.

The U.K. government took an interesting approach in setting up its Task Force. It was comprised not just of representatives of the industry, but instead was made up mostly of leaders in other industries that had successfully transformed themselves in order to provide an objective and fresh perspective based on experience.

A key component of the mandate given this Task Force was to “identify specific actions and good practice which would help achieve more efficient construction in terms of quality and customer satisfaction, timeliness in delivery and value for money”.

The Task Force's report, called “Rethinking Construction”, was released in 1998 and contained over 90 recommendations, many of which would be applicable in Canada today. (See Appendix A)

The Task Force noted, for example, that the design and construction process was fragmented and adversarial, and recommended approaches to integrate the process and to design and construct projects as a team, rather than as adversaries.

In discussing integration, it noted that the performance of the asset would be greatly improved if all key parties were involved from the outset including the engineers and design professionals, users, contractors and those who will maintain and operate the asset.

The Task Force was emphatic that whole life costs must be considered during design and construction, for example by leveraging an investment in engineering rather than seeing the fees paid to professional engineers as a cost to be minimized.

It stressed that owners needed to base procurement of design and construction not on lowest price, but on best value for money.

Interestingly the U.K. Task Force specifically cited the Private Finance Initiative, the U.K. version of P3s, as an effective response to many of the concerns it had identified.

Similar views have been expressed in the U.S., for example by the Construction Users Roundtable (CURT) in its white paper “Collaboration, Integrated Information and the Project Life Cycle in Building Design, Construction and Operation.” (See Appendix A) CURT has been working with the American Institute of Architects and the Associated General Contractors of America to pursue options in the US to address some of these same concerns.

Interest in life cycle costing is generally growing, driven by a number of factors including concerns over rising energy costs, the generally increasing awareness about sustainability and climate change, and the need for robustness and durability in creating assets that will need to perform for many, many years without incurring excessive maintenance costs.

There are examples of infrastructure projects whose owners have begun to see the benefits of an integrated delivery process and are requiring that the key parties in a project be brought together as a team from the outset of the project. This would typically include the owner, users and those responsible for maintaining and operating the asset, together with the engineers, other design professionals and constructors.

Project objectives, expectations and requirements are clearly stated as common goals for the entire team. The team takes a shared stake in the success of the project by sharing both risk and reward.

In one model, called Project Alliance, the parties sign a contract that states they will not take legal action against each other. Their multi-party contract clearly defines the mutual objectives for the project. There are specific, pre-agreed provisions for sharing risk and reward. For example, if the cost increases beyond the budget set out in the agreement, that increase would be shared on a pre-agreed basis. If the energy performance of the asset is better than targeted in the Project Alliance agreement, the owner's savings would be shared with other parties, again on a pre-agreed basis. If maintenance of the asset costs more than intended, other parties would share some of the owner's increased costs.

2.2 Demand for Infrastructure in Canada

Another factor driving interest in exploring alternative delivery models is the continuing demand for significant infrastructure investment in Canada.

It is accepted that there is a very large “infrastructure deficit” in Canada, said to be brought about by factors such as deferred maintenance and delayed replacement of assets that have reached the end of their service life.

Meantime demand for new infrastructure investment has continued to grow due to things like demographic shifts in our population such as aging and immigration, and a general trend for Canadians to live in urban rather than rural settings.

It is expected that those demographic influences and others will continue to create new demands for infrastructure of all kinds.

While recent “stimulus spending” invested in infrastructure has acknowledged the infrastructure deficit, that investment has been very limited, and governments have been emphatic that it is ending.

Yet it is clear that significant, continued investment will be essential. A recently-released report commissioned by the Residential and Civil Construction Alliance of Ontario states that governments in Canada will need to invest heavily in renewing existing and creating new infrastructure over the next 50 years. The report, called

“Public Infrastructure Investment: The Risk to Canada's Economic Growth”, links investment in infrastructure to Canada's economic performance. It states that governments have systemically underinvested in infrastructure, going on to conclude that continued underinvestment in infrastructure puts an average 1.1% annual GDP growth at risk. According to this report, over the past several years, governments in Canada have invested in infrastructure at the annual rate of 3.1% of GDP. The report recommends that this investment be increased by 62% and that a 50 year infrastructure strategy be put in place. (See Appendix A)

Given the record government deficits in much of Canada, due in part to the one-time stimulus investment, governments and public owners will more than ever before be eager to find ways to obtain greatest value for money.

2.3 Limited Capacity in the Public Sector

As a result of down-sizing and out-sourcing many conclude that there is insufficient capacity and expertise within the public sector to deliver the volume of infrastructure that is needed.

The private sector has proven itself willing and very capable of providing the necessary expertise and resources.

P3s are one vehicle through which the private sector can deliver its expertise.

2.4 Capacity in the Private Sector is Limited in Canada

In times of economic prosperity, when there are high levels of activity in the design and construction sector, there are limits to the capacity of the private sector to meet the marketplace demand. Many companies in the sector will say they are experiencing challenges in recruiting and retaining qualified engineers and other staff.

Public owners are attempting to address capacity concerns through strategically planning the release of infrastructure projects, including P3s.

However, when public owners issue RFPs that include unreasonable risk transfer to the private sector, that don't compensate consulting engineers and other designers

appropriately for pursuit costs, and that aren't structured to provide adequate compensation for professional services, they discourage participation in their projects.

It must also be noted that even well-structured P3s will not attract interest from consulting engineering companies when P3s do not align with their individual business strategies.

Very large P3 projects may have attracted some new capacity via large design and construction firms from outside of Canada. Recent changes to trade rules encourage that. This trend is also likely to increase if Canada and the EU execute the new trade agreements currently under negotiation.

Some in the industry in Canada are concerned that Canadian firms may lose some competitiveness and capacity to innovate if too many large projects go to international firms.

That said, other Canadian engineering companies have said that their experience in large Canadian projects, including P3s, has opened up international markets for them.

3.0 Why are Public Owners Using P3s?

We have seen increased use of various forms of P3s in Canada. Most agree that we are well into the 'second wave' of P3s which started around 2004.

The federal government and almost every provincial/territorial jurisdiction is either using, or planning to use, P3s for infrastructure delivery to some extent. The federal government, through its P3 Canada fund, is supporting P3s at the municipal level, as well as at the provincial/territorial level and with Canada's First Nations.

It has been reported that there have been over 100 P3 procurements in Canada since the early 1990's.

Successful experience in Canada with P3s demonstrates that P3s are a viable alternative for successfully delivering infrastructure when used appropriately and in the right circumstances.

Importantly, this experience has also resulted in a body of knowledge and best practices that is specific to Canada.

Why are public owners using P3s?

The Conference Board of Canada published a report early in 2010 called "Dispelling the Myths - A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investment." In one chapter, it discusses the "Benefits and Drawbacks of P3s in Procuring Public Infrastructure." There are many other sources that do likewise, including the websites of provincial agencies responsible for P3s. (See Appendix A) This report will not attempt to repeat that information, which is readily available.

This report will, however, summarize some key elements of P3s that appear to attract the interest of public owners.

3.1 Benefiting from Private Sector Experience, Expertise, Innovation and Efficiencies

In general, it can be concluded that public owners obtain the greatest benefit from P3s when the project agreement is structured to include maintenance and operation of the asset over the term of the agreement. This leverages the ability of the private sector to deliver efficiencies, expertise and innovation first in designing and constructing the facility to optimize maintenance and operation, and then maintaining and operating the asset for 25 to 35 or more years. At the end of the agreement's term, the public owner takes over an asset that it can continue to operate efficiently into the future.

The Canadian Council for Public-Private Partnerships (CCPPP) says "P3s bring together the strengths of the private and public sectors." On its website Infrastructure Ontario states "This approach allows the government to bring in private-sector expertise, ingenuity and rigour to the process of managing and renewing Ontario's public infrastructure."

Mention is often made of the private sector's capacity for innovation and efficiencies. Experience in Canada has indicated that, properly structured, a P3 can deliver some of these benefits.

Many Canadian P3 projects have been large enough to draw on international experience and expertise to augment that existing in the Canadian private sector.

3.2 Greater Integration

As suggested in the PPPCanada definition of a P3 in Section 1.0, P3s create a higher level of integration than under conventional delivery models because the public owner enters into a long-term relationship through which "a private proponent designs, builds, finances and operates/maintains a given infrastructure asset".

As will be seen in Section 5.0, not all models of P3 in Canada deliver that level of integration, but experience has shown that the public owner typically benefits from greater integration than generally occurs under conventional delivery models.

It should be noted, however, that in the models of P3 in use in Canada, the public owner and the private sector are not fully integrated as a team with common goals, sharing risk and reward, but instead are bound together by a "project agreement" (sometimes called a "concession") which still leaves the potential for conflicting interests to arise.

3.3 Risk Transfer

The concerns public owners have with respect to cost and schedule overruns, and asset performance, maintenance and operation, lead public owners to transfer those risks to the private sector.

