

PRIVILEGED & CONFIDENTIAL

**Alternative Financing and Procurement  
- Preliminary Assessment -  
*Downtown Ottawa Transit Tunnel  
(East-West LRT Project)***

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December 4, 2009

The City Of Ottawa  
Heritage Building, 2<sup>nd</sup> Floor  
110 Laurier Avenue West  
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Attention: Mr. Kent Kirkpatrick, City Manager

Dear Mr. Kirkpatrick,

In accordance with our letter of retainer dated May 5, 2009, Infrastructure Ontario undertook a preliminary assessment of the potential for the Ottawa East-West LRT project (Phase 1, Increment 1) to achieve positive value for money if implemented using the development framework referred to as Alternative Financing and Procurement. This report presents a summary of the approach and techniques used to compile details of the project scope, schedule and budget, and to derive our findings and conclusions with reference to the stated objective.

All references in this report to the project, and to assumptions regarding market, financial and economic conditions during the period under study, were based upon data that were available and applicable during the course of our analysis. The finding, conclusions and recommendations conveyed in this report, including all exhibits, attachments and appendices, represent our informed judgment for purposes of preliminary VFM assessment and are not binding on Infrastructure Ontario with respect to any subsequent assessment of, or involvement with, the project. Accordingly, the findings, conclusions and recommendations presented herein are subject to change and should be reviewed and interpreted with reference to new or supplemental data that may be considered after the transmittal of this report.

The City of Ottawa may reproduce this entire report for the limited purpose of confidential internal discussions regarding procurement options and strategies for the captioned project. This report along with all work papers and reference materials compiled by Infrastructure Ontario during this engagement remain the intellectual property of Infrastructure Ontario and are subject to the terms of our non-disclosure agreement with the City of Ottawa.



It was a pleasure to work with you during the course of this engagement. Please feel free to contact the undersigned to discuss any aspect of this report or future services that we may provide.

Sincerely,

**Infrastructure Ontario**

Per:

**Albert Horsman**

Vice President, Project Development

- c. Mr. J. David Livingston, President & C.E.O., Infrastructure Ontario
- Mr. George Stewart, Senior Vice President, Project Development, Infrastructure Ontario
- Ms. Nancy Schepers, Deputy City Manager, City of Ottawa
- Mr. Robert McKay, Manager, Strategic Projects, City of Ottawa

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## 1.0 Executive Summary

Infrastructure Ontario ("IO") was retained by the City of Ottawa ("Ottawa") to provide advice on the suitability of Alternative Financing & Procurement ("AFP") as a delivery method for the Downtown Ottawa Transit Tunnel, also referred to as Phase 1, Increment 1 of the East-West LRT project (the "Project"). This report provides analysis and recommendations regarding the ability of various AFP models to generate positive value for money ("VFM") in comparison to traditional public sector procurement.

To perform its preliminary VFM assessment, IO relied upon estimates and projections of the scope, schedule and budget for the project that were supplied by Ottawa. IO did not conduct due diligence on any data obtained from Ottawa beyond the effort to ensure that data and assumptions were understood and conformed to the input template that was supplied for this purpose. Accordingly, IO does not offer any opinion or pass any judgment regarding the sources or uses of data supplied by Ottawa, or the adequacy of the data for any purpose beyond the preliminary VFM assessment.

On the basis of our analysis IO concludes that positive value for money can be achieved if the Project is developed by means of AFP as compared to a traditional delivery model of design, bid, build. In comparison to the risk-adjusted cost estimates for the Project assuming traditional methods of public sector procurement, implementation of the Project using AFP is projected to yield positive VFM in the range of 4% to 14%.

In deriving the foregoing findings IO has determined that the leading catalysts for positive VFM include:

- The ability to transfer the potential financial consequences of risks inherent in the design, planning and construction of a complex civil engineering project from Ottawa to the private sector that could result in effective risk management and mitigation; and
- Private sector innovations in the discrete elements of project design, construction, management and operation, and synergy among those elements, which could reduce life-cycle costs of the Project.

The indicated range of 4% to 14% also reflects the impact of several assumptions regarding project financing including provincial and municipal credit spreads, short and long term borrowing rates, and the amount of project debt that will be carried by the private sector in an AFP concession. Based on prevailing and indicated trends in financial markets, the positive range of preliminary value for money demonstrates that AFP is likely to contain, mitigate and transfer sufficient project



risks from Ottawa to the successful bidder to achieve positive value for money in relation to traditional procurement methods and their corresponding costs.

