Government of Alberta

P3 Value for Money Assessment and Project Report

Evan Thomas Water and Wastewater Treatment Facility Project

July 2013

Alberta

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Value for Money Assessment and Project Report on
Public Private Partnership (P3) for Evan Thomas Water and Wastewater Treatment Facility Project

July 2013

1. Summary: Using a P3 for a Water Treatment Plant - did it work?

By using a Public Private Partnership (P3) to design, build, finance and operate the Evan Thomas Water and Wastewater Treatment Facility Project (Evan Thomas), the Alberta government saved $2.41 million over 12 years (in today's dollars) compared to a traditional design-bid-build approach ($59.62 million instead of $62.03 million, a 3.89% savings)[1]. It will also deliver the facility at a guaranteed fixed date. The following assessment shows that using a P3 Model delivered value for money and that it was the correct choice to procure Evan Thomas.

On May 18, 2011, Treasury Board approved Alberta Infrastructure to proceed with an RFQ and then an RFP for the purpose of procuring the construction and operation of the project as a DBFO project. The Board also agreed that Infrastructure will return to Treasury Board for approval to enter into the DBFO contract with the lowest bidder.

The government signed the P3 contract, with a 10-year operating term, in October 2012 with Epcor Water Services (the contractor). The contract requires the plant to be ready by July 2, 2014.

The cost savings were due to:

- life-cycle optimization
- construction efficiencies
- building innovations
- risks shifted from government to the contractor
- fixed cost contract

This report explains what a P3 is and why it may be used and provides a value for money assessment of the P3 for the water and wastewater treatment plant

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[1] This savings calculation is based on the amounts in the bids for the Evan Thomas Water and Wastewater Treatment Facility Project Request for Proposals.

2. Background

What is a P3?

A P3 is a non-traditional way for government to create capital assets such as roads, schools, and other types of government facilities. In the case of Evan Thomas the government entered into one agreement with a contractor responsible for designing, building, partially financing, and operating the plant for a 10-year period (excluding the time required for construction). [2]

A P3 can save time, money and reduce risk to the government by having one contractor design, build, finance, and operate a facility. For Alberta P3 projects, the public sector owns the facility and provides public services to Albertans, the same as it does with a traditional approach. In this P3, Alberta Infrastructure continues to own the plant and deliver services.

What is a traditional approach?

In a traditional approach, the public sector hires an engineer to design the facility, and then hires a construction contractor to build it. Once the facility is built, the public sector contracts for the operations component, typically by awarding numerous individual contracts for repairs and renewal. The government pays for the construction of the facility by making progress payments to the contractor (for its own infrastructure).

What does a Value for Money (VFM) assessment do?

A VFM assessment measures whether a P3 is the best option for a particular project. In the case of Evan Thomas, it compared the estimated costs of building and maintaining the same facility using the two different methods: traditional and P3. The VFM for a project is the difference between these two costs. The goal of a P3 is to provide value: to do so, the P3 must cost less – measured by net present value – than the traditional method over the life of the contract.

What is net present value?

Net present value is the current value of a future sum of money. It is a standard method to compare the value of money over time (a dollar today is worth more than a dollar tomorrow because of interest and inflation) to assess long-term projects. It is produced by applying an interest rate and an inflation rate (collectively called the “discount rate”) to a future sum. The amount and timing of cash flows differ in the two options for producing Evan Thomas (traditional and P3) and the calculation of net present value accounts for those differences. The net present value of the cost to produce and maintain a facility using the traditional approach is called the Public Sector Comparator, or PSC.

