Innovation in Large Infrastructure Procurement: 
The Case for Infrastructure Ontario
Infrastructure Ontario Business Lines & Context

**Project Delivery**

**PPP (AFP) Infrastructure Project Delivery**
- Manage planning, procurement, delivery, and contract management of major public infrastructure projects

**Commercial Projects and Land Development**
- Advise government to help generate revenue, reduce costs, maximize real estate value and create efficiencies in how public services are delivered

**Real Estate and Lending**

**Real Estate Management**
- Manage the Ontario government’s real estate portfolio, the second largest and one of the oldest real estate portfolios in Canada

**Infrastructure Loan Program**
- Provide financing solutions to qualifying public sector borrowers to renew infrastructure across Ontario
IO as a Central Procurement Agency

Balancing Between the Public and Private Sector (Government Business Enterprise)

Focus on Execution and not Policy
- Public sector competencies: policy, legislation, regulation, and identification of program requirements
- Private sector competencies: delivery, risk management, operational efficiency, commercial negotiation
- IO role is to be the intermediary between public sector: the instrument of delivery, risk management, and effective execution and commercial advice within the government context

Procurement as Integrated and Standalone Function

Centralized Multidisciplinary Professional Staff
- Public sector competencies: policy, legislation, regulation, and identification of program requirements

Everything is Procurement
- All commercial decisions are procurement decisions
- Fairness, openness, transparency, efficiency and value-for-money are not just values or goals, they are brand and reputational identifiers
IO PPP Project Context

Statistical Highlights

Aggressive Investment Plan
- CDN$160 Billion planned for Infrastructure over next 12 years – just Ontario

Track Record of Delivery (2007-2016)
- 55 projects achieved construction completion
- CDN$19.2 Billion of awarded contracts
- 98% projects on/under budget
- 73% completed within 1 month of originally targeted date

Pipeline
- 21 PPP projects in construction, total value of awarded contracts: CDN$14 Billion
- 29 PPP projects in planning or procurement, aggregate estimated value: CDN$11.8 Billion

Ontario Context

National & Provincial Activity
- Several provinces with centralized PPP agency/intermediaries (Ontario, British Columbia, Quebec, Alberta, Saskatchewan, New Brunswick)
- National PPP policy involves equity funding for municipalities separate from federal department capital programs (Canadian Infrastructure Bank (under development), PPP Canada)
- National non-profit promoter/lobbying group for PPP projects, promoting on going knowledge exchange (Canadian Council for Public Private Partnerships)

Infrastructure Ontario Tendering Efficiency
- 18-20 months from issuance of prequalification to transaction closing
- 12-24 months pre-planning
PPP Project Success Factors: 3 Themes

C O I N C I D E N T A L :  P O L I C Y A N D G O V E R N A N C E S T R U C T U R E

Stable Policy Environment
• Provincially legislated “monopoly” mandate with policy framework describing process

Apolitical Execution Mandate
• Agency governance structure (politically appointed professional Board) allows maximum autonomy of management and process from political interference and government risk
• Actual authority is vested in the agency to plan, procure, execute and contract manage


Disciplined Planning and Procurement Process
• Planning and due diligence emphasis, together with standardized process and documents lead to predictable transaction timelines and high reliability of transaction delivery

C e n t r a l i z e d M u l t i d i s c i p l i n a r y T a l e n t a n d S e r v i c e
• Integrated construction/engineering/architecture, project finance, legal, procurement, communications and cost & budget management teams, all integrated to deliver cradle-to-grave project support: from planning to contract management


Strong Track Record Breeds Success
• Availability Based PPP in social infrastructure has been the hallmark of IO
• The move to civil/linear infrastructure marks a new chapter in Ontario’s infrastructure focus
PPP Project Innovation: 3 Themes

1. **INNOVATION IN PROJECT DELIVERY AND PLANNING**
   - **Budget and Scope Discipline**
     - Balancing quality, time, cost
     - Drawing boundaries around “social” policy
   - **Asset Class Specific Standardized Approach to Project Risk Analysis**
     - Risk Matrices and Value-for-Money as disciplines

2. **INNOVATION IN PROJECT PROCUREMENT**
   - **Commercially Confidential Meetings**
     - Opportunity to optimize project requirements during procurement
   - **Post-Evaluation Negotiations**
     - Ensuring design conformance
   - **Vendor Performance Program**
     - Fair, open and transparent evaluation of past poor performance