## **2.0 Purpose of the Report**

This report is submitted in fulfillment of a contractual commitment made by IO to conduct a preliminary VFM assessment of the Project and to report the results of that assessment to Ottawa. The report was commissioned by Ottawa as a component in the process of assessing alternative procurement strategies.

The report is similar in form to other preliminary VFM assessments that IO has recently conducted for potential sponsors of transit and highway development projects. Accordingly, the report presents a summary of key activities conducted by IO and the results of such work. The attached appendices are an integral part of the final report and should be read in conjunction with this document.

## **3.0 Scope of Infrastructure Ontario's Services**

In accordance with the approved terms of reference, the scope of services performed by IO comprised the following:

- A risk matrix workshop with Ottawa and its advisors to explain the risk matrix component of the VFM methodology and obtain technical inputs
- Adaptation of a proprietary "elements-based" risk matrix to reflect pertinent details and assumptions regarding the scope and characteristics of the Project
- Computation of preliminary value for money results related to a base-case scenario and sensitivity tests of alternative assumptions that would effect VFM results
- Presentation of interim findings to Ottawa
- Final reporting

A copy of the executed terms of reference is attached as Appendix A.

## **4.0 Non-Disclosure Agreement**

In order to preserve the confidentiality of data obtained from Ottawa and to preserve the confidentiality of IO's proprietary risk matrix and value for money methodology, all parties and their advisors executed a binding non-disclosure agreement. In accordance with its undertakings, IO has received, stored and used all information as privileged and confidential. Furthermore, this report and all material disclosed by IO to Ottawa and its advisors during the course of this assignment are covered by the terms of that agreement.

A copy of the non-disclosure agreement is attached as Appendix B.



**5.0 Alternative Financing and Procurement**

Alternative Financing and Procurement (“AFP”) is a pragmatic approach for the public sector to augment traditional procurement methods for the delivery of public infrastructure projects. Infrastructure Ontario’s AFP model employs rigorous practices and procedures of procurement and project management that successfully leverage the respective strengths of the public and private sectors. The IO approach seeks the optimum combination of public and private resources, in conjunction with effective risk transfer, to develop infrastructure on time and on budget.

The document entitled *Building a Better Tomorrow* establishes a rationale and framework for the concept of Alternative Financing and Procurement. The following guiding principles are set out in that document:

- The public interest is paramount
- Value for money must be demonstrable
- Appropriate public control/ownership must be preserved
- Accountability must be maintained
- All processes must be transparent

In fulfillment of those objectives, Infrastructure Ontario ensures that all projects that are assigned for delivery employing the discipline and procedures of AFP undergo a series of tests to ensure that value for money is achieved.

**5.1 Preliminary VFM Assessment**

IO conducts a preliminary VFM assessment to determine whether a project could be a viable candidate for AFP delivery. This assessment compares Design-Bid-Build (“Traditional”) versus AFP delivery models including Design-Build-Finance (“DBF”), Design-Build-Finance-Maintain (“DBFM”) and Design-Build-Finance-Operate-Maintain (“DBFOM”) to determine whether positive value for money is achievable in delivering the same project, at the same point in time, using AFP. The table below provides a brief definition of the main delivery models.

Delivery Model	Definition
<b>Traditional Design-Bid-Build (DBB)</b>	Procurement of a project using a Stipulated Sum Contract (usually the Canadian Construction Documents Committee CCDC2 form of contract). DBB is expected to involve multiple stages and sources of design, followed by multiple construction contracts, and may include a series of short-term maintenance contracts following construction.

Delivery Model	Definition
<b>Design-Build-Finance (DBF)</b>	A delivery model in which the private sector is generally responsible for the design, construction and financing during the construction period. DBF will generally follow the intent of CCDC14 “Design-Build Stipulated Price Contract”. The project is paid for by the public sector at the completion and acceptance.
<b>Design-Build-Finance-Maintain (DBFM)</b>	In this procurement model the private sector is generally responsible for design, construction, long-term financing and maintenance of the project. The project is paid in installments over a fixed period, usually 25 to 30 years.
<b>Design-Build-Finance-Operate-Maintain (DBFOM)</b>	A procurement model in which the private sector is generally responsible for the design, construction, long-term financing, operation, and maintenance of the project. DBFOM contracts extend CCDC14 and DBF to include the maintenance/operation period; however, payments for capital repayment and maintenance are structured to extend over the length of the concession period.