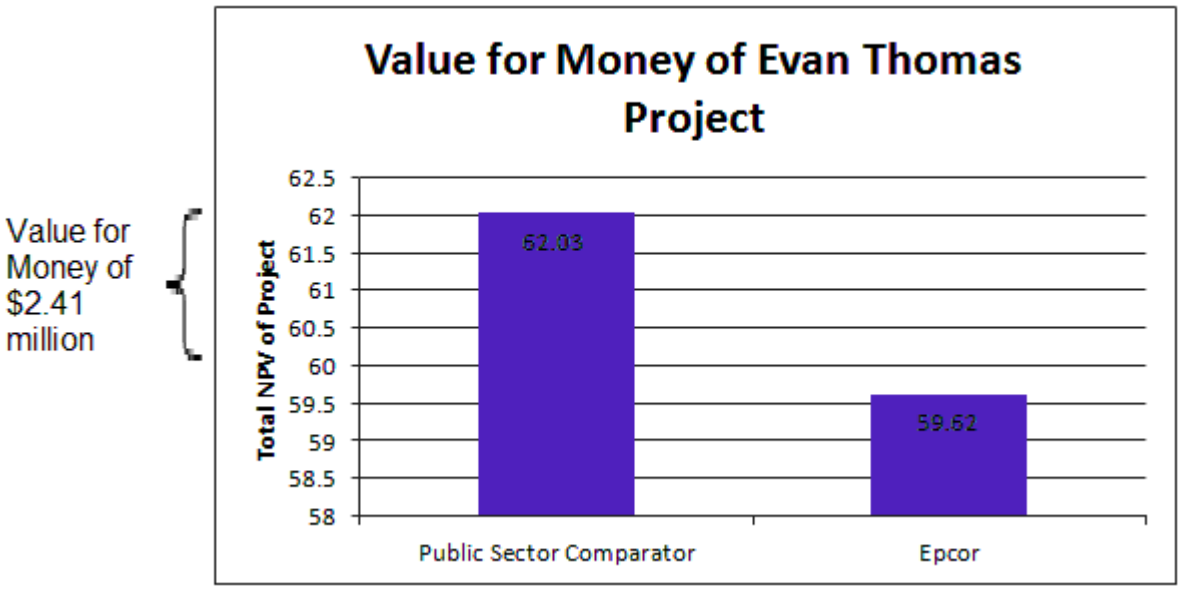
[2] For detailed discussion on P3s, see the Annual Report of the Auditor General of Alberta 2003–2004, at pages 49 to 72 (www.oag.ab.ca/files/oag/ar2003-2004.pdf).

3. VFM Assessment of the P3 used for Water Treatment Plant

Money and time saved by using P3: Quantitative measures of value

This VFM assessment uses net present value as of August 29, 2012, when bids were received. It includes the costs to design, build, partially finance, and operate Evan Thomas for the 12-year agreement term. It also includes the impact of risk transfer (as discussed later in this section) but excludes costs common to both methods, such as land costs and equipment.

The low bid received for this project was $59.62 million and the PSC was estimated at $62.03 million (both in 2012 dollars). The VFM is therefore $2.41 million or 3.9% of the PSC. A Value for Money Analysis prepared by the financial advisor, KPMG, retained for this project is attached in Appendix A. The water treatment plant is scheduled to have a faster construction period than with the traditional method.



Private financing by the contractor costs more than public financing by government, but in the case of Evan Thomas, that cost was more than offset by the following factors:

1. **Allocating risks to the party who can best manage them** means that the contractor bore many of the costs that the government would have borne in the traditional approach. For example, the contractor pays for any changes needed during the construction period due to design errors. The contractor also bears any cost increases for labour and material during the construction period. In addition, for the 10-year maintenance and renewal term, the contractor will pay to replace any defective building parts or parts that have reached the end of their useful life. A list of some of the major risks that the P3 contract allocated to the contractor is in Appendix B attached to this report.

2. **Using innovative building techniques and materials** will save the government money over the contract term. In the Request for Proposals (RFP) stage, the two proponents presented several innovations to meet stringent, long-term quality requirements set in the technical documents. The contractor will incorporate many of their innovative techniques into the final design.
3. **Developing construction schedules that allow continuous and efficient workflow** to minimize downtime between operations and reduce mobilization costs for work crews and equipment.

Qualitative measures of value

1. **Controlled scope**. By awarding the entire project to a single contractor, the government controlled the scope of the project and managed the risk of any potential scope changes. The government worked to ensure that their program needs were met early in the design process, and that these requirements were clearly expressed to proponents during the RFP phase.

2. **10-year maintenance and renewal period.** This gives the government assurance that Evan Thomas will be maintained in good condition for 10 years. The P3 contract transfers maintenance of Evan Thomas from government to the contractor for the term of the contract. This effectively gives the government a 10-year warranty for Evan Thomas with no deferred maintenance at the end of 10 years.

3. **Better workforce management.** The relatively long time to set up a P3 allows proponents time to establish labour and equipment supply and to lock in contracts for materials supply. Traditional contracts, typically with a four- to six-week tender period, introduce additional risk into the process, as the bidding contractor has only a short time to negotiate scheduling of labour, materials and equipment to arrive onsite at the right time.