There is a clear distinction between fair risk allocation, sharing risk and reward among the parties, and unreasonable attempts to "dump" risk onto the private sector without considering the ability and capacity of the private sector to manage those risks.

When discussing risk allocation under any project delivery model, including P3s, it is important to emphasize the key principles which must govern risk allocation between the public and private sector:

- Risk must always be allocated to the party best able to manage that risk
- Comprehensive risk analysis and a detailed risk matrix are essential tools for both the public owner and private sector in considering appropriate risk allocation
- The party considering taking on a risk must be able to identify, quantify, mitigate, manage and be compensated for it.

Unilateral, ill-considered attempts to transfer risk to a party that cannot manage the risk, for example where the risk is uninsurable, are not, in fact, actually transferring that risk. Risk allocation is further discussed in section 6.2.

A balanced P3 project agreement that meets these principles can be effective in allocating some owner risks to the private sector.

These agreements are typically fixed cost contracts. Unless the public owner wishes to make changes after the project

agreement is executed, or the project agreement is incomplete or flawed, much greater cost certainty can be achieved when compared with conventional delivery models.

P3 project agreements include liquidated damages provisions that require very significant payments to the public owner when all or part of an asset is not ready on schedule.

Where maintenance and operation are included in the project agreement, financial penalties are assessed against the private sector P3 partner if a portion of the asset later becomes unavailable or unusable because the private sector did not meet the performance criteria governing maintenance and operation set out in the project agreement.

In some cases the private sector may even be prepared to take on some site and environment risks, again provided those principles of risk sharing are met.

When considering the appropriate allocation of risk on any project it is critical that a comprehensive, detailed and realistic risk analysis be carried out to identify all risks, place a value on them, and determine which party is best able to take on that risk.

3.4 Financing

Financing is often identified as a reason for using P3 delivery.

Government can borrow at lower cost than the private sector. So how can private sector financing of P3 projects be justified?

The argument supporting private sector financing on P3s is that there are cost savings in efficiencies and innovations brought to the P3 project by the private sector. In addition, risks which could result in higher costs to taxpayers in the future have been transferred to the private sector P3 partner. The savings and the value of the risk transferred to the private sector is said to offset the additional finance costs. Some also suggest that there can be financial advantage in the short term for the public owner in P3s because

public money does not begin to flow until the asset is fully operational, which in large P3 projects is usually many years after the project agreement was executed.

In a similar vein, it has been suggested that P3s can continue to be procured despite the current government deficits because those deficits will no longer be an issue by the time public money must begin to be paid to the private sector partner.

3.5 Projects May Be Delivered Faster

Experience in Canada supports that P3s can in many cases deliver infrastructure faster when compared with more conventional models, though that isn't always the case.

P3s are a much more complex and therefore time-consuming process up to the point when the project agreement is executed when compared to conventional delivery models. Once the project agreement is in place, however, time may be saved in the construction process through innovation and efficiency, and the incentive of revenue beginning to flow to the private sector P3 partner earlier than planned.

3.6 Life Cycle Cost Considerations

Especially where maintenance and operation of the asset are the responsibility of the private sector P3 partner on a P3 project, decisions relating to life cycle costs are a major consideration for the private sector in preparing its proposal to be most competitive. Life cycle costs are also very important to the public owner. The owner is paying for maintenance and operation through the project agreement and expects the asset to be well-maintained and efficiently operated at the lowest cost possible. The owner also wants to continue to benefit from operating efficiencies and low costs when it takes over responsibility for maintenance and operation at the end of the project agreement.

In some cases, the objective of an owner may be to divest itself of the responsibility of operating and/or maintaining an asset and to transfer the long-term financial risk of operations and maintenance. While this is a legitimate cost consideration, it is not truly a life cycle consideration.

4.0 Is P3 a Panacea?

No one is suggesting that P3s should be the only model for delivering infrastructure projects. While P3s may be appropriate for some projects, other delivery models can provide greater ‘value for money’ on others, provided they are structured and managed well.

P3s are generally only suitable for large projects, given the need to justify additional procurement costs and attract private financing. The threshold above which P3 becomes a consideration varies across Canada but in most jurisdictions is above \$40 million in construction cost. (at the time of publication) Experience in Canada suggests that this threshold will continue to fluctuate.

If P3 is to be a consideration, careful analysis of the specific circumstances of the project is essential to determine if P3 is the most appropriate delivery model for that specific project. This process includes a value for money analysis.

4.1 Value for Money Analysis

Governments and their agencies have generally come to recognize that infrastructure projects need to be carefully analyzed to determine which delivery model is the most appropriate. Procedures are in place to develop a business case at the outset of a project, and then to compare potential delivery options using a ‘value for money analysis’ to determine which delivery approach will deliver the best value in return for the public investment.

This analysis must be comprehensive, realistic and objective. It must accurately compare the full cost of delivering a project by conventional methods and through a P3. Whichever delivers the infrastructure asset at lowest cost under this analysis is said to be delivering best value for money.

The analysis starts with base construction costs for each model. This is adjusted to reflect financing costs. The true cost to the public owner of the risks it retains is factored in to both the conventional and P3 models. Similarly, the value of risk transferred to the private sector is calculated.

Where risk allocation is dealt with correctly, the value of risks retained by the owner in the P3 model is presumably lower than in the conventional model. Ancillary costs such as project management, design professional and legal fees are then added to each. These ancillary costs are higher on P3s than on projects being delivered through conventional models.

Where there are government P3 agencies involved in the project, for example in advising the public owner, costs related to those agencies must also be considered as part of the cost of P3 delivery.

Reimbursement of pursuit costs is also factored into the cost of the P3 delivery as an investment in obtaining the caliber of proposals that will deliver highest value to the public owner.

A commonly overlooked cost in some analyses is the cost of procurement. The inherent differences between conventional project delivery and P3s and the resultant cost of the procurement process to the owner can be significant.

In the most robust processes, that analysis is revisited at later stages in the project to reconfirm the initial results, or to determine if changing circumstances have altered the outcome and call for the delivery model to be reconsidered. There have been reports of projects where the delivery model was changed after reviewing the value for money analysis later in the project.

Infrastructure Ontario posts a detailed explanation of its approach to value for money analysis on its website. (See Appendix A)

4.2 Conventional Models

As noted earlier, some of the benefits to the public owner sought through P3 can be achieved in conventional delivery models. A few examples illustrate how this is possible.

In the conventional model the consulting engineer designing the asset is engaged by the owner as its agent, unlike in a P3 where it is engaged by the contractor or the consortium, and represents those interests. The public owner has direct input and interface with the consulting engineer in the conventional model.

Experience and evidence clearly demonstrates that owners that employ a Qualification Based Selection (QBS) approach to select the engineer obtain better project results reflecting innovative, high quality engineering, and resulting in fewer change orders and delays. Through QBS the owner selects the team that is best suited to the project requirements, benefits from the team's experience and advice on determining the best approach to the project, then negotiates a fee that compensates the team appropriately for the value it delivers to the owner's benefit. The consulting engineer is regarded as a trusted advisor to the owner.

A recent report entitled "An Analysis of Issues Pertaining to Qualifications-Based Selection", prepared for the American Public Works Association and the American Council of Engineering Companies, reviewed the extensive use of QBS in the U.S. It concluded that there are many substantial benefits to owners who use QBS to procure consulting engineering services. For example, capital cost growth on the projects where QBS was used was reduced by 70% when compared to projects where other methods, such as lowest fee, were used to select the consulting engineer. As noted earlier, overrunning the capital budget is one of the major concerns expressed by public owners with the status quo. (See Appendix A)

It should be noted that QBS is equally applicable in P3 projects, and delivers similar benefits to any party in the P3 project that is engaging consulting engineering companies.

The use of standard consulting agreements helps ensure that expectations are clear, and that risks are identified and allocated reasonably.

Similar principles apply to the contractor in conventional delivery models where adherence to long-established industry standards attracts interest from the industry's best and helps assure competitive pricing. Many owners also reduce their construction risks by prequalifying contractors for their project, producing a shortlist of potential bidders using industry-recognized prequalification forms and processes.

It is always important to engage the consulting engineer and other advisors at the very outset of the project. The owner benefits from expert professional advice when considering the feasibility of the project and developing the business case, ensuring that project objectives and expectations are clear and realistic.

This early technical advice supports greater cost certainty by ensuring that project budgets are realistic, reflect all project requirements and provide appropriately for contingencies. Similarly, the project schedule allows for adequate engineering time to incorporate innovation and high quality engineering; for informed decision-making by the owner; obtaining of approvals; preparation of complete and coordinated construction documents; and, a realistic period for construction.

Life cycle costing can be reasonably addressed when owners use conventional delivery models by including specific requirements and performance criteria in the bid and contract documents. The use of QBS to select the consulting engineer will encourage innovation in optimizing the design according to life cycle considerations, whereas selecting the engineer based on lowest fee actually penalizes the firm that accurately anticipates the level of professional service that will lead to greatest efficiencies and cost-saving over the life cycle of the asset.