## 5.2 VFM is a Calculated Figure

Positive value for money indicates that the AFP approach and its attendant costs, including the private sector cost to assume transferred risks and private sector financing rates applicable to equity and debt, may be less expensive to the public sector than the risk-adjusted cost to deliver the same project using traditional procurement methods.

## 5.3 Positive VFM will Derive from Several Sources

The AFP models that are applied in the VFM calculations account for several differences between public and private procurement of infrastructure:

- Transfer of potentially costly risks including those associated with design, schedule and financing
- Synergy that can be achieved through coordinated planning of capital, operating, maintenance and life-cycle costs





- Integration of design, construction and facilities management
- Clear and effective project governance and direct commercial authority
- Strong financial oversight, project management and due diligence
- Greater freedom for innovation
- Better insulation of on-going construction and final design from last minute interventions or scope changes

A key element in the estimation of VFM is optimal risk allocation between the public and private sectors. VFM accounts for the degree to which the value of risk transfer and reduction of risks that must be assumed by the public sector outweighs the increased costs of private sector procurement, including financing and transaction costs. Again, there can be instances where the assessment might suggest that the risk is appropriately retained by the public versus private sector.

## 6.0 Chronology of Downtown Ottawa Transit Tunnel AFP Assessment

The following section outlines key dates and milestones that tracked our progress through this assignment.

### **Receipt of Risk Assessment from the City of Ottawa – June 5, 2009**

A copy of a risk assessment prepared by Ottawa's consultants, MMM Group and KPMG, was provided to IO for information and introduction to the Project.

### **Site Visit and Review of Deliverables – June 17, 2009**

Representatives from Ottawa and IO met in Ottawa to tour the proposed alignment of the Project. IO representatives were given a briefing of potential challenges and risks. Following the tour a meeting was held to review the mandate and scope of work for Infrastructure Ontario. (Refer to Appendix C for relevant meeting materials.)

### **Execution of Non-Disclosure Agreement – July 14, 2009**

IO and Ottawa executed a mutual non-disclosure agreement that ensures privileged and confidential information is restricted only to those parties explicitly identified. (Refer to Appendix B for a copy.)

### **Risk Assessment Workshop – July 14 & 15, 2009**

IO conducted a Risk Assessment Workshop in Ottawa with representatives from Ottawa, including its advisors on the Project. More discussion of the outcome of this workshop follows in a subsequent section. (Refer to Appendix D for a copy of the slide deck used at the workshop.)

### **Receipt of Capital Cost Estimates – September 18, 2009**

Ottawa provided capital cost estimates according to IO's Request for Information Template. (Refer to Appendix E for a copy of the data supplied by Ottawa.)



#### **Clarification of Project Cost Estimates – September 30, 2009**

A teleconference was held with Ottawa and its advisors to review capital cost estimates that were circulated on September 22, 2009. A member of Ottawa's consultant team, David Hopper from Delcan, was in attendance at IO's office and collectively they provided an explanation of sources for the capital cost estimates. IO indicated its satisfaction with the capital cost data as input to the preliminary VFM assessment. Operating and maintenance ("O&M") data were to be supplied by Ottawa at a later date. (Refer to Appendix F for a copy of the meeting agenda.)

#### **Receipt of Operations and Maintenance Cost Estimates – October 14, 2009**

Ottawa provided Operations and Maintenance costs according to IO's Request for Information Template. (Refer to Appendix G for a copy of the submission.)

#### **Commencement of IO's 8-week Turnaround Commitment – October 15, 2009**

Receipt of the O&M cost estimates represented the final submission from Ottawa in order to allow IO to conduct a preliminary VFM assessment. Accordingly, the undertaking to provide for an 8-week turnaround on a final report to Ottawa commenced on October 15, 2009.

#### **Presentation of Preliminary High-Level VFM Results - October 22, 2009**

A teleconference was held to review high-level preliminary VFM results for the Project. It was reported that positive VFM could be achieved if the Project was delivered under an AFP model. A slide deck was presented that explained financial assumptions and sensitivities used in calculating a range of preliminary VFM results. The slide deck also discussed the process in which letter rankings for project risks obtained at the July risk workshop were converted into numbers for input into IO's risk matrix. The process for calculating retained risk was also explained. Ottawa requested that IO undertake additional sensitivity analyses based on variables to be sent to IO at a later date. Refer to Appendix H for a copy of the slide deck cited above.)