Major risks allocated in P3 contract

An important factor in the delivery of P3 projects is an acceptable allocation of risks to the party or parties best able to manage them. In some cases, the contractor is the appropriate party to manage a risk; in others, the government can better manage the risk; in yet a third case, the risk may be best shared between the two parties.

Table 1 (Appendix B) shows a sample of the risk allocation between the government and the contractor in the P3 contract and schedules. This list is not comprehensive. The P3 contract shows all the allocated risks.

Cost overruns: the contractor bears the risk of any construction costs above the bid price in the P3 contract. Maintenance and renewal payments are indexed based on the contract formula, so the contractor pays any increased maintenance costs above the index during the contract.

Schedule certainty: the contractor agreed to have Evan Thomas completed and available for use by by July 2, 2014 or receive reduced payments. The contractor will manage the construction schedule to meet this date.

Weather: the contractor bears any costs of project delays caused by bad weather.

Scope changes: the government pays for any scope changes that it wants during construction. The government will pay for this work in accordance with the change order process set out in the P3 contract.

During the maintenance and renewal period, the government may consider changes. The government will pay for this work, as long as the contractor accepts competitive pricing based on a tendering process as specified in the P3 contract.

Interest rates and financing: during the period between notifying a preferred proponent (which becomes the contractor when it signs the P3 contract) and signing the contract, the government shares the risk of any changes in base borrowing rates with the preferred proponent.

The contractor has to arrange for partial financing for the whole term of the contract and is solely responsible for the impact of the financing arrangements. No matter how much rates increase during the contract, the contractor must pay any increased refinancing costs. Conversely, the contractor can benefit from any rate drops.

Permitting: in the project's procurement phase, the government worked to ensure that development permits were all in place, with as few conditions as possible. The project involved numerous permits at the municipal, provincial and federal levels, including those dealing with water crossings, parks restrictions, cultural considerations and many others. Once the contractor signed the contract, it was responsible to have the municipality transfer the development permits to it. The contractor assumed any schedule risks of not being able to obtain the building permits on time.

4. Project Report

Government of Alberta Goals

Goal 1 Under "Investing in Communities and Families" – Honour Alberta Communities - Our Communities are safe, prosperous, welcoming, culturally diverse and desirable places to live or destinations to visit. The completion of Evan Thomas will ensure that people living or visiting the area will have access to a sufficient water and wastewater facility into the future.

Alberta Infrastructure Ministry Goals

Goal One: Safe, adaptable and cost-effective health, learning and public infrastructure to meet the needs of Albertans. The Evan Thomas project supports this goal by ensuring that the new facility can meet the water and wastewater needs of the region.

Goal Two: Safe and sustainable operation and maintenance of public facilities. The 10 year arrangement with the contractor ensures safe and sustainable operation.

Goal Three: Cost-effective public asset management to optimize value for Albertans. Since the lowest bid fell below the Public Sector Comparator, the province was able to save $2.41 million over what the cost would have been using a traditional approach.

Project goals

- **Ensure short-term cost certainty** for building Evan Thomas and **longer-term cost certainty** for operating it. The project shifts the risk of increased costs to the contractor.

- **Use innovative design, project delivery, and funding** to meet the water and wastewater needs of the Kananaskis region.

Project outcomes

- The new water treatment and wastewater treatment plants will provide better effluent quality which will help to preserve the environment in Kananaskis country and notably the Kananaskis River.

- The project addresses water quality and safety, sewage treatment and fire protection for residents and visitors of the area.

Approaches considered

The government considered two approaches to deliver the project:

1. ***Traditional Design-Bid-Build* approach**, with the usual "pay-as-you-go" financing by the government and delivery by the government as well. Private-sector engineers and consultants, hired by the government would design Evan Thomas. Stipulated-price construction contracts are awarded through a traditional open-bidding process tendered to private-sector contractors. The province approves the contracts. Daily operations and maintenance, and infrastructure maintenance and renewal, are contracted by provincial funding.

2. ***Design-Build-Finance-Operate* approach** (the basis of the P3), with the winning private-sector proponent (the contractor) forming a consortium or group to handle the project from start to the end of the contract, the contractor is responsible for the ongoing operation of Evan Thomas for a set time (in this project, 10 years), and for having a renewal plan for various components to ensure they meet the performance requirements. The government makes monthly payments to the contractor during the 10-year operations phase of the contract. Payments start after Evan Thomas is ready to use and cover the capital and maintenance and renewal costs. The government can reduce payments based on performance criteria such as whether Evan Thomas is available for use and whether it meets prescribed standards.