3. **INNOVATION IN PROJECT FINANCE**
   - **Credit Spread Benchmarking Process**
     - Accepting credit spread risk with rules and predictability
   - **Solving for Optimal Capital-at-Risk**
     - Variable sizing of availability payments and construction period payments

Performance Based Specifications
- Innovation through competition
- Focus on asset: good execution is good policy

Whole Asset Life Cycle Capital Planning
- Understanding the true costs of underinvestment in capital rehabilitation
Disciplined Planning and Procurement Process

**Planning**
- Government screening for PPP suitability
- Initial technical due diligence
- Cost estimation and budget development

- Budgetary approvals are all-inclusive (design, construction, financing operations, lifecycle, transaction costs, ancillary, contingencies)
- Stable policy framework

**Budget Approval & Assignment to IO**
- Finalize co-Sponsor governance (MOU)
- IO value for money workshop and screening (quantitative)
- Full technical due diligence
- Output specification (scope) development
- Cost estimation and scope-to-budget verification

- Front-end loaded extensive due diligence (permitting, third party arrangements & approvals, technical site conditions)
- Scope discipline applied before procurement is released

**Project Procurement & Transaction Phase**
- Request for Qualifications
- Request for Proposals
- Contract closing & execution

- Standardized documentation (RFQ, RFP, Project Agreement)
- Commercially confidential interaction with bidders
- Mature bidding market
- High process rigor & global best practices

www.infrastructureontario.ca
Bridging the Public and Private Sector

Private Sector Mindedness in Action

Knowledge of the Market
- Periodic interaction outside of procurement and transactions (roundtable forums) allow for discussion with industry on various concerns and is followed by action
- Frequent interaction within the rules of procurement and transaction (commercially confidential meetings) allow for project-specific, but also real-time, feedback on commercial issues
- Respective disciplines within IO foster relationships with bidding counterparts and advisor/service providers
- Market sounding potential transaction structures in advance of procurement leads to better procurement documents and scope

Commercial Transaction Structuring is Paramount
- Policy objectives are delivered through optimal transaction structuring
- Allocating risks to the party best capable of managing the risks does not presume a transaction delivery model
- Continuous Improvement is a cultural and operational requirement (standardized documentation cannot be static)
Contact Information

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- Infrastructure Ontario
  Suite 2000, 1 Dundas St. West
  Toronto, Ontario M5G 2L5
- Ontario Infrastructure and Lands Corporation Act, 2011
  https://www.ontario.ca/laws/statute/11009a
- Ministry of Economic Development Employment and Infrastructure (Ontario)
Additional Reading

Available on IO’s website is a collection of industry and academic reports on infrastructure, AFP, and public policy.

www.infrastructureontario.ca
Appendix 1: IO AFP Procurement Process
IO AFP Procurement Process Features

Two Stage Procurement (Prequalification → Proposal)

- **RFQ** – Prequalification Features:
  - Vendor Performance
  - Technical and Financial Capacity

- **RFP** – Proposal Features:
  - Negotiated RFP (Canadian Law: Contract A, Contract B)
  - Honoraria
  - Commercially Confidential Meetings
  - Sequential Evaluation, Net Present Value Gearing

Other Procurement Highlights

- Unethical Bidding Practices
  - Officer’s certificates, exclusion policy; Canadian legislation and recent history

- Conflicts of Interest
  - National Accounting firm Letter re Conflict of Interest policies
  - Centralized decision making on the basis of common conflict principles

Continuous Improvement and Template Updates

- Continuous improvement of a non-static set of template documentation
IO AFP Procurement Timeline & Mechanics

<table>
<thead>
<tr>
<th>Step</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFQ Open</td>
<td>3 Months</td>
</tr>
<tr>
<td>RFQ Evaluation</td>
<td>2 months</td>
</tr>
<tr>
<td>Shortlist – Pre-RFP</td>
<td>2-3 months</td>
</tr>
<tr>
<td>RFP Open</td>
<td>6 months</td>
</tr>
<tr>
<td>RFP Evaluation</td>
<td>3 months</td>
</tr>
<tr>
<td>Negotiation</td>
<td>3 weeks</td>
</tr>
<tr>
<td>Closing</td>
<td>2-3 months</td>
</tr>
</tbody>
</table>

Request for Qualifications (RFQ)
- Total RFQ typical timeline: 6-8 months
- 3-5 shortlisted bidders

Request for Proposals (RFP)
- Total RFP typical timeline: 12 months
- Design-Bid Honorarium Paid: $400K (Design-Build-Finance), $800K-$2M (Design-Build-Finance-Maintain)
IO AFP Procurement Timeline & Mechanics