#### **Receipt of Additional Sensitivity Tests Scenarios – November 4, 2009**

A list of additional assumptions for sensitivity tests was supplied to IO in accordance with the request made on October 22, 2009.

#### **Clarification of OFA Rates with City Representatives – November 10, 2009**

At Ottawa's request, a teleconference was held with City staff to clarify IO's use of the Ontario Financing Authority (OFA) rate and other debt financing assumptions.



**Final Presentation to City of Ottawa – November 24, 2009**

IO presented its findings to senior City staff at a briefing in Ottawa. A draft copy of the final report was also tabled at the meeting for Ottawa’s review and comment. (Refer to Appendix I for related materials.)

**Comments from the City of Ottawa – November 24 to December 4, 2009**

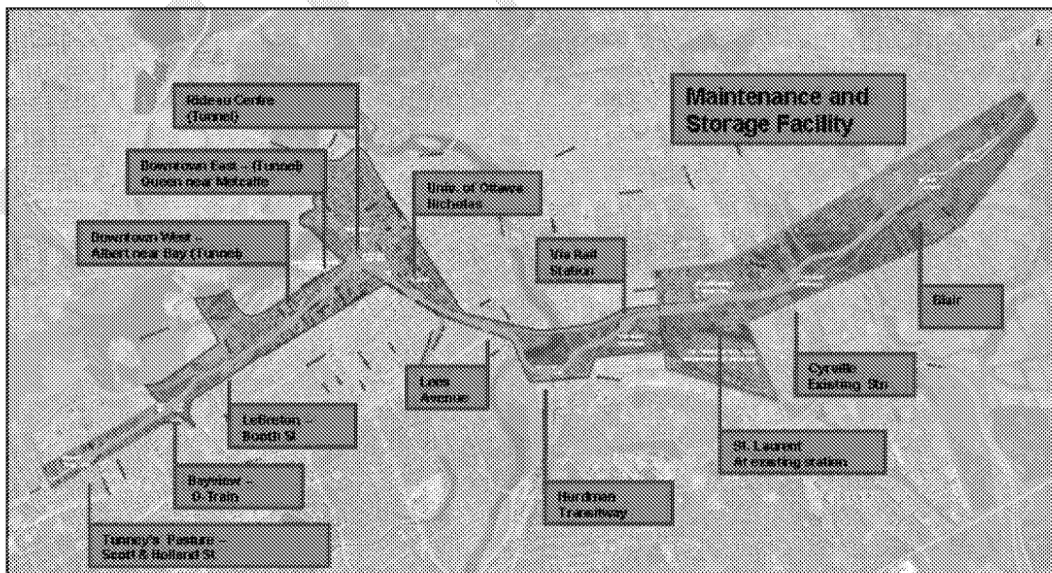
Ottawa was invited to provide comments on the draft version of the final report tabled at the November 24, 2009 meeting. IO will endeavor to incorporate where possible, the comments received from Ottawa into the final report.

**Final Report - December 8, 2009**

**7.0 Inputs to the Preliminary VFM Assessment**

**7.1 Scope**

IO confirmed project scope with Ottawa at the risk assessment workshop. For the preliminary VFM assessment the scope of the Project includes an approximate 12.5km LRT route running for the most part along the existing dedicated Transitway right-of-way. Slight deviation from the Transitway occurs through the downtown corridor where the tunnel is planned to be constructed. There are 13 stations planned in the proposed scheme, with 9 at-grade and 4 underground. A map of the proposed alignment and station placement is shown below.





## 7.2 Schedule

IO confirmed schedule assumptions with Ottawa at the risk assessment workshop. IO's preliminary VFM assessment assumes the following key dates.

	Start Date	End Date	Term
Construction	Jan. 1, 2013	Dec. 31, 2018	6 years
Operations/Maintenance	Jan. 1, 2019	Dec. 31, 2048	30 years

## 7.3 Project Cost Estimates

IO utilizes a template of Infrastructure Cost Categories ("ICC") to collect applicable capital investment and operating/maintenance expenditures needed for preliminary VFM assessment. The template is based on common elements found in projects of various transit modalities including BRT, LRT, and Commuter Rail and are tailored to fit the project under consideration.