Selection process

The government's selection process was open, competitive, timely, fair and transparent. A Fairness Auditor, Mr. Dwayne Johnson, P. Eng. was appointed Fairness Auditor for this project and prepared a report on the fairness of the process (Appendix D).

A Request for Qualifications was publicly issued on September 30, 2011. Eight teams responded and were evaluated on experience, personnel qualifications, past performance and financial capability. The three best qualified proponents selected to submit proposals were Epcor Water Services, SNC Lavalin Inc. and Plenary Group Ltd.

The Request for Proposal (RFP) process ran from March 14, 2012 to August 15, 2012. The "made-in-Alberta" approach to P3s ensures the process is competitive throughout. During the RFP process, the proponents made financial and technical submissions to ensure that they met the project's minimum specifications. The government issued a draft form of the contract during the RFP process. The proponents provided comments on it. Before receiving proposals, the government issued the final form of the contract that the successful proponent signed. There were no negotiations on this contract allowed after financial bids were received.

Once the two proponents provided RFP submissions (Plenary Group did not submit a proposal), they both submitted financial bids based on the final form of the contract. These bids are summarized in Table (Appendix A). Epcor Water Services submitted the lowest price, on a net present value basis, and won the contract.

Key terms of P3 contract

What the government must pay: The total cost of the 12-year contract is $59.62 million in 2012 dollars.

The government will pay to the contractor approximately $31 million toward the capital cost of Evan Thomas over the course of construction. Once the facility is ready by July 2, 2014, monthly amounts in three separate streams (capital, maintenance, and renewal) will be paid over the contract term.

Capital payments are fixed, while maintenance and renewal payments are indexed[7].

If any part of Evan Thomas is not ready by July 2, 2014, the government will not pay the remaining progress payments. The rest of the payment will be made upon full completion. Additionally, the government will not make monthly maintenance and renewal payments, until everything is completed. The contractor will thus lose capital, maintenance, and renewal payments if Evan Thomas is not complete by the target date.

What the contractor must do: The 10-year contract between the government and the contractor has an initial construction period and a 10-year maintenance period. It requires the contractor to:

- complete the design and construction of Evan Thomas by July 2, 2014;
- partially finance the construction over the contract term;
- maintain the facility to the standard specified in the contract;
- have a renewal plan for various components to ensure they meet the performance requirements; and
- hand back responsibility for maintenance and renewal of the facility to the government, in a condition prescribed in the contract.

Payments reduced for non-performance: The government can reduce all monthly payments (capital, maintenance, renewal) if the contractor does not meet performance standards in the contract. For example, if the water quality does not meet outlined criteria and the contractor does not resolve this within the allowed time, the government can reduce monthly payments to the contractor.

A detailed description of all the payment adjustments is in Schedule 15 of the P3 contract.

Monitoring during and after construction

During construction, the government is using AECOM as its consultant to review the designs and ensure that construction standards have been met. The contractor has to provide monthly reports on design and construction issues.

[7] Four indices are used to calculate maintenance and renewal payments: AUPE Maintenance Service Worker II published hourly salary; NAICS repair and maintenance hourly rate; Statistics Canada consumer price statistics (excluding food and energy); and Statistics Canada non-residential building construction price index for Edmonton and Calgary.

In the maintenance and renewal period, the contractor will self-monitor and report on its compliance with the technical requirements. The government will also do its own inspections and testing to check reports and ensure the standards continue to be met.

Accounting treatment

The accounting treatment for P3 projects follows generally accepted accounting principles set out by the Public Sector Accounting Board of the Canadian Institute of Chartered Accountants. The obligation is “on-book”, so the province records the amount owing for the private financing over the construction period and also records the cost of building Evan Thomas on its consolidated balance sheet as a capital asset.

Project schedule

The P3 contract was signed on October 2, 2012 and construction started by the end of September 2012. The contractor must deliver Evan Thomas by July 2, 2014 or suffer payment reductions. An independent certifier will certify when the facility is available for use.

The maintenance period starts after the facility becomes available and continues until June 2024, when the license granted to the contractor to access Evan Thomas will expire. The contractor must hand back the responsibility for maintenance and renewal of Evan Thomas to the government in the condition specified in the contract. The government and the contractor will assess the facility, starting three years before contract expiry, to ensure it is in the condition specified in the contract when the contract expires or payment adjustments will be applied. After the contract expires, the government will assume responsibility for operating, maintaining, and renewing Evan Thomas, using traditional funding.