Request for Qualifications (RFQ)
- Non-contractual process of qualifying potential bidders on technical and financing experience and capability
- Openly issued to market, resulting in a short list of 3 – 5 bidders, depending on the type of delivery model
- Bidders (“Applicants”) are evaluated as consortia of entities, not on an individual team member basis
- RFQ concludes when an Request for Proposals is issued

Request for Proposals (RFP)
- Contractual process of selecting a winning bidder based on technical responses to the project at hand and a bidder’s guaranteed price to design, build, finance and/or maintain the project
- Bidding document are only issued on an invitational basis to the top 3-5 prequalified bidders (“Proponents”)
- RFP is a “negotiated RFP” that follows a modified “Contract A” – “Contract B” formulation in Canadian law and includes a phase of negotiation with a winning bidder before execution of the Project Agreement. The form of Project Agreement is attached as part of the RFP.
- RFP concludes when a Project Agreement is executed
IO AFP Procurement Timeline & Mechanics

Contact Persons
- Formal communications with bidders occurs through a designated contact person

Addenda
- Formal changes to documents (RFQ & RFP) are legally effected **only** through addenda to the RFQ or RFP
- Any other proposed changes to RFQ & RFP documents in any other format are non-binding

Interaction with Bidders: RFQ Specific
- Initial all-Applicants’ meeting
- Posted Questions and Answers (Q&A)

Interaction with Bidders: RFP Specific
- Initial all-Proponents’ meeting
- Design Presentation Meetings & Commercially Confidential Meetings
- Requests for Information (RFI’s) and RFI Responses
- Addenda
IO AFP Procurement Timeline & Mechanics

Evaluation Framework
- Governing document that sets rules for evaluation of Prequalification Submissions (RFQ) and Proposals (RFP)
- Lists all individuals slated to evaluate bids
- Includes forms of confidentiality agreement and conflict of interest certifications
- Includes detailed worksheets to ensure evaluators apply evaluation criteria consistently

Segregation of Technical and Financial Evaluations
- Ensures that technical determinations are made without knowledge of financial results
- Sequential Evaluation process for RFPs: financial evaluations are not conducted until technical evaluations are concluded (not applicable at RFQ)

Confidentiality Agreement, Conflict of Interest Declarations and Training
- All participants to the evaluation (scoring evaluators & subject matter experts) must sign confidentiality agreements, make conflict of interest declarations, and be given project specific evaluation training before being given access to bids
Requests for Clarification (RFCs)

- Clarifying questions can be asked by evaluators of an Applicant or Proponent to assist in interpreting information contained in the Prequalification Submission or Proposal, as applicable

Subject Matter Experts (SMEs)

- Third party advisors and other staff can be given roles as “subject matter experts” to assist scoring evaluators
- SMEs typically include technical advisors, and are typically most relevant in the RFP evaluation.
- SMEs provide reports and analysis on components of a Proposal which are then interpreted by scoring evaluators and evaluation committee in performing the evaluation

Individual Review and Consensus Decision-Making

- Evaluation of all bids is done first by scoring evaluators independently and on an individual basis
- Individuals as part of the evaluation teams (technical and financial) meet to arrive at a consensus score
- Consensus scores are presented to the evaluation committee for acceptance
IO AFP Procurement Timeline & Mechanics

3rd Party Fairness Monitor

- Reviews all correspondence to Applicants and Proponents to ensure fairness (Q&A, Addenda, Notices, RFI Responses, RFCs)
- Reviews the content of all SME reports to ensure no bias is being introduced into the evaluation process
- Attends at every meeting between Sponsors and Applicants/Proponents (CCMs, All-Applicant & All-Proponent meetings)
- Attends at every consensus meeting of evaluators and every evaluation committee meeting
- Is able to provide advice on exercise of rights under the RFQ and RFP that affect bidders
- Provides letter/opinion attesting to the fairness of the procurement
- Does not participate in negotiation with winning bidder (Preferred Proponent) following the conclusion of the RFP evaluation process

Procedural Fairness a Matter of Common Law (in Canada)

- Fairness Monitors matter for program integrity, but ultimate determinations of procedural fairness are determinations made in law and advised upon by legal counsel
Negotiations

- Highest scoring RFP Proponent is identified as the “First Negotiations Proponent”
- Discussions commence between the First Negotiations Proponent and Sponsors to address any issues of potential design or technical non-conformance with project requirements
- All concerns must be addressed without any change in price or any change in duration of construction schedule
- Conclusion of successful negotiations results giving the First Negotiations Proponent formal status as the “Preferred Proponent”
- Simultaneous negotiations with more than one Negotiations Proponent is permissible in extremely rare circumstances (e.g. tie)