Data was collected according to 8 categories that are further refined into 72 sub-categories; it is important to note that not all categories are applicable to every project.

The major headings include:

- Guideway and Track Work
- Stations, Stops, Terminals and Intermodal
- Support Facilities: Yards, Shops, Administrative Buildings
- Sitework and Special Conditions
- Systems
- ROW, Land and Existing Improvements
- Vehicles
- Professional Services
- Operations and Maintenance

## 7.4 City Provided "Contingency-Free" Estimates

As requested by IO, "contingency-free" estimates, which may be considered best-case estimates for capital, operations and maintenance, were provided by Ottawa in 2009 dollars for each applicable ICC.

## 7.5 Risk Assessment Workshop

IO conducted a risk assessment workshop in Ottawa on July 14 & July 15, 2009. Representatives from Ottawa including its advisors attended. Deliverables of the workshop included scope confirmation for the Project, review of a risk register developed by Ottawa, and completion of a risk assessment exercise according to IO's proprietary methodology.



For the risk assessment exercise a letter ranking system was used to identify which generic risk descriptions were applicable to the Project, at that point in time. Participants of the workshops assigned these letters against project life-cycle risk stages according to their applicable Infrastructure Cost Category. (Refer to Appendix C for a copy of the slide deck from the workshop.)

### 7.6 Conversion of Letter Rankings to Numerical Values

For input into IO's risk matrix model, IO conducted the subsequent task of converting the letter rankings determined at the risk assessment workshop into numerical values. The translation of letters to numerical values was based on a conversion procedure that IO established prior to the workshop.

### 7.7 Financial Assumptions

Financial assumptions that were applied to the base case scenario were determined with reference to three criteria:

- Recent market soundings of other civil infrastructure projects in Ontario and other jurisdictions
- Recent market activity in the development of social accommodation projects in Ontario
- Reference to other financial market indicators available to IO

The following "base-case" financial assumptions were used for preliminary VFM assessment.

Financial Assumption	Base Case	Definition
Public sector discount rate	3.77% (OFA rate: July 2009)	A rate used to perform net present value calculations. This rate is reflective of the Provincial average cost of funds.
Long-term debt interest rate	7.70% (GOC LT rate [3.70%] +400 bps credit spread)	400bps premium over GOC rates for private sector lending to the Project. Spread is influenced by a number of factors including market capacity, liquidity, tolerance for risk, term and credit worthiness of Project Co. and its consortia.

Financial Assumption	Base Case	Definition
Short-term debt interest rate	4.45% (GOC ST rate [1.45%] + 300 bps credit spread)	Same comment as LT debt interest rate
Debt equity ratio	90/10	A ratio that indicates amount of private sector debt as a percentage of total private sector contribution to the amount of equity as a percentage of total private sector contribution.
Milestone payments (MP)	None	Interim payments made to Project Co. in consideration of milestone achievement. Milestone payments have the effect of reducing the final payment that is made at substantial completion.
Substantial completion Payment (SCP)	85% Contribution (DBFM & DBFOM)  100% Contribution (DBF)	A lump sum amount that will be paid to Project Co. at end of the construction period once certified by an independent verifier. The size of this amount will influence the relative split of long-term/short-term debt needed to finance the project.

### 7.8 Sensitivity Test Scenarios

To ensure that IO's preliminary VFM assessment and recommendations remain valid, sensitivity tests were conducted to reflect potential alternative conditions that may prevail in the next 24 months. Sensitivity tests were conducted to reflect both IO suggestions as well as specific requests from Ottawa. Sensitivity scenarios were added or subtracted from base case financial assumptions as applicable according to the following table.



Sensitivity Driver	Sensitivity Scenario	Scenario No.
Public Sector Discount Rate	+/-50 bps	1,2
	+100 bps	3
	+200 bps	4
Long-Term Debt Interest Rate	+/- 50 bps	5,6
	+/- 100 bps	7,8
Short-Term Debt Interest Rate	+/- 50 bps	9,10
	+/- 100 bps	11,12
Short-Term & Long-Term Debt Interest Rates	Simultaneous decrease of 200bps to both rates	13
Capital Construction Costs	+20%	14
Operations and Maintenance Costs	+20%	15
	+100%	16
Length of Concession Term	25 years following completion of capital construction	17
Capital Contribution During Construction: 85% Total Contribution	MP: Year 3 (35%) SCP: 50%	18
	MP: Year 3 (25%) & Year 5 (25%) SCP: 35%	19
	MP: Year 3 (30%) SCP: 55%	20
	MP: Year 3 (50%) SCP: 35%	21
Capital Contribution During Construction: 80% Total Contribution	MP: No Milestone Payment SCP: 80%	22