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July 9, 2013

Re: Evan-Thomas Water and Wastewater Treatment Facilities Upgrade Project – Value For Money Analysis

Dear Mr. Gibson:

KPMG LLP ("KPMG") was retained by the Alberta Department of Infrastructure ("INFRA") to provide financial advisory services in respect of the Evan-Thomas Water and Wastewater Treatment Facilities Upgrade Project ("the Project"), which involves the design, build, finance, operate ("DBFO") of the water and wastewater treatment facilities in Kananaskis Country, Alberta.

As INFRA's financial advisor, our work includes the development of a Public Sector Comparator ("PSC") for the Project and the comparison of the PSC to the financial offers received from the Proponents ("Value For Money" analysis).

The following table summarizes the results of the Value For Money analysis.

Comparison of PSC and Financial Offers	PSC	EPCOR Financial Offer	SNC Financial Offer
Total Cost on Net Present Value Basis (NPVs to August 29, 2012)	$62.034 million	$59.623 million	$79.083 million
Financial Bid Rank	--	Rank 1	Rank 2
Value For Money compared to PSC	--	$2.411 million	--
Value For Money as percentage of PSC	--	3.9%	--

As shown above, the financial offer submitted by EPCOR has the lowest NPV and EPCOR was selected as the Preferred Proponent. The Financial Offer from EPCOR is estimated to generate Value For Money of $2.411 million (or 3.9%) as compared to the PSC.

The calculation of the value of the PSC and the NPV of the financial bids has been based on a discount rate of 2.85% and an inflation rate of 1.85%, reflecting the discount rate and inflation rate

issued by the Alberta Department of Treasury Board and Finance ("FINANCE") two days before the SR Package 3 bid submission deadline of August 29, 2012.

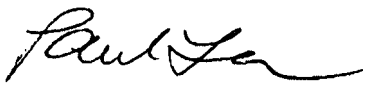
In calculating the NPVs of the financial offers, we used the methodology as described in section 5.12 of the Instructions to Proponents dated November 24, 2011 and as amended on August 16, 2012.

In developing the PSC, KPMG received input assumptions from INFRA's project team and AECOM Canada Architects Ltd. (technical advisor to INFRA) and constructed a financial model to calculate the cost of the Project over the term of the proposed DBFO transaction on a Net Present Value basis.

This letter has been prepared for the exclusive use of Alberta Infrastructure and the Government of Alberta in relation to the DBFO procurement process. KPMG will not assume any responsibility or liability of any costs, damages, losses, or expenses incurred by any party as a result of publication, circulation, reproduction, use of or reliance upon this letter.

We trust this letter meets your needs.

Yours truly,



Paul Lan
Partner
416-777-3205

cc: Marc Song

Appendix B: Sample of Risk Allocations

Table 1: Sample of Risk Allocations between Government of Alberta and Contractor

	Traditional		P3	
RISK ALLOCATION AFTER AWARD	**GOA**	**Contractor**	**GOA**	**Proponent**
General Risks - Construction and Operation Phases				
Land acquisition	•		•	
Life cycle management	•			•
Patent infringement	•	•		•
GOA supplied data – accuracy/interpretation	•	•		•
Schedule issues	•	•		•
Labour issues		•		•
Material issues		•		•
Adverse weather conditions		•		•
Force Majeure	•		•	
Construction Risks				
Design interaction with site conditions	•			•
Design quality issues	•			•
Construction interaction with site conditions	•	•		•
Site safety		•		•
Construction costs		•		•
Construction quality issues		•		•
Scope changes	•		•	
Construction performance specification risks	•		•	
Delayed site access	•		•	
Vandalism/theft/arson during construction		•		•
Damage to work		•		•
Public interface	•	•		•
Workplace health and safety		•		•
Approval Risks				
Environmental approvals	•			•
Development permits	•			•
Building permits		•		•
Regulatory/ Municipal requirements	•	•		•
Building Code compliance	•			•
Environmental Risks – Known/Unknown				
Geotechnical (known)		•		•
Contamination (known)		•		•
Archaeological (known)		•		•
Geotechnical (unknown)	•			•
Contamination (unknown)	•		•	
Archaeological (unknown)	•		•	
Financial and Economic Risks				
Sourcing/Allocation of capital	•			•
Cash flow management – construction/operations	•			•
Inflation risks prior to financial close	•		•	
Exchange rate risks	n/a			•
Inflation risk after financial close	•		•	•
Government withdrawing from P3s	n/a		•	
Operations and Maintenance Risks				
Water/wastewater treatment above original projections	•		•	
Changes in legislation	•		•	
Damage to property beyond insurance coverage	•		•	
Operation performance risks	•		•	
Lack of plant system integration		•		•
Future technology risk	•			•
Non-availability of treatment plant thereof	•			•
Unplanned major replacements	•			•
Consequential damage due to contractor non-performance		•		•
Facility condition risk over 10 years	•			•
Third party damages risk	•			•