Closing

- Finalization of all Project Agreement documents and a Proponent’s third party financing to complete the project
Unethical Bidding Practices Officer’s Certificates

- Collected as part of both the RFQ Prequalification Submission and RFP Proposals
- RFQ and RFP contain right to disqualify bidder due to convictions related to unethical bidding practices
- Officer’s Certificates certify:
  - there are no charges or investigations by a public body except as disclosed
  - do not have any or convictions related to inappropriate bidding practices or unethical behaviour in relation to a public or broader public sector tender or procurement in any Canadian jurisdiction that (a) are related to the Project; (b) may compromise the reputation or integrity of the Ontario Government so as to affect public confidence in the Project related to the Project; or (c) would contravene any Applicable Law or could have a material adverse effect on the Prime Team Member in a way which could impair its ability to perform its obligations under the Project Agreement.
  - requires the company to make certifications regarding the control of its employees and the establishment of internal policies that IO can diligence
- IO has the general right to impose additional requirements on any given party (including a specific Team Member within a bidding consortium) in relation to unethical bidding practices. Refusal to implement prescribed measures can lead to rejecting an RFQ Prequalification Submission or RFP Proposal
IO AFP Procurement Timeline & Mechanics

Transaction Approvals

- **IO Management Committee**
  - Approval to Release RFQ
  - Approval of RFQ Evaluations
  - Approval to Release RFP

- **IO Board of Directors**
  - Approval of RFQ Evaluations
  - Approval to Release RFP

- **Co-Sponsor / Board Approvals** (Typical)
  - Approval of RFQ Evaluations
  - Approval to Release RFP

- **IO Management Committee**
  - Approval of RFP Results & Recommendation to Proceed to Commercial Close with a Preferred Proponent, subject to successful negotiation

- **IO Board of Directors**
  - Approval of RFP Results & Approval to Proceed to Commercial Close with recommended Preferred Proponent

- **Other Governmental Transaction Approvals**
  - Legal Approvals (e.g. Ministry of Finance)

- **Co-Sponsor / Board Approvals** (Typical)
  - Approval of RFP Evaluations
  - Approval to Proceed to Close
Appendix 2: Commercial, Risk and Financing Approaches in AFP Projects
While other models exist, the Design-Build-Finance-Maintain (DBFM) model best exemplifies the availability-based public private partnership (Ontario AFP) model.
Project Risk Transfer: General Approach

• IO has structured its contracts in an effort to maximize value for money – all decisions on which risks to transfer and how to do so are made with the objective of never “over-paying” for risk transfer

  Therefore, risk should reside with the party best able to manage/mitigate it

• For this reason – some risks are retained by the Public Sector, some are shared between the Public and Private Sector and others are completely transferred (next slide gives some examples)

• Any change to an IO contract is screened through various internal committees, where collective experience within IO is used to determine the optimal risk transfer

• We have had some challenges transferring some risks in specific sectors given the complexity of the issues

• It is imperative that contract documents are very clear on how risks are transferred without any ambiguity, otherwise countless disputes on the ground will surface
Project Risk Transfer: Value-for-Money Allocation

- The key to achieving VFM is a function of risk allocation and in particular achieving the optimal risk allocation between the public and private sectors.
- VFM is achieved when individual risks are allocated to the party that is best placed to manage them by undertaking effective and cost-efficient risk mitigation strategies.
- All risk allocation is specified in the Project Agreement and Schedules between the Private Sector and Public Sector.
- Risks are usually allocated as follows:

<table>
<thead>
<tr>
<th>Retained</th>
<th>Shared</th>
<th>Transferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory/Political</td>
<td>Force Majeure</td>
<td>Development</td>
</tr>
<tr>
<td>Tendering Process</td>
<td>Employee Relations</td>
<td>Financing</td>
</tr>
<tr>
<td>Scope Changes</td>
<td>Inflation</td>
<td>Integration</td>
</tr>
<tr>
<td></td>
<td>Interest Rates</td>
<td>Design</td>
</tr>
<tr>
<td></td>
<td>Taxation</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td>Environmental</td>
<td>Operation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
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<td></td>
<td></td>
<td>Performance</td>
</tr>
</tbody>
</table>
# Project Risk Transfer: Challenges