Sensitivity Driver	Sensitivity Scenario	Scenario No.
Capital Contribution During Construction: “Improved Market Conditions” 50% Total Contribution Scenario with 200bps Simultaneous Decrease in Short & Long Term Debt Interest Rates <sup>1</sup>	MP: No Milestone Payment SCP: 50%	23

## 8.0 Findings of the Preliminary VFM Assessment

### 8.1 Drivers of Positive VFM

Based on its preliminary VFM assessment IO has determined that the leading drivers of VFM include:

- The extensive scope for risk transfer from the public sector (sponsor) to the private sector (contractor) given the complexity of the civil works associated with the Project including:
  - Construction of a deep tunnel through the downtown corridor
  - Construction of underground stations and surface connections into existing structures
  - Relocation of known, unknown and unspecified utilities
  - Environmental remediation of polluted lands.
- The opportunity to realize synergies between the construction of civil works and long-term operating and maintenance services including lifecycle cost planning that integrates design, construction, finance, operations and maintenance to achieve uniform performance standards.
- Opportunity for private sector innovation in construction methods given the preliminary stage of project planning, which creates conditions for maximum creativity and innovation in physical and operational requirements.
- Project financing challenges imposed by current market conditions, the competition for finite resources that can be committed to projects of this nature and the impact of alternative payment mechanisms.

### 8.2 Value of Risks Transferred Outweigh Cost of Financing

IO has noted that the expected cost of private financing for that portion of the Project that could be subject to private investment will counteract the benefits that may be realized by private participation in all other aspects of the Project. Financial markets have faced significant pressures in the past 12 months that have translated into a high premium charged by financial institutions and other sources

<sup>1</sup> This scenario was tested for illustrative purposes at Ottawa’s request.





of short and long term financing including life insurance companies and pension funds.

Notwithstanding the high cost of private debt and equity financing for a portion of the project relative to the cost of public borrowing, an AFP process should more than offset the cost differential by accounting for the value of transferred risks. The preliminary VFM assessment has applied sector-specific assumptions regarding the ability of private contractors to absorb a share of the cost and schedule risks involved with:

- Planning and Design
- Construction
- Maintenance and /or Operations
- Financing
- Inflation

The presumed value of risks that would be held exclusively by the public sector in a traditional procurement is greater than the value of private financing that would be necessary to implement an AFP process. Accordingly, when risk-adjusted costs are assigned to the parties that are best able to manage and mitigate the attendant risks, the net overall benefits of AFP translate into positive VFM.

### **8.3 A Range of 4% to 14% Positive VFM Achieved Under AFP**

Based on the IO assumptions and approach described above, and relying upon data supplied by Ottawa, the preliminary VFM assessment indicates positive value for money ranging from 4% to 14% in relation to traditional design-bid-build procurement. This spread includes results from the base case scenario and alternative assumptions tested as sensitivity scenarios.

<b>AFP Delivery Model</b>	<b>Preliminary VFM Result</b>
Traditional vs. Design-Build-Finance	8% to 11%
Traditional vs. Design-Build-Finance-Maintain	4% to 13%
Traditional vs. Design-Build-Finance-Operate-Maintain	5% to 14%

#### **8.3a Traditional versus Design-Build-Finance**

The preliminary VFM range for the DBF model provides for the highest minimum VFM (8%) and the least amount of fluctuation from traditional procurement. This result is achieved, in part, because the DBF model is not exposed to the higher cost of long-term financing. All construction debt is assumed to be short term and paid out at substantial completion of construction.



### **8.3b Traditional versus Design-Build-Finance-Maintain**

A wider range between the low and high results for the DBFM model was observed as a result of long-term financing, which serves to depress the contribution to VFM that is associated with the more extensive opportunities for innovation and risk transfer under this AFP model. The higher end of the range illustrates the effect of innovation and risk transfer under circumstances in which long term financing rates retreat from current levels.

### **8.3c Traditional versus Design-Build-Finance-Operate-Maintain**

The preliminary VFM results for the DBFOM model share many characteristics with the DBFM model. The modest advantage of DBFOM is attributed to our assumptions regarding the integration of construction, operating and maintenance components in a manner that permits maximum innovation and cost efficiency.