In the end, failure to obtain best value for money, cost and schedule certainty, and other elements of project success under conventional delivery models is often the result of under-resourcing project planning and design at the very outset of the project. It's at this critical juncture that decisions are being made which will have major impact on the performance of the asset, satisfaction among users and the public, and efficiencies in service delivery over the whole life of the project.

Engaging the consulting engineer and other professional advisors at the very beginning of a project is an investment to be leveraged to the benefit of the public owner over the life of the project, rather than a cost to be minimized.

5.0 Forms of P3 in Canada

P3s in Canada take many forms. It is imperative that all parties understand the precise form and legal structure of the P3 being considered for any given project because roles and responsibilities of the public owner and its private sector P3 partner can vary significantly.

It is also important to understand that there can be variations within each form depending on the specific circumstances of the project.

It is useful to again emphasize that the greatest benefits of P3s arise when maintenance and operations are included in the project agreement. This leads the private sector P3 partner to design and build an asset that will operate most efficiently and cost-effectively over the term of that contract, optimizing the competitiveness of its proposal to the owner. The owner benefits from those efficiencies and lower maintenance and operating costs during the term of the project agreement and after it takes over maintenance and operation of the asset when the agreement ends.

The private sector is attracted to P3s where maintenance and operation are included in the project agreement because it establishes a long-term, secure revenue stream over the term of the project agreement, typically 25 to 35 years or more.

5.1 Design Build Finance Maintain Operate (DBFMO)

Most consulting engineers are familiar with design-build, a process that has been used successfully for infrastructure delivery for many years. In a typical design-build relationship a public owner enters into a legal agreement with a contractor that engages or joint ventures with a consulting engineer and other design professionals to design and build the asset according to requirements set out by the public owner.

This differs from Design-Bid-Build which many refer to as “conventional” delivery. In that model the design team is engaged by the public owner and prepares the design for the asset working in close cooperation with the owner

and users. The design team then prepares detailed bid documents and invites contractors to bid on constructing the project. The design team reviews the construction of the asset and typically administers the construction contract on behalf of the owner.

On a Design-Bid-Build project the consulting engineer and design team are the owner’s agents, and represent the owner’s interests. By contrast, on a design-build project, because they are engaged by the contractor, the consulting engineer and other design professionals represent the contractor’s interests as their client.

As a result, in a design-build project, where the design is the responsibility of the builder, the public owner often engages a team of professionals to advise it and represent its interests in the project. This “compliance team” is often referred to as the “Planning Design and Compliance Consultants” (PDC) or “owner’s engineer”.

In a Design Build Finance Maintain Operate (DBFMO) P3, the public owner enters into a project agreement with a “consortium” (also called “concessionaire” or “special purpose vehicle”), a legal entity created to provide the design, build, finance, and life cycle maintenance/operation of the asset. The term of this project agreement can be 25 to 35 or more years. At the end of the agreement, the owner takes over the asset and responsibility for its maintenance and operation.

The consortium often includes the financiers, project management, and may also include the constructor and/or consulting engineer and design team. The consortium in turn directly engages - or has those that it engages subcontract - the rest of the expertise required to provide the range of services set out in the project agreement. This often includes design and specialist consultants, and the maintenance and operations components.

Because the consulting engineer and design team are working with the consortium, representing its interests, the public owner engages a compliance team to advise it.

The consortium is selected through a two-stage Request for Qualifications/Request for Information (RFQ/RFI) and Request for Proposals (RFP) process. In the first phase,

prospective consortia submit information that will be used to establish a shortlist, usually of 3 consortia, that will be invited to respond to a very complex and demanding RFP. The RFP includes the contracts prepared by the owner's legal advisors, as well as output specifications that set out the technical requirements for the asset in detail. These output specifications are prepared by the owner's compliance team and include designs as well as performance specifications.

Because the consortium is responsible for maintaining and operating the asset during the term of the project agreement in a DBFMO, the output specifications include the performance criteria which govern the maintenance and operation of the asset by the consortium.

The project agreement also sets criteria for the condition of the asset when it is taken over by the public owner at the end of the project agreement.

Repayment of the financing is usually amortized over the term of the project agreement.

The asset is publicly owned in a DBFMO P3.

There are usually other consulting engineers on a DBFMO P3 project, for example, advising other parties such as the financier, or acting as an independent certifier.

5.2 Design Build Finance Own Maintain Operate Transfer (DBFOMOT)

Though not that common in Canada at the present time, this model of P3 builds on the DBFMO P3 with the consortium now also owning the infrastructure for the term of the project agreement, then transferring ownership of the asset to the public owner at the end of the term. The consortium designs the asset, arranges financing, operates and maintains the asset during the term of the project agreement. Performance criteria in the project agreement for maintenance and operation are critical to preserving the value of the asset which is ultimately transferred to the public owner at the end of the project agreement. And, criteria in the project agreement establish the condition of the asset when legal ownership of the asset is transferred to the public owner.

DBFOMOT is not widely-used by the public sector in Canada because many governments take the position that core assets such as water and waste water infrastructure, hospitals, schools and justice facilities must always be publicly owned. Also, in many cases, the asset is located on crown land making the concept of private ownership problematic.

5.3 Design Build Finance and Maintain (DBFM)

This P3 model is very common in Canada.

It differs from DBFMO in that the operation of the asset is not included in the project agreement but remains the responsibility of the public owner. However, as in a DBFMO, maintenance of the asset is the responsibility of the consortium during the term of the project agreement.

Under this model the asset is publicly-owned. The public owner takes over responsibility for maintaining the asset at the end of the project agreement. This model presents a potential risk to the consortium in that maintenance costs can be significantly influenced by operational decisions by the owner.

5.4 Design Build Finance (DBF)

In a Design Build Finance P3 the public owner contracts with the private sector to design and construct the asset, however in this model the asset is always owned, maintained and operated by the public sector.

The private sector also provides the financing for the asset. This can either be a short-term construction loan, which is paid out by the public owner on completion of construction, or it may be a longer term loan paid out by the public owner over an extended period of time.

Where only construction phase financing is provided, it is often arranged by the design-builder. Where long term financing is provided, the public owner may contract with a consortium to provide the financing under the terms of a project agreement.

Under a DBF project agreement, the public owner does not benefit from transferring risks related to maintenance and operation to the private sector. And, the private sector

partner does not profit from the long-term revenue stream that maintenance and operation generate under a DBFM or DBFMO P3.

In a DBF P3 public owners typically engage a compliance team, including owner's engineer, to advise them.

5.5 Build Finance (BF) and Build Finance Maintain (BFM)

Build Finance and Build Finance Maintain are good illustrations of how forms of P3s can vary due to specific project circumstances.

In Ontario, the DBFM model was adapted to create these two variations that are being used quite extensively on what have come to be called 'legacy projects'.

Infrastructure and facilities such as hospitals had been designed but had not been constructed. Many of these projects had been inactive for a number of years.

The province wanted to implement the projects in some form of partnership arrangement with the private sector, however, didn't want to lose the investment already made in design and preparation of construction documents.

The original designers were engaged to review and update their designs and documents that were then used to invite proposals from contractors who would construct the asset and also provide construction phase financing. This process is called Build Finance (BF).

The contractors engaged engineers, architects and others to carefully review the construction documents prepared by the original designers because the expectation was that the contractor include all necessary contingencies to ensure there would be no cost overruns.

This expectation of a cost warranty has serious liability implications for the original designers. It also has serious implications for the engineers, architects and others engaged by the contractors to review the construction documents. Because they are advising their client, the contractor, of the need for contingencies in the budget, the contractor is likely to hold them accountable for any contingencies they fail to identify. Further, the risk

associated with this expectation of cost warranty was heightened for the engineers, architects and others engaged by the contractors because the contingency amount was treated as a component of the competitive RFP process, rather than being stipulated as a set amount that all contractors would carry.

There are other risks for consulting engineers and design teams beyond commercial liability in these situations, for example, the requirements of professional regulators and other statutory obligations. Design professionals cannot contract out of those risks and responsibilities.

Once the successful Build Finance team was selected and construction was underway, the original designers acted for the public owner monitoring compliance with the project requirements by that Build Finance team. In most cases the contractor continued to engage its own engineers and design team to advise it during construction.

Ontario has also employed another variation in which the public owner executes a project agreement with a consortium to build the asset, provide construction phase financing, then maintain the asset during the term of the agreement. Build Finance Maintain thus includes some of the benefits for the public owner and its private sector partner attributed to the maintenance component of a DBFM.

The asset is always publicly-owned in a BF or BFM.

