ON RECOMPRESENTATION AND COMPANION.

Value for Money Assessment

Highway 427 Expansion Project
March 14, 2017



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I. EXECUTIVE SUMMARY

This report provides a summary of the procurement process for the Highway 427 Expansion project and demonstrates how value for money was achieved by delivering the project using Infrastructure Ontario's (IO) Alternative Financing and Procurement approach.

➤ Infrastructure Ontario

IO is a Crown agency owned by the Province of Ontario that provides a wide range of services to support the Ontario government's initiatives to modernize and maximize the value of public infrastructure and realty. Projects delivered by IO are guided by five key principles: transparency, accountability, value for money, public ownership and control, and public interest are paramount.

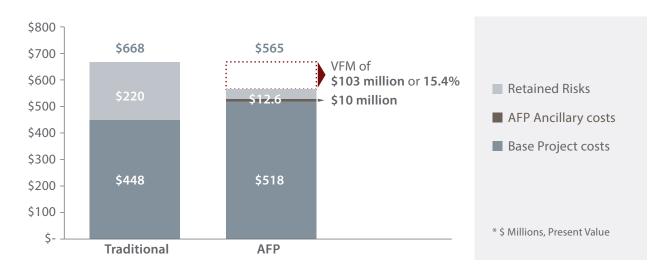
➤ Alternative Financing and Procurement in Ontario

IO delivers public infrastructure projects using a project delivery model called Alternative Financing and Procurement (AFP). The AFP model brings together private and public sector expertise in a unique structure that transfers to the private sector partner the risk of project cost increases and scheduling delays typically associated with traditional project delivery. The goal of the AFP approach is to deliver a project on time and on budget and to provide real cost savings for the public sector.

All projects with a cost greater than \$100 million are screened for their suitability in being delivered as an AFP project. The decision to proceed with an AFP delivery model is based on both qualitative considerations (e.g., size and complexity of the project) and a quantitative assessment. The quantitative assessment, called Value for Money (VFM), is used to assess whether the AFP delivery model will achieve greater value to the public compared to a traditional public sector delivery model. VFM compares the estimated total project costs of delivering public infrastructure using AFP relative to the traditional delivery model.

➤ Achieving Value for Money

The VFM assessment of the Highway 427 Expansion indicates an estimated cost savings of \$103 million or 15.4% percent (in present value terms) by using the AFP approach compared to traditional delivery.



I. EXECUTIVE SUMMARY

> External Review

As part of the procurement process and VFM assessment, two external parties were retained by IO:

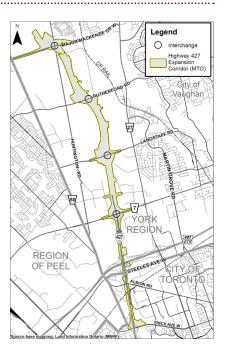
- ▶ KPMG was retained to complete the VFM assessment; and,
- ▶ P1 Consulting acted as the Fairness Monitor for the project.



II. PROJECT HIGHLIGHTS

➤ Highway 427 Expansion

Purpose	Extending Highway 427 is a key priority in addressing the efficient movement of people and goods within the context of the province's Growth Plan for the Greater Golden Horseshoe.
Project Owner	Ministry of Transportation (MTO)
Private Partner	LINK 427
Location	Toronto
Project Type	Design-Build-Finance-Maintain (DBFM)
Infrastructure Type	Highway
Contract Value	\$616 million (nominal/including inflation)
Construction Period	2017 to 2020
Length of Project Agreement	34 years: 4 years construction + 30 years maintenance and rehabilitation
Estimated Value for Money (Present Value)	\$103 Million or 15.4%



> Background

The Highway 427 Expansion project includes a new 6.6 kilometer extension from Highway 7 to Major Mackenzie Drive, a 4.0 kilometer road widening from Finch Avenue to Highway 7 and new median High Occupancy Toll (HOT) lanes in each direction.

Objectives

Ontario is making the largest infrastructure investment in hospitals, schools, public transit, roads and bridges in the province's history.

Once complete, the expansion will provide economic benefits to the province by offering an enhanced freeway route into York Region, the Vaughan Business area and the CPR Vaughan Intermodal Facility.