**Disclaimer: This is a high level risk allocation structure, for more specific details please refer to DBFO agreement.*

MORRISON HERSHFIELD

August 29, 2012 **Confidential**

Mr. Ray Gilmore
Deputy Minister
Chair of the Oversight Committee
Alberta Infrastructure
3rd Floor, 6950 – 113th Street
Edmonton, Alberta, Canada
T6H 5V7

Dear Sir;

Re: Interim Fairness Report # 2
Following the completion of the
RFP Evaluation and the Selection of the Preferred Proponent for the
Evan Thomas Water and Wastewater Treatment Facilities Upgrade Project.

This second Interim Fairness Report has been prepared in accordance with the Fairness Auditor Terms of Reference. A draft copy of this report has been provided to John Gibson, Project Director, for comment, and his input has been considered in completion of this Report.

The following definition of fairness has been used throughout the transaction process:

- Alberta Infrastructure, in its execution of the procurement, adhered to the process set out by Alberta Infrastructure during the RFP;
- The evaluation criteria and evaluation procedures of Alberta Infrastructure were defined and applied in accordance with the RFP;
- The procurement process and outcome were not influenced by any biases; and
- All respondents and proponents were treated consistently throughout the procurement process, and in accordance with the RFP.

In carrying out my responsibilities as Fairness Auditor, within the framework of the fairness principles set out above, I have:

- Reviewed project documents including the Request for Proposals (RFP), the RFP evaluation procedure, the RFP process framework, and information provided on the SharePoint web site to the shortlisted respondents.
- Reviewed the shortlisted respondent questions and, subsequent to RFP submissions, clarification questions asked by the analysis teams and shortlisted respondent answers thereto.
- Attended the in-confidence information meetings, weekly project meetings, document review meetings/requests, various project review committee meetings.
- Reviewed the shortlisted respondent scoring and material provided to the Selection Committee.
- Observed and monitored the various selection activities throughout the RFP process.

- Reviewed various correspondence including meeting minutes, emails, notes and reports of the review committee and analysis teams.
- Provided advice when requested on fairness matters and identified potential process issues related to fairness.
- Reported to the Evan Thomas Water & Wastewater Treatment Facilities Upgrade Project Team on a regular basis.

Of particular note during the RFP process, one of the three shortlisted respondents was unable to comply with the terms and conditions set out in the RFP. As such, they formally dropped out of the competition. I can confirm that the matter was thoroughly reviewed by the selection team and that all of the fairness principles were met to the fullest in dealing with this matter.

In my opinion, the Evan Thomas Water & Wastewater Facilities Upgrade Project Team has been diligent in its application of the fairness principles set out above. All shortlisted respondents for the RFP have been dealt with consistently, fairly and in an unbiased manner.

Yours truly,

Morrison Hershfield Limited

Dwayne R. Johnston, P.Eng.
Fairness Auditor
Evan Thomas Water & Wastewater Treatment Facility's Upgrade Project

List of Proponents for the Evan Thomas Water and Wastewater Treatment Facility Project Upgrade

No.	Consortium	List of Companies	Project Lead
1.	EPCOR	Epcor Water Services Inc. (Financing, O&M) Lockerbie Stanley Inc.(a AECON Company) (Construction) Stantec Consulting Ltd. (Design)	Epcor Water Services Inc.
2.	SNC Lavalin	SNC Lavalin Inc. (Financing) SNC Lavalin Constructors (Pacific) Inc. (100% Design-Construction JV) SNC Lavalin Operations and Maintenance Inc. (O&M) Westpro Infrastructure Ltd. (Civil Construction sub-contractor) Kasian Architecture Interior Design & Planning Ltd. (Water and wastewater treatment plant architects, landscaping architects) Sanitherm Inc. (Technology provider/subcontractor to DC JV and O&M)	SNC Lavalin Inc.