<table>
<thead>
<tr>
<th>Risk</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site Conditions</strong></td>
<td>Environmental and Geotechnical conditions can only fully be known once the contractor is in the ground – it is impossible at times to accurately quantify the risk and price accordingly</td>
<td>Provide as much background testing and reliance on documents as possible. In some cases, cap the risk exposure to a specific dollar amount. Protect Project Co for risks that were completely unknown and unforeseeable.</td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td>Utility companies usually will not commit to a set price and schedule for their work – leaving Project Co at schedule risk beyond their control</td>
<td>Share in cost and schedule overruns up to a cap. Province takes residual risk in some extreme cases in transit deals.</td>
</tr>
<tr>
<td><strong>3rd Party Actions</strong></td>
<td>The public, protestors, trespassers and operators can impact performance of the asset beyond Project Co’s control</td>
<td>Provide performance relief for limited number of scenarios, only when project co can not mitigate or insure against the risk.</td>
</tr>
</tbody>
</table>
## Project Risk Transfer: Challenges

<table>
<thead>
<tr>
<th>Risk</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permits</td>
<td>Some permits are subject to internal bureaucratic approvals processes and may be held up by political interference</td>
<td>In very rare cases, the Province has provided schedule relief if permits are not processed in time, despite Project Co doing everything they can</td>
</tr>
<tr>
<td>Supervening Events</td>
<td>There are several events that fall outside of the control of Project Co</td>
<td>IO has developed a comprehensive regime laying out the events, process and financial relief offered for every event. In most cases, the financial risk is shared in some way between the Public and Private Sector</td>
</tr>
</tbody>
</table>

**Key Lesson:** Allow risk allocation to be subjected to continuous improvement. While there is benefit in templated risk allocation, it is not necessarily a “one-size fits all” approach. IO has a dedicated continuous improvement committee that continually challenges the precedent.
Project Risk Transfer: AFP Contracts Secure Risk

Payment structure

• Contractor is not paid until completion or until a significant amount of work has been completed. In DBFM, capital is held back for 30 years to ensure asset performance.

Events of default

• In extreme cases, the sponsor can terminate Project Co. for poor performance through the accrual of “failure points” during the operating period.

No extension of term

• If Project Co is late in achieving Substantial Completion, there is no extension of the 30 year concession term typical in our projects – Project Co. will not receive payments until the asset is complete leaving them to absorb any debt servicing costs.

Remedial rights

• The public sponsor has rights to increase monitoring, issue stop work orders, replace poor performing contractors, and complete work itself if needed under certain scenarios at Project Co’s cost.

Reliance on lenders and equity investors

• The AFP model aligns the interests of lenders and the Public Sector. Lenders have rights to step in and cure defaults, replace subcontractors, lock up equity distributions, impose additional project security and terminate project co for various performance issues.
AFP Payment Structure: Overview

Value-for-Money Key Principle: To ensure there is sufficient private sector capital at risk, at all times, for effective risk transfer.

- While private sector finance allows effective risk transfer and negotiating leverage, it comes with a significantly higher cost.
- Therefore all projects must be structured so that there is no more private finance than is required to achieve these objectives with no substantial change to the risk profile. **Key Lesson: Do not over-secure projects!**

**During Construction**
- Competing issues: balance use of payments during construction vs. third-party leverage
- Financing structure decision: What combination of payments can be made by the public sector during construction under AFPs without impacting risk transfer?
- Interim completion payments, milestone payments and construction progress payment

**At Substantial Completion**
- Competing issues: Balance amortization of remaining capital cost against walk away risk at expiry
- Financing structure decision: What percent of capital costs should be paid out by Substantial Completion?

**During Operations**
- Competing issues: smooth annual payments vs. lumpy annual payments
- Financing structure decision: What is the term for the project? What is the profile of payments?
AFP Payment Structure: Operation Period

- Senior Debt Interest
- Senior Debt Principal
- Operating Costs (O&M, SPV, Insurance)
- Lifecycle Costs
- Equity Distributions
- Capital
- Maintenance
- Energy
- Lifecycle Payments
### Procurement and Construction Security

- For BF, DBF and DBFM Projects, IO stipulates, within the RFP, security that Project Co must provide to protect the Province against a variety of defaults during the procurement / construction/ post-construction.