Overall key objectives of the Highway 427 Expansion include:

- > Increase urban transit capacity
- Manage congestion
- ▶ Minimize disruption during construction
- > Design excellence

- > A maintained asset for the long-term
- > Deliver on-time, on budget
- > Public ownership

II. PROJECT HIGHLIGHTS

➤ Project Scope

The project agreement with LINK 427 contains their requirements to:

- ▶ Design and Construct lead the design and construction of the Highway for final completion in 2021;
- ▶ Finance secure sufficient financing to finance the construction and capital costs over the term of the project;
- ▶ Maintain provide maintenance, lifecycle repair and renewal of the highway for a 30-year service period as per maintenance performance standards in the project agreement; and
- ▶ Third-Party Certification obtain a third-party independent certification that the requirements of the project agreement are met.

➤ Economic Benefits & Job Creation

The project is generating economic stimulus by creating and supporting jobs. LINK 427 estimates the majority of the labour will come from the Greater Toronto Area. There will be 250 workers on site at the peak of construction.

Value for money assessment for the Highway 427 Expansion Project demonstrates a project cost savings of:

\$103 million or 15.4%

The VFM assessment methodology is outlined in *Assessing Value for Money – An Updated Guide to Infrastructure Ontario's Methodology*, which can be found at www.infrastructureontario.ca

➤ Value for Money Concept

The VFM compares the estimated total-risk adjusted project costs, expressed in dollars measured at the same point in time, of delivering the same infrastructure project under two delivery models: the Traditional Design, Bid, Build (DBB) model and the AFP model.

MODEL #1:

Traditional DBB Delivery (PSC)

Estimated costs to the public sector of delivering an infrastructure project using a traditional procurement delivery model.

Total risk-adjusted costs are known as the Public Sector Comparator or PSC Costs.

MODEL # 2:AFP Delivery

Estimated costs to the public sector of delivering the same project to the identical specifications using the AFP delivery model.

Total risk-adjusted costs are known as AFP Costs.

Value for Money \$ = PSC Costs - AFP Costs or Value for Money % =

(PSC Costs - AFP Costs)
PSC Cost Costs

The difference between the total estimated PSC costs and the total estimated AFP costs is referred to as VFM. Positive VFM is demonstrated when the cost of delivery under AFP is less than PSC.

➤ Calculating Value for Money – Inputs & Assumptions

The VFM is assessed and refined throughout the entire procurement process to reflect updated information and LINK 427's actual bid costs. All costs and risks in this report are expressed in present value terms and have been discounted back to present terms.

The VFM assessment relies on a number of inputs and assumptions, including:

- ▶ 1. Base Project Costs
 - ▼ 1.1. Adjusted Base Costs (design, construction, lifecycle and maintenance)
 - 1.2. Financing Costs
- ▶ 2. AFP Ancillary Costs
- > 3. Retained Risks

1. Base Project Costs

▼ 1.1. Calculation of Base Costs

Traditional Delivery Model (PSC)		AFP Delivery Model		
Base Costs adjusted for:	(\$)		Base Costs adjusted for:	(\$)
Innovation Factor	N/A		Innovation Factor	• to Construction Costs
Lifecycle Cost Adjustment Factor	to Lifecycle Costs	•	Lifecycle Cost Adjustment Factor	N/A
Competitive Neutrality	nto Lifecycle Costs		Competitive Neutrality	N/A
Adjusted Base Costs Base Costs (\$) +/- Adjustments		Adjusted Base Costs	Base Costs (\$) +/- Adjustments	
Estimated Savings / (Costs) in Base Costs under the AFP Model			PSC – AFP	

Base costs include design, construction, and maintenance and lifecycle costs. In the estimation of base costs, IO relies on external cost consultants to estimate the costs of the project. This becomes the starting point for both the PSC and AFP models. These costs are then adjusted for:

- An innovation factor the VFM methodology includes an innovation factor which recognizes that the base cost of the AFP model will be lower than the PSC model as a result of:
 - the use of performance-based specifications in AFP projects allow contractors to consider innovative and alternative ways to deliver a project, such that project costs are lower as compared to a traditional delivery which uses more prescriptive specifications; and,
 - ▶ an increased competitive environment on AFP projects which have resulted in cost reductions.
- A lifecycle cost adjustment factor experience suggests that typically governments will under-spend on lifecycle maintenance for projects delivered under traditional delivery methods. Whereas, for DBFM projects, the AFP model requires the private sector partner to meet specifications which ensures the asset is well maintained over the project term. The VFM methodology captures this by reducing the actual spend on lifecycle costs in the PSC model over the 30-year operating term and quantifying the expected impact and costs of this deferred maintenance in the risk assessment. The net impact results in an overall increase in PSC costs.
- ▶ Competitive neutrality the base costs under AFP delivery will also include a provision for certain taxes payable by the private sector, namely taxes paid by the equity developers. The equivalent costs will not appear under the PSC. These perceived cost advantages could be misleading. As a result, an adjustment called the "competitive neutrality adjustment" is required to negate this potentially misleading cost of AFP delivery. The adjustment consists of adding such costs to the PSC.

▼ 1.2. Financing Costs

Traditional Delivery Model (PSC)		AFP Delivery Model	
Financing Costs	Public sector notional financing costs		Financing Costs	Private sector financing costs
Estimated Savings / (Costs) from Financing under the AFP Model			PSC – AFP	

One of the common elements of the AFP model is the use of private finance for some or all of the project period. Under the traditional delivery model, the public sector makes progress payments throughout construction. Whereas under the AFP model, the government pays a portion of construction costs during construction as interim payments and/or pays the entire amount at the end of the construction period and/or through a series of regular service payments over the term of the concession agreement (for DBFM projects). Financing costs are reflected as follows:

- ▶ Traditional Delivery Model or PSC the public sector notionally incurs an "opportunity cost" for having paid earlier as compared to the AFP model. The notional public sector financing cost is calculated at the current Provincial cost of borrowing or weighted average cost of capital. This cost is also is reflected in the discount rate used to assess and compare the project costs.
- ▶ AFP Delivery Model the private sector party borrows at private financing rates to pay for the project costs during construction and carries that financing until fully repaid by the public sector. This private sector financing cost is ultimately passed through to the public sector as a cost and reflected in the AFP model.

2. AFP Ancillary Costs

Traditional Delivery Model (PSC)		AFP Delivery Model	
AFP Ancillary Costs	N/A		AFP Ancillary Costs	• AFP costs
Estimated Savings / (Costs) from Financing under the AFP Model			PSC – AFP	

There are significant costs associated with the planning and delivery of a large complex project. The VFM methodology quantifies the incremental ancillary costs arising under the AFP delivery model only. Ancillary costs typically incurred include legal, capital markets, fairness, transaction, and the cost of IO services.

3. Retained Risks

Traditional Delivery Model (l	PSC)	AFP Delivery Model	
Retained Risks	∩ PSC costs	Retained Risks	• AFP costs
Estimated Savings / (Costs) from Retained Risks under the AFP Model PSC - AFP			

The concepts of risk transfer and mitigation are key to understanding the overall VFM assessment. To estimate and compare the total cost of delivering a project under the traditional delivery model versus the AFP model, the risks borne by the public sector, which are called "retained risks", are identified and quantified.

Details on how retained risks are identified and quantified are in Assessing Value for Money – An Updated Guide to Infrastructure Ontario's Methodology, which can be found at www.infrastructureontario.ca

Project risks are defined as potential adverse events that may have a direct impact on project costs. To the extent that the public sector retains these risks under both delivery models, they are included in the estimated cost under the PSC and AFP model as "retained risks". Risks retained under the AFP model are lower than risks retained by the public sector under the PSC model. This reflects the transfer of certain project risks from the public sector to the private sector and the appropriate allocation of risk between the public and private sectors based on the party best able to manage, mitigate, and/or eliminate the project risk.

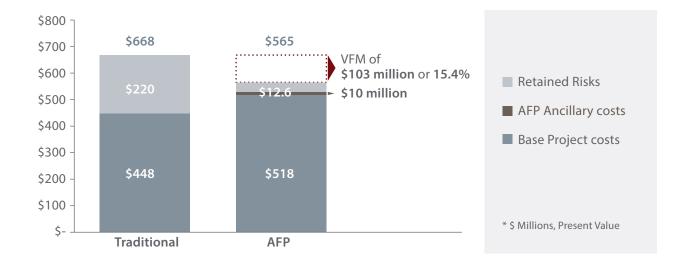
As a result of a comprehensive risk assessment, the following are examples of key project risks that have been transferred or mitigated under the project agreement to LINK 427:

- ▶ Project Schedule risk of a longer construction period and resulting in a higher total program cost.
- Asset Residual Risk risk that at the end of the lifecycle, the asset residual value is less than expected because the quality of the asset is not equivalent to the handback requirements under a concession contract.
- ▶ Latent Defects Risk that latent defects result in operational difficulties, additional lifecycle maintenance costs.
- Quality Management risk associated with meeting design standards and codes as they relate to long-term asset performance.