While these variations have only seen use in Ontario, this model of P3 could be used in any jurisdiction, not just on 'legacy projects' but any time the public owner wants to exert greater stewardship over the engineering and design of the asset by directly engaging the engineer and other professionals. The risk profile for the original designers and the engineers and design team engaged by the contractor will vary depending on the circumstance of the project, the requirements of the RFP and project agreement, and the specific processes used to implement the BF or BFM P3.

This example illustrates the importance of understanding the specific form of P3 and legal relationships on each project.

6.0 Potential Challenges in P3 for Owners

Section 3.0 outlined some of the key reasons why public owners are using P3s. It is important to note that P3s can also bring with them their own challenges for public owners.

6.1 Complexity, Cost and Time

P3 delivery of projects tends to be more complex than conventional delivery models. The legal documents governing the contractual relationship between the public sector entity and the private sector consortium, as well as between other parties on the project, are very complex.

The process is more costly and time-consuming than conventional delivery models. As noted earlier, some projects are delivered faster than through conventional models by recovering time in the construction phase, however that is not always the case.

P3 projects need to be quite large to justify additional process costs as compared to other delivery models, and also because the project must have the critical mass to attract private financing.

Very specialized expertise is required within the public sector organization or must be retained separately to manage the complex P3 process effectively.

Most governments in Canada are mandating that P3 relationships be as transparent as possible and that there be appropriate accountability. These relationships and the agreements governing them are very complex. There are sensitivities related to these business transactions such as proprietary information, intellectual property and privacy issues. As a result it can be difficult for public owners to fully satisfy expectations of transparency and accountability in every case.

6.2 Risk Allocation

In a P3 there is an expectation that there will be additional costs to compensate the private sector for taking on some public sector risk.

This includes compensation for pursuit costs during the RFP process as well as compensation for other risks that the public owner wishes to transfer to the consortium through the project agreement.

There is a danger if the public owner is attempting to transfer too much risk to the private sector P3 partner that the cost will be excessive, or that the private sector will simply not respond to the project opportunity.

There are some risks that should remain public risks.

It must be remembered that there is no insurance available for some risks which a public owner may consider allocating to the private sector P3 partner.

If the project agreement attempts to transfer to that P3 partner an owner's risk that it cannot mitigate or manage, for example when the risk is uninsurable, one questions whether the risk has really been transferred regardless of how the project agreement is structured.

Aside from uninsurable risks, there are risks over which the design professionals have no control. A project agreement is unrealistic, for example, when it attempts to have a design professional guarantee that approvals will be successfully obtained from authorities, or to require a consulting engineer to warrant the work of others with which it has no contractual relationship. In other cases, compliance with the terms of the agreement by the designer or consortium may be defined in subjective terms such as "fit for intended purpose"

All of this points to the critical need to perform a comprehensive, realistic and fully-informed risk analysis, a process in which the advice of the owner's engineer and other advisors is essential.

6.3 Project Requirements

The output specifications require very careful preparation as they form part of the RFP documents and ultimately the project agreement between the public owner and the consortium.

They must clearly set out project requirements so that the expectations of the public owner, its users and clients, operators and others can be fully met. Note that the immediate and long term project requirements may not be the same in many circumstances and they should be clearly articulated in such cases. Furthermore, these expectations go far beyond the design, construction, operation and maintenance of the asset.

For example, the ability to deliver public services most efficiently by way of the infrastructure asset is a critically-important consideration, and one which may conflict with the maintenance, operation and other interests of the private sector consortium.

Ontario's Ministry of Health and Long-Term Care estimates that the delivery of clinical services represents over 95% of the total public investment in a hospital when considered over a period of 25-30 years, similar to the term of a P3 project agreement. The design, construction, maintenance and operation of the physical hospital building itself during that same period represents less than 5% of that total public investment. Clearly, a design which facilitates the most efficient delivery of those clinical services is of paramount importance, and in a P3 that design depends entirely on the quality of the output specification which sets out project requirements.

Development of those output specifications is especially challenging because while carefully setting out user requirements to achieve that efficiency in service delivery, the output specification must also provide for maximum flexibility to encourage innovation and efficiencies on the part of the consortium.

Once the project agreement is executed, including those output specifications, any changes required to improve efficiency of service delivery must be negotiated with the consortium. Experience shows that those changes are very often much more expensive than in conventional delivery models where the designers are engaged by the public owner and work on a continuous basis with the end-users as they finalize the details of the design before a construction contract is signed.

Where there is a long-term operating or maintenance component in the project agreement, the output specifications again play a critical role. They set out, in detail, the performance criteria which the private sector must meet in operating or maintaining the asset. These criteria must meet the needs of the public owner without being excessively demanding because that would inflate the cost it must pay to the private sector.

If the performance criteria governing maintenance and operation are not established correctly, or if the public owner needs to amend them at some point during the life of the project agreement, the amendments often prove to be costly.

It is imperative when the output specifications are being prepared that users and those that will maintain and operate the facility be fully engaged and their needs carefully considered in order to avoid dissatisfaction with the asset when it is constructed and in use.

Properly prepared, the output specifications and project agreement used in P3s can minimize scope changes. It is important to note, however, that even in the case of very well-prepared output specifications, there can be legitimate reasons for change. For example, new technology that can be used to improve the efficiency or standard of service delivery through an asset may justify a change in order to capitalize on the benefits of that new technology over the life of the project agreement and beyond.

There is one more element to the challenges related to the importance of complete, clear and appropriate project requirements - public expectations and public perception of the project results. The public, elected officials, authorities and approval agencies can be dissatisfied with project outcomes if they are not adequately engaged in the process. For example, elected officials in the U.K. declared that they were embarrassed to attend ribbon-cuttings of some of the first wave of P3 schools and hospitals because the public was dissatisfied with the aesthetics of these important civic buildings. One school was described as an "agricultural shed with windows".

6.4 Financing

P3 projects that include a finance component rely on the expertise of the private sector to access appropriate financing.

Until the recent economic downturn, P3 projects enjoyed readily available long-term financing, lending predictability and reasonable financing costs. The downturn demonstrated the considerable degree to which P3 financing can be susceptible to the availability and cost-effectiveness of credit in global markets. There were a number of large P3 projects in Canada that appeared to be in jeopardy because the financing originally anticipated when the consortium was selected was no longer available. Financing was eventually restructured using what became known as 'hybrid models' combining, for example, short term loans, bonds and equities. In some cases a provincial government was forced to directly advance some of the funding for the project.

6.5 The Consortium's Team

The makeup of the consortium's team can create risk for the public owner. Under-performance by just one member of that private sector team can have serious negative consequences for the owner and its project.

When analyzing the response from potential consortia to the RFQ/RFI, owners and their advisors must take great care in selecting the shortlist of consortia that will later be invited to respond to the RFP.

Especially given that the project design engineers will not be representing the interests of the owner on most P3 projects, selection of the preferred consortium involves a 'leap of faith' on the part of the public owner.

To have the most successful P3 project, it is essential to have the right team, with the best understanding of the project and its requirements.

A consortium that uses QBS to engage its design professionals recognizes the critical importance of the design of the asset in winning the RFP.

A public owner that properly compensates teams for their pursuit costs and shares risk fairly understands that it will attract the best teams to its project.

7.0 P3 Process

This section will describe a generic process which would be followed to develop and deliver an infrastructure project when the value for money analysis concludes that P3 is the most appropriate delivery model for this specific project.

7.1 Role of Government Agencies

Before outlining the process, it should be noted that government agencies and departments can play an important role working with a public owner to manage a P3 project. In some cases, in addition to supporting the owner with project management, that agency or department assists in or performs the review, including the value for money analysis, that determines whether a project will be delivered as a P3.

In most Canadian jurisdictions the government has established an arm's length agency or identified a government department to manage delivery of infrastructure under P3 models.

Currently, there are three agencies - Partnerships BC, Infrastructure Ontario and Infrastructure Quebec.

In Alberta, P3 delivery can fall under Treasury Board or a group within Alberta Transportation. In Saskatchewan, P3 is with the Ministry of Highways and Infrastructure, and in New Brunswick, P3s fall under the Ministry of Transportation.

The federal government actually has three groups involved in P3s - PPP Canada (also known as P3 Canada), a P3 group at Public Works Government Services Canada, and a P3 team at Treasury Board.

Some agencies offer their services to other jurisdictions and tiers of government. For example, Partnerships BC has been assisting Nova Scotia while Infrastructure Ontario is offering its project management services to lower tier governments and agencies.

7.2 Process When P3 is Contemplated

This hypothetical project is estimated at \$120 million which is above the threshold in this jurisdiction where P3 becomes a consideration. In this case, the value for money

analysis concludes that a Design Build Finance Maintain Operate P3 is the most appropriate delivery model and it proceeds as a P3.

It is important to note that this is a generic outline describing only the major steps and milestones in the process. Some steps in this process may overlap or occur in a different chronological order, or may not be required.