### **8.3d Sensitivity Scenarios**

In accordance with our mandate a series of sensitivity tests were conducted for each procurement model. The tests reflected potential trends in the following assumptions that could materialize over the period leading to financial close (December 2012).

- Changes in rates attributed to specific benchmarks including the Ontario Financing Authority, Government of Canada long term rate and Government of Canada short term rate
- Increase in project cost estimates
- Length of concession period
- Changes in payment mechanism

The results of sensitivity tests, expressed as ranges in preliminary VFM, are summarized in the tables that follow.



### Sensitivity Scenario: Financing Rates

Rate Change (in basis pts)	Resulting Preliminary VFM Result			
	OFA	GOC LT	GOC ST	GOC ST & LT
50bps Increase	8% to 11% VFM (Scenario 1)	6% to 10% VFM (Scenario 5)	6% to 10% VFM (Scenario 9)	
100bps Increase	9% to 11% VFM (Scenario 3)	8% to 10% VFM (Scenario 7)	5% to 10% VFM (Scenario 11)	
200bps Increase to OFA Rate	10% to 14% VFM (Scenario 4)			
50bps Decrease	4% to 10% VFM (Scenario 2)	7% to 10% VFM (Scenario 6)	7% to 10% VFM (Scenario 10)	
100bps Decrease		8% to 10% VFM (Scenario 8)	8% to 10% VFM (Scenario 12)	
200bps Decrease in GOC ST and GOC LT Rates				9% to 11% VFM (Scenario 13)

### Sensitivity Scenarios: Cost Estimates

Increase Amount	Capital	Operating & Maintenance
20% Increase	6% to 11% VFM (Scenario 14)	6% to 10% VFM (Scenario 15)
100% Increase		6% to 9% VFM (Scenario 16)

### Sensitivity Scenarios: Length of Concession Term

Duration	Base Case Assumptions
25 years following completion of capital construction	6% to 11% VFM (Scenario 17)



### Sensitivity Scenarios: Payment Mechanism

Payment Mechanism	Base Case Assumptions
85% at SC - MP 35%(Y3), SCP 50%(Y6)	8% to 10% VFM (Scenario 18)
85% at SC - MP 25%(Y2), MP 25%(Y5), SCP 35%(Y6)	7% to 11% VFM (Scenario 19)
85% at SC - MP 30%(Y3), SCP 55% (Y6)	7% to 10% VFM (Scenario 20)
85% at SC - MP 50%(Y3) SCP 35% (Y6)	9% to 11% VFM (Scenario 21)
80% at SC - No Milestone Payments	5% to 10% VFM (Scenario 22)
50% at SC with 2% Decrease in GOC ST & LT Rates (No Milestone Payments) <sup>2</sup>	4% to 10% VFM (Scenario 23)

#### 9.0 Implications of the Preliminary VFM Assessment for the City of Ottawa

The IO retainer to perform a preliminary VFM assessment is not binding on Ottawa or IO with respect to the scope, schedule or budget for the Project. Furthermore, Ottawa is not obliged to adopt the findings of this report for any purpose related to the planning or implementation of the Project.

Preliminary VFM assessment is a metric adopted by IO to indicate whether the circumstances and characteristics of a project may be expected to produce positive value for money at key milestones during an AFP process. In this respect VFM is relevant to Ottawa only insofar as Ottawa seeks to pursue a contractual relationship with IO for project delivery.

IO does not represent the results of the preliminary VFM assessment as an indication of its willingness to enter into a contractual relationship with Ottawa and other financial sponsors of the Project. The circumstances that must be in place for IO to serve as the delivery agent for the Project are not stated in this report and would not in any event be subject to a bilateral relationship between Ottawa and IO. The Project would have to be assigned to IO by the Provincial Cabinet and be subject to the successful negotiation of a memorandum of understanding (“MOU”) and project agreement (“PA”) between Ottawa, all other sponsors and IO.

<sup>2</sup> This scenario was tested for illustrative purposes at Ottawa’s request.



For the reasons outlined above, Ottawa should refer to this preliminary VFM assessment as a leading indicator of the potential for IO to play a role in delivery of the Project. This report and its conclusions, however, should not be considered an endorsement of the Project, an expression of interest in the Project, or a commitment by IO to any further involvement with the Project.

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