➤ Highway 427 Expansion Value for Money Results

The VFM assessment of the Highway 427 Expansion indicates an estimated cost savings of \$103 million or 15.4 per cent by using the AFP approach compared to traditional delivery.

Traditional Delivery Model (PSC)	\$ Millions, Present Value	AFP Delivery Model \$ Milli Prese	ons, nt Value
I. Base Project Costs (Adjusted Base Costs + Financing)	\$448	I. Base Project Costs \$51 (Adjusted Base Costs + Financing)	8
II. AFP Ancillary Costs	N/A	II. AFP Ancillary Costs \$10	
III. Retained Risks	\$220	III. Retained Risks \$37	
Total	\$668	Total \$56	5
Estimated Value for Money (cost diffe	rence)	\$103 million	
Estimated Percentage Savings		15.4%	



> External Review

KPMG completed the VFM assessment for the project. Their assessment demonstrates projected cost savings of 15.4 percent by delivering the project using the AFP model versus what it would have cost to deliver the project using a traditional delivery model (see letter on page 15).

P1 Consulting acted as the Fairness Monitor for the project. They reviewed and monitored the communications, evaluations and decision-making processes associated with the project, ensuring the fairness, equity, objectivity, transparency and adequate documentation of the process. P1 Consulting certified that these principles were maintained throughout the procurement process (see letter on page 17).



➤ Highlights of the Project Agreement

The Project Agreement signed between IO (on behalf of MTO) and LINK 427 defines the obligations and risks of all parties involved. Key highlights that pertain to the construction and maintenance terms are below:

- ▶ Contract Price Certainty A \$687M fixed-price contract (includes inflation at contractually determined rate on certain maintenance and lifecycle costs) to design, build, finance and maintain the Highway 427 Expansion for a 30-year period. Any extra costs incurred as a result of a schedule overrun caused by the contractor will not be paid by the Province.
- ▶ Scheduling, Project Completion and Delays LINK 427 has agreed to a substantial completion date in 2020. The schedule can be modified in limited circumstances in accordance with the project agreement. A sizeable payment will be made by the Province at substantial completion, providing further incentive for LINK 427 to complete construction on time.
- ▶ Site conditions and contamination LINK 427 is responsible for managing and where required, remediating any contamination at the site. This includes contamination that was disclosed or reasonably anticipated from site condition reports, or that is caused by LINK 427 or any of its parties.
- ▶ Construction Financing LINK 427 is required to finance the construction of the project and is responsible for any additional financing costs if there is a delay reaching substantial completion of the project.
- ▶ Ongoing Maintenance and Lifecycle LINK 427 must meet the requirements as outlined in the project agreement, for the maintenance and lifecycle renewal. LINK 427 will face deductions to their monthly payments if they do not meet the performance obligations during the 30-year maintenance term.
- ▶ Asset Hand Back upon expiry of the 30-year maintenance term, LINK 427 must hand back the infrastructure to the Province in good working order within specific prescribed standards. Financial penalties can be levied if the asset condition does not meet the prescribed requirements.

V. COMPETITIVE SELECTION PROCESS

The procurement process for the Highway 427 Expansion project, from RFQ to Financial Close, took 20 months to complete.

After concluding a fair and competitive procurement process, MTO and IO entered into a project agreement with LINK 427 to design, build, finance and maintain the project.

➤ Procurement Process

- i. Request for Qualifications | July 8, 2015
 - ▶ MTO and IO issued a request for qualifications (RFQ) to solicit interested parties to design, build, finance and maintain the Highway 427 Expansion project.
 - ▶ In October 2015, the RFQ period closed and the Sponsors received statements of qualifications from six interested teams.
 - ▶ RFQ submissions were evaluated by IO and MTO. High standards were set to ensure the pre-qualified consortia exceeded the technical and financial standards required for this complex and large project. The evaluation process resulted in three proponents being pre-qualified.