- Public owner engages professional compliance team, including owner's engineer.
 - This ensures that the owner is receiving expert technical and professional advice from the very beginning of the project.
 - In jurisdictions where a government agency or department assists the owner in managing the project, that agency or department would also become involved at this point.
- The business case for the project is developed by the owner and its compliance team.
 - The business case includes a detailed statement of the project objectives, owner expectations and requirements.
 - A feasibility analysis is carried out before the project proceeds further.
- Value for Money analysis is performed which, in this example, concludes that P3 is the appropriate delivery model.
 - In those jurisdictions where more than one P3 model might be a consideration, the specific model of P3 is identified.
 - If this analysis concludes that a conventional delivery model is the most appropriate, the compliance team continues to work with the owner to complete the project from this point on.
- Owner engages specialist P3 advisors including project management, legal, accounting, finance and risk management.
- Compliance team works with the owner and its staff to develop project concepts, preliminary design and output specifications while other advisors prepare the balance of the Request for Proposals (RFP) package, such as legal agreements.
- A Request for Information (RFI) or Request for Qualifications (RFQ) is issued to which potential consortia respond.
- Compliance team and other advisors to the owner complete the RFP package.
- Responses to RFQ/RFI are analyzed and the shortlist of consortia that will be invited to respond to the RFP is announced.
- The initial Value for Money analysis is reviewed to confirm that P3 remains the most appropriate delivery model for the project.
- RFP is released. It includes design (as appropriate to the project circumstances), output specifications and all other bid documents such as legal agreements.
 - Compliance team advises owner in responding to requests for clarification from consortia.
 - There may be some structured interaction between consortia and the owner and its compliance team while the RFP is open. The purpose is to allow the consortia to seek clarifications and in some cases to solicit feedback on its designs. Where this occurs it is carefully managed to ensure that fairness is preserved in the RFP process.
- Proposals are received and analyzed by the owner, compliance team and other advisors.
 - Consortia that are compliant with the RFP are identified.
 - A 'best value' analysis is included to consider innovations for enhancing the project suggested in each of the proposals.
- Preferred consortium is named based on this comprehensive technical and financial analysis.
- The owner, with support of its compliance team and other advisors, engages in negotiations with the preferred consortium to finalize details of the transaction.

- For example, there may be technical details in the proposal that the owner and its compliance team require to be modified to best meet the owner's requirements, such as for most efficient delivery of services to the public.
- Initial Value for Money analysis is again reviewed to confirm that P3 remains the most appropriate model.
- Financial close is announced and the project agreement is executed.
- Construction commences.
 - Compliance team monitors and audits construction.
 - Where the public owner identifies the need for a change, for example to incorporate new technology or processes, the compliance team advises the public owner as it negotiates with the consortium. The consortium, in turn, is advised by its design professionals in negotiating that legitimate change under the terms of the project agreement. When properly executed, P3s can reduce the need for changes after the project agreement is signed, but it is unrealistic to expect changes will be eliminated altogether.
- Construction is completed.
- Consortium provides maintenance and/or operations of the asset where that is included in the project agreement.
 - The owner engages a team of professionals, including an owner's engineer, to monitor and audit the performance of the maintenance and operations by the consortium.
 - Performance is measured against the performance standards set out in the project agreement.
- Asset is turned over to the owner at end of the project agreement and owner takes over maintenance and operations.
 - Compliance team advises owner on the condition of the asset measured against the criteria set out in the project agreement.

8.0 Principal Roles for Consulting Engineering Companies in P3s

There are a number of potential roles for consulting engineers in P3 projects.

The following generic descriptions of typical roles and responsibilities will vary to suit the circumstances of the specific project.

8.1 Owner's Engineer

Engaged directly or as part of a compliance team engaged by the public owner, the owner's engineer provides professional technical advice and support to the owner. Those services typically include:

- provides technical advice to the owner as it develops the business case for the project, establishes project objectives and requirements and carries out feasibility analysis
- advises the owner as the Value for Money analysis is performed
- develops engineering designs, concepts and complementary studies and technical documents that will form part of the RFP and the project agreement
- develops the output specifications - the design and performance specifications that form part of the RFP and ultimately the project agreement
- where maintenance of the asset is part of the project agreement, as in a DBFM, develops the performance criteria against which the maintenance by the consortium is monitored and audited
- where operation of the asset is part of the project agreement, as in a DBFOM, the performance criteria against which the operation by the consortium is monitored and audited
- advises the project owner as it responds to inquiries during the RFP
- advises the project owner as it evaluates the proposals

- monitors and audits construction by the consortium based on the requirements in the project agreement
- advises the owner on rationale for and validity of changes, and assists the public owner when negotiating changes with the private sector P3 partner
- advises and assists the project owner as it takes over the asset

Where the consortium is required to maintain or operate the asset under the project agreement, the owner will engage an owner's engineer, in some cases as part of a team of professionals, to monitor and audit the maintenance and/or operations by the consortium.

When the asset is to be turned over to the project owner at the end of the maintenance and/or operation period set out in the project agreement, the owner's engineer assesses the condition of the asset against the criteria set out in the project agreement.

8.2 Consulting Engineer Working with the Consortium

There are a number of potential roles for consulting engineers working with the consortium.

8.2.1 Consulting Engineer Engaged by the Contractor

In Canada, consulting engineers are generally engaged as a sub-contractor by the contractor when working with the consortium, or as a sub-consultant to the prime consultant engaged by the contractor.

In this role, the consulting engineer typically:

- supports the consortium in responding to the Request for Qualifications/Request for Information
- reviews the RFP and advises its client on requests for clarification that should be made and opportunities for innovation
- assists in the development and execution of the pursuit strategy
- prepares designs and documents to be included in the consortium's proposal

- where they occur, participates in review meetings with the public owner and its advisors during the preparation of the proposal
- advises its client during negotiations with the project owner
- if the consortium is identified as the preferred consortium, completes the design and the construction documents
 - the construction documents are almost always 'fast-tracked', meaning the consulting engineer and its team must have the experience and capability of providing the documents using a 'fast-track' approach
- advises its client, the contractor, during construction and completion of the asset
 - represents its client, the contractor, during negotiation of scope changes

The engineer's role in this case is typically focused on the design and construction aspects of the P3. In fact, this arrangement is common to design-build projects.

8.2.2 Consulting Engineer Directly Engaged by the Consortium

In this role, the consulting engineer provides expert professional advice to, and represents the interests of, its client, the consortium.

This does not typically include the preparation of design and construction documents which are usually prepared by the consulting engineer engaged by the contractor.

This role may include, for example:

- assisting the consortium in selecting the contractor and its team and in establishing the terms of that relationship
- advising the consortium on advice being provided to the consortium by the contractor's design team through the contractor
- advising the consortium in its negotiation of changes of scope with the owner and with the contractor
- advising the consortium on the requirements of the project agreement, including the output specifications

Where maintenance and operation are included in the project agreement, a consulting engineer may be engaged to advise the consortium relative to the maintenance and operations requirements.

8.2.3 Equity Position

Consulting engineers may also take an equity position in a consortium in any of these models, especially in the design and construction components of the project. It should be noted that this equity position brings with it a very different risk profile because of the major commercial exposure which extends over the term of the project agreement.

8.3 Technical Advisor to Other Parties

Rather than being engaged by the project owner or working with the consortium, consulting engineers may be engaged as technical advisor to other parties in the project, for example, financiers.

8.4 Independent Certifier/Engineer

On many P3 projects there is a role for an independent certifier that will provide an objective professional opinion on the value of the construction that has been completed as the asset is constructed.

9.0 Opportunities and Potential Benefits of P3 for Consulting Engineering Companies

P3s present opportunities to a number of consulting engineers on a single project.

P3s may present additional opportunities on projects that might not have proceeded under conventional delivery models.

Once underway, these are typically large projects, relatively secure because financing is in place.

There is the benefit of being involved early in the project in the various roles in the P3 model.

Because the success of any P3 venture is so dependent upon the entire team, there is potential for consulting engineers with a strong track record of success in P3s to access more opportunities and to command higher fees even when competing with others. In some cases, fees may be higher than market norms especially when compared to conventional delivery models where the professional fee may be a factor in procurement of consulting engineering services.

It is important to stress, however, that this potential benefit is entirely dependent on the type of relationship the consulting engineer has with its client. A team approach where risk and reward are appropriately shared among the parties can result in a very positive, long-term relationship. However, consulting engineers engaged in adversarial relationships where they are not compensated adequately, or where risks are transferred unrealistically and unilaterally to them, will not enjoy the successful experience that leads to a positive relationship over the longer term.

Successful P3 projects can lead to valued long term client relationships that may lead to a steady flow of projects, including non-P3 projects.

Consulting engineers have indicated that success in P3s in Canada has gained them access to international markets, including in non-P3 projects.

Successful P3 projects can contribute substantially to the reputation of consulting engineering companies.

Some have indicated that success in P3 projects has assisted them in recruiting and retaining highly qualified staff.