<table>
<thead>
<tr>
<th>Procurement Stage</th>
<th>Post Procurement</th>
<th>Post Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preferred Proponent (PP) to Financial Close (FC)</strong></td>
<td><strong>During Construction</strong></td>
<td><strong>Warranty LC</strong></td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td><strong>Performance Bond and Labour &amp; Materials Bond</strong></td>
<td><strong>Performance Failure of the asset post construction (e.g. roof is leaky 1 year in to construction completion)</strong></td>
</tr>
<tr>
<td>Letters of Credit (LC) posted by Project Co</td>
<td>Failure of Project Co default during construction leading to the inability to complete the project in a satisfactory manner (e.g. Project Co is bankrupt)</td>
<td>% may vary</td>
</tr>
<tr>
<td><strong>Protection against</strong></td>
<td><strong>Amount</strong></td>
<td><strong>% may vary</strong></td>
</tr>
<tr>
<td>Failure of Project Co to reach Commercial / Financial Close (e.g. Project Co may go bankrupt or Lenders may walk due to credit crisis or inability in raising financing for the Project at Financial Close)</td>
<td>50% of the Cost of Work</td>
<td><strong>DBFs only</strong></td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td><strong>BFs / DBFs / DBFM</strong>*</td>
<td><strong>BFs / DBFs</strong></td>
</tr>
<tr>
<td>BF / DBF / DBFM</td>
<td>% may vary depending on size of project</td>
<td><strong>DBFs only</strong></td>
</tr>
</tbody>
</table>

- During the construction and operations phase, lenders prescribe enhanced security packages to project them against performance defaults of Project Co.
- The previous requirements for bid bonds was recently deleted, in favour of having the LC as the sole remedy in case of walk-away during the procurement phase.
Operations Phase Remedies

**Key Lesson:** Enforce remedies in the agreement and work as a true partner with the private sector to remedy project issues together

<table>
<thead>
<tr>
<th>Remedial Measure</th>
<th>Reporting Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning Notice: Notice to Project Co indicating the matters which gave rise to this notice.</td>
<td>1 month</td>
</tr>
<tr>
<td>Monitoring Notice: Requires Project Co to increase its level of self monitoring of its performance obligation until such time as Sponsor is satisfied that Project Co can reasonably perform its obligations under the Project Agreement.</td>
<td>3 months</td>
</tr>
<tr>
<td>Exercise of Remedial Rights: The sponsor reserves the right to perform obligations on behalf of Project Co, where Project Co is not meeting its obligations. All costs incurred will be the responsibility of Project Co.</td>
<td>1 month</td>
</tr>
<tr>
<td>Replacement on non-performing service provider: Requires Project Co to replace sub-contractor of services where delivery of such service is considered inadequate.</td>
<td>6 months</td>
</tr>
<tr>
<td>Event of Default: Project Co contract is terminated.</td>
<td>3, 6 and 12 months</td>
</tr>
</tbody>
</table>
How Risk is Secured: Lenders

Project Security
• Lenders and rating agencies prescribe minimum levels of security against default to protect their investments

Reserve Requirements
• Cash reserves are funded during construction to address potential performance issues and ensure cash flow available for debt service is maintained

Rating Requirements
• Most lenders now require two investment grade credit ratings to take a project through their approvals processes

Independent Technical Review
• Lenders technical advisor independently opines on progress of works and certifies draw requests. If project is at material risk, the LTA could recommend a draw stop to protect the lenders from funding into a failing project
How Risk is Secured: Lenders

**Equity lock up**
- Certain events in the credit agreement can trigger a suspension of any payments to equity investors

**Lifecycle look forward and corresponding reserve mechanisms**
- The LTA opines on the adequacy of the lifecycle budget to meet performance obligations and can force a top up if a shortfall of funds is projected. Reserves are held to ensure lifecycle cost overruns can be managed

**Cash waterfall**
- Access to project funds is heavily regulated through the use of locked accounts. This prevents contractors from drawing funds without the proper authorization from lenders

**Key Lessons:**
- Obtain extensive due diligence from independent parties
- Lifecycle/major maintenance budgets tend to fluctuate between bidders – place extra emphasis on the quality of lifecycle plans and ensure budgets are adequate
## Lender Prescribed Security Packages