427 Link	Blackbird Infrastructure Group	LINK 427
Plenary	▶ Cintra	▶ ACS
> Aecon	▶ CRH	Brennan Infrastructure Inc.
> Walsh	Ferrovial Agroman	Dragados
Hatch Mott MacDonald	Dufferin	▶ BOT
	AIA Engineers	▶ MMM Group
	Urban Systems Ltd.	

- ii. Request for Proposals | March 3, 2016
 - ▶ A request for proposals (RFP) was issued to the pre-qualified proponents, setting out the bid process and proposed project agreement for the project.
 - ▶ The proponents spent seven months to prepare high-quality, competitive submissions.
- iii. Proposal Submission | September 30, 2016
 - ▶ The RFP period closed on September 30, 2016. All three proponents submitted bids on time.
 - ▶ October, 2016 December, 2016: bids were evaluated using criteria as set out in the RFP by an Evaluation Committee comprised of subject matter experts from IO, MTO and technical consultants enlisted by the Sponsors. The extensive evaluation process resulted in LINK 427 receiving the highest score.
 - ▶ On December 15, 2016, the 'first-ranked proponent' also referred to as the First Negotiations Proponent LINK 427, was then notified of their standing.
- iv. Preferred Proponent Notification | January 24, 2017
 - ▶ After successful negotiations with the First Negotiations Proponent, LINK 427 was selected as the preferred proponent. LINK 427 best demonstrated the ability to meet the specifications outlined in the RFP, including technical requirements, construction schedule, price and financial backing, as well as maintenance and rehabilitation plans.

V. COMPETITIVE SELECTION PROCESS

- v. Commercial and Financial Close | March 10, 2017
 - ▶ Upon conclusion of negotiations and once a financing rate was set, a Project Agreement (contract) was executed between LINK 427, IO (on behalf of MTO) on March 7, 2017 and financial close was reached on March 10, 2017.
 - ▶ The entire LINK 427 team, including identified subcontractors, comprises more than 11 companies:

Developers

- > ACS Infrastructure Canada Inc.
- Brennan Infrastructure Inc. (a member of the Miller Group of Companies).

Maintenance and Rehabilitation

- > ACS Infrastructure Canada Inc.
- > Brennan Infrastructure Inc.

Financial Advisors

National Bank Financial

Design and Construction

- Brennan Infrastructure Inc.
- > Dragados Canada Inc.
- > Bot Infrastructure Ltd.
- > MMM Group Ltd
- ▶ Thurber Engineering Ltd.

Lenders

- Manulife
- > Bank of Tokyo-Mitsubishi UFJ
- > Fédération Des Caisses Desjardins du Québec
- ▶ Korea Development Bank
- ▶ Bank of China

➤ Construction and Maintenance Phases

- vi. Construction Phase | 2017 2020
- ▶ The design and construction phase began in spring 2017 upon signing of the contract and will be carried out in accordance with the project agreement and the builder's schedule as approved by the Sponsors.
- ▶ During the construction period, the builder's construction costs will be funded through their own equity, bond and lending arrangements, which will be paid in monthly installments based on the construction program set out by LINK 427.
- ▶ Project construction will be overseen by MTO with IO providing contract management oversight.
- vii. Maintenance Phase | 2020 2050
 - ▶ Following construction, the Highway 427 Expansion is expected to become operational in 2020 and later completed in 2021. According to the project agreement, LINK 427 will provide maintenance, lifecycle, repair and rehabilitation services for a 30-year period.
 - ▶ Highway maintenance will be overseen by MTO.

vii. Payment

- ▶ LINK 427 will receive monthly construction period payments and a substantial completion payment expected in 2020.
- ▶ During the 30-year maintenance and rehabilitation phase, annual service payments (by way of monthly availability payments) will be paid to LINK 427. Payments will cover the capital and service portions, lifecycle payments minus any performance deductions.

VI. CONCLUSION

This report provides a project overview and summary of the procurement process for the Highway 427 Expansion project, and demonstrates that a VFM of \$103 million or 15.4% percent will be achieved by using the AFP approach compared to traditional delivery.

Going forward, IO, MTO and LINK 427 will continue to work together to ensure the successful delivery of the Highway 427 Expansion.



