

Canadian Council for Public-Private Partnerships

Civil Infrastructure Renewal: The P3 Solution

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Problem:

- **Under the traditional design and construction approach designers and contractors have a short term view which does not usually include concerns about life cycle and life cycle costing issues. In their mind that is some else's problem to be dealt with by others in the future.**

Traditional costing:

- **Does not calculate cost today to design, build, operate, finance, maintain and repair the asset for the useful life of the asset (or beyond).**

Characteristics of Traditional Model:

- **Owner pays entire cost of the project and shoulders all of the associated risks after construction warranty period.**
- **Majority of costs are incurred on the front end; maintenance costs are often deferred as a “cost-saving” measure, but this can result in more expensive and substantial repairs in the long run.**

Life-cycle costing:

- **Allocate expenses over the expected useful life of the product, rather than focusing on the initial capital outlay.**

<http://www.engnetglobal.com/tips/glossary.aspx?word=life+cycle+costing>

Characteristics of P3s:

- Allocation of risk between public and private sector partners.
- Private sector designs, builds, finances, maintains and/or repairs the project for a specified term (the “concession period”).
- Public sector facilitates funding of the project either through payment of fees to private sector, or by allowing private sector partner to charge user fees.
- Private sector must maintain project to established quality standards during the concession period.
- Project is turned over to public sector owner at end of concession period to meet specified Hand

P3s are a tool to facilitate infrastructure projects:

- **Allow access to private capital and leverage public resources.**
- **Shift significant risks from the public sector owner to the private sector partner including risk to operate, maintain, rehabilitate and Hand Back Asset to specified Performance Standards.**
- **Encourage better design and construction up front to reduce operating, maintenance and rehabilitation costs in the future to be in a position to hand back asset to prescribed standard with minimum cost.**

P3s at Work:

The Fredericton to Moncton Highway Expansion Project

Fredericton to Moncton Highway Project

- The project involved the development, design and construction, operation, maintenance and rehabilitation for a 30 year concession period to prescribed Performance Standards of a new four-lane access controlled highway of approximately 195km connecting Fredericton and Moncton, New Brunswick.

Fredericton to Moncton Highway Project

- **Design/Build Component:**
 - Province issued RFQ.
 - Interested proponents responded.
 - Province issued RFP to qualified proponents.
 - Interested proponents responded with proposals.
 - Province selected winning proponent based on established criteria to evaluate design, construction methodology, operations, maintenance and rehabilitation covenants, price and other qualitative and quantitative elements.

Fredericton to Moncton Highway Project

- **Design/Build Component (cont'd):**
 - Province established project requirements, proponents submitted design, construction, operation, maintenance and rehabilitation plans to meet Province's prescribed performance standards for the full concession period.
 - Process encouraged innovative, efficient and effective design, construction, operation, maintenance and rehabilitation plans as the lowest overall price would be selected by Province.

Fredericton to Moncton Highway Project

- **Design/Build Component (cont'd):**
 - Process encouraged quality, as proponent would have to operate and maintain the asset during the concession period and hand asset back to meet prescribed Performance Standards with a relatively fixed income stream.
 - Traditional tendering process creates risk for owner that quality may be sub-standard since builder is paid on completion and has no further responsibility for project.
 - Only way to protect owner in the traditional process is to conduct thorough qualitative testing and extensive warranties.
 - P3 structure minimizes many of these risks, as owner, designer, builder, operator and financier are partners and share in the risks and the rewards.

Fredericton to Moncton Highway Project

- **Design/Build Component (cont'd):**
 - P3s also insulate owner from conflicts between the designer and the builder. Private sector partner is responsible for ensuring project meets specifications: no more situations where owner is caught between designer claiming defective construction and builder claiming faulty design.

Fredericton to Moncton Highway Project

- **Financial Component:**
 - Federal government contributed cash payment to Province for portion of project cost.
 - Province wanted to defer payment until the highway was completed and open to the public.
 - Province wanted project debt off of its books.
 - Province did not want project debt consolidated with other Provincial debt.

Fredericton to Moncton Highway Project

- **Financial Component (cont'd)**
 - Operating Lease vs. Capital Lease
 - Key was to create not-for-profit operating company not controlled by the Province

Fredericton to Moncton Highway Project

- **Financial Component (cont'd)**
 - Project financed as a toll highway.
 - Debt repaid from toll-based revenue and lease-based revenue.
 - Toll-based revenue: Highway users paid tolls (no cost to Province).
 - Lease-based revenue: Province paid rent to private sector partner for highway.

Fredericton to Moncton Highway Project

- **Operation and Maintenance Component:**
 - Successful proponent also had to operate, manage, maintain and repair the highway following construction.
 - Proponent must meet stringent operation, maintenance and repair standards throughout term.
 - Proponent must meet specific safety standards for highway throughout term.
 - Compliance is verified by periodic audits conducted by an independent agent.
 - At end of term, proponent hands back highway to the Province – asset must meet specific hand back standards.

Fredericton to Moncton Highway Project

- **Operation and Maintenance Component (cont'd):**
 - Term of OMM Agreement had to balance Province's need for cost certainty for a fixed period (longer term preferred) against proponent's ability to forecast costs and hedge against fluctuations (shorter term preferred).
 - If the term is too long, proponent will inflate price to cover uncertain risk of price fluctuations.
 - If the term is too short, Province will not benefit from cost certainty and costs may not be effectively allocated over the life of the asset.

Fredericton to Moncton Highway Project

- **Operation and Maintenance Component (cont'd):**
 - Life cycle of the surface of the highway estimated at 10-12 years before major resurfacing required.
 - Life cycle of bridge structure estimated at 75 years.
 - Life cycle of bridge deck estimated at 25 years.
 - Term of concession period should be long enough to cover complete life cycle to ensure asset is properly repaired and replaced prior to turning asset back to owner, but short enough to allow for relatively certain cost forecasts, minimizing risk premium paid to proponent.

Fredericton to Moncton Highway Project

- **Operation and Maintenance Component (cont'd):**
 - Province selected 30 year term.
 - Highway to be resurfaced at least twice.
 - Bridge decks to be redone once prior to hand back to Province.

Fredericton to Moncton Highway Project

- **Operation and Maintenance Component (cont'd):**
 - Fixed price under OMM Agreement for 20 years.
 - Price to be renegotiated during term for last 10 years.
 - After first 20 years, both Province and proponent will have better idea of actual costs.
 - If Province and proponent cannot agree on price under OMM Agreement for last 10 years, parties must go to arbitration.

Fredericton to Moncton Highway Project

- **Financial Component**

- **Result:**

- Province ended up with state-of-the-art divided highway and did not have to pay a dime until highway completed and in use.
 - Province's share of Project costs allocated over term of concession period.
 - Highway has to be maintained to prescribed performance standards during the concession period and Handed Back to meet prescribed standards.
 - Life Cycle Costing included in Bid Price. No surprises for the Province.

Catching the P3 Wave

- Canada is suffering from a critical infrastructure deficit.
- Governments do not have the resources to address this short-fall in time.
- By leveraging private sector resources and expertise using the P3 model, governments can immediately begin to replace aging infrastructure with world class state-of-the-art assets, ensuring Canada's competitiveness in the global marketplace and maintaining a high standard of living for all Canadians.
- P3's are an ideal way to provide for life cycle costing to be included in infrastructure projects.