10.0 Risks and Challenges in P3s for Consulting Engineering Companies

A thorough understanding of the risks in P3s, most of which are very different from conventional delivery models, is essential to consulting engineers and others contemplating involvement in P3s.

Those with experience in P3s consistently identify two items as representing the greatest risks on P3 projects for consulting engineers and other design professionals.

First, as has been mentioned earlier, there are very high pursuit costs which too often are not adequately compensated.

Second, there is a general tendency to shift risk from the public owner to the consortium, and then for the consortium to shift that risk to its team, including to the consulting engineers and other design professionals.

Consulting engineers find themselves under intense pressure to accept inappropriate risks, and accept additional risk without adequate compensation, when negotiating their participation in P3s.

10.1 Critical Importance of Negotiating Appropriate Professional Fees

One of the greatest challenges for consulting engineers in P3s is in understanding fully the critical importance of negotiating appropriate professional fees.

Other than when performing the role engaged by the contractor working with the consortium, professional fees are generally said to be at usual market rates on P3 projects.

However, when working for the contractor with the consortium, there are some very important considerations regarding professional fees.

Pursuit costs are a risk that occurs in every P3, but most especially when pursuing a DBFMO, or variations of

DBFMO which include operations and maintenance. Because consulting engineers working with the consortium are first engaged in a very expensive and competitive RFP process, they are typically expected by their client to provide services at fees below their usual rate.

The amount below the usual rate is seen as the engineer's share of the risk the consortium takes in pursuing the project. Engineers negotiate to keep that amount at minimum, recognizing that not every proposal in which they participate will succeed.

Engineers negotiate a success fee that rewards them for taking on this risk when proposals are successful. That success fee is at least double the value of the professional fees the engineer had at risk, that is, double the amount by which the consulting engineer's fees for participating in preparing the response to the RFP are below the consulting engineer's usual rates.

Once a proposal proceeds, there are additional risks in most P3 projects, many of which are discussed in this section. Consulting engineers negotiate additional compensation when taking on additional risks. This additional compensation covers such things as the direct costs, for example, of providing additional resources to manage the risk or paying for additional insurance.

The additional compensation should also include a premium for accepting additional risk on the project.

Some consulting engineers may not be sufficiently experienced in assessing and quantifying risk correctly, and then negotiating compensation commensurate with the risk they have agreed to take on, especially when they are unfamiliar with the additional risk inherent in the P3 process.

Clearly, consulting engineers must carefully and objectively review the business case, including risks related specifically to pursuit costs and to P3s in general, when considering participating in P3s.

10.2 Consulting Agreements

When working in P3s consulting engineers should negotiate use of the national, standard contract ACEC 31 wherever possible. The agreement should clearly define the scope of services being provided by the engineer, and should have few, if any, amendments.

Especially when engaged by the contractor, negotiating terms of the consulting agreement is as critically important as negotiating appropriate fees. Given the risk profile of P3 projects, engineers must negotiate terms in their agreements to clearly define their role and responsibility, and to limit their risks to those that they have specifically agreed to accept.

When dealing with P3s, the consulting engineers and design professionals must negotiate while under immense pressure to accept risks that they cannot properly mitigate and manage.

This is an area where knowledge of the P3 process, contracts and contract negotiation is critical.

10.3 Fast Pace

When working with the consortium, consulting engineers will be required to deliver their services very quickly during the RFP process. If the consortium's proposal is successful and the project proceeds, this pressure to deliver their professional services very quickly becomes even more intense. If the project is not completed on schedule, liquidated damages may be assessed against the consortium, which is likely to turn to the contractor and its consultants for compensation.

As a result, projects are generally fast-tracked. Experience demonstrates that fast-tracking results in additional risk for the consulting engineer. The standard quality control/quality assurance process used by an engineering firm for conventionally delivered projects may not be suitable for P3 projects and may need to be adapted for such projects.

Engineers should ensure that they have sufficient, qualified resources available to meet the project schedule, and, at minimum, include the full cost of those resources,

including overtime premium, when negotiating professional fees together with a premium for the risk related to fast-tracking the project.

10.4 Budget Risk

Because P3s promise cost certainty, there is considerable risk related to construction cost of the asset because the capital cost is fixed.

Consulting engineers may be under pressure from their client to adopt less than optimum engineering solutions to enable budgets to be maintained, although this is said to happen less frequently if the consortium is responsible under the project agreement for maintenance and operation of the asset.

Consulting engineers also face risks related to quantity takeoffs when they provide those if it is later alleged their takeoffs were inaccurate and others relied on them to fix their costs for the project. This risk is much more acute on P3 projects since, unlike conventionally delivered projects, the quantity estimates are based upon incomplete designs.

10.5 Risks Related to the Team

Experience has clearly shown that the creation of the team including the identification of all of the participants and structuring the working and legal relationships among them can be one of the major challenges in P3 projects.

Underperformance by other team members can have serious negative impact for consulting engineers, including financial consequences and damage to reputation.

Further, an engineer's statutory and regulatory responsibilities may conflict with the client's interests, or the interests of other team members.

There is another risk which can arise in the team approach to delivering P3 projects because the contractor engaging the design professionals may expect a specific team from those professionals to be dedicated to the project and working in the contractor's or a project office, leaving them isolated.

10.6 Pursuit Strategy

Many consulting engineers indicate that they have had little real input into the pursuit strategy employed by the consortium. Yet that strategy can have a significant impact on them, for example in determining the engineer's actual pursuit costs.

Experience in Canada shows that proposals that incorporate design excellence are most successful. Owners should be prepared to invest in the most successful project outcome by providing appropriate compensation for pursuit costs.

10.7 Intellectual Property

International conventions declare that the intellectual property rights belong to the creator or designer. Yet these could be lost to the contractor, the consortium, the public owner, or even to a government agency depending on the project agreement and the underlying agreements through which the consulting engineer is engaged. Intellectual property rights extend beyond copyright, and include moral rights and issues relating to patent of a design or a system.

Where possible, consulting engineers should negotiate agreements that preserve their intellectual property rights.

There are significant risks related to the use of designs and documents on other projects and in applications where the designer is not involved. An indemnification may provide some comfort to the designer, although the indemnification is only as useful as the ability and willingness of the issuer of that indemnification to stand behind it.

Where the consulting engineer and design team develop innovative responses to the RFP requirements, they must ensure that they retain the right to use those innovations on other projects where appropriate, whether-or-not the proposal submitted by the consortium incorporating those innovations was successful.

There are circumstances where the public owner may legitimately wish to negotiate limits on the designer's intellectual property rights, for example for security reasons, in which case the consulting engineer must negotiate to limit those restrictions to minimize the impact on its ability to reuse its innovations and designs on other

projects. And, the consulting engineer should factor these limitations on intellectual property rights into the fee charged for its professional services.

There are cases where a public owner may wish the designers to produce a prototype or template design, where it is contemplated that the design may be re-used in whole or in part on other projects. In those cases the consulting engineer and other designers should negotiate specific limits on re-use, appropriate compensation and indemnification.

It is an accepted practice for the consulting engineer and design professionals to provide a royalty-free license allowing for the use of their documents for ongoing maintenance and operation of the asset.

10.8 Maintenance and Operations

There is greater potential risk, and the risk profile itself is quite different, for consulting engineers if they are providing technical and professional advice related to the maintenance or operation of the asset once it is constructed. That must be taken into account when negotiating fees and terms of the agreement.

Some have identified a potential concern that provision of professional services related to long term maintenance and operation of the asset could extend the discovery period under limitations legislation if the consulting engineer provides those services under the agreement intended for design and construction of the asset.

10.9 Equity Position

As noted earlier the risk profile is significantly different for a consulting engineering company that takes an equity position in the consortium.

Even a small level of equity participation can expose the assets of the company to very large risks that could affect the viability of the company.

It must also be remembered that the assets of a typical professional services firm are mainly its people, rather than tangible assets that can support an equity position.

In addition to financial and other exposure through the entire period of the project agreement, some have suggested that a consulting engineer that is an equity partner may find itself in a conflict of interest, especially when other engineers are involved in the project.

10.10 Potential Conflict of Interest

Other concerns have been raised by some with respect to consulting engineers working on numerous P3 projects, in various roles, where some of the same parties are involved. For example, could a consulting engineer working with Consortium A and representing its interest on one project find itself in a conflict of interest working as part of a compliance team that is monitoring that same Consortium A on a different project, with the consulting engineer now required to represent the interests of the public owner against those of Consortium A?

Contrast this with conventional delivery models where the design professionals are clearly representing the interests of their client, the public owner.

10.11 “Bundling”

As mentioned earlier, P3s must have a certain critical mass to be successful, primarily to justify the substantially higher procurement and process costs, and to attract financing.

Owners may be tempted to ‘bundle’ a number of projects together into a P3 contract in the attempt to achieve that critical mass. Taken individually those projects would provide greater value to the public owner and taxpayers delivered through conventional delivery models. When ‘bundled’, these individual projects are no more suited to being delivered as P3s than when considered individually.