KPMG LLP

Suite 4600, 333 Bay Street Toronto, ON M5H 2S5 Telephone (416) 777-8500 Fax (416) 777-8818 Internet www.kpmg.ca

PRIVATE & CONFIDENTIAL

Ms. Divya Shah Infrastructure Ontario 777 Bay Street Toronto, Ontario M5G 2C8

Re: Value for Money Assessment – Highway 427 Expansion Project

Dear Ms. Shah:

KPMG LLP ("KPMG") has prepared the Value for Money ("VFM") assessment for the Highway 427 Expansion Project ("Project") at the Financial Close stage, in accordance with our letter of engagement with Infrastructure Ontario ("IO") and IO's methodology Assessing Value for Money: An Updated Guide to Infrastructure Ontario's Methodology – March 2015.

The VFM assessment is based on a comparison of the total project costs for the Project under:

- 1. The traditional delivery approach, as reflected in the Public Sector Comparator ("PSC") model; and
- 2. The Alternative Finance and Procurement approach ("AFP"), incorporating the Successful Bidder's proposed costs.

The VFM assessment was calculated using the following information (collectively the "Information") within the VFM model:

- i. A Risk Matrix developed for IO by Altus Group and adapted by IO to reflect Project specific risks; and
- ii. Cost and other input assumptions extracted from the bid submitted by the Successful Bidder and other VFM model assumptions as provided by IO.

We have not audited or attempted to independently verify the reasonableness, accuracy or completeness of the Information.

Based on our understanding of IO's VFM methodology, we can confirm that, the Information has been appropriately used in the VFM model, and that the VFM assessment demonstrates the AFP approach provides estimated cost savings of 15.44% in comparison to the traditional delivery approach.

Yours very truly,

Will Lyan

KPMG LLP

Will Lipson Partner Toronto, Ontario March 10, 2017



December 14th, 2016

Mr. Michael Inch Vice President, Procurement Infrastructure Ontario 1 Dundas Street West, Suite 2000 Toronto, Ontario, M5G 2L5

Subject: Fairness Attestation - Request for Proposals for Highway 427 Expansion (RFP No. 15-407)

Dear Mr. Inch:

P1Consulting acted as the Fairness Monitor to review and monitor the communications, evaluations and decision-making processes associated with the procurement process for **the Request for Proposals ("RFP") in connection with the Highway 427 Expansion Project (the "Project")**. This was done with the aim of ensuring fairness, equity, objectivity, transparency and adequate documentation in the evaluation process.

The Request for Qualifications ("RFQ") preceded the RFP process, with the intent of identifying the Pre-qualified Proponents who would be eligible to participate in RFP process, with the intent of identifying a Negotiations Proponent. P1 Consulting was engaged in the procurement process prior to the release of the RFQ, and monitored and reviewed the process up until the selection of the First Negotiations Proponent.

To date, in our role as Fairness Monitor, P1 Consulting has made certain that the following steps were taken to ensure a fair and transparent process:

- Clarity and consistency of the RFQ and RFP, Evaluation Framework and related documentation;
- Adherence to the processes described in the RFQ and RFP and Evaluation Framework, including the evaluation process;
- Objectivity and diligence during the procurement process in order to ensure that it was conducted in a transparent manner;
- Compliance of participants with strict requirements regarding conflict of interest and confidentiality during the procurement and evaluation processes;
- Security of information; and
- Oversight to provide a process where the Proponents are treated fairly.

The Fairness Monitor actively participated in the following steps in the process to ensure that fairness was maintained throughout:

- Participation in the project kick-off meeting;
- Review of the draft RFQ and RFP and related documentation;
- Review of the Evaluation Frameworks;





Mr. Inch December 14th, 2016 Page 2 of 2



- Overseeing Commercially Confidential Meetings;
- Overseeing the receipt of Proposals; and
- Overseeing the proposal evaluation and the selection of the First Negotiations Proponent.

As the Fairness Monitor for the **Request for Proposals for the Highway 427 Expansion Project**, we certify that, up until the date of this letter, the principles of fairness, consistency and transparency have been, in our opinion, maintained throughout the procurement process. Furthermore, no issues have emerged during the procurement process, of which we were aware, that would have impaired the fairness of this initiative.

Yours truly,

Stephanie Braithwaite Lead Fairness Monitor P1 Consulting

Cc: Louise Panneton, President, P1 Consulting





Infrastructure Ontario

1 Dundas Street West, Suite 2000, Toronto Ontario M5G 2L5 www.infrastructureontario.ca