<table>
<thead>
<tr>
<th></th>
<th>Construction Period</th>
<th>Operating Period</th>
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</table>
| **Typical Security Package** (combination of the following depending on (1) complexity and size of project (2) financial strength (3) experience) | • Letter of Credit worth 5% to 10% of the Construction Cost  
• Parental Company Guarantee for 40% - 50% of the construction cost  
• 50% Performance Bond or P3 Performance Bond & 50% Labour / Material Bond  
• Subguard (subcontractor contractor default Insurance)  
• Retention Account (~5% of the Construction Cost) | • Letter of Credit worth 50% of the next year’s Maintenance Payment + [next year’s lifecycle payment]  
• Parental Company Guarantee worth 150% - 300% of the next year’s Maintenance Payment + [next year’s lifecycle payment] |
| **Look Forward Tests** | • Liquidated Damages Look-Forward Test                                                | 9th, 15th, 20th and 25th anniversaries of SC + [last 5 years], an Independent Lifecycle Monitor will conduct lifecycle look forward-tests |
| **Lender Longstop**    | 3 months – 6 months                                                                   | N/A                                                                              |
| **Leverage**           | 5% to 8% Equity (A rated)  
10-25% Equity (BBB rated) | 5% to 8% Equity (A rated)  
10-25% Equity (BBB rated) |
| **DSRA**               | 6 months                                                                            | -                                                                                |
| **Min. DSCR**          | N/A                                                                                 | 1.15x – 1.42x                                                                    |
Appendix 3: AFP Capital Markets Overview
### IO AFP/PPP Lending Market: Solutions

<table>
<thead>
<tr>
<th>Types of Financing Solutions</th>
<th>Term</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Bank</td>
<td>2– 6</td>
<td>Canadian banks in addition to DesJardin &amp; Alberta Treasury Branches, Sumitomo Mitsui, Mizuho, Bank of Tokyo – Mitsubishi, HSBC and Bank of China</td>
</tr>
<tr>
<td>Long Bank</td>
<td>6 - 30</td>
<td>European Banks</td>
</tr>
<tr>
<td>Broadly Marketed Bonds (Short / Long / Bullets)</td>
<td>0-30</td>
<td>Life Insurance Companies, Money Market Funds, Other Institutions (Mutual Funds, Pension Funds)</td>
</tr>
<tr>
<td>Privately Placed (Short / Long / Bullets)</td>
<td>2-30</td>
<td>Life Insurance Companies (SunLife, Manulife, CanadaLife etc)</td>
</tr>
</tbody>
</table>

Over the years there has been less reliance on traditional buy-and-hold investors

---

**December 2009 to July 2010**
- Insurance, 73%
- Money Managers, 4%
- Pension Fund, 14%
- Mutual Fund, 7%

**July 2010 to Today**
- Insurance, 31%
- Money Managers, 29%
- Other, 6%
- Pension Fund, 16%
- Mutual Fund, 17%
- Hedge Fund, 1%
IO AFP/PPP Lending Market: Exposure

<table>
<thead>
<tr>
<th>Country</th>
<th>Lenders</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>TD Bank</td>
<td>1,027,903,792</td>
</tr>
<tr>
<td>Canada</td>
<td>Bank of Montreal</td>
<td>876,424,774</td>
</tr>
<tr>
<td>Canada</td>
<td>Bank of Nova Scotia</td>
<td>809,560,223</td>
</tr>
<tr>
<td>Canada</td>
<td>National Bank of Canada</td>
<td>685,493,823</td>
</tr>
<tr>
<td>Canada</td>
<td>Desjardins</td>
<td>618,641,722</td>
</tr>
<tr>
<td>Japan</td>
<td>Bank of Tokyo Mitsubishi</td>
<td>552,864,694</td>
</tr>
<tr>
<td>Japan</td>
<td>SMBC</td>
<td>548,389,092</td>
</tr>
<tr>
<td>Canada</td>
<td>Pacific &amp; Western Bank of Canada</td>
<td>357,108,656</td>
</tr>
<tr>
<td>France</td>
<td>Societe Generale</td>
<td>305,657,701</td>
</tr>
<tr>
<td>Canada</td>
<td>ATB</td>
<td>296,342,473</td>
</tr>
</tbody>
</table>

**Recent Transaction have been dominated by:**
- Japanese: SMBC

Recent SDNs have usually been priced by ATB, providing the most robust rate.

**Exposure By Country**

- Canada 65%
- Japan 14%
- France 8%
- Germany 3%
- Spain 3%
- Belgium 2%
- Netherlands 0%
- Portugal 1%
- United States 1%
- Scotland 1%
- Ireland 1%
- Belgium 2%
- Netherlands 0%
- Portugal 1%
- United States 1%
- Scotland 1%
- Ireland 1%
- Canada 65%

**Relevant Information:**
- RBC & CIBC, while feature prominently as underwriters and financial advisor are not typical Bank Lenders
- National / TD / BMO / BNS are integrated (Bank Lenders + financial advisory + Underwriting mandates)
## IO AFP/PPP Lending Market: Bond Lenders