This has significant negative implication for the owner and the success of its projects, but will also have negative impact on the industry generally. Especially affected would be the many, many smaller companies and specialty firms that constitute a major portion of the sector and that rely upon local relationships for sustainability and success.

11.0 Guidance for Owners Considering a P3

P3s can provide a viable alternative for successfully delivering infrastructure projects to public owners when used appropriately and under the right circumstances. Here is a short summary of key guidance for public owners that may be considering P3. Based on Canadian experience to date this guidance will help the owner achieve the most successful project outcome.

- Assemble a team of qualified advisors who are knowledgeable about P3, including the owner's engineer.
 - Use Qualification Based Selection to obtain greatest value from the design professionals on the compliance team.
 - These advisors will become the compliance team if the decision is taken to use P3 as the delivery model.
 - If the decision is to use a conventional delivery model, this team will work with the owner to complete the project.
- Educate decision-makers within the public owner's organization on P3.
- Develop a comprehensive business case that includes clearly-stated project objectives.
- Compare the benefits and challenges of P3 to other delivery models.
 - Assess whether benefits sought in P3 could be achieved under other delivery models on the specific project, for example:
 - through the use of qualification based selection of the consulting engineer and design team
 - by negotiating appropriate risk transfer to the private sector including additional compensation commensurate with the risk taken on
 - by negotiating an expanded scope of services for the private sector to maximize benefit of, for example, consulting engineering advice very early in the process and professional advice on life cycle costing
- Before deciding on P3 as the delivery model, complete a comprehensive value for money analysis.
 - Incorporate the advice of your technical and other advisors.
 - In some jurisdictions a government agency performs the analysis, or assists the owner and its team in carrying it out.
- If the analysis supports P3 as delivering best value for money, determine which model of P3 is most appropriate.
 - Engage users/operators/public/authorities as appropriate to maximize project success.
 - Ensure a comprehensive risk analysis is performed, and that risk allocation is appropriate.
 - Ensure professional technical advice is obtained from the compliance team in carrying out the risk analysis.
 - Ensure that there are rigorous governance and decision-making mechanisms in place and that those mechanisms are strictly adhered to.
 - Ensure that the owner's senior management is fully engaged in the process throughout.
 - Carefully consider transitional issues when developing project requirements.
 - Environmental mitigation, loss of use of the asset, traffic management, interference in operations and service delivery are examples of transitional considerations.
 - Ensure that the project agreement with the consortium and all underlying agreements are comprehensive and coordinated and include a clear definition of roles, responsibilities, scope of services and deliverables.
 - Obtain professional advice from experts, including technical advice from the owner's engineer, to ensure that well-intentioned requirements do not lead to unanticipated outcomes. For example, avoid conflict of interest rules that may create unnecessary restriction on retaining the best-qualified professionals on the compliance team.

- Conduct a post-construction evaluation of project outcome with the advice of the compliance team and other advisors.
- Where maintenance and/or operations are a responsibility of the consortium under the project agreement ensure that the performance criteria are rigorous enough to meet the owner's needs.
- Ensure that the consortium's ongoing compliance with those criteria is monitored and audited by the compliance team.

12.0 Guidance for Consulting Engineering Companies Considering Participating in P3s

Used appropriately and under the right circumstances, P3s can be a successful alternative to more conventional models for delivering infrastructure. Based on experience with P3s in Canada, here is a short summary of some of the key guidance for consulting engineers considering P3.

- Educate company management and decision-makers on P3.
- If considering participating in P3s, whether on the compliance team, working with the consortium or both:
 - Develop a comprehensive business case before engaging in P3s.
 - Carefully assess risk and reward related to participating in P3s.
 - Be aware that when working in the compliance role the consulting engineering company could find itself in an adversarial position with colleagues working with the consortium or in other roles on a P3 project.
 - Investigate existing insurance coverage, availability of additional types of insurance, and the cost of insuring risks the consulting engineering company is considering assuming when engaging in P3 projects.
 - Understand that the consulting engineer may be required to dedicate a team of senior staff to the project during the entire process of design and construction of the asset.
- If a consulting engineering company decides to consider participating in a specific P3 project:
 - Revisit the business case and ensure that it remains viable, and that this particular project fits the business case.
 - Carefully assess all other team members including the consortium, as well as the owner and its team. Underperformance by even one member of either team could have significant, negative impact for the other team members, including the consulting engineer.

- Carefully analyse risk specific to the project and determine what risks to consider assuming.
 - Put in place measures to eliminate, mitigate and manage risk and ensure that they are adhered to consistently.
 - Be aware of risks taken on by other team members or the consortium that they may then attempt to transfer to consulting engineers, e.g. liquidated damages for failing to meet the schedule if it is alleged the consulting engineer contributed to that situation.
- Ensure that the necessary resources, knowledge and experience will be available in the company, taking into consideration the fast pace at which P3s operate.
- Carefully assess the scope of services necessary to complete the project.
 - Be prepared to dedicate a senior team totally to this project for its duration, quite possibly isolated with the balance of a multi-disciplinary project team.
- Ensure that those negotiating on behalf of the consulting engineer are very knowledgeable of contracts, P3s and the risks and opportunities they present, and are skilled and experienced negotiators.
 - Those that the consulting engineers negotiate with will be attempting to transfer as much risk and responsibility, with minimal compensation, to the consulting engineer.
 - Engage legal counsel to advise during the negotiations and on the agreements.
- Negotiate compensation and a consulting agreement appropriate to the scope of services and the risk being undertaken, including:
 - fees that will enable provision of professional services that meet the company's standards and those of the profession
 - adequate pursuit costs so that the financial viability of the company will not be impaired
 - success fees to offset the fees received in the pursuit phase that are typically lower than normal
 - limits on liability
 - additional insurance
 - a realistic and achievable schedule
- preservation of the engineer's intellectual property rights
- appropriate compensation for professional services if the consortium's proposal is successful, including premium costs related to fast-tracking
- Ensure that internal project management processes are in place, appropriate, and adhered to consistently.
- Ensure that quality management processes are in place and that they are adhered to consistently.
- Exercise and be prepared to defend and stand by professional engineering judgement if questioned or challenged.

Appendix A - Additional Resources and Sources

Note that many of these resources also contain lists of resources.

A.1 P3 Government Agencies/Ministries/ Departments in Canada

These websites are a good source of general information on P3s in Canada. Some include detailed listing of projects completed or underway as P3s. Many include useful resources, for example, Infrastructure Ontario's detailed brief on value for money analysis.

Partnerships BC
www.partnershipsbcc.ca

Infrastructure Ontario
www.infrastructureontario.ca

Infrastructure Quebec
www.ppp.gouv.qc.ca/index.asp

PPP Canada (also P3Canada)
www.p3canada.ca/home.php

Alberta Ministry of Infrastructure
www.infrastructure.alberta.ca

A.2 Associations

The Canadian Council for Public-Private Partnerships
www.pppcouncil.ca

A clearing house for information on P3s that advocates in support of P3s.

Consulting Engineers of British Columbia
www.cebc.org/library/presentations.html
Includes numerous presentations on P3s

Ontario Association of Architects

"A P3 Primer" - Author, Brian Watkinson, 2002
[www.oaa.on.ca/client/oaa/OAAHome.nsf/object/P3/\\$file/P3Primer.pdf](http://www.oaa.on.ca/client/oaa/OAAHome.nsf/object/P3/$file/P3Primer.pdf)

A.3 International Resources/Sources on P3

Infrastructure UK

Numerous resource documents on P3s.
www.hm-treasury.gov.uk/ppp_infrastructureuk.htm

Partnerships UK

An organization created to support owners and others in the appropriate use and execution of P3s in the U.K. (called PFIs, Private Finance Initiative). Extensive guidance to various types of public owners in the U.K., and including resources such as standard contract forms.
www.partnershipsuk.org.uk

National Council for Public Private Partnerships

A non-profit organization in the U.S. formed to advocate and facilitate P3s at all levels of government. Some general resources on P3s, including a long list of case studies in all types of P3s.
www.ncppp.org

Infrastructure Australia

Created in 2008 by the Australian Government to develop a strategic blueprint for Australia's infrastructure needs and facilitate implementation working with other levels of government. Numerous publications and a detailed list of projects.
www.infrastructureaustralia.gov.au

Partnerships Victoria (Australia)

Established in 2000 in Victoria to facilitate P3s. Numerous reference materials and descriptions of projects for which it has been responsible.
www.partnerships.vic.gov.au

New Zealand Council for Infrastructure Development

Comprised of private sector companies, it advocates for effective investment in infrastructure including through P3s. One report critiques a series of P3 projects, in part examining whether they could have benefited from greater private sector involvement.

www.nzcid.org.nz

South African Public Private Partnerships

Good general information on P3s, description of P3 projects, and a comprehensive P3 manual.

www.ppp.gov.za

Government of South Australia, Department of Treasury and Finance, Projects Branch

Oversees P3 projects, providing advice and guidance to public owners. Reference and resource materials as well as project lists.

www.treasury.sa.gov.au/dtf/infrastructure_support/projects_branch.jsp

New South Wales Government

Resources deal with a form of P3 where the private sector owns the asset during the term of the project agreement.

www.treasury.nsw.gov.au/wwg/WWG_Publications

Irish Government Public Private Partnerships

Good general information on P3s in Ireland, including resources and project lists.

www.ppp.gov.ie

A.4 Reports

“Dispelling the Myths, A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments”

The Conference Board of Canada

www.conferenceboard.ca/e-library/abstract.aspx?did=3431&goal1=PRICE0

“Steering a Tricky Course: Effective Public–Private Partnerships for the Provision of Transportation Infrastructure and Services”

The Conference Board of Canada

www.conferenceboard.ca/e-library/abstract.aspx?did=2751&goal1=PRICE0

“Public-Private Partnerships in Canada: Theory and Evidence”

Vining, Aidan and Anthony Boardman

Canadian Public Administration 51 (March 2008) pp. 9-44

“European Commission Guidelines for Successful Public Private Partnerships”

ec.europa.eu/regional_policy/sources/docgener/guides/ppp_en.pdf

“The Anatomy of Construction Risk: Lessons from a Millenium of PPP Experience”

Standard & Poor’s

“Issues Facing the Canadian P3 Market”

Ernst & Yonge Orenda Corporate Finance Inc

“Closing the Infrastructure Gap - The Role of Public Private Partnerships”

Deloitte 2006

“The Changing Face of Infrastructure”

KPMG 2009

“Global Infrastructure Trend Monitor: North American Roads Edition, Outlook 2009-2013”

KPMG

“Partnering for value - Structuring effective public-private partnerships for infrastructure”

Deloitte Research 2009

“Delivering the PPP Promise - A Review of PPP Issues and Activity”

Price Waterhouse Coopers (Europe) 2005

“Creating the Winning Conditions for Public Private Partnerships in Canada”

TD Economics June 22, 2006

“Public Private Partnerships Handbook”
Asian Development Bank 2008
www.adb.org/Documents/Handbooks/Public-Private-Partnership/default.asp

“The Infrastructure Funding Deficit: Time To Act”
Residential and Civil Construction Alliance of Ontario June 2006
www.rccao.com/research/files/Rccao_InfraFundDeficit-Jun06.pdf

“Selecting a Professional Consultant”
Part of InfraGuide, Innovations and Best Practices

from ACEC
www.thebestpractice.ca

or from the Federation of Canadian Municipalities
www.sustainablecommunities.fcm.ca/files/InfraGuide/Decision_Making_Investment_Planning/Selecting_Profess_Consultant.pdf

“An Analysis of Issues Pertaining to Qualifications Based Selection”
American Council of Engineering Companies
American Public Works Association
netforum.acec.org/eweb/?site=acec_store

“Rethinking Construction”
The Report of the Egan Commission, 1998, U.K.
www.architecture.com/Files/RIBAHoldings/PolicyAndInternationalRelations/Policy/PublicAffairs/RethinkingConstruction.pdf

“Collaboration, Integrated Information and the Project Life Cycle in Building Design, Construction and Operation”
Construction Users Roundtable, U.S.
www.curt.org/14_0_curt_publications.html

“The Case for Public-Private Partnerships in Infrastructure”
Murphy, Timothy
Canadian Public Administration 51 (2008) pp. 99-126

Public Infrastructure Investment:
The Risk to Canada’s Economic Growth
An Independent Study Commissioned by the Residential and Civil Construction Alliance of Ontario
www.rccao.com/news/files/RCCAO_Report_JULY2010_LOWRES.pdf

A.5 Articles

P3 For You and Me
Canadian Architect, Author - Brian Watkinson
www.canadianarchitect.com/issues/story.aspx?aid=1000221446

Public Private Partnerships Now Part of Canadian Construction Mainstream
Building Strategies - Author, Dan O’Reilly

Hybrid Model Future for P3 Financing
National Post, March 26, 2009 Author Lorraine Mallinder

P3s Await Ontario Project List
National Post, May 28, Author Barry Critchley
www.financialpost.com/await+Ontario+project+list/3080584/story.html

Public/private partnerships: An interview with a U.K. expert
Deloitte and Touche
Sept 2008

Appendix B - Glossary of Terms

Project Agreement (also called ‘Concession’)

The main contract between the public owner and the consortium. It sets out the responsibilities of the private sector P3 partner such as the design, construction, financing, maintenance and operation of the asset, depending on the specific model of P3 being used. In addition to defining very complex legal arrangements and allocation of risk, it includes the output specifications setting out the project requirements, details of the financing arrangements including repayment provisions and performance criteria related to maintenance and operation of the asset by the consortium where that is part of the agreement. The term of project agreements can be 25 to 35 or more years. The project agreement also includes criteria defining the condition of the asset when it is taken over at the end of the term.

Consortium (also called ‘Concessionaire’ or ‘Special Purpose Vehicle’)

A legal entity that responds to the RFP issued by the Public Owner and, if successful, enters into the Project Agreement with the Public Owner. The consortium typically includes financier and project management, and may include contractor or design professionals. The consortium engages design professionals and other specialists such as facility managers and operators to fulfill its obligations under the project agreement.

Public Owner

The entity which executes the project agreement with the consortium. The public owner may be a government or government agency or a public institution such as a hospital.

Value for Money Analysis

A comprehensive analysis that determines whether a P3 or conventional delivery on a specific project delivers best value for money, best return on investment of public dollars.

Compliance Team (also called ‘Planning Design and Compliance’ consultants (PDC) or ‘Owner’s Engineer’)

A design professional or team of design professionals engaged by the public owner to represent its interests in a P3, especially important because the designers of the asset are representing the interests of the private sector.

Output Specifications

The specification upon which consortia base their bids, and that sets out in detail the project requirements. Output specifications include performance specifications, and often include design concepts or illustrative designs. The output specifications become part of the project agreement between the public owner and the consortium that is successful in the RFP process.

Appendix C - Strategies 4 Impact!

Strategies 4 Impact! is a professional service firm that provides strategic advice and support to businesses in the design and construction sector, their clients and their associations.

Principal Brian Watkinson is an architect who ran a very successful 20 person practice in Niagara Falls, Ontario in the 1980's. In 1991 he accepted an invitation from the Ontario Association of Architects to join the staff of that professional association and build a practice advisory service to support members and to offer information and advice to clients, others in the industry, government authorities and the public. In 1995 he was named Executive Director of the association, the senior staff position, and focused on providing strategic advice to the governing Council and on government and industry relations.

When the Ontario government announced its intention to begin using P3s for hospitals, courthouses and education facilities in 2001, he and the elected president undertook extensive research into their use in other jurisdictions, including in the U.K. where the first wave of P3s, called PFI, was nearly completed. They organized a mini-conference to share their findings with the industry in Ontario.

Brian left the association in 2006 to launch Strategies 4 Impact! and his third career. He continues to monitor strategic trends in the industry, and the opportunities and risks that they bring.

In particular he has been watching the increasing use of P3s in Canada and has updated the research and his P3 knowledge base on an ongoing basis. While consulting to the Ontario Ministry of Health and Long-Term Care in 2006 and 2007 he was involved in the first project under the second wave of P3 hospitals.

Brian has spoken, taught and written extensively on P3s in Canada.

Appendix D - Association of Consulting Engineering Companies

The Association of Consulting Engineering Companies (ACEC) is a not-for-profit organization representing companies across Canada that provide professional engineering services to both public and private sector clients. These services include the planning, design and execution of all types of engineering projects as well as providing independent advice and expertise in a wide range of engineering and engineering-related fields. Through offering these services, ACEC member companies have a direct influence on virtually every aspect of our economic, social and environmental quality of life in Canada.

In 2009, ACEC created a P3 Task Force to create this document. The membership of the P3 Task Force is:

François Plourde, CIMA+ (Chair)
Walter Orr, FSC Architects & Engineers
Roland LeBlanc, Acadia Consultants & Inspectors Limited (ACI)
John Collings, Collings Johnston Inc.
John Fussell, Associated Engineering
Andy Robinson, ACEC Chair (2009-2010)
John Gamble, ACEC President

Founded in 1925, ACEC today consists of nearly 500 independent consulting engineering companies, and 12 provincial and territorial member organizations. Consulting engineering in Canada is a \$17.8 billion a year industry that employs 100,000 Canadians. Canada is globally recognized for its engineering services and is the fourth largest exporter of engineering services in the world with 30% of its work performed at the international level.

ACEC advocates for a business and regulatory climate that allows its members to provide the highest level of services and best possible value to its clients. Moreover, as part of a regulated profession, the engineers employed by ACEC companies are obligated by law to act with fidelity to the public interest.