<table>
<thead>
<tr>
<th>Rank</th>
<th>Investor</th>
<th>Total Volume (million CAD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sun Life Financial</td>
<td>$679.0</td>
</tr>
<tr>
<td>2</td>
<td>Manulife</td>
<td>$481.5</td>
</tr>
<tr>
<td>3</td>
<td>Canada Life™</td>
<td>$186.5</td>
</tr>
<tr>
<td>4</td>
<td>FIERA Capital</td>
<td>$175.0</td>
</tr>
<tr>
<td>5</td>
<td>CIBC Asset Management</td>
<td>$145.0</td>
</tr>
<tr>
<td>6</td>
<td>Canico Investment Counsel Ltd.</td>
<td>$145.0</td>
</tr>
<tr>
<td>7</td>
<td>PHILLIPS, HAGER &amp; NORTH</td>
<td>$123.0</td>
</tr>
<tr>
<td>8</td>
<td>Addenda Capital</td>
<td>$120.5</td>
</tr>
<tr>
<td>9</td>
<td>Industrial Alliance</td>
<td>$118.5</td>
</tr>
<tr>
<td>10</td>
<td>Great-West Life Assurance Company</td>
<td>$98.5</td>
</tr>
</tbody>
</table>

*Note: including all deals prior to Eglinton Crosstown LRT; Champlain Bridge is also included given the impact of its large issuance size to the league table.*

Life Insurance Companies continue to play a dominant role in our transactions with 60% of the funding.
Appendix 4: Bond Rating Agency Approaches
### Bond Rating Agency: Sample Weights in Ratings

<table>
<thead>
<tr>
<th>Broad Rating Factors, Sub-factors &amp; Notching Adjustments</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: Construction risk allocation between the private sector and the public sector</strong></td>
<td>5%</td>
</tr>
<tr>
<td><strong>Factor 2: Project construction complexity</strong></td>
<td></td>
</tr>
<tr>
<td>Site preparation requirements &amp; substructure risk</td>
<td>15%</td>
</tr>
<tr>
<td>Structure complexity and construction technique risk</td>
<td></td>
</tr>
<tr>
<td>Performance risk</td>
<td></td>
</tr>
<tr>
<td>Construction constraints risk</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Factor 3: Constructor/Consortium experience and project readiness</strong></td>
<td>25%</td>
</tr>
<tr>
<td>Constructor/consortium experience</td>
<td>15%</td>
</tr>
<tr>
<td>Project readiness &amp; risk management</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Factor 4: Resilience of constructor to cost overruns</strong></td>
<td>20%</td>
</tr>
<tr>
<td>Profit margin &amp; contingency &amp; robustness of budget build-up</td>
<td>10%</td>
</tr>
<tr>
<td>Strength of the constructor and relative size of the project</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Factor 5: Resilience of project to construction schedule overrun</strong></td>
<td>25%</td>
</tr>
<tr>
<td>Construction schedule room</td>
<td>10%</td>
</tr>
<tr>
<td>Liquidity to withstand a schedule overrun</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

**Notching Adjustments:**

- Ease of replacement of the constructor: +1 to -2
- Amount and quality of security available to replace the constructor or mitigate losses: +2.5 to 0
## Bond Rating Agency: Sample Weights in Ratings

<table>
<thead>
<tr>
<th>Factor</th>
<th>Sub-factor</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volatility of Revenue</td>
<td>1. Complexity of Project Operations</td>
<td>15.0%</td>
</tr>
<tr>
<td></td>
<td>2. Nature of Performance Regime</td>
<td>15.0%</td>
</tr>
<tr>
<td></td>
<td>3. Inflation Exposure and Change of Law and Off-taker Modifications</td>
<td>10.0%</td>
</tr>
<tr>
<td>Cost Structure</td>
<td>4. Market Efficiency</td>
<td>15.0%</td>
</tr>
<tr>
<td></td>
<td>5. Sub-Contractor Efficacy</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td>6. Sub-Contractor Liability Caps</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td>7. Base Case Costs versus Benchmark</td>
<td>8.3%</td>
</tr>
<tr>
<td>Force Majeure &amp; Issuer Default Termination</td>
<td>8. Force Majeure</td>
<td>6.7%</td>
</tr>
<tr>
<td></td>
<td>9. Issuer Default Termination</td>
<td>6.7%</td>
</tr>
<tr>
<td></td>
<td>10. Concession/Sub-Contract Interface</td>
<td>6.7%</td>
</tr>
</tbody>
</table>